



DRAFT Viva Network Configuration

2007 REVIEW

Executive Update

May 2007

		
Phase 1	Phase 2	Phase 3
<i>The right technology ... at the right cost ... at the right time</i>		

The 2007 Viva Network Configuration Review (2007 Review) confirms that the approach originally endorsed by Regional Council and the local municipalities in 2003 based on the *2003 Network Configuration Report* (2003 NCR) remains the most logical, cost-effective strategy to implement York Region's rapid transit network.

Highlights of the 2007 Review include the following:

- Construct the approved Spadina Subway extension to Vaughan Corporate Centre between 2008-2014
- Construct Phase 2 bus rapid transit (BRT) between 2008-2016
- Commence process to approve, finance and construct the Yonge subway extension to Richmond Hill Terminal now
- Convert from BRT to LRT (light rail transit) as warranted

2003 Network Configuration Report

The 2003 NCR built on a series of Regional policies, including the *Official Plan*, *Transportation Master Plan* and *Centres and Corridors Study*. Its objective was to identify the best rapid transit configuration to cost-effectively increase transit mode share and reduce reliance on the automobile as the primary mode of transportation to support population and employment in York Region.

The 2003 NCR documented an analysis that included traffic demand modeling to evaluate the impacts on ridership of different rapid transit technologies in selected corridors for the 2021 horizon year. The report proceeded on the basis of two primary assumptions: that the TTC Spadina subway would be extended north to York University by 2021; and that an extension of the TTC Yonge subway north of Finch Station should be given serious consideration because surface transit solutions would likely be reaching capacity by 2021 for travel to and from the Finch Station. Various network configurations were evaluated on the basis of six key factors:

- 2021 ridership
- Capital and operating costs
- Speed and reliability of service

- Land use
- Environmental, heritage and social impacts
- Risk

The 2003 NCR recommended that, following the implementation of Viva Phase 1 as funded by the Government of Canada, Province of Ontario and Region of York, Viva Phase 2 move forward with BRT, allowing for future conversion to Phase 3 (LRT or other fixed-guideway technology) along all of the rapid transit corridors. The environmental assessments (EAs), which also built on the work of York Region's *Transportation Master Plan* to evaluate rapid transit technologies for each of the corridors, further supported the 2003 NCR recommendation that Phase 2 move forward with the implementation of BRT on rapidways.

2007 Network Configuration Review

On June 20, 2006, Regional Council authorized staff to proceed with Phase 2-Y1 BRT planning and preliminary engineering work from Steeles Avenue to Richmond Hill Centre Terminal and the work for the North Yonge EA from Richmond Hill Centre Terminal to Newmarket and vicinity. Council also authorized staff to move forward with the property and utility planning on Phase 2 BRT segments Y2 (Yonge Street from Richmond Hill Centre Terminal to 19th Avenue) and H3 (Highway 7 from Richmond Hill Centre Terminal to Markham Centre). As part of this work, the 2007 Review was initiated.

The 2007 Review included the following elements:

- An assessment of the economic value and construction time impacts of 'pre-constructing' Phase 3 LRT elements in conjunction with Phase 2 BRT.
- Estimation of demand for all Viva system segments for 2021 and 2031 with either BRT or LRT technology, both with and without a Yonge subway extension to Richmond Hill Centre. These estimates took into consideration the latest GTA-wide highway and transit network assumptions, including the TTC Spadina subway extension to Vaughan Corporate Centre and the Highway 407 inter-regional transitway.
- Consideration of potential ridership development to 2051 based on long-term regional trends in population and employment.
- Consideration of the likely range of 'low' and 'high' demands related to future network and economic developments.

The 2007 Review confirms that the approach recommended by the 2003 NCR remains the best course of action. Certain refinements to the six steps presented in the 2003 NCR are noted below.

Step 1 *Initiate Quick Start (Viva Phase 1) as recently funded by the federal and provincial governments.*

With the implementation of Viva Phase 1, this step is now complete.

