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VIVANEXT BUS RAPID TRANSIT PARK-AND-RIDE STRATEGY UPDATE

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

- 1. Receipt of the presentation by David Clark, Chief Architect, York Region Rapid Transit Corporation; and**
- 2. Adoption of the recommendations contained in the following report dated April 30, 2009, from the Vice President, York Region Rapid Transit Corporation and the following additional recommendation:**
 - 4. The Regional Clerk forward this report to the Clerks of the Local Municipalities with a request that the Local Municipalities provide the Region with their comments and other additional information relating to their local parking authorities.**

1. RECOMMENDATIONS

It is recommended that:

1. Staff be directed to finalize the identification of appropriate sites for commuter parking facilities at high-priority locations along the Viva corridors.
2. Staff be directed to bring back a financial strategy for the implementation of the park-and-ride programme prior to making final recommendations for the park-and-ride strategy and entering into negotiations with private land owners.
3. Staff be directed to finalize and bring back a governance structure for the management and operation of commuter parking facilities prior to making final recommendations for the park-and-ride strategy.

2. PURPOSE

This Report updates Council on the steps taken towards finalizing recommendations for a comprehensive Viva park-and-ride strategy. Following the report to Committee in November 2008, the team has focussed on analyzing the next level of projected park-and-ride demand by segment and developing the station-level screening of potential park-and-ride locations. This report also sets out a timeline for implementing the final park-and-ride strategy and puts forward a preliminary discussion and emerging recommendations on appropriate governance and business models.

3. BACKGROUND

Council endorsed five principles to guide the final park-and-ride strategy

On November 20, 2008, Council endorsed five principles to guide the finalization of a park-and-ride strategy to support the ridership growth on the Viva BRT network. The principles established the essential role that commuter parking will play in the success of the Viva BRT network. The principles contemplated parking fees as an important consideration in the operation of the network and established a preference for developing parking through the use of public lands or through shared use arrangements. The strategy is planned to avoid frustrating transit-oriented development opportunities within designated intensification areas by avoiding the use of surface parking. Council endorsed the principle that Viva should maintain control over certain facets of the park-and-ride operations that have an impact on the Viva brand.

Raw parking demand in each segment has been established

As reported in November 2008, the strategy team used the regional demand model to project the unconstrained or “raw” park-and-ride demand for each segment of the Viva network, including the future subway segments along the Yonge Street corridor south of Highway 7 (Y1) and the Spadina corridor (V1). The demand model was run for each of the three “horizon years”, with the following network assumptions:

- 2011: BRT on all segments; this horizon was established earlier for analyzing the BRT and has been carried forward into the modeling analysis. The \$1.4 billion provincial funding commitment assumes that the core of the BRT network will be in place by 2013 and the full network will be in segregated rapidways by 2021.
- 2021: both the Yonge and Spadina subway extensions are in place and BRT is in all other segments. This is the critical forecast as the majority of the demand shown in the model in 2021 should be in place by 2017, when both subway lines are expected to be open.
- 2031: has the same network assumptions as 2021, with parking demand growing with ridership as the transit system becomes established and more intensification occurs.

The results are summarized in Table 1:

Table 1
Unconstrained Park-and-Ride Demand ¹

			2011	2021	2031
Segment	From (inclusive)	To (inclusive)	All BRT	Subway	Subway
Y1	Finch Subway	Richmond Hill Centre	1,900	3,750	4,300
Y2	Bantry-Scott	19th-Gamble	1,400	2,350	2,700
Y3	King	Newmarket Terminal	750	2,800	4,250
H1	Western Gateway	Weston	600	600	450
H2	Keele	Atkinson	0	0	0
H3	Bayview	Town Centre Blvd.	0	250	300
Markham	Warden	Unionville	150	750	450
H4	Kennedy	Cornell	700	1,400	1,650
M1	14th	Don Mills	0	0	0
V1	Vaughan Corp. Ctr.	Steeles West	700	2,450	3,150
Total			6,200	14,350	17,250
VIVA BRT stations only, excluding subway:			6,200	8,150	9,800

