

**MEETING DATE:** July 14, 2004

**SUBJECT:** Bus-Only Lanes (Bus Rapid Transit), Downsview Subway Station To York University

## **RECOMMENDATIONS**

It is recommended that the Commission:

1. Approve the conceptual design for bus-only lanes from Downsview Subway Station to York University, via Allen Road-Dufferin Street and the hydro corridor north of Finch Avenue, as described in this report;
2. Note that staff will issue a contract change to the design for the Downsview Commuter Parking Lot project, following the authorization for expenditures policy, to avoid construction in the area immediately south of the bus terminal that is now proposed to be used for a new signalised bus driveway onto Allen Road;
3. Approve a further allocation of \$200,000 for completion of a more-detailed evaluation of the property requirements within the hydro right-of-way, and at the Sheppard/Allen intersection;
4. Request Toronto City Council to approve the recommended design for bus-only lanes and authorize staff to submit the associated more-detailed Environmental Study Report to the Ministry of Environment, requesting their approval of this project; and
5. Forward this report to Councillors Peter Li Preti, Michael Feldman, and Maria Augimeri for information.

## **FUNDING**

Funds in the amount of \$500,000 were approved for studies under Program 9.2 Service Planning – Bus Rapid Transit from Spadina Subway to York University/Steeles Avenue, as outlined on pages 1339-1340 of the Commission's 2004-2008 Capital Program budget, approved by City Council on April 21, 2004. Efforts will be made to accommodate the additional \$200,000 within the 2004 budget allocation, and funding recoveries will be addressed once senior level government funding agreements have been finalized.

Funding towards the study was announced by the previous Provincial government under the Golden Horseshoe Transit Investments Partnership (GTIP) Program in August 2002 and under the current Provincial Government funding is now being proposed under the renamed program known as the Provincial Transit Expansion Fund (PTEF). Work is in progress on a draft agreement.

On March 31, 2004, a joint announcement was made of a Federal-Provincial-Municipal TTC Capital Funding Agreement of \$1.050 billion over five years, of which this Bus Rapid Transit project was included with joint funding of \$42.5 million from the Government of Canada, the Province of Ontario, and the City of Toronto at 1/3 each; however, the Memorandum of Understanding has not yet been executed and no discussions have commenced on the formal agreement.

## **BACKGROUND**

At its meeting on June 20, 2001, the Commission approved the staff report entitled, "Expanding Transit Priorities in Toronto". The recommendations in that report included the creation of dedicated bus lanes between Downsview Subway Station and York University to make public transit a more-competitive option to the private automobile in that corridor.

On November 15, 2002, the Commission approved \$500,000 to fund an environmental assessment study of this proposed improvement under the 2003-2007 Capital Program budget. This was confirmed by City Council on February 23, 2003.

At its meeting on March 19, 2003, the Commission approved the staff report, "*Ridership Growth Strategy*", which recommended that high priority be given to implementation of Bus Rapid Transit to York University.

In support of the above initiatives, the TTC and City of Toronto have jointly undertaken an Environmental Assessment (EA) study of an improved surface transit connection between Downsview Subway Station and York University. A working committee made up of representatives of the TTC, City of Toronto Planning, City of Toronto Transportation, York Region Transit, and GO Transit guided the study, with URS Canada Inc. as the primary consultant.

This report provides an overview of the Environmental Assessment study, and describes the key decisions that led to the recommendation for bus-only lanes from Downsview Subway Station to York University.

## **DISCUSSION**

The new Official Plan for the City of Toronto calls for transit to have much-greater priority on city roads to attract people out of their cars, so that the City will grow in an environmentally-sustainable way.

The Plan identifies the corridor from Downsview Subway Station to York University for "higher-order transit". In addition to the current study of bus-only lanes to York University, the TTC has recently initiated an Environmental Assessment study of an extension of the Spadina Subway line to Steeles Avenue, including York University. However, even under the most optimistic scenario, it would take nine years to study, design, and construct a subway extension. Significant improvements to transit service in this corridor are required now, to offer a more-attractive alternative to the automobile and to build up ridership in advance of a subway.

The main objective of the current Environmental Assessment study discussed in this report was to determine how to provide a much-faster and more-reliable transit connection between Downsview Subway Station and York University and, ultimately, the new regional bus terminal and commuter parking lot planned for the north side of Steeles Avenue, east of Jane Street. This would allow York Region Transit and GO Transit -- who plan to operate express service between Vaughan and Downsview Subway Station -- to also offer higher-quality transit service.

