



TORONTO STAFF REPORT

August 31, 2004

To: Planning and Transportation Committee
Works Committee
Toronto Transit Commission

From: Commissioner of Urban Development Services
Acting Commissioner of Works and Emergency Services
Chief General Manager, Toronto Transit Commission
President, Toronto Parking Authority

Subject: St. Clair Avenue West Transit Improvements Environmental Assessment:
Yonge Street to Gunns Road (just west of Keele Street)
(St. Paul's, Davenport, York South-Weston)

Purpose:

To provide the results of the St. Clair Avenue West Transit Improvements Class Environmental Assessment (EA) study, request approval of the Preferred Design Concept, and direct staff to continue with the Environmental Assessment approvals process.

Financial Implications and Impact Statement:

A total of \$47.928 million gross / \$47.724 million debt will be required to fund these projects in 2005, comprised of \$32.528 million gross / \$32.324 million debt previously approved and \$15.4 million gross/debt to be requested through the 2005-2009 Capital Program Budget Submission. These projects entail:

1. \$25 million gross/debt budgeted by TTC for track replacement (previously approved in 2004-2008 Capital program)
2. \$7 million gross/debt budgeted by TTC for platforms, shelters, intersection improvements, public art, urban design and property acquisition. (previously approved in 2004-2008 TTC Capital program)
3. \$13 million gross/debt budgeted by TTC for additional related civil works and streetscaping (To be requested through 2005-2009 Capital Program Budget Submission)
4. A number of City divisions have work programmes and budgets for projects on St. Clair Avenue West that will be brought forward to coincide with construction of the project:
 - (i) The WES Transportation Services State of Good Repair works for the pavement and sidewalk on St. Clair Avenue West will be advanced as necessary to coincide with

the TTC track reconstruction work. A total of \$2.4 million gross/debt is estimated for both the pavement and sidewalk rehabilitation work and will be requested in the 2005-2009 Transportation Capital Works Budget Submission.

- (ii) The City's traffic signal LED replacement program, which is approved by City Council, will be advanced to replace the lenses/lamps in the signal heads with LED modules along St. Clair Avenue West as required during construction: the total estimated cost for this work is \$120,000 gross/debt.
 - (iii) The City, through its BIA capital cost program, has previously approved funding in the amount of \$408,000 gross / \$204,000 debt for streetscape improvement projects in the five BIA's along this section of St. Clair Avenue West. These endeavors will provide opportunities for construction efficiencies if the BIA streetscape improvement work is coordinated with TTC/City construction.
5. In addition, new capital requests will be submitted with City programs and/or ABC's in 2006, currently estimated at \$8.0 million. Based on the current conceptual design, \$2.5 million will be required for engineering services; \$2.0 million for Parks improvements/tree replacement; \$2.0 million for street-lighting; \$1.0 million for traffic signal equipment; and \$0.5 million for urban design services.

The Chief Financial Officer and Treasurer has reviewed this report and concurs with the financial impact statement.

Recommendations:

It is recommended that:

- (1) The Preferred Design Concept identified through the St Clair Avenue West Transit Improvements Class Environmental Assessment study process, as described in this report be approved, the principal elements of which are:
 - (i) Two centre lanes reserved for exclusive use by streetcars (and emergency vehicles) protected by a raised, but mountable, trackbed;
 - (ii) During peak periods, two general purpose traffic lanes in each direction, located on either side of the streetcar tracks, providing sufficient capacity to accommodate all current peak period traffic volumes on St. Clair;
 - (iii) During off-peak periods and weekends, one general purpose traffic lane and one parking lane in each direction providing sufficient capacity to accommodate all current off-peak and weekend traffic volumes;
 - (iv) Left-turns lanes at signalized intersections to permit left-turn and U-turns on their own exclusive signal phases;
 - (v) On-street parking on both sides of the street during off-peak times on weekdays and at all times on weekends will be permitted in the majority of the curb lanes, and new off-street parking, resulting in a net increase in the parking supply along St. Clair Avenue West; and
 - (vi) Enhanced streetscape, urban design, streetcar shelters and platforms, public art and safety features in the overall design and implementation of the transit improvement project.