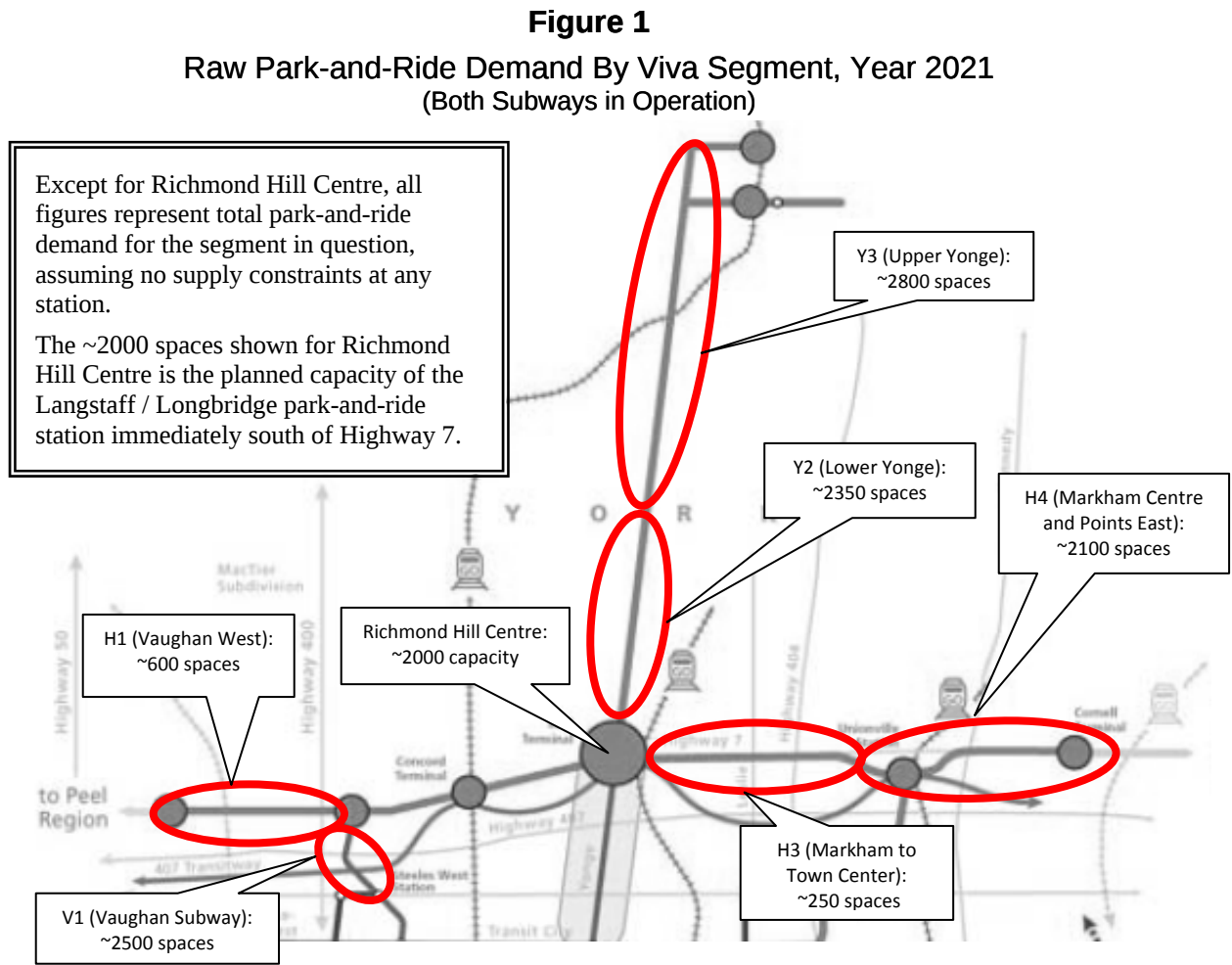
The principal findings from the modeling data conclude that:

1. Viva park-and-ride demand on Yonge Street north of Highway 7 (Y2 and Y3) is significantly greater than on Highway 7.
2. The H4 segment on Highway 7 east of Markham Centre represents a major secondary source of demand.
3. Segments H2 and H3 on Highway 7 between Vaughan Corporate Centre and Richmond Hill Centre and eastward to Kennedy Road, exhibit minimal demand, because direct subway access is available by driving a little further to Y1 or V1.

The modeling analysis shown in the table assumes parking demand at BRT-only stations, for which Viva will be responsible. For purposes of this analysis, the parking at future subway stations for Spadina and Yonge are assumed to be the primary operating responsibility of the TTC, with planning input from York Region. For the 2021 demand, there are 3,750 spaces indicated as associated with the Yonge Subway extension (Y1) and 2,450 associated with the Spadina Subway extension (V1). If, for modeling purposes, the subway parking demand is set aside, there is a total demand of 8,150 spaces required to support the Viva network in 2021 with growth in demand to 9,800 spaces by 2031.