### **Current Conditions**

The 196 YORK UNIVERSITY ROCKET currently provides express bus service between Downsview Subway Station and York University. This is one of the TTC's busiest bus routes, carrying over 10,000 people per day on service which is as frequent as every 2-½ minutes in the morning peak period. The routing is illustrated in Exhibit 1. In the morning, the route operates northbound via Allen Road-Dufferin Street, west on Finch Avenue to Keele Street, and north on Keele to the entrance to York University at York Boulevard. In the peak direction, there is only a single mid-route stop, at the Finch Avenue/Dufferin Street intersection. On the southbound trip, buses provide a local service along Sentinel Road to Finch Avenue, then return express to Downsview Station via Finch Avenue, Dufferin Street-Allen Road, and Sheppard Avenue to Downsview Station. In the afternoon, the operation is reversed, with northbound buses operating west on Finch Avenue to Sentinel Road, and southbound buses returning on the more-direct express routing.

On the section of the route between Sheppard and Finch Avenues, there are

relatively few delays. This section of Allen Road-Dufferin Street has three through-traffic lanes in each direction, with the curb lanes reserved, during peak periods, for buses and for cars with at least three occupants. The route has relatively little delay on Keele Street, from north of Finch Avenue, to York Boulevard, where it enters the university campus.

However, on other sections of this route, buses are often delayed by chronic traffic congestion in the rush hours. As shown in Exhibit 2, the worst areas are Finch Avenue, and the southbound left turn from Allen Road onto Sheppard Avenue. The northbound turn through the Dufferin/Finch intersection uses a special turning loop, but still takes 1½-to-2 minutes to complete.

The delays encountered in the problem areas cause the whole route to operate slowly and unreliably, making transit less attractive as a travel choice for the large number of people travelling to and from York University. The northbound trip between Downsview Station and York University is scheduled to take 18 minutes in the morning and the southbound trip in the afternoon is scheduled to take 20 minutes; surveys show the actual trip times in the peak direction are as long as 24 minutes, and customers have reported the trip taking as long as a half hour.

### **The Solution to Current Operating Problems - “Bus-Only Lanes”**

The Environmental Assessment Study team looked at different ways of improving the quality of transit service offered in this corridor. They examined measures such as widening roads to improve traffic flow for all road users, giving priority to buses at traffic signals, replacing the bus service with streetcars in their own right-of-way, and buses with their own traffic lanes.

The team concluded that the best way to dramatically improve the quality of service, in advance of a subway extension, would be to provide “bus rapid transit”, that is, operating a fast bus service in lanes that are, to the greatest extent practical, separated from other traffic, and with infrequent stops. While the term “bus rapid transit” is relatively self-explanatory, many of the public are not familiar with the term. The term “bus-only lanes” was used instead because it is easily understood but still differentiates this facility from the “reserved bus lanes” in place at other locations in Toronto which are normally in the curbside bus lane and which, typically, have so many motorists using the lane – both legal right turns and illegal through traffic – that they don’t work.

### **Future Demand on an Improved Bus Connection to Downsview Station**

Given that a subway extension to York University is probably at least ten years away, a 10-to-15-year time horizon was used when projecting future transit demands for bus-only lanes. While there is significant development expected on the York University lands, most of the growth in transit demand on an improved bus connection in this corridor will come from growth north of Steeles, in Vaughan.

As a result of future development, and with an improved surface transit connection to Downsview Station in place, there would be potential for the ridership to grow from the current 10,000, to as high as 20,000, trips per day.

This increase in passenger volumes will result in a significant increase in the total volume of buses travelling between Downsview Station and York University or beyond. During the morning peak hour, the volume of buses will more than double from current volumes, from 24 to 50, broken down as:

**Bus Volumes – Morning Peak Hour**

<b>Existing</b>	<b>Projected</b>
	28 (TTC)
	12 (York Region buses)
24 (TTC)	<u>10 (GO Transit)</u>
	50 (Total)

**Recommended Routing South of York University - The Dufferin/Hydro Alignment**

The EA study team evaluated a variety of routing options for bus-only lanes from Downsview Station to the York University lands. Ultimately, the analysis identified that the two alternatives shown in Exhibit 3 would allow the greatest improvement to transit speeds and reliability.

### *Alternative 1 – the Dufferin Street/Hydro Corridor Routing*

From Downsview Subway Station, buses would travel north on Allen Road-Dufferin Street. Two of the six traffic lanes on this road could be converted to bus-only lanes over most of the section between Sheppard and Finch Avenues. Two design concepts were considered in this section: i) bus-only lanes in the middle of the road, with some road widening to accommodate new concrete curbs or medians to separate the bus-only lanes from other traffic; and ii) a design that makes use of curb bus-only lanes, shared with right-turning traffic. In either case, Dufferin Street, north of Finch Avenue, is only four lanes wide and would require a major widening.

When the buses reach the hydro corridor north of Finch Avenue, they would turn left to travel west in the hydro corridor, on a new two-lane bus-only roadway which would be constructed in the corridor between Dufferin Street and Keele Street.