Step 2 *Implement...by 2011 BRT in all corridors. The BRT corridors will be constructed to design standards that facilitate conversion to LRT when warranted. The network design will also include a master plan for the creation of a major intermodal hub at Langstaff Gateway. Planning for the Vaughan North-South link will include property protection for the Spadina subway extension to the Vaughan Corporate Centre based on the EA findings of the preferred subway alignment.*

Preliminary engineering for the rapidways on Yonge Street between Steeles Avenue and Richmond Hill Centre Terminal (Y1) and from Richmond Hill Centre Terminal to 19th Avenue (Y2), and on Highway 7 from Richmond Hill Centre Terminal to Markham Centre (H3) are now underway. The designs will facilitate conversion to Phase 3 LRT when warranted. Federal and Provincial funding has been procured for the preliminary engineering work, and the final design and construction of the Y1 rapidway, Markham centre rapidway segment adjacent to Enterprise Drive, Cornell Terminal (at the eastern terminus of the Highway 7 corridor) and a central Operations & Maintenance facility. Construction will commence in 2008 and is expected to be complete by 2010.

Master planning is underway for the creation of a major intermodal hub at Langstaff Gateway (renamed Richmond Hill Centre subsequent to the 2003 NCR). By providing riders with terminal connections to facilitate transit travel to and from York Region, Viva impacts the other transit agencies operating within the GTA. TTC, GO Transit and Brampton Acceleride are also developing long-range plans that improve inter-regional connectivity. These plans have been taken into account to increase transit mobility and further support the goals of York Region's rapid transit plan. The recently created Greater Toronto Transit Authority will be working with its Regional stakeholders to further improve transit mode share on a GTA-wide basis.

As a result of the Federal and Provincial funding announcements, the planned subway extension to Vaughan Corporate Centre is moving forward and property requirements along the subway alignment are being identified.

Step 3 *...it is anticipated that by 2011 a major review of the program will be completed to confirm the underlying assumptions about growth (population, employment and other activities) in York Region and that ridership response has met expectations. The next decade of the evolution of the rapid transit network will proceed based on the determination of the length and timing of an extension of the Yonge subway... the preferred evolution is to extend the subway line to Langstaff [Richmond Hill Centre], which will become the centre of*

the network of subway, BRT, commuter rail and LRT lines. To be completed by 2011, this review should be initiated by 2009.

The 2007 Review confirms the 2003 NCR assumptions about population and employment growth and changing land use. Solid and growing ridership on the Yonge corridor in Phase 1 further supports the funding commitment for a BRT rapidway on the Y1 segment. Periodic reviews will be done to incorporate actual ridership response to refine the actual timing of subsequent steps.

Decision Point *If the major program review confirms the underlying assumptions regarding development...and if ridership response to the [Viva] program has met or exceeded expectations, proceed to Step 4 in conjunction with implementation of a subway extension to Langstaff. If, however, it is determined that a subway extension to Langstaff cannot be in place by 2021 or soon thereafter, proceed directly to Step 4.*

The 2007 Review indicates the need for a subway extension north of Finch Station. An extension to Richmond Hill Centre Terminal can be justified. At the present time the City of Toronto has no plans to extend the subway north of Finch Station. The recent "Transit City" announcement identifies only a series of LRT routes to meet the City of Toronto's long-term transit requirements. The City's current EA for Yonge Street south of Steeles is assuming BRT technology for a ten-year time horizon. To move forward with a Yonge subway extension will require a new EA and coordination between York Region and the City of Toronto as joint proponents.

Exhibit 1 shows that it will take 11- 16 years before service can begin. (The subway extension to Vaughan Corporate Centre, for which EA approval and funding have already been obtained with construction scheduled to begin next year, will not be completed until 2014 or 7 years from now.) Depending on funding, the extension of the Yonge subway could occur in one or more phases (e.g., initial extension to Steeles Avenue, with subsequent extension to Richmond Hill Centre Terminal.)

Exhibit 1: Timeline for Yonge Subway Extension

Stakeholder consultation	1 year
EA & Funding process	3-4 years
Design and construction	6-10 years
Commissioning	1 year
Total Time Required	11-16 years

York Region cannot afford to wait until the subway extension is finally in service. It must move forward with the planned implementation of the Y1 and other Phase 2 rapidways in order to achieve its more immediate objectives (increased transit mode share and compact, mixed-use urban development to accommodate ongoing population and employment growth) while the subway is being developed. The 2007 Review also indicates that the Y1 segment of BRT rapidway will continue to be required after the subway extension becomes operational.

Step 4 *Implement LRT in the Yonge corridor between the end of the Yonge subway (Finch or Langstaff [Richmond Hill Centre]) and 19th Avenue.*

Following the completion of the subway extension, Phase 3 LRT or other fixed-guideway technology should be introduced north of Richmond Hill Centre Terminal to 19th Avenue as demand warrants.

