

Meeting Date: June 12, 2002

Subject: Rapid Transit Expansion Study (Rtes) – Follow-Up Report

Recommendations

It is recommended that the Commission:

1. Re-affirm its position that funding for the TTC's base capital needs related to State-of-Good-Repair, Safety, and Legislative requirements are the TTC's first priority and that the next priority is funding to meet ridership growth on existing routes;

2. Note that, with respect to the construction of future rapid transit lines:

- the fundamental conclusions of the RTES report remain intact; that is, if base funding and ridership growth requirements were to be satisfied, and if additional funding were to be available for subway expansion purposes, then the Sheppard and Spadina corridors should be priority investments;
- subject to \$5 million in funding being received from the Golden Horseshoe Transit Investment Partnership Fund (GTIP) or other sources, TTC staff will be proceeding with the work necessary to advance the eventual construction of subways in the Spadina and Sheppard corridors, notably assessing the alternative alignments identified in the RTES report and undertaking amendments to the existing environmental assessments for these subway extensions;
- from the perspective of city-building, and Toronto's long-term aspirations to become a "world class city", the construction of subway extensions and other higher-order transit services is essential;
- there is no comprehensive approach being taken to planning for regional transit expansion in the GTA; there has not been a comparison of the costs and benefits of the TTC's rapid transit expansion proposals with investments in GO Transit and non-subway-related transit improvements in the City and the 905 area;
- as the TTC has no stable long-term funding commitments for its base capital program needs, the TTC has little option but to take a two-pronged approach to rapid transit planning. The TTC should take all necessary actions to protect for the future subway extensions identified in the RTES report, while pursuing lower-cost, lower-risk transit priority and Bus Rapid Transit initiatives in the short term, as funding permits;

3. Re-affirm its recognition of the importance of, and the need to improve the quality, speed, and reliability of its comprehensive surface network by requesting Toronto City Council to:

- endorse the TTC's concept of expanding transit priorities throughout Toronto using measures such as signal priority for transit vehicles on major arterial roads, transit priority lanes for high-frequency routes, and the creation of a network of roads where there are stricter turning and parking/stopping restrictions;
- approve the transit-supportive principles of the proposed new City of Toronto Official Plan;

4. Assist in establishing the transit usage patterns necessary to make future subways successful by approving, in principle, the establishment of Bus Rapid Transit in a number of suitable corridors, notably:

- Downsview Station to York University and an inter-regional commuter parking and transit facility at Steeles Avenue
- Yonge Street north from Finch Station to Steeles Avenue
- Sheppard Avenue from Don Mills Station to Scarborough Centre Station
- Bloor-Dundas-Eglinton Avenues and Highway 427 from Kipling Station to the Airport Corporate Centre;

5. Note that, during the TTC's last twenty years of building new rapid transit facilities, land development near subways has been less-supportive of high-capacity transit than necessary, and the resulting market share and ridership have been below expected levels; therefore, the TTC should adopt a go-slow approach to further subway construction until progress is made on the following matters which are critical to the long-term viability of high-capacity transit:

- formal land use, planning, and zoning commitments for high-density development in the vicinity of existing rapid transit stations and as part of the initial approval process for new rapid transit lines and stations
- economic and tax incentives to make rapid transit-oriented development more attractive to the development industry than greenfield development; and

6. Forward this report to Toronto City Council, the Golden Horseshoe Smart Growth Council, GO Transit, the Ontario Ministry of Transportation, the Ontario Superbuild Corporation, the Regional Municipality of York, the City of Vaughan, the Town of Markham, the Town of Richmond Hill, the City of Mississauga, and all of the other parties who submitted comments on the report.

Funding

This report has no impact on the TTC's operating or capital budgets because the TTC's 2002-2006 Capital Program does not include funds for any activities associated with rapid transit expansion beyond the completion of the Sheppard Subway project in 2002.

Background

At its meeting of August 29, 2001, the Commission received a report entitled, "Rapid Transit Expansion Study – Screening of Options". At the meeting, the Commission confirmed that the TTC's funding priorities continue to be its State-of-Good-Repair/Safety/Legislative program and accommodation of increases in ridership on existing routes, before any rapid transit expansion takes place. With this understanding, the Commission approved that, subject to these base funding requirements being met, the TTC's priorities for future rapid transit expansion would be either a northerly extension of the Spadina Subway or an easterly extension of the Sheppard Subway as shown in Exhibit 1. The Commission directed staff to circulate the Rapid Transit Expansion Study Report (RTES) for comment, and requested staff to provide responses on a number of issues arising from the initial study.

