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3.1 DETAILED DESCRIPTION OF SHOWCASE MEASURES

The physical characteristics of the Showcase Project have been developed, evaluated and defined through an Individual Environmental Study, employing a harmonized EA process, that meets the requirements of both the Ontario and Canadian Environmental Assessment Acts. The study, expected to be completed by mid-2003, has:

- established the Yonge Street Transitway's functional requirements
- assessed effects on the social and natural environments of the adjacent communities
- identified optimal station locations and integrated streetscape solutions through consultation with urban design consultants

The Yonge Street Transitway can be described within the context of six key measures:

- Rapid Transit Network
- Low-Cost Infrastructure
- Advanced Technology
- Sustainable Land Use
- Integrated Communications
- Innovative Approach.

3.1.1 Rapid Transit Network

Strategic and incremental investment is required to develop a rapid transit network that reduces vehicle emissions by providing a viable alternative to the private car as a primary mode of transportation.

The Showcase proposal is for a dedicated Yonge Street Transitway that will act as the first step of an incremental introduction of the full rapid transit network in York Region. Depending on the outcome of the EAs, the full rapid transit network could incorporate bus rapid transit (BRT), light-rail transit (LRT) or a combination of both technologies. Building BRT now in the Yonge corridor brings immediate transit improvements along with flexibility to readily incorporate the infrastructure for use by either technology in the evolving full network. A primary goal of the YRTP is to minimize the construction of infrastructure that would be redundant as higher-order rapid transit services are implemented, and the Yonge Street Transitway meets this objective.

The Yonge Street Transitway will incorporate an integrated package of rapid transit elements designed to improve service reliability, travel times and passenger comfort and convenience. This combination of factors will dramatically increase public transit ridership levels with a corresponding decrease in automobile travel.

High-frequency Service – Buses will arrive at 3-minute intervals during peak periods, and 7 to 10-minute intervals during off-peak times. Frequent service along the BRT routes will replicate rail transit services so that passengers can arrive at a station randomly without needing to consult a schedule, confident that they will not have to wait more than a few minutes for a vehicle.

Reduced Travel Times – Features included in the BRT design will speed travel times along the Yonge Street Transitway through:

- Transit signal priority at intersections
- Limited stops, with approximately one-kilometre spacing between stations

The Yonge Street Transitway will immediately improve mobility and travel times along the most congested segment of the Region's primary north-south corridor.



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- Proof-of-payment fare policy with off-board fare collection to reduce vehicle boarding times
- Advanced-design vehicles with multiple wide doors, and wider aisles near the doors, to speed boarding and alighting.

Innovative fare policies – The fare structure will encourage frequent transit use and enhance passenger convenience through simplified fare collection with:

- Time-based transfers that allow stopovers to provide more travel flexibility
- Pricing that encourages the purchase of monthly passes
- Integration with other transit fare systems (Smart Cards, consistent with current provincial initiatives, simplify fare collection and integration of inter-regional fares)

3.1.2 Low-Cost Infrastructure

Bus Rapid Transit replicates higher-order rail transit features with flexible, cost-effective implementation

One of the greatest advantages of BRT is its ability to deliver rail transit performance levels and passenger amenities at a much lower capital cost. BRT guideways and vehicles are significantly less expensive than comparable rail elements. By using the median lanes of an existing arterial road, the Yonge Street Transitway will minimize corridor acquisition as well as guideway construction costs.

The relative simplicity of the running way allows for faster construction, thereby reducing construction-period disruption for

traffic and adjacent residential, employment and commercial areas. The busway is being integrated into the existing right-of-way without reducing traffic capacity of the arterial street. The modular construction of station components will permit relocation and reuse as the overall network is upgraded to meet increased ridership demands.

The proposed Yonge Street Transitway envisions a possible extension of the TTC Yonge subway line from Finch Station to Steeles Avenue, with a further extension to the Langstaff Terminal at Highway 7. The cost of extending the subway from Finch Station to Highway 7 is estimated to exceed \$1 billion, an amount that is well beyond the current funding capacity of the potential partners. It will therefore be many years before implementation can begin.

In the interim, The Yonge Street Transitway is a relatively low-cost proposal that will significantly enhance public transit service, facilitate the implementation of the full rapid transit network in York Region and help build ridership for a future subway extension. It is also able to cost-effectively incorporate the BRT vehicles and many of the other elements being introduced as part of the Quick Start phase of the YRTP as an initial step towards the full build of the ultimate network.