Steps 5 and 6 *Extend the LRT network to include the Highway 7 east corridor to Markham Centre; in the longer term, convert other surface rapid transit lines from BRT [Phase 2] to LRT [Phase 3] as demand warrants. .*

Convert from BRT (Phase 2) to LRT (Phase 3) as warranted.

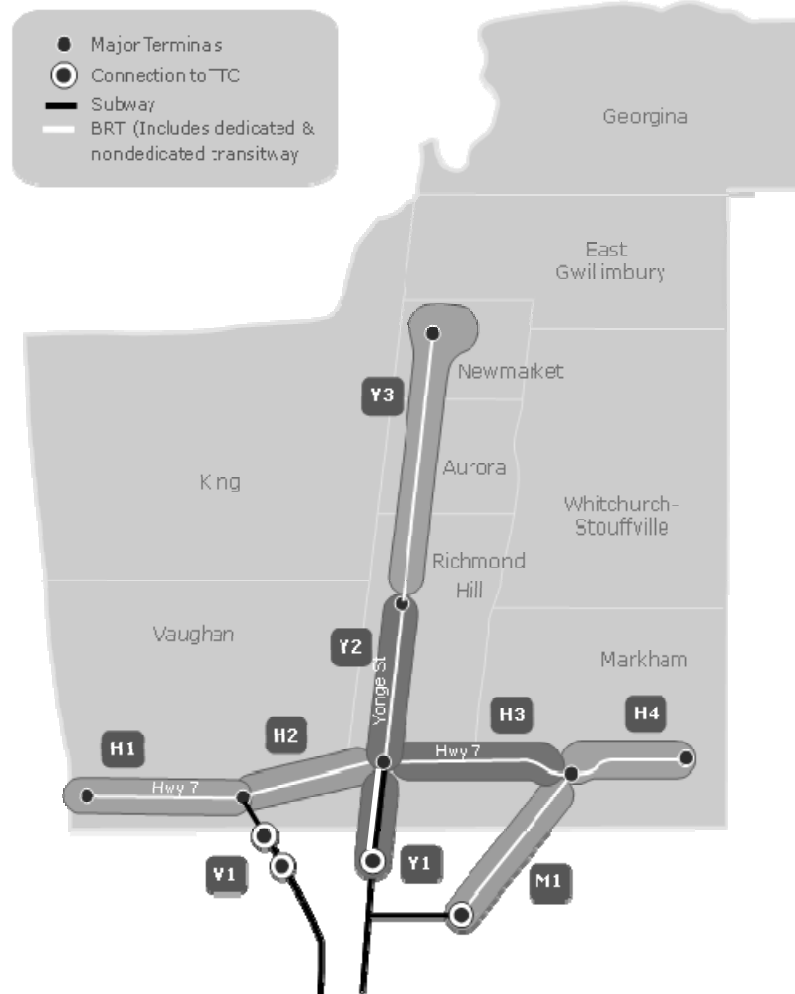
The 2007 Review supports the following implementation strategy for the Viva rapid transit network:

Phase 2, Stage 1 (2007-2011)

- Construct BRT rapidway on Yonge Street between Steeles Avenue and Richmond Hill Centre Terminal, BRT rapidway in Markham Centre, and Cornell Terminal;
- Complete preliminary engineering and land acquisition for BRT rapidways on Yonge Street from RHC to 19th Avenue and on Highway 7 from Richmond Hill Centre Terminal to Markham Centre;
- Begin construction of Spadina subway extension to Vaughan Corporate Centre;
- Complete North Yonge EA;
- Work with City of Toronto and TTC to initiate EA for Yonge subway extension; and
- Move forward with park-and-ride strategy to support initial rapidway segments.

Phase 2, Stage 2 (2011-2021)

- Complete construction of remaining BRT rapidways;
- Complete Spadina subway extension to Vaughan Corporate Centre;
- Begin construction of Yonge subway extension to Richmond Hill Centre Terminal; and
- Implement full park-and-ride strategy to support ridership demand.



Phase 3 (2021-2031)

- Complete construction of Yonge subway extension to Richmond Hill Centre Terminal
- Convert BRT rapidways to LRT or other fixed-guideway technology and incorporate grade separations or other improvements as required to achieve transit mode share targets.

During this phase, important congestion points in the system will need to be relieved to maintain attractive travel times and continue building ridership. Two readily identifiable points of congestion are through downtown Richmond Hill and the Highway 7/Highway 404 interchange. Possible actions include adding capacity by converting to Phase 3 LRT, grade separations or supplemental bypass routings. Such improvements would be the subject of continued planning analysis.