¹ Entries are rounded to the nearest 50.

Figure 1 illustrates the Year 2021 demand for each segment.



4. ANALYSIS AND OPTIONS

Station level screening has refined park-and-ride demand on the segments

In order to determine which vivastations would be suitable for the development of park-and-ride facilities, the team applied a second level of screening to the stations to determine which ones would be appropriate for park-and-ride. The “station-level” analysis has been completed, and the results are summarized as follows.

The station-level screening in Table 2 was undertaken through the application of the following three criteria:

Table 2
Station-Level Screening

Criteria	How Applied	Assumptions
<i>Land Use</i>	Examin ed the general compatibility of park-and-ride with local and Regional plans	- Significant at-grade park-and-ride facilities would not be located within high-density TOD. - Surface, stand-alone parking facilities in Regional Centres and locally-designated Key Development Areas (KDAs) would be avoided. - Structured parking opportunities would be identified that could be developed as shared use facilities serving multiple uses during a typical day or week, where park-and-ride is considered for Regional Centres or KDAs. - These opportunities would be addressed as part of development applications that will emerge as the areas intensify over time.
<i>Highway Location</i>	- Examin ed the “catchment” value of the major road network intersecting the Viva corridor (with major concession roads more valuable than local streets); - The ease of access to and from the 400 series highways; and - Anticipated future traffic conditions in the station vicinity.	
<i>Potential Sites</i>	Examin ed the potential availability of sites which meet the performance standards for park-and-ride facilities investigation.	Sites meeting performance standards are: - properties located within 300 meters of the station platform; - are able to accommodate at least 100 spaces; and - are either publicly owned, privately owned with apparent

Criteria	How Applied	Assumptions
		excess daily parking (shopping malls), or privately owned and of sufficient size to warrant further parking.

Each station was rated as either optimal, unsuitable, or possible on each of the three criteria. The ratings were then combined into station scores of the same three gradations as shown in Table 3. Of the 74 Vivanext BRT stations, the following summary results were obtained:²

Table 3
Station-Level Screening Ratings

Optimal	Unsuitable	Possible	Total
24	32	18	74

The optimal stations are key targets for park-and-ride implementation

Not all of the optimal stations will result in the development of park-and-ride facilities. Some will be found to lack suitable parking locations once the analysis progresses to the next stage of a more detailed investigation of specific properties and site configurations; others are so close to one another that they would be duplicative. Within each segment, the stations identified as optimal are locations where detailed investigations are underway and ownership and contact information is being assembled (see Table 4). As these investigations are pursued, it should be noted that, as set out in the previous report to Committee, there is a hierarchy of preferences in selecting specific sites in which acquiring land outright in the marketplace is the least preferred option (especially if structured parking would have to be constructed). The preferred alternatives include using public land, creating shared-use parking facilities with other public or private partners, or leasing land on an interim basis.

However, in certain segments, where demand modeling is high and potential sites appear limited, the strategic decision point of whether to acquire land and invest in a garage facility could come as an early decision point. One potential example is the Y2 segment.

² The 74 stations include Richmond Hill Centre Terminal (because of its importance as a BRT hub), but the screening found it unsuitable for park-and-ride on land use and highway congestion grounds. All of the other Y1 stations and all of the Vaughan subway stations were excluded, because their park-and-ride facilities are expected to be used entirely for subway boardings.

The optimal locations are as follows:

Table 4
Optimal Station Locations

Segment	Year 2021 Demand	Optimal Stations
Y3 ³	2,800	• East Gwillimbury GO • Green Lane Midblock } (one of because of proximity) • Yonge & Green Lane • Davis Drive & 404 • Davis Drive & Yonge • Mulock Drive • Henderson Drive / Allaura Boulevard • Bloomington Road • Stouffville Road / Jefferson Sideroad
Y2	2400	• Bernard Avenue • Major Mackenzie Drive • Weldrick Road • 16th Avenue / Carrville Road
H1	600	• Western Gateway (Highway 50) • Highway 427 } (one or two of) • Highway 27 • Weston Road
H2	0	• Highway 7 / Bathurst Loop (see subway strategy)
H3	250	• Chalmers Park / South Park Road (see subway)
H4 ⁴	2,100	• McCowan Road • Main Street • Ninth Line Road • Cornell Terminal • Durham Line / Regional Road 10