3.1.3 Advanced Technology

Intelligent Transportation Systems increase service levels and passenger information, support fare card technology to speed boarding times, and enable centralized control and operations.

The implementation of Intelligent Transportation System (ITS) for the Yonge Street Transitway will enable a safe, high-capacity



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transportation system within a complex, constrained environment. Effective fleet management will optimize efficiency by monitoring the continuous flow of vehicles to meet ridership demands. Since a number of routes will share the Transitway, real-time information will help to make the system highly convenient for passengers. ITS will also enhance the Transitway’s image as a modern, safe, secure and efficient facility.

As a prototype for other BRT projects in Canada, the Yonge Street Transitway will set high standards in all aspects of its planning, design, and operation. ITS will be used to:

- Monitor Transitway schedule adherence
- Provide passenger information about stations, routes, schedules, arrival times, fares and other services
- Facilitate automated fare collection systems
- Enhance passenger security by providing emergency telephone links to the control centre, video surveillance of station areas and alarm systems
- Coordinate service frequencies
- Gather information regarding operating performance and ridership levels
- Implement transit signal priority
- Facilitate coordination with traffic operations, emergency services and other transit services
- Activate public announcements at stations and on-board vehicles

Real-time “next bus” information will be made available at stations, at bus transfer points and on the internet for pre-trip

planning purposes. Comparisons between bus and car travel times along Yonge Street will be made available to attract and retain new transit users. ITS will also play a major role in serving passengers with special needs by enabling audio, visual, multilingual and other means of communication.

A key element of a modern rapid transit system is operating a reliable, predictable service. By monitoring the location and progress of all buses on or approaching the Yonge Street Transitway, bus operators will have the opportunity to intervene on an as-needed basis to ensure that the buses arrive at the stations on schedule. Coordination among the various operators using the Transitway is an important part of this strategy.

The ability to generate monitoring reports for user-specified requirements from the Transitway operational database will be very useful for service planning, administrative reporting and cost analyses. The information can also be used for transit marketing purposes, and for measuring system performance as discussed in Section 4.

