

To: York Region Rapid Transit Corporation Board of Directors
From: Mary-Frances Turner, President
Subject: **Markham Centre – Mobility Hub Station and Transit Alignments**

Recommendations

It is recommended that:

1. The Corporation commission a study to determine the implications of the proposed Calthorpe Associates revised vivaNext rapidway alignment within Markham Centre subject to sufficient funding being provided by others to cover the cost of the study.
2. The Town of Markham be requested to fund or arrange for funding from private developers for this study.
3. The Regional Clerk be requested to forward a copy of this report to the Town of Markham.

Purpose

The purpose of this report is to authorize the Corporation to commission a study to determine the implications of a new vivaNext rapidway alignment in Markham Centre, proposed by Calthorpe Associates on behalf of the Remington Group, in a report entitled *Markham Centre Mobility Hub Station and Transit Alignments*, and to secure study funding arrangements through the Town of Markham.

Background

Markham Centre is an emerging high density, mixed use downtown served by an interconnected transit network

- Significant development continues to emerge in Markham Centre geographically located between Highways 7 and 407, Town Centre Blvd and Kennedy Road.
- This mixed use urban community is served by an interconnected network of existing and proposed transit services, including GO, the 407 transitway, vivaNext, and local YRT buses.

In July 2003, Markham Council granted draft plan approval to the Remington Group's 20 plus year development plan for Markham Centre

- The Remington Group is reviewing potential amendments to its Markham Centre precinct plan, which would involve redistributing land uses and density, and introducing an enhanced road pattern within the central and eastern areas of its plan.
- Calthorpe Associates, land use planning and urban design consultants, have prepared a revised plan for The Remington Group which has been shared with Markham Council.
- Calthorpe Associates has proposed a preliminary concept for potential alternative transit alignments and Mobility Hub station location, including a new alignment for the vivaNext rapidway, (see *Attachment 1*). Key features of this proposal include:
 - A vivaNext right-of-way located, in general, at the south edge of the proposed development
 - A total of four stations between Warden Avenue and Kennedy Road for the vivaNext alignment
 - A 407 rapidway alignment that stays south along the proposed vivaNext alignment
 - A Mobility Hub located along the GO rail line, just north of Highway 407, serving GO rail, vivaNext and the 407 transitway
- Part of the Remington Group's Calthorpe plan includes a new alignment for the vivaNext rapidway and 407 transitway within and adjacent to the Remington lands, and introducing additional crossings of the GO rail line for increased connectivity.

- Transit alignment options and additional road crossings of the GO line are also under review by the Town, pursuant to the Town initiating the “East Precinct/Mobility Hub” planning and design exercise.

A portion of the vivaNext rapidway affected by the Calthorpe plan has EA approval and funding under the provincial 5 in 10 funding plan

- The alignment of the vivaNext rapidway between Warden Avenue and Kennedy Road, as per the approved Highway 7 and Vaughan N-S Environmental Assessment (EA), is an east-west route generally north of Enterprise Boulevard and Helen Avenue (YMCA Blvd) within Markham Centre. Three stations are proposed between Warden Avenue and Kennedy Road, with the major Markham Centre station located directly northeast of the Unionville GO Station. The EA alignment and proposed station locations are shown in *Attachment 1*.
- York Region invested \$910,000 in 2003/04 to ensure this alignment could be accommodated in the Enterprise / GO rail separation. This funding was for the design and construction of the additional span in the GO rail bridge to accommodate the future vivaNext alignment. In addition to this, York Region has invested in the Environmental Assessment which recommended the current alignment and the preliminary engineering for this alignment.

The Town of Markham has requested that YRRTC and the Ministry of Transportation (MTO) review and respond to the Calthorpe proposal

- The Town of Markham Council has requested YRRTC and MTO review, evaluate and report back on the potential alternative vivaNext rapidway alignment and Mobility Hub station location, and Highway 407 transitway alignment in Markham Centre, as outlined in the Calthorpe Associates report: *Markham Centre Mobility Hub Station and Transit Alignments*.

