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SHARED SPACE RAPIDWAYS

The Rapid Transit Public/Private Partnership Steering Committee recommends the following:

- 1. The presentation by David Clark, Chief Architect, York Region Rapid Transit, be received; and**
- 2. The recommendations contained in the following report, February 8, 2008, from the Vice-President, York Region Rapid Transit Corporation, be adopted:**

1. RECOMMENDATIONS

It is recommended that:

1. Council endorse the shared space principles and key design criteria for rapidways located in civic malls and urban spaces.
2. Council authorize staff to enter into negotiations with the Town of Markham regarding a memorandum of understanding for the capitalization, construction, operation and maintenance of the Markham Town Centre civic mall rapidways.

2. PURPOSE

This report provides Council with an overview of the principles and key design criteria for the shared use corridors and urban spaces incorporating rapid transit, cycling and pedestrian uses. The first application of a shared space rapidway is in the civic mall in the Town of Markham, and this report provides details on the civic mall/rapidway design. The report also seeks authorization for staff to begin negotiations with the Town of Markham for the capitalization, construction, operation and maintenance of the rapidways through the Civic Mall corridor.

3. BACKGROUND

In the spring of 2007, Council endorsed design standards for rapidways located in the centre of Regional rights-of-way. These rapidways provide for the high frequency, higher speed movement of rapid transit vehicles out of mixed traffic from place-making destination to place-making destination. In the more highly urbanized town centres along the rapid transit corridors, unique opportunities exist to co-mingle the transit system with urban squares and malls. The first of these was recognized in the town planning for the Markham downtown and was reflected in the Highway 7 environmental assessment (EA).

The civic mall is featured in the Highway 7 EA as the approved location for the rapidway.

4. ANALYSIS AND OPTIONS

Rapidways combined urban spaces and rapid transit to create unique shared spaces

A new design standard for a shared space environment of pedestrians and transit has been developed. This new shared space design standard compliments the rapidway design standard developed for on-street application, which takes place along 100 km. of the rapid transit corridors.



San Jose, California

The new design standard can be applied in highly urbanized spaces where pedestrian and rapid transit activities are co-mingled without the automobile. The first application, which is now advancing through preliminary engineering, is the Markham Town Centre Civic Mall. The shared space principles can be used in other more urbanized segments of the rapid transit system, such as Vaughan Corporate Centre (VCC), Richmond Hill

Centre (RHC) and the constrained environments of Richmond Hill's and Aurora's downtowns.

Shared space' rapidway design principles have been developed

Design should be guided by principles that ensure that all users have an equal stake in the use and enjoyment of a shared space. Shared use design is well established in many forward thinking jurisdictions and a number of international best practice models exist, some examples of which are illustrated throughout this report.

The proposed principles of 'shared space' are as follows:

- Give equal priority to pedestrians, cyclists and transit riders and promote full accessibility and barrier free design across modes.
- Promote safety through visibility and eye contact.
- Differentiate modes through surface material texture, colour and pattern.
- Promote walking, transit use and cycling through design and detailing.
- Utilize sustainable design strategies and best practices.
- Promote integrated building design through the use of common design elements.
- Visually and physically connect shared space to major open spaces, parkland, urban plazas and watersheds.
- Promote safety and security through the principles of Crime Prevention Through Environmental Design (CPTED).
- Encourage structured daily and seasonal events and activities.
- Establish shared space as major urban destinations.

The principles generate key design criteria for civic malls

- Locate the transitway to provide additional separation from ground floor residential uses in the east and west, and to be closer to mixed uses along the south side of the mall thus permitting maximum sun exposure along the north side.
- The transitway is typically on the same horizontal plane as the pedestrian and cycling movement surfaces and adjacent urban landscape treatments.
- Transitway geometry meets the requirements for BRT and LRT.
- Transit speed is between 20 to 30 kph to ensure safe interaction with pedestrians and cyclists.
- Pedestrians and cyclists share all areas of passage through the corridor.
- The transit surface is distinguished by pattern, texture and colour and continuous barrier-free curbing.
- Three metre wide zone borders the running surface with no vertical projections above 750 mm (low planters, shrubs, benches, bollards etc.).
- Surface materials within the civic mall and along the transitways are compatible in quality (ie. no asphalt).
- Civic mall character is maintained through public street intersections.