The TTC's funding shortfall continues to strongly influence the TTC's perspective on rapid transit expansion. There is a large amount of uncertainty regarding ongoing funding for the TTC's fundamental State-of-Good-Repair, notably the ongoing need for vehicle replacement, and its ability to serve growing ridership on existing routes. Until funding for these needs are met, expansion cannot be justified. Keeping the TTC system in a state-of-good-repair is critical for safety and operational reasons. Committed funding to meet ridership growth on existing TTC services is the next-highest priority because such growth is neither speculative nor contingent on future development plans. After these needs have been met, then any further funding available should be allocated where it will provide the greatest benefit in attracting transit riders. Rapid transit expansion is one of a number of possible investments that could be made to increase transit ridership in the city.

Since the release of the RTES report, there have been a number of new initiatives that have implications for rapid transit planning in Toronto. The City has made further progress on the development of the City's new Official Plan related to the way in which transit-oriented intensification of development is planned for the City. The emerging plan is strongly

Exhibit 1

supportive of transit and focuses on making existing surface transit services more effective in the short term, in addition to protecting for subway and rapid transit construction in the longer term.

In December 2001, the Province of Ontario announced a new funding program -- the Golden Horseshoe Transit Investment Partnership (GTIP) -- to invest in transit improvements in the GTA. The TTC, in conjunction with the City of Toronto and York

Region, submitted a number of proposals for GTIP funding related to the implementation of Bus Rapid Transit (BRT) as a means of establishing the solid ridership bases which are critical to the establishment of successful subway lines, as was evidenced in the original Yonge and Bloor-Danforth subways. The TTC also submitted proposals to undertake the required studies to update and amend the environmental assessments for subway construction in the Sheppard and Spadina corridors identified in the RTES report.

This current report:

- addresses the matters presented by the Commission when it originally considered the RTES report on August 29, 2001;
- provides a summary of the comments received on the RTES report;
- provides a status report on activities concerning rapid transit planning at the TTC in light of the recent initiatives noted above;
- discusses some of the realities about the effectiveness of more-recent subway construction in Toronto; and
- advocates a cautious go-slow approach to further subway expansion, premised on obtaining strong commitments from relevant jurisdictions to make city-building and transportation decisions which would ensure that investments in subway expansion are warranted and cost-effective.

Discussion

The fundamental conclusions of the RTES report remain intact; that is, if a number of conditions and base funding requirements were to be satisfied, and if additional funding were to be available for expansion purposes, then the Sheppard and Spadina corridors should be priority investments.

Appendix 1 summarises the staff responses to the questions raised by the Commission when considering the RTES report at its meeting of August 29, 2001. Appendix 2 summarises the comments received from the circulation of the RTES report and other submissions received. The responses from neighbouring municipalities and agencies are generally supportive of the conclusion of the study, although a number of respondents suggested additions or amendments to the list of priorities identified in the study. York Region and the City of Vaughan, in particular, offered strong support for the extension of the Spadina subway to York University and further north into Vaughan. Virtually all of the responses state that building these subways would support their city-building objectives. It is not clear from the responses, however, whether development will occur in the catchment area for these lines of the type and scale required to make their construction cost-effective, or whether the labour and/or consumer markets associated with such development would be capable of supporting high-capacity subway service.

The Council of the City of Toronto, at its meeting of April 16-18, 2002, approved a report from the Planning and Transportation Committee recommending receipt of the TTC's RTES report and requesting that further work be undertaken in a number of areas. In particular, it recommended that TTC and City staff be directed to undertake the required assessments of alignment alternatives, and the commencement of the studies required to update the Environmental Assessment reports for the two priority subway expansions. The City staff report and recommendations highlighted the close inter-relationship between planning for higher-order transit service and the City of Toronto's Official Plan. The recommendations in the City staff's report included protection of possible future transit corridors and the need to update forecasts and plans based on the new Official Plan.