A strategy to address the Richmond Hill/Langstaff gateway commuter parking demand is being developed

As a corollary to the Viva park-and-ride strategy, the team examined the opportunity to provide commuter parking facilities in close proximity to the Richmond Hill/Langstaff

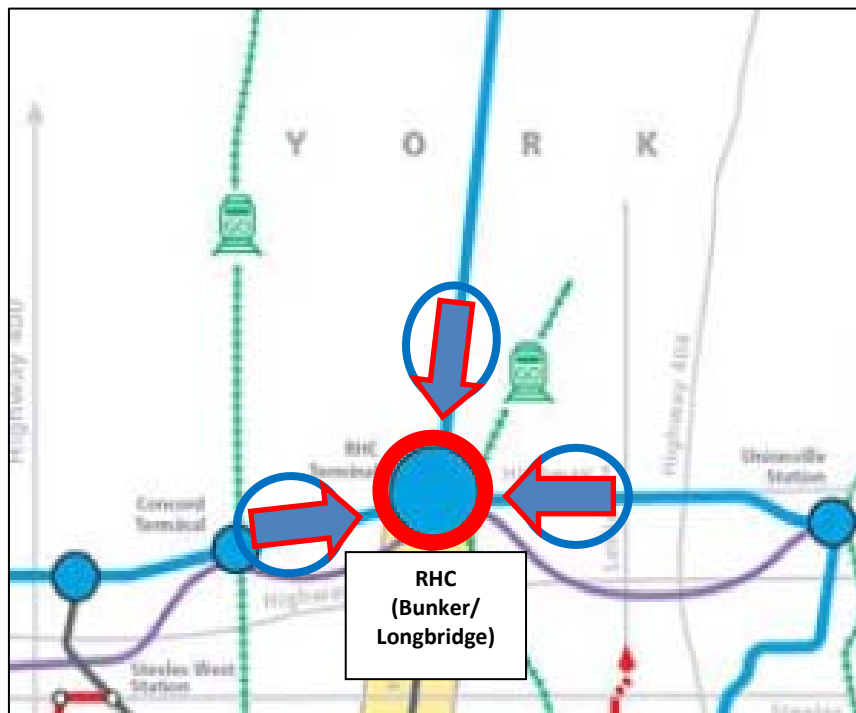
³ For this analysis, Y3 includes the D1 (Davis Drive) and G1 (Green Lane) extensions.

⁴ In this table, H4 includes the four Markham Centre stations.

Regional Growth Centre that could be accessed directly to the Viva system with less than a five minute ride to the intermodal hub. These “Five Minute” lots are being considered as potentially critical parking support to the hub and a means to “depressurize” significant pressures on the road network in the vicinity of the Centre. The strategy proposes a set of three park-and-ride lots that would be sited one, or at most two stops out from the Richmond Hill Intermodal Terminal on the three radial Viva segments (H1, Y2, and H3) as illustrated in Figure 2. The concept is that these lots would allow park-and-ride passengers to be at Richmond Hill Centre “in five minutes”.

These lots may also be a critical strategy for relieving Yonge Subway and Langstaff GO park-and-ride demand, which is likely to exceed that which can be satisfied at the Langstaff/Longbridge Subway Station and Langstaff GO lot, respectively.⁵ In the case of the Yonge Street Subway, a “Five-Minute” lot at 16th/Carrville may be particularly critical, since Y2 parking demand pushing “downstream” may combine with Richmond Hill Centre demand pushing “upstream”. The other two potential sites are the Highway 7/Bathurst Loop (H2) and the Chalmers/South Times station (H3). The concept is illustrated below.

Figure 2
The “Five-Minute” Lots Concept



⁵ Because RHC Terminal is considered unsuitable for park-and-ride, the approximately 2,000 space-capacity at its Langstaff-Longbridge companion station is the only parking proposed for the Yonge Subway terminus.

Preliminary implementation timelines have been developed

Based on the modeling analysis there are two target periods for placing BRT park-and-ride facilities in service as illustrated in Table 5.