- Transit rapidway has its own storm water drainage.
- Use environmentally friendly and energy efficient materials and technologies and promote the natural percolation of storm water.
- Plants and trees species will be tolerant of urban conditions.

Integrating rapid transit into public space has been successfully implemented elsewhere

While the integration of rapid transit into public space environments, such as a civic mall, is relatively new to Canada, there are a number of highly successful urban settings in Europe and the United States where transit, pedestrians and cyclists share equally in the use and enjoyment of a high quality, seamlessly designed, public environment. Practical experience demonstrates that where there is a high degree of visibility and eye contact amongst all modes and users, safe movement through shared space can be successfully maintained. The photograph that follows shows how transit and pedestrians can successfully share public space in this example from 16th Avenue in downtown Denver, Colorado.



Denver, Colorado

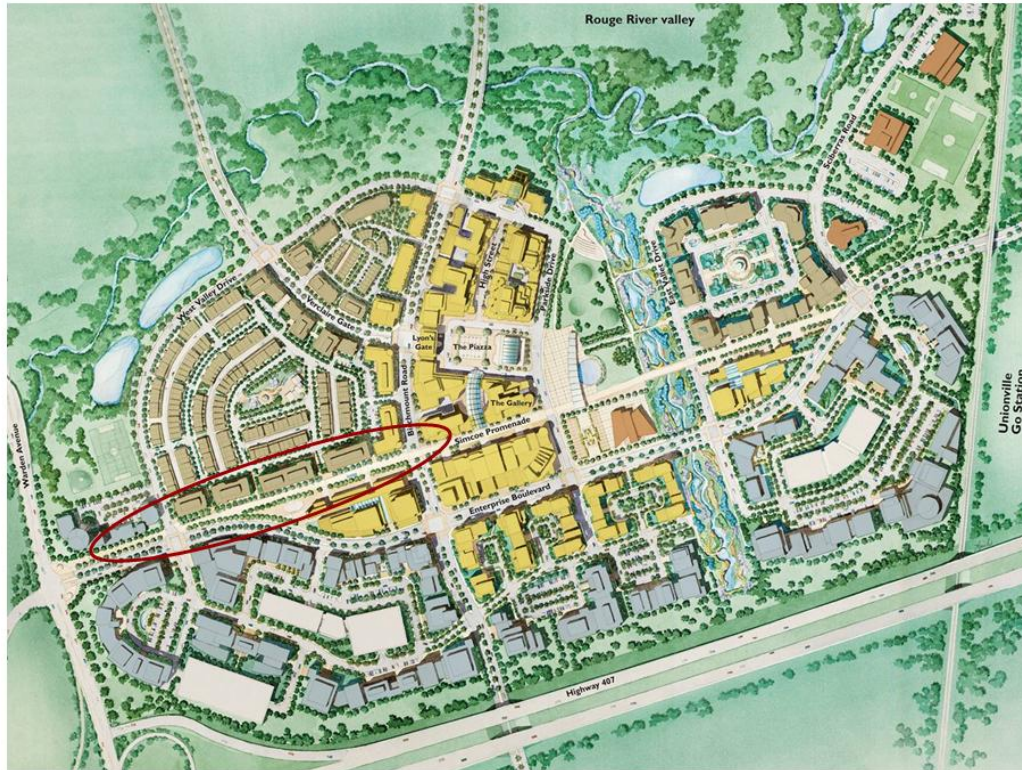
The first application of the shared space rapidway is in Markham Civic Centre

The Markham Centre Civic Mall rapidway is a 1 km. segment of the “Centre to Centres” Highway 7 Viva rapid transit system. It is unique in character in that it runs along a shared use corridor through the heart of Markham Centre. The Civic Mall section will connect eastward to the intermodal facilities at the Unionville GO Transit station, allowing Viva transit users to connect to higher order GO Rail and 407 Transitway systems, as well as to local transit routes.