### *Alternative 2- the Sheppard Avenue/Keele Street Routing*

From Downsview Station, buses would travel west on Sheppard Avenue to Tuscan Gate, then via a new bus-only roadway to Keele Street along the north side of the vacant land west of Tuscan Gate. Sheppard Avenue, from Downsview Station to Tuscan Gate, is only four lanes wide, and any design on this street would require a major road widening and a major reconstruction of the CN rail overpass bridge. Keele Street is also a four-lane road, and bus-only lanes here would also require a major widening.

Only one design for bus-only lanes would be viable on Keele Street and that would be in the middle of the road. There are a high number of commercial driveways on this section of Keele Street, most of them of the east side of the street. There are two unsignalised side-streets and 38 driveways, serving high-activity developments such as fast-food outlets, retail plazas, food stores, tire stores, and banks. This results in a high level of activity in the curb lane as motorists turn into, and out of, these driveways. Under these conditions, there is no workable design for bus-only lanes at the side of the road.

### *Comparison of the Two Final Routing Alternatives*

The technical evaluation concluded that either option would reduce the peak period scheduled travel times on the 196 YORK UNIVERSITY ROCKET to about 13 minutes in the peak direction. This would result in a reduction in the scheduled travel times of five minutes, or 28 percent, in the northbound direction in the morning, and of seven minutes, or 35 percent, in the southbound direction in the afternoon. More importantly, given the huge variability in actual trip times, the savings would often be much greater. The one-way trip time of 13 minutes would be achievable on a consistent basis.

With no clear distinction between the two options on the key objective of service reliability and speed, the EA team focused on other criteria. The factors that ultimately had the greatest influence on the final decision were capital cost, and the extent to which each would support planned development, minimize the extent of road widenings required, and avoid impacts on driveways and unsignalised side-streets.

Alternative 2, via Sheppard Avenue and Keele Street, was ranked higher in the category of supporting planned development. Bus-only lanes via Sheppard and Keele could incorporate an express stop on the northern perimeter of a future 2000-person residential development planned for the area north of Sheppard Avenue, between Keele Street and Tuscan Gate. This area is already

well-served by frequent transit service on Keele Street and on Sheppard Avenue, and transit ridership in this area would be high in any event. However, an additional high-quality service would have the potential to positively influence the pace or nature of this future development. Alternative 1, via Allen Road-Dufferin Street and the hydro corridor, was ranked higher in three other criteria:

- i) Road Widening - Two of the existing six lanes on Allen Road-Dufferin Street, between Sheppard and Finch Avenues, could be converted to bus-only, hence requiring much less road widening than the Sheppard/Keele routing option.
- ii) Impacts on Left Turns at Unsignalized Driveways and Side Streets – When the comparison was made between the two routing options, the actual design for bus-only lanes on Allen Road-Dufferin Street had not yet been decided. Since a centre-of-the-road, that is a “centre-median”, design would prevent left turns at unsignalized locations, it was used as a “worst case” to compare against the effects of a centre-median design on Keele Street. In a weekday count in November, 2002 there were 1600 left turns to and from unsignalised driveways and side streets on Allen Road-Dufferin Street, between Sheppard Avenue and the hydro corridor. The comparable number on Keele Street, between Grandravine Drive and the hydro corridor, based on a weekday count in August 2003, was 4900.
- iii) Capital Costs - The capital costs of centre-median bus-only lanes on Allen Road-Dufferin Street, and a new bus-only roadway in the hydro corridor, would not be much different than the cost of the Sheppard/Keele option with its major road widenings and the reconstruction of the CN overpass on Sheppard Avenue. However, the capital cost of a curb lane design on Allen Road-Dufferin Street would be \$8-to\$10 million less than a centre-median design.

In summary, Alternative 1 – the Dufferin Street-Hydro Corridor – is recommended because it would provide the same dramatic improvement in transit speeds and reliability, but with fewer impacts. Since a design using the curb lanes on Allen Road-Dufferin Street was a viable alternative, this routing also had the potential for significantly lower cost.

### Comparison of Routing Options

Criterion	1.DufferinStreet/ Hydro Corridor	2.SheppardAvenue/ Keele Street
Transit speed/ Reliability	Not a significant difference	
Proximity to future developments		☐
Least road widening	☐	
Left turns no longer possible with a centre-median design (per day)	☐ 1600	4900
Lowest Cost	☐ (depends on option)	

### Selecting a Design for Bus-Only Lanes for Allen Road-Dufferin Street

After the Dufferin Street/Hydro Corridor option was identified as the preferred routing, a thorough comparison was made of the two potential design options for Allen Road-Dufferin Street: i) bus-only lanes in the middle of the road, or “centre-median” design, and ii) a design with bus-only lanes in the curb lane, shared with right-turning motorists.