Analysis

The proposed Calthorpe alignment will require an amendment to the Highway 7 EA

- Changes to the vivaNext alignment from that approved in the Highway 7 EA, will require an amendment to the EA.
- EA amendments may not affect the timing for this section of the corridor as it been scheduled for 2015 – 2020; however, it will result in the need for a consultant work program and provincial and agency approvals.

The proposed alignment increases the length of the rapidway and has potential implications on connections to Kennedy Road and the crossing of the Rouge River Tributary

- The total length of the vivaNext rapidway as shown in the Calthorpe plan is significantly greater relative to the originally planned alignment. The approximate 500 metres of additional rapidway would imply higher capital costs and somewhat longer travel times.
- The proposed connection of the vivaNext rapidway to Kennedy Road is not clear from the Calthorpe plan. As per the EA alignment, viva buses would make the connection to Kennedy Road at the Kennedy Road and Helen Avenue (YMCA Blvd) intersection. With the Calthorpe alignment, it is not clear how an efficient connection could be implemented, and whether an above-grade or underpass structure would be required for the connection.
- A Rouge River tributary is located approximately 400 metres east of and parallel to Birchmount Road, for which a rapidway crossing is required according to the Highway 7 EA. The Calthorpe alignment may mitigate partially the need for a crossing of this tributary. However it is not clear how this is achieved and will need to be addressed.
- Current alignment is being protected for LRT conversion. The implications of the Calthorpe alignment on LRT conversion would need to be addressed.

The desired location of the vivaNext rapidway and stations with respect to development and to other transit facilities in Markham Centre, would need to be studied further within the context of the proposed Calthorpe plan and planning studies underway in Markham by staff and their consultants

- The Calthorpe proposed vivaNext rapidway alignment and Mobility Hub station location may have an effect on pedestrian access to transit facilities.
- The location of the Mobility Hub station at the south limit of the development area, rather than near Enterprise Blvd. / YMCA Blvd., appears to reduce the number of proposed residences, businesses and attractions within walking distance of the station.
- Several local destinations, such as the secondary school, are rendered outside the walking distance envelope (500 m) of the station, and should be examined as part of a centrally located mobility hub and the more southerly hub proposed in the Calthorpe plan.
- It is not clear where in the Calthorpe plan local bus facilities may be located. As Markham Centre promises to be a very highly developed area, there will be considerable transit demand that will not be fully satisfied by the vivaNext

rapidway, 407 transitway, and GO rail. In the interest of minimizing commuter transfers, there will likely be justification for providing direct access to Markham Centre for local bus routes, for example from Warden Avenue or Kennedy Road. Given the preceding, a bus terminal forming part of the Mobility Hub should be included. Depending on its location, such a bus terminal could provide potential for development above the terminal.

- The preferred relative location of the vivaNext station with respect to other transit facilities should be confirmed. Another alternative that may merit consideration is that the vivaNext and 407 transitway stations be located at opposite (north-south) ends of the GO Station. Such a configuration could avoid requiring the vivaNext alignment to be routed south, and the 407 transitway alignment to be routed north. Whether this may be an effective design option depends on a complexity of factors, including:
 - The anticipated number of connections between vivaNext and 407 transitway services
 - The extent to which passengers may wish to and be able to make “on the spot” decisions about which particular service to use
 - The relative funding schedules of the services
 - The nature of development in the area
 - The relative location of a YRT bus terminal

Financial

York Region and the Province of Ontario have invested considerable dollars in the vivaNext project, including costs related to the EA, Preliminary Engineering, and underpass construction for the rapidway alignment in Markham Centre

- The Highway 7 and Vaughan N-S Environmental Assessment included the section of the vivaNext rapidway through Markham Centre. As previously mentioned, changes to the alignment from that approved in the EA, will require an amendment to the EA.
- Preliminary engineering has also been completed for the rapidway through Markham Centre to Sciberras Road. Almost one half of the affected alignment is included in the preliminary designed section. Considerable conceptual design work has also been completed on the section from Sciberras Road to Kennedy Road.
- York Region has contributed financially to construction of the Enterprise Boulevard bridge underpass at the GO line. An additional span was built on the south side to accommodate the future vivaNext rapidway, as per the EA alignment.