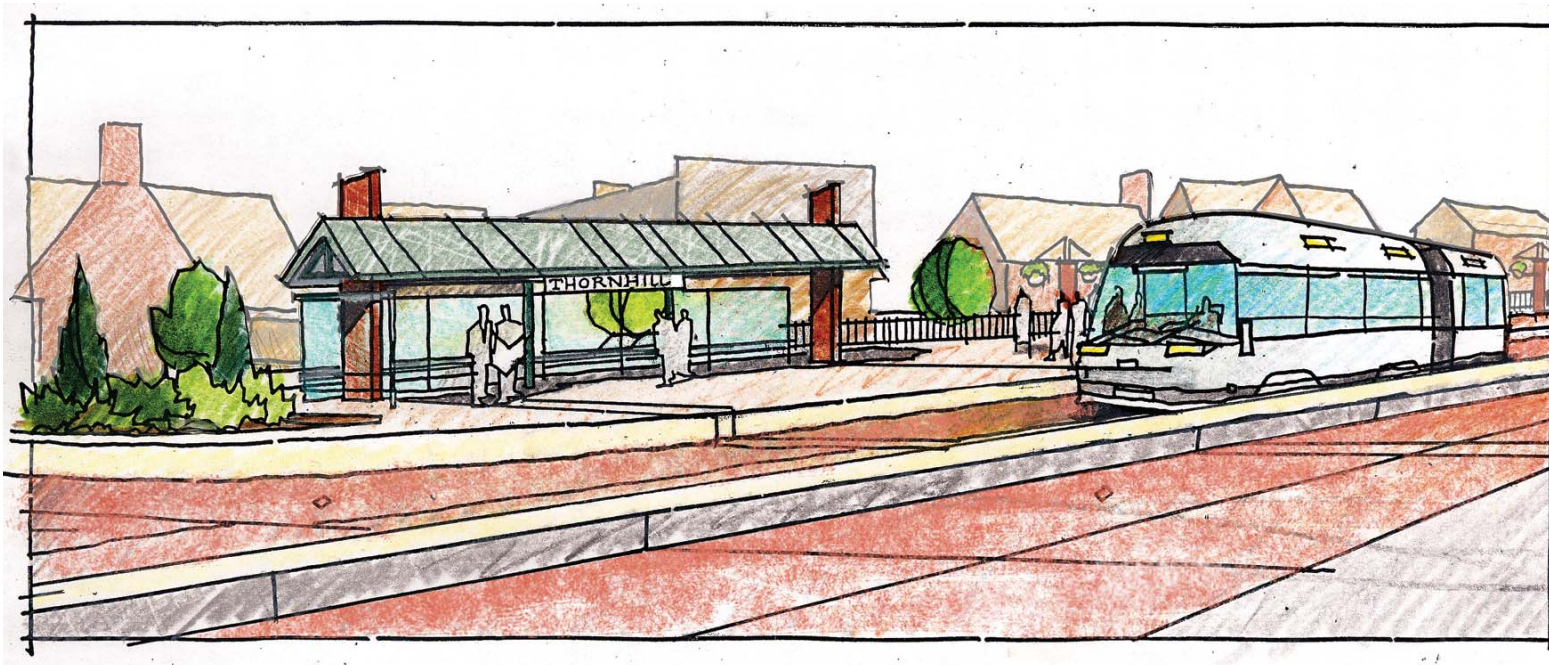
3.1.4 Sustainable Land Use

Transit-oriented development supports the Smart Growth goals of strong community, strong economy and healthy environment with a balanced urban mix of commercial, residential and employment land uses.

The proposed Showcase project capitalizes on the strong, interdependent relationship between rapid transit and sustainable land use. As transit services and facilities are tailored to meet urban transportation requirements, the introduction of rapid transit will enhance existing communities and act as a catalyst for sensitive, cohesive development.



Yonge Street has always been a growth spine for intensification. It is appropriate to invest in this spine as an example of leading growth and development.



Integration of the Yonge Street Transitway presents an opportunity to improve and enrich streetscapes with new amenities

This drawing shows a potential design concept for a passenger station in the Thornhill neighborhood. New shelters, and streetscape elements would work together to knit existing, disparate elements together and reinforce new, unified design themes. The sketch represents one of several approaches that have been considered during the EA process. The configuration and streetscape elements of this portion of the transit way are being developed in close coordination with the proponents of the Thornhill Community Revitalization and Streetscaping Study.



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The Yonge Street Transitway will support existing land use patterns by introducing rapid transit service on an existing arterial with a mix of residential and commercial development that is more mature than what is found along neighbouring arterial roads.

The Transitway will also pass through the community of Thornhill, a heritage district with a distinctive, intimate scale and character. Through the EA process, a close working relationship has been established with the proponents of the Thornhill Community Revitalization and Streetscaping Study. This responds to two important urban design goals:

- Integration of the BRT Transitway presents an opportunity to improve and enrich streetscapes with new amenities. It also encourages a holistic approach to defining all of the elements of the main street revitalization by using rapid transit facilities to knit these elements together. Because guideway construction may displace lighting, sidewalks and street furniture, they can be reconstructed or replaced to reinforce new, unified design themes.
- Construction-period disruption within the heritage district will be reduced by coordinating the streetscape improvements developed as part of the Revitalization Study with the implementation of the Yonge Street Transitway.

3.1.5 Integrated Communications

The establishment of a distinctive brand, marketing, advertising and partnerships with the business community will make transit more viable and attractive to the public.

For the proposed transit service to be successful, the public must understand and recognize its unique benefits as a realistic alternative to the private car. An integrated communications strategy will deliver this message in a variety of media:

- The creation of a brand and distinctive livery for the rapid transit service will be important to establish public recognition of the service while visually reinforcing its unique role within an integrated family of transit services operating within the Region.
- Rapid transit services will be promoted through a combination of both paid and free media. The marketing campaign will begin prior to revenue service and continue after implementation to build ridership levels. An action plan will be developed to set out the timing for communication activities associated with the Yonge Street Transitway.
- Distinctive design elements that reinforce the system’s visual identity will be incorporated into running ways, vehicles, stations, signage, street amenities and livery to increase the visibility of rapid transit services within the community.

Complementary Transportation Demand Management measures will be included to further increase ridership through partnerships with the business community. The main focus will be to work with employers to promote and facilitate use of the new transit facility by employees with transit pass subsidies, payroll deduction programs and other initiatives.



Distinctive design elements that reinforce the rapid transit system's visual identity will be incorporated into running ways, vehicles, stations, signage, street amenities and livery to increase visibility within the community and attract new ridership.



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3.1.6 Innovative Approach

York Region’s unique public-private partnership speeds implementation while guaranteeing cost-competitive delivery of the system in an open and transparent manner.