Table 5
Target Periods for Placing BRT Park-and-Ride Facilities in Service

	Target Period 1	Target Period 2
In Operation by	2012-2013	2017
Trigger	Coincides with the anticipated completion of the core of the BRT vivaNext network, including the Highway 7 segments H2 - from Pine Valley to Richmond Hill Centre, H3 - Richmond Hill Centre to Kennedy Road, and the Yonge segments Y2 - Richmond Hill Centre to 19 th and the Y3//D1 - segments on Yonge Street and Davis Drive in Newmarket in full operating segregated rights-of-way.	Both subways are projected to be in operation
Total park-and-ride demand	6,200	5,000-6,000

Prior to the Yonge Subway opening, most of the modeled parking demand on the Yonge corridor south of Highway 7 is projected for the existing Finch station. No park-and-ride will be provided along the Spadina corridor prior to the Spadina Subway opening. The BRT network demand is approximately 3,600, distributed among segments H1, H4, Y2, and Y3. Since it is unlikely that raw demand can be met because of land use and site availability constraints, it is assumed that 75% of the network raw demand, or approximately 2,700 spaces, would likely be required at the time that the core of the BRT network is operational. Any over-supply, if any, would be temporary, disappearing when the subways open.

For 2021, the model projected a total park-and-ride raw demand of 8,150 spaces. It is assumed that 60-75% of the 8,150 spaces, or 5,000-6,000 spaces, should be in place by 2017. This range reflects the likelihood that supply will be constrained by corridor conditions as discussed above, and that demand may also be reduced somewhat by a policy of charging fees sufficient to recover park-and-ride operating and maintenance costs.

It is also assumed that not all of the 2021 demand will occur on subway opening day; however, the 2017 supply should be deployed such that it can be expanded as the 2021 and 2031 horizons approach. As an upper limit, it is reasonable to assume that demand in excess of the 2031 raw demand is highly unlikely.

A timetable for selecting sites for park-and-ride facilities will be required shortly

Based on the lead times for delivering parking facilities, it will be necessary to identify a set of available high-priority sites by September 2009 and select the initial round of sites to be pursued (whether by land lease, shared-use agreement, or acquisition) by year end. To be ready for vivaNext BRT operations in 2012-2013, it will be necessary to place at least some sites under agreement by June 2010.

Lead times are required for developing parking facilities

Parking facilities can be surface lots or structured facilities; usually decks. Either type of facility can be constructed on land owned or acquired by the Region, or leased on a shared-use basis from an existing public or private sector owner. The combinations of facility and transaction type have different lead times for design and construction. The lead times associated with the various types of facilities are shown in Table 6:

Table 6
Lead Time by Facility Type

Type of Arrangement	Effort	Approximate Time Required
Existing lot or deck placed under a shared-use agreement (e.g., shopping mall excess lot capacity)	design + layout/equipment	9 months
Surface lots built from scratch on appropriately zoned land already owned by the Region	design + construction	18 months*
Garage or deck built from scratch on appropriately zoned land already owned by the Region	design + construction	30 months*

*The lead time would be significantly longer if land is to be acquired and approvals required

Working back from the 2012-2013 in-service target for the first tranche of parking facilities, the following dates would have to be achieved as shown in Table 7:

Table 7
Design Start to Meet 2012-2013 In-Service Dates

Type of Arrangement	In-Service Date	Start Design by
Existing lot or deck placed under a shared-use agreement (e.g., shopping mall excess lot capacity)	January 1, 2012	April 2011
Surface lots built from scratch on appropriately zoned land already owned by the Region	June 1, 2012	January 2011
Garage or deck built from scratch on appropriately zoned land already owned by the Region	January 1, 2013	July 2010

The in-service targets for new surface lots and parking decks assume that the facilities are built on Region-owned land, zoned for parking use. However, if land will have to be acquired for the development of the facilities, it seems unlikely that a structured parking facility could be constructed in time for the projected in-service date. If land is to be acquired, the land acquisition, approvals and construction timelines appear to meet the projected in-service targets achievable only if a surface parking facility were developed. To meet the first tranche of parking demand it would be prudent to focus initially on the identification and delivery of shared use arrangements for parking and/or the development of Region-owned surface facilities.

Similarly, for the second tranche of facilities to be in service by 2016-2017, the following dates would have to be achieved:

Table 8
Design Start to Meet 2016-2017 In-Service Dates

Type of Arrangement	In Service Date	Start Design by
Existing lot or deck placed under a shared-use agreement (e.g., shopping mall excess lot capacity)	January 1, 2016	April 2015
Surface lots built from scratch on appropriately zoned land already owned by the Region	June 1, 2016	January 2015
Garage or deck built from scratch on appropriately zoned land already owned by the Region	January 1, 2017	July 2014

Since these in-service targets are further out in time, it is reasonable to assume that all three types of facilities can be developed even if land will need to be acquired for the development of surface and/or structured parking facilities.