- In the event that the EA alignment is not maintained, the additional cost to account for these items for a revised alignment would need to be funded from a different source.
- Anticipated costs to undertake a functional review of the proposed Calthorpe plan are estimated between \$50,000 and \$100,000, not including any additional EA work or supporting studies, or conceptual/preliminary engineering work. These costs do not have a budget source within the Rapid Transit Budget.

The Calthorpe alignment results in a number of additional costs to the vivaNext project that would need to be funded from another source and should be studied in greater detail

- The increased length of the proposed vivaNext rapidway of approximately 500 metres adds capital expense to the project and needs to be detailed.
- Extra costs would be associated with an above or below-grade connection to Kennedy Road, should such a feature be needed. As the Calthorpe plan is not clear on the connection at Kennedy Road, this would need to be investigated further.
- The addition of a viva station at Kennedy Road, per the Calthorpe plan, involves an additional capital cost.
- The construction of a mobility hub above the GO rail line is potentially technically challenging. This represents a new rail crossing for viva and a potentially more costly station, relative to the location identified in the EA. However, this depends on how cost is apportioned with other parties with an interest in the mobility hub and would need to be investigated. A local transit interface would also have to be included.

Timing

The vivaNext rapidway within Markham Centre to the GO line is fully funded, and no funding is in place for the 407 Transitway

- The vivaNext rapidway within Markham Centre to the GO line is fully funded by Metrolinx, with the section from Warden Avenue to Birchmount Road scheduled for completion in 2010, and the section from Birchmount Road to the GO line scheduled for construction 2016-2020.
- The funding schedule for the 407 transitway has not been defined at this time.

- If a joint-use mobility hub is to be built, it should be established how the cost of this work is to be apportioned, and what the cost schedule will be. Given the current funding schedule, the study needs to address who will front-end some, if not all of the 407 transitway component for the mobility hub.

Conclusion

- The general effect of the Calthorpe plan relative to the Highway 7 EA, as it relates to the vivaNext rapidway alignment, appears to be an increase in capital costs and an increase in travel time.
- Additional funding would likely be needed to support the plan beyond that already secured.
- Clarification on aspects of the Calthorpe plan are required, including the connection at Kennedy Road, the Rouge River tributary crossing, and the location of a YRT bus terminal.
- Since the Mobility Hub is proposed at the south edge of the development, the Calthorpe plan may engender lower walk in transit ridership and/or less efficient access to viva services and transit facilities in general, depending on the nature of development in the area and this should be examined further.
- There may be a basis for exploring other design options, such as locating the vivaNext and 407 transitway stations at opposite ends of the GO station.
- A more detailed analysis needs to be carried out on the cost, planning, timing, and other implications of the Calthorpe proposal as it relates to vivaNext.

For more information on this report, please contact Paul May, Chief Engineer, York Region Rapid Transit Corporation at 905-886-6767, Ext. 1030.