### The Centre-Median Design

This design would have the bus-only lanes in the middle two lanes on Allen Road-Dufferin Street, from the south limit of the Downsview Station bus terminal to the hydro corridor. The bus-only lanes would have some form of physical feature, such as curbs or medians, to separate the bus operation from other traffic. New traffic signals would provide buses with exclusive access at the new bus terminal driveway at Downsview Station and to and from the middle of the road at the hydro corridor. Road widenings would be required at the Sheppard/Allen intersection to maintain sufficient capacity for general traffic. North of Sheppard Avenue, to Finch Avenue, two of the six traffic lanes would be converted to bus-only, although minor widenings would still be required to accommodate curbs or medians on either side of the bus-only lanes. Between the Finch/Dufferin intersection and the hydro corridor, Dufferin Street is only four lanes wide and would be widened to construct the bus-only lanes.

Motorists would no longer be able to make left turns across the middle of the road at unsignalised driveways. Instead, they would drive to the next traffic signal where they would make a U-turn on a special signal phase, and then drive back and make a right turn into their intended destination.

### Bus-Only Lanes in the Curb Lane - The "Hybrid" Design

This design for Allen Road-Dufferin Street would have bus-only lanes in the curb in the northbound direction and, in the southbound direction, would have some sections with the bus-only lane in the curb, and others with the bus-only lane in the middle of the road. The combined features of this design result in it being called the "Hybrid" design. This is shown in Exhibit 4.

#### *Northbound:*

The northbound curb lane on Allen Road-Dufferin Street, from south of Downsview Station to just south of Finch Avenue, is currently reserved for buses, right turns and High Occupancy Vehicles (HOV's), which are vehicles with at least three occupants. The number of right turns and HOV's using this lane is relatively low and the lane operates with relatively little delay in spite of some illegal use by through motorists. The operation could be improved by designating the lane as bus-only while still allowing motorists to enter the lane only to make right turns. There are two unsignalised intersections on the east side of the street, 18 driveways to private homes, and one driveway to a low-rise apartment complex,

and these all have very low use on a daily basis.

At the Sheppard Avenue intersection with Allen Road, there are special signal phases for left-

turning traffic in both directions, and this leaves insufficient green time to accommodate existing peak period traffic volumes in the two general northbound traffic lanes. There is already congestion in the northbound direction and it would worsen, marginally, with this design, since the relatively low volumes of HOV's that are now in the curb lane would be added to use these two lanes. At the signalised intersections between Sheppard and Finch Avenues, two traffic lanes are sufficient for general traffic, because the signal operation at these intersections is simpler and this leaves more green time available for northbound traffic.

Currently, at Finch Avenue, only northbound buses are permitted to continue through the intersection from the curb lane. The Hybrid design includes the construction of a new northbound right turn lane to the right of the bus lane at Finch Avenue. North of the intersection, the road would be widened to create a new bus-only lane on the east side of the street. At the hydro corridor, a new traffic signal would detect the presence of a bus, and stop northbound and southbound traffic on Dufferin Street to allow buses to quickly cross into the hydro corridor. This design is shown in more detail in Exhibit 5.

*Southbound:*

There is a traffic "bottleneck" southbound on Dufferin Street at Finch Avenue. There are two southbound traffic lanes and they operate at capacity during peak periods. Traffic flows very well south of Finch Avenue where there is an additional lane provided for buses, HOV's and right turns. Since there is no significant development expected north of the Allen/Sheppard area, and with this bottleneck preventing any increase in southbound traffic south of the Finch intersection, there should be very little increase in traffic volumes south of Finch Avenue in the foreseeable future.

In order for buses to overcome the traffic congestion north of Finch Avenue, a new southbound bus-only curb lane would be constructed from the hydro corridor to the existing southbound right turn lane at Finch Avenue. This would allow southbound buses to by-pass the "bottleneck" at Finch Avenue. South of Finch Avenue, there are three southbound lanes and the curb lane, now designated for HOV's, would be converted to bus-only to just south of the signalised intersection at the Canadian Tire complex. At this point, the bus-only lane would end, and all traffic would use all three southbound traffic lanes. Buses would then transition from the curb lane into a new southbound bus-only lane which would be located in the middle of Allen Road, beginning just south of Rimrock Road, continuing across Sheppard Avenue, to a new signalised entrance to the Downsview Station bus terminal.

*Recommendation - the Hybrid Design*

The EA study team recommends the hybrid design because it would provide much-improved transit

speeds and reliability which are comparable to a centre-median design, but at \$8-to-\$10 million less capital cost. In the event of a very significant traffic problem caused by a snowstorm or serious collision, motorists could illegally use the bus lanes, which could cause bus delays. However, such incidents should be infrequent and can be tolerated.