Three typical business transaction templates have been identified

The park-and-ride facilities can be delivered through the three types of business arrangements described in Table 9, each of which will be particular to the business opportunities available at each of the site locations. The complexity of entering into business arrangements on identified properties will form part of the evaluation process as negotiations with owners evolve. As indicated in the guiding principles, a preference has been expressed to the use of existing public lands or entering into shared use arrangements on properties where parking already exists.

On some segments; however, such as Yonge Street from Carville Road northward to Stouffville Road, where demand is high and appropriate shared use sites are in shorter supply, it may be prudent to examine land purchase alternatives earlier when property values are more stable. As the Viva network is implemented in the core areas of the system and intensification momentum begins to take hold, appropriate park-and-ride sites may become more difficult and expensive to acquire within proximity to the corridor. A key component in the decision to purchase land is the potential for future transit-oriented development in association with structured commuter parking facilities. Any land acquisition will require a detailed business case basis for proceeding with a purchase alternative.

Table 9
Business Transaction Template

Business Transaction Template	Description	Business Model
Own and Operate	Under this first model the Region or a Viva Parking Business Unit would acquire a site and subsequently design and construct the parking facilities.	• The Region or Parking Business Unit would function as a full service entity that would own, operate, manage and maintain the facility • Alternatively, the Region or Parking Business Unit would own the parking lands and control key aspects of the parking, as established in the principles, but lease or license out the parking operations to a third party parking contractor.
Lease or Shared Use Facilities	Under this second model the Region or Viva Parking Business Unit would lease a	• The Region or Parking Business Unit would lease a defined area within a larger facility and operate it as if it were a stand-alone park-and-ride

Business Transaction Template	Description	Business Model
Lease or Shared Use Facilities (cont'd)	portion of a parking lot or garage owned and operated by others. The owner could be a developer, municipality, or other transportation agency.	facility according to the two business models above. • The Region or Parking Business Unit would have access to a portion of the owner's facility on a shared basis. The owner develops and operates the facility, collects revenues and distributes share to the Region or Parking Business Unit.
Joint Development	The joint development model is usually used to develop structured parking facilities whereby park-and-ride facilities are integrated into a development project. While the park-and-ride facility is generally created as a structured facility from the start of a project, there are examples where structured park-and-ride facilities have evolved as a successor to a surface park-and-ride lot.	

Templates that were developed for other projects that the team has been involved with in other jurisdictions have been researched and identified as applicable to each of the alternative models.

- Region or Parking Business Unit owns and operates its own parking facilities
Examples: Fruitvale (BART), White Flint and Huntington (WMATA).
- Developer builds a parking facility (garage) for commuter parking as part of a development; Region owns it and Region and/or Parking Business Unit operates it as a dedicated commuter park-and-ride facility.
Examples: McArthur (BART), West Hyattsville (WMATA), Woodland (MBTA), Cypress (Houston Metro).
- Developer builds a shared-use garage. Examples: Englewood and Lincoln Stations (Denver RTD), Wellington (MBTA), Cupey (Tren Urbano), Lindbergh (MARTA), Sepulveda (LA Metro).

A preferred direction for governing and managing commuter parking is emerging

A preferred direction for governing and managing commuter parking is emerging. It is common for transit agencies across North America to manage and/or operate their park-and-ride facilities internally through a department within the agency itself. The primary management and operating functions include security, waste removal, property maintenance and repair. When paid parking is included, access control considerably increases the operational complexity, especially if parking is provided in-structure. Paid parking will require the installation and maintenance of revenue control systems, revenue collection/control, and potentially paid parking enforcement as well. It is a common practice to contract out many, or potentially all, of the operating functions described above, while retaining overall management control, including branding & marketing. The provision of park-and-ride facilities is primarily a “transit access service” rather than a revenue generating service. As such, it is unlikely that it will operate on a financially self-sustaining basis from a complete life cycle cost perspective for some period of time. Achieving self-sufficiency is extremely challenging for most agencies.