- (2) Authority be granted to the Commissioner of Urban Development Services to file the Draft Environmental Study Report (ESR) for the St. Clair Avenue West Transit Improvements Environmental Assessment with the City Clerk and to give notification of such filing in accordance with the requirements of the Municipal Class Environmental Assessment process;
- (3) Authority be granted to commence negotiations to acquire the property interests and initiate expropriations if required, to implement the Preferred Design Concept for the St. Clair Avenue West Transit Improvements Environmental Assessment;
- (4) A community design consultation group consisting of representatives of the St. Clair Avenue West business community, residents and other stakeholders be established to work with the project team to provide input during the detailed process;
- (5) Additional funding be provided in the 2005-2009 TTC and City capital budgets to undertake the enhanced streetscape, urban design, and public art elements associated with the finalized design concept;
- (6) The Commissioner of Urban Development Services develop a proposal to engage the local arts communities to provide input on the development of a public art program and themes for St. Clair Avenue West, and report back to Council by December 2004 for approval;
- (7) The Commissioner of Economic Development, Culture and Tourism, in consultation with the City's Urban Design section, the City's Tree Advocate and project design team, develop a detailed implementation plan for landscaping along St. Clair Avenue West, with particular attention to creating viable tree plantings and associate attractive tree-pit containers, where possible, and report back to Council upon completion of the detailed design;
- (8) That approval be granted in principle for the traffic bylaws required to implement this project as summarized in Appendix A; and
- (9) The appropriate City Officials be authorized and directed to take the necessary actions to give effect thereto.

Background:

The streetcar tracks on St. Clair Avenue West are in poor condition and must be replaced. The track and trackbed replacement, originally scheduled for 2004, was delayed to 2005 to allow the City and the Toronto Transit Commission (TTC) the opportunity to review possible enhancements to the streetcar line and roadway operations.

Consequently, City Council at its meeting of February 4, 2003 recommended that:

- (1) approval be given to undertake an environmental assessment regarding the establishment of an exclusive right-of-way for streetcars on St. Clair Avenue West, between Yonge Street and Gunns Road, and the extension of the 512 ST CLAIR streetcar route, in an exclusive right-of-way, from Gunns Road to Jane Street, with such work to be carried

out by consultants under the direction of the City of Toronto Transportation Services and TTC staff.

(Works Committee Report No. 1, Clause 1, February 4, 2003)

A consulting team led by Marshall Macklin Monaghan Limited was selected to assist in undertaking the study. The formal Notice of Study Initiation was issued in August 2003.

The terms of reference for the study recognized that the reconstruction of the streetcar tracks presented the opportunity to combine operational improvements in transit service with enhancements to the appearance of St. Clair Avenue West. In particular, the project could provide the stimulus to improve the attractiveness of St. Clair Avenue West as a place to live, work, and visit by providing higher-quality, reliable transit service, while incorporating new or improved urban design elements. Such elements include sidewalk improvements, transit stops/shelters, connections to public spaces and parks, and public art.

Comments:

1. Study Process

1.1 The Municipal Class EA Process

The EA study was undertaken in accordance with the Municipal Class Environmental Assessment (EA) process. The study is a collaborative effort, undertaken by a project team consisting of staff from various City of Toronto Departments, the Toronto Transit Commission (TTC), and Toronto Parking Authority (TPA). The consulting team led by Marshall Macklin Monaghan provided added technical expertise in the areas of transit planning/operations, traffic operations and engineering, economic assessment, pedestrian planning, urban design, and functional design.

The study addresses Phases 1 through 4 of the Municipal Class EA, Schedule C projects. The five phases of the Class EA process are described in detail in the attached Draft Environmental Study Report (ESR). The study process begins by first establishing the problem statement and definition, and the opportunities related to the project. Next, possible alternative solutions are identified and their impacts analyzed and evaluated. Finally, alternative design concepts for the preferred solution(s) are identified and their impacts analyzed and evaluated. Mitigation measures are developed to limit any negative effects of the preferred alternative.

Upon approval of the recommendations of this staff report by City Council, staff will complete the detailed Draft Environmental Study Report (ESR) and file the Draft ESR for a 30-day public review period. More details on the approvals process are described in Section 6 of this report - Next Steps in EA Approvals Process.