While the Hybrid design does not convey to the user a perception of exclusivity, there is little empirical data available to suggest that this perception would affect transit use.

### **Additional Elements in the Dufferin Street-Hydro Corridor Design**

#### *Accommodating Regional Buses at Downsview Station*

York Region has plans, in advance of these bus-only lanes being constructed, for a York Region Rapid Transit (YRTP) express bus route to operate into Downsview Station to pick up customers destined to north of Steeles Avenue. This service is scheduled to begin in mid-2005, with an initial frequency of six buses per hour. The current plan is for their customers to alight at a new bus stop on Sheppard Avenue, in front of Downsview Station, so that YRTP buses would be empty when entering the station. These buses would not be permitted to carry customers into the bus terminal, because it is a fare-paid area which allows people to transfer between buses and the subway without any fare transaction.

On April 14, 2004, the Commission authorized staff to negotiate and execute agreements to allow YRTP to use Downsview Bus Terminal in this manner. A formal agreement to implement this is currently being negotiated.

GO Transit also has plans to connect to the subway at Downsview Station. This current EA project includes a new regional bus platform within the station complex, as shown in Exhibit 6, to provide a single identifiable location for regional customers. At the same time, TTC staff are working with YRTP, York Region Transit, and GO Transit to establish a fare collection arrangement that would allow these operators to use the spare bays in Downsview Station to both pick up and drop off their customers. This would defer or eliminate the need for a new regional bus platform area.

Discussions will be required, in any event, with respect to a cost-sharing agreement for the use of these TTC facilities.

#### *Impacts on the Downsview Commuter Parking Lot*

A new signalised driveway to/from Downsview Station off of Allen Road would require a minor modification to the parking lot being constructed in area south of the bus terminal. This driveway would conflict with the landscaping planned for the north-west corner of the commuter parking lot. This landscaped area would have to be shifted to the south, and this would require the elimination of about 10 parking spaces. It is not possible, given the schedule for construction of the parking lot, to delay construction in this area and await a decision from the Ministry of Environment on the Bus-Only Lanes project. For this reason, given the expectation that this environmental assessment will receive approval, it is recommended that a change order be issued for the commuter parking lot project to alter the design and avoid any construction in the area that is proposed for a new bus driveway.

#### *A Staged Design Northbound at Sheppard Avenue*

From a transit operations perspective, it would be better if the northbound curb bus-only lane on Allen Road were to begin at the new bus driveway to/from Downsview Station, with only right turns permitted to share the lane. This is the operation that was in place when the road was constructed in the early 1980's, and this project includes approval to return to that design if necessary. However, a staged approach is recommended in the interest of improving traffic operations, while still providing high priority for buses at this intersection.

Currently, the northbound curb lane at the Allen/Sheppard intersection is reserved for High Occupancy Vehicles (HOV's) and right turns. However, the other two northbound lanes on Allen Road at Sheppard Avenue cannot accommodate all of the remaining northbound traffic, even though HOV's are now allowed in the curb lane. Delays to traffic in these lanes are less than expected only because many non-HOV motorists illegally use the curb lane to travel through the intersection.

The EA team wanted to avoid such delays to traffic, if practical, in this developing area. An option was developed for implementation in the short-term that opens up all three northbound lanes to general traffic, with the bus-only lane beginning north of the intersection. As shown in Exhibit 6, a short distance north of Sheppard Avenue, the northbound traffic lanes on Allen Road would be reduced, from three lanes to two. Buses would by-pass this point, via a separate bus-only lane on the east side of the road that connects with the existing northbound curb lane.

At Sheppard Avenue, the signals would be timed to ensure that northbound through traffic, stopped at that intersection on a red signal, did not interfere with buses exiting the station at the signalised bus driveway. As necessary, the northbound traffic signal at Sheppard Avenue would be held on green, to clear out much of the northbound queue. This operation would ensure that delays to northbound buses at the Sheppard Avenue intersection are manageable and predictable.

The ultimate design, with the northbound bus-only lane beginning at the bus driveway to Downsview Station, could be implemented if problems arise in the future with this staged approach. However, if the subway extension is in place within 10 years, the ultimate design may not be necessary.

*Design for Bus-Only Lanes in the Hydro Corridor*

A new two-lane roadway would be constructed in the hydro corridor, reserved for buses and

emergency vehicles only. It would require a new at-grade crossing of the CN line, and this requires modifications to an existing spur line which accommodates rail service to the adjacent Imperial Oil “tank farm”. Hydro One, CN Rail, and Imperial Oil have provided approvals in principle for this concept. However, technical approval and negotiation of the necessary agreements is still required.