In addition to operational considerations, the Region faces a considerable challenge in physically creating the spaces required to meet commuter parking demand for the 2021 and 2031 horizons. While many tasks can be “contracted out”, a core team of internal professionals will be required to manage the process, as well as conduct on-going planning for future development and expansion of the facilities, either in surface lots or garages and potentially in joint venture with private developers. While the development of municipal “parking authorities” are on the horizon, there are not currently any municipal parking operations in the Region with either the expertise or operational scale to undertake the management and operation of the 5,000 to 6,000 spaces planned for the Viva system to coincide with the opening of the two subways.

The Ontario Municipal Act allows for the creation of a service board or corporation to develop, operate and maintain municipal parking. The primary rationale for these separate agencies is to create operational efficiency by delegating most municipal authority for on-going management and operation of the system to the board, thereby eliminating the need for municipal council approval throughout the year, except for adoption of annual strategic plans and budgets. Many municipalities are investigating the use of these provisions to actualize their parking objectives

York Region Rapid Transit Corporation’s corporate structure appears to provide an ideal model to achieve the management and operational efficiency required to develop and operate park-and-ride facilities under its governance structure. The decision as to whether the Corporation should provide the full range of operational services in-house, will require further study to determine the potential cost-benefits of internal versus contracted-out facility operation. The outcome of this analysis may be strongly influenced by the degree of shared use parking provided by others on a lease or joint

venture basis. It will also be influenced by the degree of contracting-out that the Corporation may pursue for other aspects of their transit facility operation and maintenance programme.

NEXT STEPS

As identified in the report, the team is focusing on the key Viva segments that have been identified as having stations with optimal park-and-ride characteristics. The team is examining, in detail, sites in the vicinity of the station for their potential to accommodate commuter parking. As indicated in the report, it will be necessary to identify the high-priority sites by September 2009 and select those sites to begin negotiations by no later than year end, with a view to having some of the high-priority sites tied up as early as mid 2010 to be in a position to design and complete the on-site work to set up the facilities for operation in 2012-2013. Preliminary investigations, both locally and in the North American context, into the manner in which park-and-ride facilities should be governed and managed has identified York Region Rapid Transit Corporation's corporate structure as a potentially ideal model to plan, deliver and manage Viva commuter parking facilities. Further analysis is required and the results will be brought forward for Council's consideration in a future report.

The study team will work with the Cornell Terminal design team to develop the commuter parking programme for the opening of the facility, planned for 2010-2011. As the high-priority sites are identified, it will become clearer as to the financial requirements to get the initial programme up and running. A financial funding strategy for the implementation of the park-and-ride plan will be brought forward for Council's consideration in a future report.

5. FINANCIAL IMPLICATIONS

As outlined in the previous report in November 2008, the implementation of a comprehensive park-and-ride strategy will require a financial strategy to implement the plan. Staff will bring back a capital funding strategy in a future report for Council's consideration, prior to making final recommendations regarding the implementation of the park-and-ride strategy, including entering into any negotiations for land or negotiations with private land owners for shared use arrangements.

6. LOCAL MUNICIPAL IMPACT

Municipal parking policies are under review by most of the area municipalities as part of Official Plan or Transportation Plan updates. Staff will work closely with the area municipalities to seek appropriate policies in development application reviews along the rapid transit corridors in support of transit related parking. As the study moves closer to identifying the high-priority sites, a detailed screen of zoning will be undertaken as part

of the analysis and consideration for selection as sites to pursue in the early stages of the programme.

7. CONCLUSION

The York Region Rapid Transit Corporation team is nearing completion of the park-and-ride strategy to support the Viva system. The team has refined the screening of potential locations for park-and-ride and identified the stations along the various segments where commuter parking facilities should be located as a high-priority. The team has researched and identified a number of sound business models to deliver the strategy. The team has also identified an emerging preferred governance model for managing the development of the parking network and commuter parking operations.

The analysis to date confirms that the significant pressures for park-and-ride lie on the Yonge corridor for at least the first 20-25 years of operations and growth on the Viva network. As the work proceeds, the team will focus on selecting the preferred sites at the high-priority station locations that will be recommended for pursuing business relationships, either with public or private sector owners. At the same time, given the pressures on the Yonge corridor and challenges in finding suitable locations for parking in some parts of the southern segments of the corridor, the team will also identify potential sites for purchase. Prior to making final recommendations and entering into negotiations, the team will report back with a financial strategy for funding or financing the park-and-ride programme for Council's consideration.

For more information on this report, 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.