The City of Toronto staff report, along with a submission received from an individual, expressed concerns about the priority being given to subway planning and construction without adequate attention being paid to alternatives such as improved TTC surface and GO services, and less-costly alternative modes such as reserved-lane streetcars and busways. The City staff report suggests that these alternatives could be implemented in selected corridors as "precursors to future rapid transit services". That report identified the following potential corridors:

- Yonge Street north of Finch Avenue
- from Downsview Station to York University/Steeles Avenue and Vaughan Corporate Centre
- Eglinton Avenue west of Eglinton West station

In conjunction with adopting these City staff recommendations, Council also formally supported the TTC's submission for GTIP funding to undertake work on a possible Bus Rapid Transit service between Downsview Subway station and York University/Steeles Avenue. Council also directed City and TTC staff to work with the Region of York on the development of an interim express bus in this and other inter-regional corridors.

Realities of High-Cost Rapid Transit Construction

The responses received were generally supportive of the recommendations of the RTES report with respect to subway expansion, but a number of responses, notably the responses from the City of Toronto and from members of the public, identified valid concerns about the cost-effectiveness of such expansion in the short term.

Subways provide the highest practical capacity of any public transit mode. Their private right-of-way allows them to offer high speeds that can be very competitive with the automobile, and they can accommodate large volumes of passengers. However, they are expensive to construct and can be expensive to operate if not supported by adequate ridership. The construction of subways directly affects the way in which a city grows and can strongly alter the pattern of development close to stations.

The RTES report provides an outline of the "success factors" needed for a subway line or extension to be a success. Foremost among these is the development of higher-density nodes around subway stations that help to create high volumes of subway ridership. Experience has shown that nodes with 20,000 population and employment are generally required to generate high levels of transit ridership and for transit to attract a high proportion of all trips in the area. Examples of this type of development can be found along Yonge Street at St. Clair, Eglinton, and Sheppard and, to a lesser degree, on the Bloor-Danforth line at Islington and Victoria Park stations. An absolute minimum nodal density threshold of 8,000 population plus employment within 500m of a subway station was identified in the RTES study. This translates into a density of 100 population plus employment per hectare.

There are significant risks that this level of intense development may not be achieved in individual corridors and specific station/node locations. Such an achievement is a very long-term "city building" process and requires the type of planning and ongoing incentives that were used to support the original Bloor-Danforth subway. Typically, there are large costs in the interim while redevelopment occurs. Exhibit 2-16 from the RTES Technical Report, shows that, recently, the City has not been very successful in achieving transit-oriented redevelopment around existing subway stations, even at major nodes designated in previous Official Plans, such as at North York Centre and Scarborough City Centre. The exhibit illustrates that the majority of stations constructed before 1978 -- which are the stations built for the original Yonge-University and Bloor-Danforth lines -- have development densities that adequately support the subway and are achieving transit mode splits of 30% or more. Most of the stations built since 1978, including those at designated development nodes, have not achieved these densities and, even 20-or-more years after their construction, are attracting only 15% to 25% of all trips from the area immediately adjacent to the stations.

A review of the more-recent stations indicates that intense development has not occurred for a wide variety of reasons including the economics of redevelopment, at both a local and regional scale, taxation issues, and City planning, zoning, and community issues. While some of these issues are beyond the control of the City, and virtually all are outside the control of the TTC, there have been a number of examples of City decisions in recent years that have worked against the success of existing subway lines and future higher-order transit services. Typically, these decisions have been reached based on local community objections to intensive re-development.

Exhibit 2

Recent experience with the approvals related to the Sheppard Subway provide a case in point. The original planning work, and ridership forecasts justifying the line, were based on achieving 4-to-5 times coverage on development sites within 500m of proposed stations. When the Official Plan Amendment (OPA 392) was approved for the areas affected by the line, it allowed 2 ½-to-3 times coverage for development sites. In addition, many sites within 500m of stations were designated as "stable areas" and not

designated for development. As a result, OPA 392 removed approximately 50% of the development potential in the Sheppard corridor.

There continues to be a large supply of developable land close to existing subway stations, and the opening of the new Sheppard Subway in late 2002 will create new opportunities for subway-oriented redevelopment. Development nodes identified in the City's Official Plan such as North York City Centre, Scarborough City Centre, and the Kipling/Islington area have large parcels of land available for development. Locations that are owned by the City and used by the TTC for stations, bus terminals, and commuter parking could be redeveloped to make better use of the air-rights. These sites include major development parcels at Sheppard/Yonge, York Mills/Yonge, Eglinton/Yonge, Downsview/Sheppard, and Islington/Bloor. In addition, there are other smaller parcels of City-owned land close to subway stations that could be redeveloped for higher-density transit-oriented uses.