1.2 Public Consultation Process

Public involvement has been an integral and ongoing component of the study process for the St. Clair Avenue West Transit Improvements Class EA Study. The formal

requirements for public consultation, as prescribed by the Class EA process, were greatly exceeded. In response to concerns raised early in the study process, the public consultation component of the study was expanded to include a second round of public meetings during Phase 2 of the Study. The intent of this extra round of meetings was to provide the community with additional opportunity to comment on the evaluation of the alternative concepts. In addition, community workshops were also held during Phases 2 and 3 of the study, providing further community involvement and input into the study.

Table SR-1 lists the formal public meetings and workshops held. In addition to these formal meetings and workshops, many separate meetings with community groups, property owners, individuals, and other stakeholders were held throughout the study. A total of 39 such meetings were held including 18 after the final public meetings in June 2004.

Table SR-1: Formal Public Meetings and Workshops

Date	Location	Attendance	EA Requirement
<i>Phase 1 Public Meetings – Need and Justification</i>			
October 16 th 2003	J.J. Piccininni Community Recreation Centre	200	Yes
October 21 st 2003	Brown Community Centre	100	Yes
<i>Phase 2a Community Workshop #1 – Evaluation Method, Criteria and Alternatives</i>			
January 26 th , 2004	Timothy Eaton Memorial Church	50	No
<i>Phase 2a Public Meetings – Evaluation Method, Criteria and Alternatives</i>			
February 17 th , 2004	Holy Rosary Parish Centre	150	No
February 19 th , 2004	J.J. Piccininni Community Recreation Centre	250	No
<i>Phase 2b Community Workshop #2 – Evaluation of Alternatives</i>			
March 30, 2004,	Holy Rosary Parish Centre	47	No
<i>Phase 2b Public Meetings – Evaluation of Alternatives</i>			
April 13 th , 2004	Holy Rosary Parish Centre	250	Yes
April 15 th 004	J.J. Piccininni Community Recreation Centre	350	Yes
<i>Phase 3 Community Workshop #3 – Review of Short-listed Alternatives</i>			
June 12 th , 2004	Timothy Eaton Memorial Church	12	No
June 14 th , 2004	Timothy Eaton Memorial Church	33	No
<i>Phase 3 Public Meetings – Evaluation of Design Concepts and Preferred Alternative</i>			
June 21 st , 2004	Timothy Eaton Memorial Church	150	Yes
June 23 rd , 2004	J.J. Piccininni Community Recreation Centre	+350	Yes

In addition, the project team completed three major community surveys providing valuable information on the travel patterns of residents and the transportation needs of business owners/tenants and customers along St. Clair Avenue West.

During Phase 5 of the study, after approvals, a detailed design for the Preferred Design Concept and construction drawings will be completed. Community input will again be sought here as part of the project's on-going commitment to public consultation.

2. Environmental Assessment Findings:

2.1 Existing Conditions

The St. Clair Avenue West corridor is made up of a number of distinct communities that comprise a mix of employment, residential, and commercial uses.

St. Clair Avenue West is a key mid-town east-west transportation route. In addition to its role in serving traffic, it is important in terms of goods movement, deliveries and loading for local businesses, parking, pedestrian and cycling activity.

In the east, between Yonge Street and Avenue Road, high-rise office and residential uses dominate, making this the densest sector of the study area. From Avenue Road to just east of Bathurst Street, a transition in residential uses and higher density can be found. There is a mix of older residential condominiums, apartments and houses, and institutions such as schools and churches.

The section from Bathurst Street to Oakwood Avenue is a diverse commercial/residential "main street" area with many restaurants. Some auto-oriented businesses exist in this area, such as auto repair businesses, a gas station, and a fast food restaurant. Between Oakwood Avenue and Lansdowne Avenue, a uniform street front of small businesses and restaurants continue this "main-street" environment. The section from Lansdowne Avenue to Old Weston Road is more auto-oriented, with strip retail uses that have small parking lots. From Old Weston Road to Gunns Road, the land uses are more industrial with some newly-developed "big box" commercial sites. There are new residential developments in this area on the north side of St. Clair Avenue West.