At Keele Street, on the north side of the hydro corridor, there is a signalized intersection, with Murray Ross Boulevard on the west, and a driveway to the Shell “tank farm” on the east. As the Shell driveway is very lightly used and already signalized at Keele Street, the bus-only roadway in the hydro corridor should connect with that driveway, just east of Keele Street. Discussions with Shell Canada regarding a shared access at Keele Street have been favourable, but not yet completed. If shared access is not agreed upon, then a “fifth leg” for buses would be created at the signalised intersection, making the hydro corridor bus-only lanes part of the intersection.

### **Design for Bus-Only Lanes at York University**

There is relatively little delay to buses on Keele Street, between the hydro corridor and the entrance to the campus at York Boulevard. However, in contrast to Dufferin Street, traffic on this section of Keele Street is expected to worsen as this area is developed, and it is difficult to predict, with certainty, future delays to buses.

To provide an operating environment that is predictable and to, thereby, ensure that transit service is reliable, the bus-only lanes should be separated from the effects of future traffic congestion. Centre-median bus-only lanes on Keele Street, from Murray Ross Parkway to York Boulevard, were considered, but were costly, at \$6 million, and would still require buses to make the northbound left turn into the York University campus at the busy Keele/York Boulevard intersection. A bus-only roadway within the university lands, on the alignment of a planned future roadway which is part of the current secondary plan for this area, is recommended. The recommended alignment is included in Exhibit 7. It would allow buses to operate quickly and reliably, would avoid the busy Keele/York Boulevard intersection, would provide better service to future developments in the university lands west of Keele Street, and would have a capital cost of \$3-to-\$4 million.

Buses would cross Keele Street from the hydro corridor to Murray Ross Parkway, operate in mixed traffic on Murray Ross Parkway to a new bus-only roadway, and then travel on the bus-only roadway to York Boulevard. Buses would turn onto York Boulevard and operate in mixed traffic a short distance to the current bus stops in the area known as the “Common”.

A new bus-only connection between the “Common” and Steeles Avenue would provide improved access to the Common for TTC, GO Transit, Brampton Transit, and York Region buses from the north.

York University staff have advised that they are not currently in a position to endorse the recommended bus-only lanes on their lands, south of York Boulevard, because they are planning a major review of the secondary plan for this area, and this may alter the location of proposed roadways and adjacent land uses. They strongly favour an option which would improve the capacity for all traffic on Keele Street, between the hydro corridor and York Boulevard, and would include specific sections reserved for exclusive bus use - for example, one of the two existing northbound left-turn lanes at York Boulevard would be designated as bus-only. This would cost roughly \$3 million to implement. This would improve future operations for both



buses and general traffic and accommodate the improvements for future traffic volumes at the intersections on this section of Keele Street that will be required in the future in any event.

The EA study team does not prefer this option because it would not ensure that bus operations would be separated from future traffic congestion, and it would result in buses operating on the perimeter of the development parcel west of Keele Street instead of through it.

York University has advised that they are willing to examine the recommendation for bus-only lanes on their lands within the planned secondary plan review process. This approach would require that this section of the bus-only lanes project be excluded from this current approval and be subject to another EA process in the future. In a recent meeting with York University President Lorna Marsden, Chair Howard Moscoe requested that the University approve the recommendation of the EA study in principle, and commit to ensuring that this bus-only roadway, and complementary land uses, are incorporated in any changes to the Secondary Plan for this area. York University will be preparing a response to this request. Therefore, the EA study is seeking approval for the recommended routing on the University lands, conditional on the University's approval in principle for this alignment.

If the bus-only lanes on the University lands are approved in principle, buses would operate in mixed traffic on this section of Keele Street until the larger review of the secondary plan for the university lands is completed.

#### **Summary of Recommended Design: Bus-Only Lanes - Downsview Station to York University**

The recommended design concept for bus-only lanes, from Downsview Station to York University, is illustrated in Exhibit 7, and summarized as follows.

*Northbound:*

Buses would exit Downsview Station onto Allen Road via a new signalised bus driveway. The

“ultimate” design is for the northbound curb lane to be designated as bus-only, beginning at the new signalised bus driveway. However, initially, a staged operation would be implemented which would permit general traffic in all three northbound lanes, with the bus-only lane beginning just north of the Allen Road/Sheppard Avenue intersection.

The bus-only lane would continue to Finch Avenue, where a separate right-turn lane would be constructed so that northbound buses are not delayed behind right-turning traffic. North of Finch Avenue, a new bus-only lane would be constructed on the east side of the street and, at the hydro corridor, a new traffic signal would be provided to allow buses exclusive access from the east side of Dufferin, into a new two-lane-wide bus-only roadway in the hydro corridor. A new at-grade crossing would be implemented at the CN tracks. The bus-only road would intersect Keele Street at the existing signalised intersection. Buses would operate in mixed traffic across Keele Street and for a short distance on Murray Ross Parkway, before turning north onto a new bus-only roadway. Buses would turn onto York Boulevard, and operate in mixed traffic for a short distance to their current stop location in the bus-only roadway around the “Common”.