The reality is, however, that the commercial market for such redevelopment within Toronto has been weak for the past 10 to 15 years. While these subway locations remain undeveloped, there has been substantial growth in office-type development outside of the City in non-transit-oriented locations such as the Airport Corporate Centre and Meadowvale in Mississauga and the Beaver Creek commercial area in Richmond Hill. Before 1980, these types of development would frequently locate close to subway stations and at established development nodes, but with changing office technology and business practices, the need for physical proximity of businesses is dramatically reduced. These issues, coupled with economic and taxation issues, have resulted in an increasingly-dispersed pattern of office-oriented development which is not supportive of even low-capacity transit service, let alone subways.

These recent experiences illustrate that there is a significant risk in assuming that "if you build it, they will come". Without strong, consistent, and committed municipal support, over many years, for a city-building philosophy premised on actively encouraging and providing incentives for transit-supportive development in the vicinity of existing and future rapid transit facilities, these facilities may never be successful in attracting adequate ridership to justify their construction. Any high-cost, long-term investment in transit infrastructure, whether it be subway, GO Rail, or new LRT service, runs the risk that the development needed to support the investment will not materialise. These risks can be minimised through the implementation of strong land use and economic incentive policies and through the development of lower-cost, less capital-intensive precursor surface transit services to "test the market".

Lower-Cost, Low-Risk Opportunities

At the Commission meeting of June 20, 2001, the Commission received a staff report entitled, "Expanding Transit Priorities in Toronto" which outlined a comprehensive plan for improving surface transit services in the City in a low-cost, low-risk way. The report identified a range of specific means by which to make the TTC's extensive network of bus and streetcar routes faster, more reliable, and more competitive with the car:

- expanded implementation of signal priority on transit routes which reduces the time wasted waiting at red lights;
- construction of physically-separated transit lanes for high-frequency transit routes as a means of extricating transit from chronic congestion and giving transit a competitive advantage over cars;
- implementation of innovative transit service concepts such the construction of partially- or fully-exclusive bus lanes and the operation of high-speed, high-capacity bus services in selected corridors ("Bus Rapid Transit"); and,
- on a selected group of existing arterial roads in the city, implementation of aggressive and widespread restrictions on stopping and turning to speed the movement of buses and streetcars, and reduce congestion for all traffic.

Together, these initiatives form the basis for a broad strategy of significantly improving transit throughout Toronto, not just in one corridor, in the short- and medium-term. Such a program could be implemented at a relatively low cost, and with a high degree of confidence that it would result in significantly-improved transit service for large numbers of existing and potential future transit passengers.

These initiatives reflect, and are highly consistent with, the approach being taken to transit improvements in the City of Toronto's draft new Official Plan. Encouraging transit-oriented mixed-use development on "avenues" provided with enhanced surface transit services is seen as an important strategy for allowing the City to grow in a way that preserves local communities while moving towards a more-sustainable urban form.

Bus Rapid Transit Can Establish the Ridership Base Necessary for Successful Subway Extensions

One of the reasons that the original Yonge and Bloor-Danforth subways were successful at the outset was that they were built on an already-existing solid base of high-volume ridership which had been established by the Yonge, Bloor, and Danforth streetcar lines. Prior to those subways, the surface forerunners to the subways provided service frequencies equivalent to a streetcar every 45 seconds. The success of these subways was not dependent on the hope that future development would someday bring riders; the riders were already there! This

is the strong logic which argues that, in order to increase the likelihood that future subway extensions will be successful when funding becomes available for such investments, a fast, reliable, and attractive service should be provided today to establish solid ridership.

To encourage greater transit use in a future subway corridor, a precursor system needs to be put in place. The development of interim "subway precursor" services would achieve a number of objectives simultaneously, including:

- providing improved service to existing passengers in heavily-utilised corridors;
- encouraging greater transit use in the corridor to reduce the risks associated with future conversion to higher-order transit; and,
- providing a clear indication of commitment to transit improvements in the corridor that will help to attract transit-oriented development to the corridor in advance of actual construction of a new line.