The public-private partnership between York Region and York Consortium provides the necessary resources to plan, develop and execute an integrated strategy. The members of York Consortium bring extensive worldwide experience in implementing rapid transit networks and will facilitate the development of low-cost infrastructure with reduced project costs and delivery times. Member firms also provide significant knowledge of advanced technology and Intelligent Transportation Systems. York Region is committed to sustainable land use patterns and transit-oriented development along key transportation corridors, and has taken a leading role in introducing policies and planning studies to achieve this goal. Together, the partners will deliver an integrated communication strategy that will increase awareness about the benefits of public transit and other non-automotive modes of transportation.

Experience in urban transit has consistently shown that significant ridership increases only come about with an integrated package of strategic improvements. Simply increasing service levels will not be effective without supporting land uses, densities and provisions for good pedestrian access. Limited-stop services will not be effective if vehicles are stuck in traffic congestion. A user-friendly fare system will not generate good results if the public is not sufficiently informed.

The proposed Yonge Street Transitway will integrate a range of measures that focus on the ultimate objective of generating new transit ridership while substantially reducing automobile use and greenhouse gas emissions.

3.2 RELATIONSHIP WITH EXISTING INITIATIVES

The Yonge Street Transitway is fully consistent with the EA for the Yonge Corridor. Subject to funding, implementation can begin following the EA approval, which is expected in December 2003.

The Yonge Street Transitway will help to support efficient land use within York Region by managing growth within urban centres along key transportation corridors as detailed in the Region’s Official Plan, Centres and Corridors Study and Vision 2026.

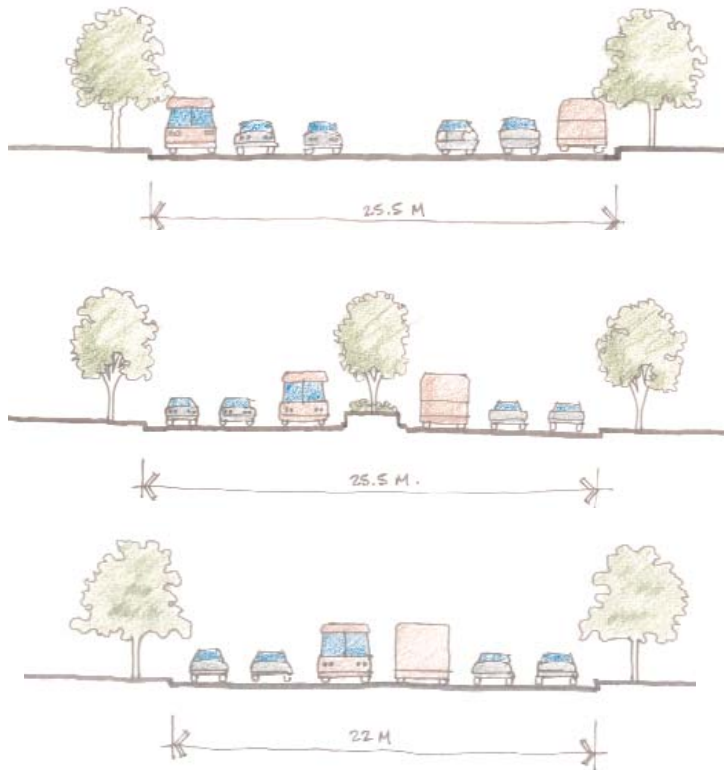
Because of its high-volume connection with the TTC Finch Station, the Yonge Street Transitway is the most critical segment of the entire rapid transit network. Early implementation will facilitate important linkages with other transit services providers to significantly improve mobility and service levels necessary to build overall transit ridership. The Yonge Street Transitway is also compatible with the Toronto Transit Commission’s plan for a higher-order level of transit along the Yonge corridor north of Finch Station.

The City of Toronto has already commenced a Transitway EA for the segment of Yonge Street between Steeles Avenue and Finch Station. The YRTP Project Office is actively participating to facilitate the coordination of the of the two EA studies.

As detailed earlier, construction of the Transitway within the historic community of Thornhill is being planned to harmonize with the objectives of the Thornhill Community Revitalization and Streetscaping Study.



The proposed Yonge Street Transitway is fully consistent with the EA for the Yonge corridor.