Although St. Clair Avenue West generally has a uniform right-of-way width of 30 metres, the pavement width along the street varies. Between Spadina Road and Yonge Street, St. Clair Avenue West generally operates as three lanes in each direction, with dedicated left-turn lanes provided on the streetcar tracks at certain intersections. Between Caledonia Road and Vaughan Road, St. Clair Avenue West operates as three lanes in each direction, with parking provided at all times on the north side of the street and during off-peak periods only on the south side of the street. West of Caledonia Road, St. Clair Avenue West is narrower, and operates as two lanes of traffic in each direction, with parking provided during off-peak periods only. In areas where the pavement width is wider, the corresponding sidewalk widths are generally narrower and vice versa.

2.2 The Need for St. Clair Avenue West Transit Improvements

The new Toronto Official Plan designates St. Clair Avenue West as a surface transit priority route and potential higher order transit link. It is also identified among the "Avenues" targeted for future reurbanization and growth in the City.

The streetcar tracks on St. Clair Avenue West are at the end of their usable service life and must be replaced. The track reconstruction entails the complete excavation and rebuilding of the tracks and trackbed.

In 2003, the 512 St. Clair streetcar service carried about 32,000 passengers per weekday and approximately 26,000 passengers per weekend. On average, about 18,000 passenger boardings occurred during the morning and afternoon peak periods. At busy times, the 512 St. Clair streetcar carries about half of all people travelling on St. Clair Avenue. The 512 St. Clair service is fourth among streetcar routes in terms of passenger trips per vehicle hour, an important measure of productivity.

Many of the key intersections along St. Clair Avenue West are at or approaching their operating capacity during morning and afternoon peak periods as shown in Table SR-2 (attached).

Existing levels of service (represented by volume to capacity ratios as is standard practise), shown in Table SR-2, indicate the conditions during both morning and afternoon peak periods along St. Clair Avenue West today. The analysis reflects a review of traffic count data over the last three years to ensure that the traffic flows represent a typical pattern at these intersections. A detailed assessment of all signalized intersections on St. Clair Avenue West study is included in the Draft ESR. Even small increases in travel growth will increase congestion and interference with streetcar operations. Trends across the GTA and within the City show that traffic congestion is not only increasing but is also extending over longer periods of time. Existing travel and demographic data show that the St. Clair Avenue West study area is fairly typical of the 'core' area of the City in that 29% of households do not own an automobile, with some of these households choosing not to own a vehicle. There is also evidence from the 2001 Transportation for Tomorrow Survey that more residents would choose transit for their travel if the service were more reliable or predictable.

The streetcar service experiences significant interference from other vehicles limiting its ability to provide reliable, "on-time" service. In most months, other than the summertime when traffic is lighter, the line experiences over 100 delays per month, with many customers experiencing delays of 15 minutes or more and, in the worst cases, delays of over an hour. These delays, or the operational attempts to respond to delays on the line, result in the practice of "short-turning", whereby a streetcar is required to alter its routing, away from its original destination, to avoid an obstruction or to restore service which has already been disrupted. This means that customers on the "short-turned" streetcar will not be able to get to where they were headed and, instead, must get off the streetcar and wait for another one which will be travelling to the end of the line.

Short-turning is a major source of dissatisfaction and complaints among transit customers, and this problem is prevalent on the 512 St.Clair streetcar line. For example, in 2003, 12 per cent of all morning peak period trips had to be short-turned, 17 per cent of mid-day trips were short-turned, and 19 per cent of afternoon peak period trips were short-turned. This means that, under current conditions, customers have up to a 1-in-5 chance that they will be off-loaded from a streetcar and forced to wait for another streetcar to complete their trip. Another significant source of dissatisfaction among transit riders is the unpredictability of travel times owing to streetcars getting stuck in traffic. Again, looking at 2003, for the "middle" section of the route, between Spadina Road and Lansdowne Avenue, people making this same trip over this section of the route could find their travel time varying anywhere from 11 minutes to 33 minutes, depending on the prevailing traffic conditions. This type of unpredictability, where people do not know how long it will take to make their trips on any given day, drives people away from using transit and causes them to look for alternative choices such as driving a car.

As noted above, the reconstruction of the streetcar tracks presents the opportunity to enhance the appearance of, and to beautify St. Clair Avenue West. The need for urban design improvements to St. Clair Avenue West has been identified by the community, including residents, businesses, shoppers, and other stakeholders. As a result, a number of community-based revitalization plans for St. Clair Avenue West are being pursued.