Bus-based systems have a number of distinct advantages over streetcar/LRT-based systems in the role of subway precursor. Bus systems can provide a high quality of service at a much lower capital cost and, thereby, avoid the risks associated with those costs. A Bus Rapid Transit line on dedicated lanes in the centre of an arterial road can provide high-speed service at capacities comparable to LRT-type systems in most suburban situations.

Rail systems are very inflexible with respect to staging of construction, alignment adjustments, and vehicle utilisation. It is both the advantage and disadvantage of rail-based systems that they represent a significant long-term commitment to operate in a specific way in a specific corridor. While this is an advantage in attracting potential future development into a corridor, this advantage comes at a very high initial cost. In contrast, Bus Rapid Transit systems can be implemented quickly and at low cost compared to rail-based systems. They can provide a speed and capacity comparable to a rail system, albeit with reduced ride comfort. They can also be designed to reduce the number of transfers that passengers must make, while having the flexibility to use interim alignments during a staged development process. Bus-based systems also have network advantages. For example, a number of different operators can operate on the same facility where this is unrealistic for a rail-based system. This is of particular significance in the context of higher-order corridors in the GTA that will cross municipal boundaries. The fleet-flexibility and relatively low purchase cost of buses also means that capital expenditures for Bus Rapid Transit can be more carefully tailored and staged to actual ridership levels over time, than is possible with a rail project.

It is for these reasons that the TTC, in conjunction with the Regions of York and Peel, submitted, among many proposals, three projects to the provincial GTIP funding program in January 2002, notably:

- Bus Rapid Transit from Downsview Station to York University and Steeles Avenue
- Bus Rapid Transit on Yonge Street north from Finch Station

- Signal Priority on inter-regional bus routes

In total, \$57M in GTIP funding has been requested for these projects and, if approved, the projects could commence quickly with implementation in three-to-five years. These initiatives are supported by the City of Toronto, the Region of York, and York University.

In addition, TTC staff continue to meet with representatives of the City of Mississauga to discuss the potential for joint initiatives related to Bus Rapid Transit on the west boundary of Toronto, and the establishment of inter-regional transit priority traffic signal systems. As a result of these discussions, the City of Mississauga has recently contracted with the TTC to provide improved service on the Eglinton Avenue corridor from Toronto into its growing Airport Corporate Centre.

With the opening of the Sheppard subway in the fall of 2002, TTC staff will be introducing a new limited-stop "Rocket" express bus service on Sheppard Avenue, between Don Mills Station and Scarborough City Centre, to help compensate for the short-distance service provided by the Sheppard Subway itself. This express service will replicate what the subway will do when it is completed. This Rocket route is important as an extension of the subway, both to encourage increased ridership on the Sheppard Subway and within the Sheppard Avenue corridor.

Where do we go from here?

From the perspective of city-building, and Toronto's long-term aspirations to become a "world class city", the construction of subway extensions and other higher-order transit services is essential. In the near term, however, there are risks associated with proceeding with a broad-based rapid transit expansion program. In the current environment, a balance must be struck between the pursuit of practical, short-term improvements, and the achievement of longer-term objectives. As described above, there are opportunities to move forward towards achieving both ends at once by focussing on comparatively low-cost transit priority and Bus Rapid Transit improvements in corridors that have been identified for future rapid transit lines.

In parallel with this approach, it is essential that the City and the TTC take all actions necessary to protect for future rapid transit extensions. For this reason, as soon as funding becomes available, TTC staff will be updating and amending, as necessary, the earlier Environmental Assessment (EA) reports undertaken for the two Sheppard and Spadina subway extensions identified in the RTES report. The TTC has applied for \$5 million in GTIP funding to undertake this work. As indicated previously to the Commission, at the initial stage of these projects, TTC staff will assess the benefits of establishing a Class EA process for the TTC in conjunction with this work.

Justification

As the TTC has no stable long-term funding commitments for its base capital program needs, the TTC has little option but to take a two-pronged approach to rapid transit planning. The TTC should take all necessary actions required to protect for the future subway extensions identified in the RTES report, while pursuing lower-cost, lower-risk transit priority and Bus Rapid Transit initiatives in the short term as funding permits.

May 26, 2002

11-47

Attachments: Appendices 1 and 2

Minutes from April 16-18, 2002, meeting of City Council