Cross-sections showing transitway concepts in Yonge Street. The proposed Transitway passes through what has become a major transportation "bottleneck" on Yonge Street where there are only four traffic lanes through the historic village of Thornhill (shown in the sketch immediately above)

Advancing the implementation of the Yonge Street Transitway will address the following issues:

- This portion of the Yonge corridor, the most congested segment of the entire YRTP network, generates significant greenhouse gases and other environmental contaminants
- Large traffic volumes are threatening the ability of the village of Thornhill to sustain its character as a designated heritage community

- Construction disruption will be minimized if the Yonge Street Transitway is constructed at the same time as the improvements identified in the Thornhill Revitalization and Streetscaping Study are implemented
- The early delivery of high-level rapid transit services will enhance connections with other service providers to significantly increase ridership and reduce reliance on automobile transportation

3.3 SHOWCASE IMPACTS

The York Region Transitway will generate a number of benefits consistent with the objectives of the federal Showcase initiative. These are described in the following sub-sections.

3.3.1 Reduction of Greenhouse Gas Emissions and Other Air Pollutants

One of the intents of the Yonge Street Transitway is to demonstrate how a distinctly "higher-order" transit service can result in a significant modal shift to transit from private automobile use. Experiences with similar BRT facilities in Canada and the United States have shown immediate increases in transit ridership of 20% to 40%, with a corresponding decrease in automobile travel. This is an important strategy to reduce the production of greenhouse gases in urban areas.

The ridership demand analysis, undertaken for the Yonge corridor as part of the overall YRTP system planning, indicated that by 2021, BRT should attract an additional 35,000 (or 5,500 peak-hour) trips per day. This is a 50% increase from current levels and corresponds to an estimated 160 million passenger-kilometres per year that would be diverted from automobile use.

Serious peak hour congestion along the historic Thornhill portion of Yonge Street is generating significant levels of greenhouse gases and other air pollutants.



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Recent research provided by the Canadian Urban Transit Association shows that automobile emissions contribute 254 tonnes of CO₂ per million passenger-kilometres compared with 70 tonnes per million passenger-kilometres for buses operating in mixed traffic. Applying this difference to the forecast reduction in automobile passenger-kilometres would result in approximately a 30,000 tonne annual reduction in CO₂ emissions directly related to the proposed Yonge Street Transitway.

The vehicles operating in the Yonge Street Transitway will be the same ones introduced during the initial *Quick Start* phase of the YRTP. Although the selection of vehicles has not yet taken place, one of the major requirements is low vehicle emissions. Clean diesel technology incorporates the use of low sulphur fuels and filter/catalyst systems for the post-processing of exhaust gases. Consideration is also being given to emerging hybrid technology (low-power, low-emission engines are used to generate electricity in conjunction with electric traction motors and on-board energy storage) for vehicle propulsion. These vehicles would further enhance the reduction of greenhouse gases.



Photosimulation showing a median transitway prepared for the Yonge Corridor EA.

Public Transport International magazine has reported that a 3 km/h improvement in the scheduled speed of the transit service allows bus emissions to be halved. The reserved right-of-way provided by the Yonge Street Transitway, combined with transit signal priority, will speed the movement of BRT vehicles (as compared with buses that would otherwise be operating in congested mixed traffic) with a highly favourable effect on pollution levels.

3.3.2 Reduction of Traffic Congestion and Delay

Reliable, frequent all-day service along the Yonge Street Transitway will reduce passenger travel times and delays at stations, and facilitate efficient connections with other transit service providers. Rapid transit can reduce transit travel times by 25% - 40% during peak periods. The Yonge Street Transitway will demonstrate that these improvements in service levels are required to engender a substantial modal shift from the private automobile to public transit.

On-going modelling of the travel demand in the Yonge Street corridor indicates that by the year 2021, the proposed Yonge Street Transitway can be expected to carry approximately 10,000 trips in the morning peak hour, peak direction along with 1,300 trips in the reverse direction. Achievement of this volume in the new transit lanes corresponds to an increase in right-of-way throughput of ten times that which would be achieved if the additional lanes were general traffic. The added capacity will enable the Yonge corridor to accommodate a significantly higher growth in trip-making, thus avoiding further increases in traffic congestion and corresponding delays to transit service.



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3.3.3 Improvement of Public Safety

Responding to continuing travel demand in the corridor by adding more general traffic lanes alone brings with it the risk of deterioration in public safety in the communities adjacent to Yonge Street. In developing the cross-section to accommodate the Yonge Street Transitway, a landscaped median divider has been included to prevent illegal turns across the transitway and to mitigate the effect of a wider road cross-section by providing a refuge for pedestrians using the signal-controlled crosswalks.

Safety for transit riders will also be improved through the adoption of level boarding from the new station platforms and the placement of traffic barriers along the rear edge of the median station platforms.