If the York Region commuter parking lot were to be constructed in the hydro corridor, north of Steeles Avenue, as planned, buses could proceed to Steeles Avenue to serve park ‘n ride customers who would use that lot and are destined for the subway.

#### *Southbound:*

From the Common, southbound buses would travel east on York Boulevard, south on the new bus-only roadway to Murray Ross Parkway, and across Keele Street into the new two-lane bus-only roadway in the hydro corridor. Buses would exit the hydro corridor into a southbound bus-only lane, which would end a short distance south of the first signalised intersection south of Finch Avenue. At this point, buses would merge from the curb lane into a new southbound bus-only lane in the middle of the road which would begin north of Sheppard Avenue and continue south, through the Sheppard intersection, to the new signalised entrance to Downsview Station.

#### *Use of the Bus-Only Lanes*

The bus-only lanes would provide a reliable, high-speed connection to the subway for the 196 YORK UNIVERSITY ROCKET, York Region Transit, and GO Transit. As with the current 196 YORK UNIVERSITY ROCKET operation, service would be provided to the residential area along Sentinel Road in the off-peak direction.

TTC staff are also analyzing the pro’s and con’s of re-routing other TTC routes to take advantage of the increased speeds which would be provided by this new facility. These include:

- the 117 ALNESS route, which now operates on Dufferin Street, north of the hydro corridor, to Martin Ross Boulevard, could by-pass the congestion on that section of Dufferin Street by operating via the bus-only lanes in the hydro corridor, from Dufferin Street to Alness Street, and then travel along Alness Street, to Martin Ross Boulevard;
- the 107 KEELE NORTH route, which serves the areas north of Highway 7 would have much-improved travel times if some, or all, of this service were re-routed to operate along the bus-only lanes between the Keele–hydro corridor intersection and Downsview Station.
- the 105 DUFFERIN NORTH route, which now operates on Wilson Heights Boulevard, from Dufferin Street to Sheppard Avenue to avoid the congested Allen/Sheppard intersection, could

instead remain on Dufferin Street and Allen Road, and have direct access to Downsview Station to improve travel times for customers.

### **Costs and Benefits**

Based on the preliminary design work to date, the capital costs for bus-only lanes between Downsview Station and York University are in the order of \$25-to-\$30 million.

The bus trip from Downsview Station to York University, now scheduled to take 18 minutes in the morning in the peak direction, would be reduced to by 28 per cent, to 13 minutes, and would be much more reliable, with little chance of the current situation of long and unpredictable trip time owing to congestion. Similarly, the southbound trip time in the afternoon, now scheduled at 20 minutes, would be reduced by 35 percent.

Overall, the travel time savings to the 196 YORK UNIVERSITY ROCKET service would result in an increase in capacity worth in the order of \$1 million annually.

### **Input from the Public**

Formal public meetings were held at two stages of the study. In June 2003, an “open house” meeting was held at York University, and a formal public meeting was held in the Sheppard/Allen area. At these initial meetings, the EA team explained the problems being experienced on the 196 YORK UNIVERSITY ROCKET and the need for a faster express bus connection using bus-only lanes to allow the buses to be free of the effects of traffic congestion. The meetings also presented the bus-only lane routing options that were on a short-list for further study.

A second set of meetings were held, consisting of an open house at York University on April 22, 2004, and a formal meeting, with a presentation and question-and-answer period, in the Sheppard/Allen community on May 4, 2004. These meetings explained the analysis which had been done and the recommended routing and design for the bus-only lanes.

The response from the meetings at York University were very positive, particularly from those students and staff who use the 196 YORK UNIVERSITY ROCKET service and who recognize the significant benefits which this proposal could bring to their daily travel. The project is seen as necessary improvement in advance of a subway. Most of the attendees at the May 4, 2004, meeting lived in the Sheppard/Allen area. Some area residents understood the merits of the bus-only lanes, as an interim to a subway extension, while the more-common comment was that the subway should be built as quickly as possible and that money should not be “wasted” on bus-only lanes.

### **Specific Design Issues**

At the May 4, 2004, meeting, staff presented a design that had northbound buses exiting Downsview Station onto Sheppard Avenue, and then connecting to Allen Road. Many of the attendees at the meeting did not support that previous recommendation. In response to these concerns, the EA team eliminated this aspect of the design in favour of buses exiting directly onto

Allen Road.