Mary-Frances Turner
President

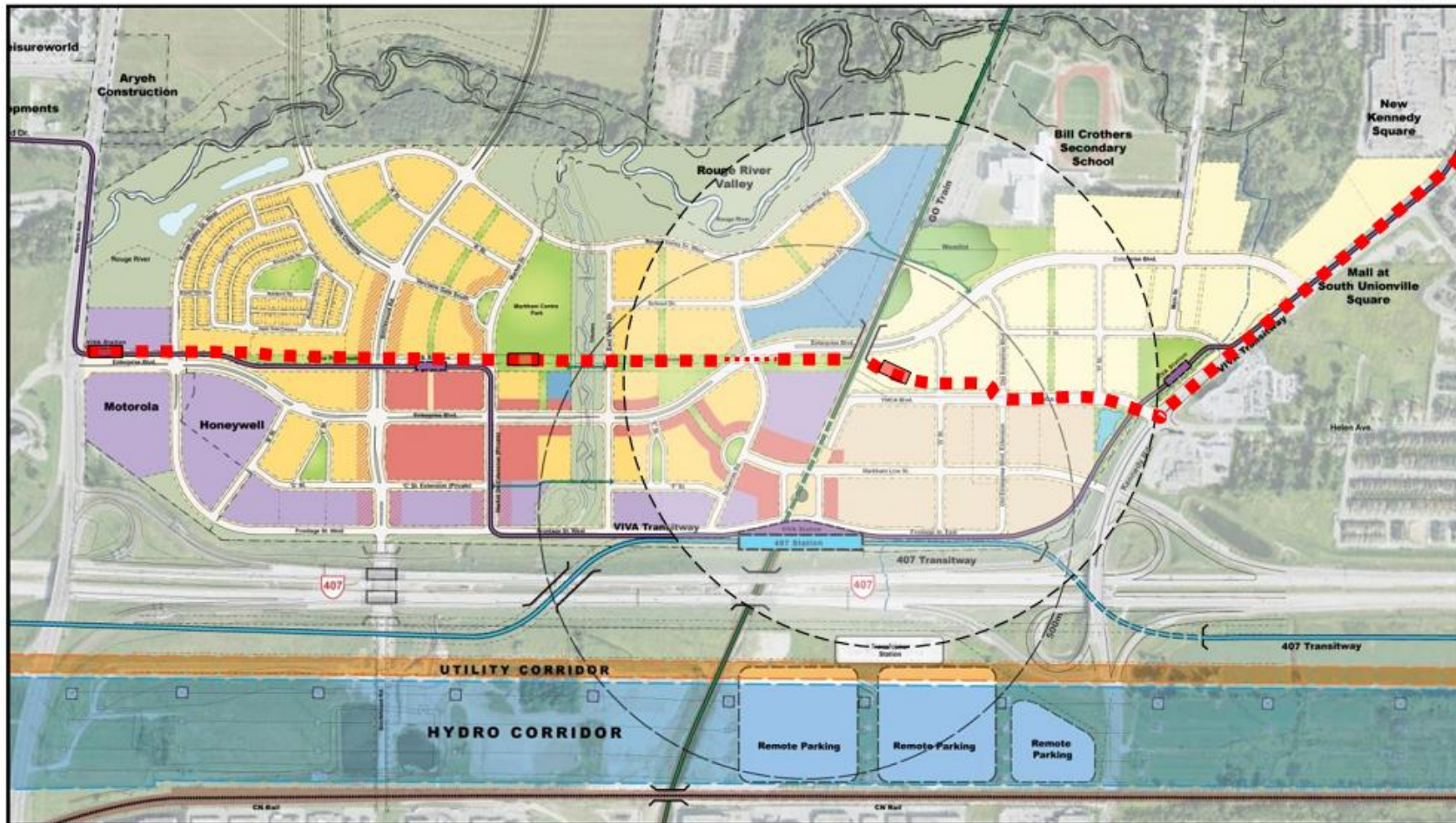
September 7, 2010

Attachments (1)

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Conceptual Superimposition of EA viva Alignment on Calthorpe Plan

**DOWNTOWN
MARKHAM**



LEGEND FOR SUPERIMPOSITION

- ■ ■ viva alignment as per EA (approximate)
- viva station as per EA (approximate)
- 500m radius station area
- viva alignment as per Calthorpe plan



CALTHORPE ASSOCIATES
URBAN DESIGNERS, PLANNERS, ARCHITECTS