The Canadian Urban Transit Association has reported that Canada's public transit systems have an outstanding safety record. The risk of fatality for a transit passenger is 20 times lower than it is for a car passenger making the same trip. At a time when motor vehicle crashes are the leading cause of death for young Canadians, transit offers a safer alternative.

Air quality is a major health concern for residents of urban areas. One out of every five Canadians has some form of respiratory problem, with small children and the elderly particularly at risk. By helping to reduce air pollution, the Yonge Street Transitway will also make a valuable contribution to public health.

3.3.4 Reduction of Private and Public Costs

A study commissioned by the Federal government shows it would cost Canadians 50% more to meet new travel demands by car than it would by public transit. The Yonge Street Transitway is a major step towards converting driving a car in York Region from a necessity to an option.

BRT increases rapid transit use, improves the performance of transit equipment and reduces operating costs. By accommodating increases in residential population and employment within defined urban areas around BRT stations, the Yonge Street Transitway takes development pressure off prime agricultural lands and environmentally sensitive areas. Land that would normally be paved for parking lots can be used for other purposes.

3.3.5 Enhancement of Quality of Life

The collaboration with the Thornhill Community Revitalization and Streetscaping Study is focusing on using the Yonge Street Transitway features to foster a more pedestrian-friendly environment that will reunite the communities on either side of Yonge Street. Significant tree-planting is planned for station precincts and opportunities will be provided for recognition of the community heritage and the display of public art in these spaces.

The Region's planners have developed integrated road and Transitway cross-sections with a focus on "greening of the corridor" to reinforce the environmental benefits of transit improvements. This will be manifested by extensive plantings of columnar trees and evergreen shrubs in the required Transitway median divider as well as along sidewalks to enhance the public space as well as reduce dispersion of particulates from emissions. The use of solar energy for low wattage applications such as station lighting, fare collection equipment and passenger information signage will further contribute to the visual enhancement of the area.

Quality of life is one of the top factors considered by companies when they are deciding where to locate. Continued job growth depends on the efficient movement of people and goods, reduced congestion and a healthy environment.

The risk of fatality for a passenger on public transit is 20 times lower than it is for a car passenger making the same trip. At a time when motor vehicle crashes are the leading cause of death and injury among young Canadians, transit offers a safer alternative.



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3.4 PUBLIC OUTREACH

To facilitate accessibility, BRT vehicles will be low-floor and all stations will be designed for full access. Public transit allows people with disabilities to retain independence by enabling them to get to work, school and other appointments.

Regional Council has been encouraged by the public support for enhanced transit services. A comprehensive public consultation program has been pursued during preparation of the Environmental Assessment Terms of Reference for the Yonge Street Transitway. The public endorsed the need and justification for the introduction of rapid transit within this corridor as quickly as possible to address the issue of congested roadways and facilitate sustainable development.

Representatives of key interest groups, community associations, business areas and heritage groups have been contacted as part of the EA process.

As the Project is implemented, specific public outreach initiatives will include:

- A storefront project office established within the study area and staffed with a Community Liaison Officer during construction
- Workshop sessions and correspondence with stakeholder groups
- Region updates to the YRTP website.

Transit marketing surveys, carried out regularly to gauge the general performance of York Region Transit, will be expanded in scope to include specific measurement of the performance of major new service elements such as the Yonge Street Transitway.

3.5 CAPACITY TO PARTICIPATE IN THE NATIONAL INFORMATION NETWORK

Information sharing and idea exchange is one of the key benefits of programs such as the Urban Transportation Showcase. The Project Office will participate fully in both developing the scope of the information network and providing relevant content. The communications plan for the full YRTP program includes making regular presentations to community and professional organizations at conferences and meetings. The preparation for these sessions and the related feedback is extremely useful.

An allocation for resources to support these efforts has been included as part of the budgeting process to:

- Assist in setting up the network by providing advice on activities, content, structure, reporting requirements and reporting formats
- Participate in workshops, seminars, presentations, focus groups, internet forums and discussion groups
- Contribute to the knowledge base through the preparation of newsletter articles, reports, summaries, presentation materials, website information and documentation of the showcase
- Develop an information bank of resource materials to enable the effective sharing of information with other Canadian municipalities.

3.6 EA QUESTIONNAIRE

Consultation with the Transport Canada Environmental Assessment Advisor has taken place. The Environmental Assessment questionnaire has been completed and is appended to this document in Annex C.

Resources will be made available to enable active participation by the Project Office in the national information network with a library of print and multimedia materials.