To the west, the Civic Mall connects to the newly endorsed Cedarland alignment, bringing Viva service up Town Centre Boulevard and along Highway 7 to the RHC terminal. When constructed, the rapidway from the Unionville GO Transit station along the Civic Mall and along Highway 7 to Highway 404, will be an ideal demonstration of the linkage between transit and built-form transformation on one of the Region’s major east-west corridors.

The Civic Mall corridor within the Markham Centre plan is envisioned as a multi-use public corridor incorporating walking, cycling, transit and a range of compatible open space activities. Rapid transit service through the heart of the new downtown along the Civic Mall will support the higher order mix of uses in the plan and provide access to the major retail and cultural destinations in the core. The Civic Mall is envisioned as the major rapid transit and public use spine, linking the east and west development precincts to the central park and mixed use core and to open space in the Rouge Valley.

Location of Civic Mall construction within Markham Centre



Construction has begun along the Markham Centre Civic Mall

Construction of high density condo buildings along the northern edge of the corridor is well underway and occupancy is expected to commence later this year, with full occupancy expected sometime in early 2009.

Early construction of rapidways along the Civic Mall is proposed

The York Region Rapid Transit Corporation (YRRTC) has proposed early construction of the Civic Mall segment from Warden Avenue to Birchmount Drive on the strength of federal and provincial funding announcements made in early 2007. Preliminary design and engineering of the Civic Mall commenced in the fall of 2007. The location of the Civic Mall rapidways is shown on the following map.



Oslo, Norway

Staff has been engaged in the review of the preliminary design and engineering efforts

Significant design coordination is required in order to deliver a public environment that seamlessly integrates the various movement systems and land uses within and adjacent to the corridor as well as linkages into the broader community.

A set of 'shared space' principles and key design criteria has been developed in consultation with Town of Markham staff to help guide the development of an integrated design concept for the mall, and is being brought forward to Council for endorsement. A more detailed design concept will be brought back to Council for endorsement later in the spring.

5. FINANCIAL IMPLICATIONS

The Civic Mall installation is unique in that the rapidways are being constructed in a 'greenfield' environment, in contrast to construction within an existing street. The surface materials, curb and finish details on the rapidway through the Civic Mall will be to a higher standard than is planned for the rapidways within a reconstructed street environment, such as Yonge Street and Highway 7. Any per kilometre cost premiums associated with constructing the rapidways to higher quality design standards in the Civic

Mall should be offset by the savings associated with not having to build the rapidways within an existing street that would need to be partially or significantly reconstructed.

Staff will commence discussions with Town of Markham staff to develop a memorandum of understanding (MOU) for the capitalization and construction of the rapidways, identifying opportunities for cost-sharing, as well as identifying operating and maintenance protocols and responsibilities. An outline of the terms of an MOU with Markham will be brought forward for Council's consideration in a future report.

6. LOCAL MUNICIPAL IMPACT

Rapid transit service through the heart of Markham's new downtown along the Civic Mall will support the higher order mix of uses in the plan and provide access to the major retail and cultural destinations in the core.

7. CONCLUSION

Constructing the rapidways within multi use public corridors is an important component of the Phase 2 Viva system. These unique components of the rapidway network are envisioned as being seamlessly integrated into multi-use public corridors, incorporating walking, cycling and transit as well as a range of compatible public open space activities. As such the design standards on these sections of the network vary from the standards previously adopted by Regional Council for general application to the network along the Yonge Street and Highway 7 corridors. This report brings forward the shared space principles and key design criteria for Council's endorsement. The principles and criteria will be used to guide the preliminary design and engineering efforts within these sections of the network. The shared use standards are expected to be applicable elsewhere within the network such as in the transit mall at VCC or potentially in constrained environments such as in the Richmond Hill and Aurora downtowns.

The first application of the new standards has been identified for the Civic Mall in Markham Centre. This project was identified for funding under the federal FLOW programme in order to be in place to coincide with the occupancy of the high density residential buildings currently under construction along the northern boundary of the mall. The shared space principles and key design criteria as described in this report have been developed in consultation with Town of Markham staff for the Civic Mall installation in Markham.

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.