A few people at the meeting expressed concern about an increase in the number of buses using Downsview Station; they suggested that southbound buses should continue south to Wilson Station and avoid using Downsview Station altogether.

Mr. Gerrit de Boer, who owns the property on the north-west corner of the Sheppard/Allen intersection, voiced concerns at the meeting, and in subsequent discussions with the EA team, regarding the recommendation to widen Allen Road, on the basis that the road is already very wide and “unfriendly” to pedestrians. He expressed concern with the potential negative effect of the road widening on the City’s future urban design concepts for this area. In response, the EA team revisited this matter and confirmed that a widening of Allen Road at Sheppard Avenue, to incorporate the southbound bus-only lane is necessary in this instance. However, in response to Mr. de Boer’s concerns with respect to urban design, the road widening along the frontage of his property will be done in a manner that leaves sufficient public right-of-way on the west side of the road to incorporate a boulevard, sidewalk, and a row of trees. The possible exception is at the north-west corner of the Allen/Sheppard intersection, immediately adjacent to Mr. de Boer’s property line, where the public road right-of-way is very narrow and any widening to the west will require that the City obtain a small corner of Mr. de Boer’s property.

Mr. de Boer also expressed concern with the design, shown at the public meetings, which had all of the widening on the west side of the road right-of-way, adjacent to his property. Mr. de Boer has plans to develop his property, and has approval for a new east-west road on his property that would intersect with Allen Road about 170 metres north of Sheppard Avenue. He will be seeking approval for a new signalized intersection at that location, including a northbound left-turn lane. He has requested that the widening be done in a manner that leaves sufficient width within the public right-of-way adjacent to his property so that this future left-turn lane – if it is approved by the City – does not result in an encroachment on his property.

The EA team has not incorporated Mr. de Boer’s proposed future intersection design in the current plans because his proposal does not have approved status. The team has developed conceptual designs to ensure that this future intersection is not precluded. However, at this conceptual stage of the design process, the team cannot make a commitment that other future plans would not have an effect on his lands. Staff will continue with further development of designs for this area to determine exactly how much of the south-east corner of Mr. de Boer’s property would be required for any intersection widening. This design work will also examine options where the widening is entirely on the east side of the road, avoiding Mr. de Boer’s land.

### **Next Steps in the Approval Process**

Following approval of this report by City Council, Provincial and Federal environmental assessment approvals are required, prior to seeking Commission and City approval to proceed with detailed design and construction. Staff are working with the Ontario Ministry of the Environment (MOE) and Transport Canada on these approval processes.

- i) Issues to be Resolved Prior to Submission to the Ministry of Environment (MOE)

This EA study followed the requirements of the Municipal Class Environmental Assessment process, a more streamlined process that was established for certain types of projects. The Municipal Class EA process may be applied to “linear paved facilities” which are defined as “...*facilities which utilize a linear paved surface including road lanes, HOV lanes, bus lanes or*

*transit lanes. (Note: new busways or transitways, including system elements such as stations and park'n ride, are subject to an individual EA requirements).“*

There are no further definitions of these terms in the document. City and TTC staff had interpreted that all aspects of the recommended bus-only lanes are a form of “bus lanes” and that, therefore, this project could be evaluated under the Municipal Class EA process. However, MOE staff have said that the bus-only roadways being recommended to be built in the hydro corridor and on the York University lands, are busways, not bus lanes, if they do not also allow general traffic. As a result of the MOE staff position, City and TTC staff have requested a minor amendment to the Municipal Class EA to clarify the issue and allow the Class EA process to apply to this project. This request is included in Appendix 1.

The MOE forwarded this request to the Municipal Engineers Association Monitoring Committee for comment. MOE comments on the matter are expected in the near future. If problems arise with the requested amendment, staff would seek approval from the Minister of the Environment through a “Request for a Declaration Order” (formerly called an Exemption).

ii) Canadian Environmental Assessment Act (CEAA)

The federal government is expected to provide 1/3 of the funding for this project, and this contribution “triggers” federal Environmental Assessment requirements. Staff met with Transport Canada representatives to initiate this process and were advised that the federal process would be able to take advantage of much of the work that has already been done to satisfy provincial EA requirements.

## **JUSTIFICATION**

Immediate improvements are needed to the bus service operating between Downsview Subway Station and York University. Bus-only lanes on Allen Road-Dufferin Street and a bus-only roadway in the hydro corridor, from Dufferin Street to Keele Street, as well as on the York University lands, would achieve that improvement. The design recommended in this report would provide dramatic improvements to the speed and reliability of this bus service with relatively little effect on other users of these roads and with the lowest cost of any of the short-listed options that were considered.

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July 7, 2004

11-84-42

Attachment: Appendix 1: Request for amendment to Municipal Class EA