In the future, peak period travel demand along St. Clair Avenue West and parallel roads are forecast to increase by approximately 14% by 2021 (6,800 additional peak period trips). On St. Clair Avenue West itself, the growth in travel is expected to be 9-10% in the peak direction and 17-19% in the off-peak direction. This rate of trip growth along the St. Clair Avenue West corridor cannot be accommodated by private vehicles. The City's Official Plan shows a network of surface transit priority services that can be developed to provide high quality alternatives to the private automobile, which combined, will provide the means to reduce dependence on the automobile travel for at least some trip-making.

The Problem Statement, which was developed through consultation with the community, summarizes the above "need" for the study as follows:

"The St. Clair streetcar route carries about half of all trips made on most of St. Clair Avenue West, at various times of the day. The quality, speed, and reliability of this transit service are degraded, at various times of the day and week, by recurring obstruction and delay caused by other vehicular traffic. These detrimental effects of traffic on the streetcar service are expected to worsen over time, because traffic volumes and congestion will increase due to forecast increases in population and employment in and around the City over the next 20-30 years.

Toronto's Official Plan aims to make more effective use of the City's existing road capacity and to reduce congestion, pollution and energy consumption by encouraging more people to travel by transit. This requires enhancing the attractiveness of bus and streetcar services through improving their frequency, speed, reliability and comfort. The purpose of this study is to identify how to bring about such improvements to streetcar service on St. Clair Avenue West in a manner that recognizes the needs of other road users, reflects the revitalization objectives of the communities along St. Clair, contributes to the City's community-building objectives, respects the policies of the Plan, and will be sustainable under future conditions."

2.3 Identification and Evaluation of Alternatives

As prescribed by the Municipal Class EA process, a comprehensive assessment methodology was developed early in the study to evaluate the alternatives to the undertaking. The methodology included defining a comprehensive range of evaluation categories, criteria and measures, through an ongoing process which involved continuous feedback from the community and other stakeholders.

Every alternative was evaluated against four main categories of criteria: Transportation, Business and Community, Natural Environment, and Costs. A comprehensive list of criteria and measures used in assessing the impacts of each alternative and their relative importance, or "weighting", was developed in consultation with the St. Clair West community and stakeholders. Based on public input, an overall category listing and an averaged weighting of categories was determined. These criteria were used to evaluate the alternatives.

The assessment of alternatives was completed during Phases 2 and 3 of the study process:

Phase 2 – Identification and evaluation of alternative solutions (planning alternatives)

Phase 3 – Identification and evaluation of alternative design concepts

Nine planning alternatives were identified and evaluated during Phase 2. These are described below. From these, Alternative 6 and Alternative 9, which included components of Alternative 2, 3 and 6 were carried forward for development of design concepts (Phase 3).

A description of the nine (9) planning alternatives and a summary of their evaluation are provided below:

Alternative 1 – Do Nothing:

This alternative involves reconstructing the streetcar tracks to current standards and maintaining the current road cross-section. Passenger platforms would be reconstructed to current standards with some being widened where possible. This alternative was not carried forward to Phase 3 because the assessment concluded that the reliability of transit service and the quality of transit would remain the same initially, then decrease in the future, due to increasing interference from traffic and collisions. Collisions and risk of collisions would be expected to remain the same or increase over time, as would safety for pedestrians and cyclists. Passenger comfort would also decrease as trip demand grows and streetcars are impeded by traffic. More streetcars could be added to the line to address increased traffic congestion, however, they would operate at a declining quality of service, speed and reliability, contrary to the objectives and needs of the community.

Alternative 2 – Minor Transportation Improvements:

This alternative involves minor changes to the roadway or to traffic operations elements at specific locations. Examples include traffic signal timing improvements and additional exclusive left-turn/right-turn lanes and/or turn restrictions. The assessment concluded that some minor benefits could be provided relative to added costs, however they would be low, because the transportation service benefits would be limited, while effects on community and business and natural environment criteria would be neutral or marginally negative. On its own, this alternative would not provide sufficient improvements to transit services but could be used in combination with other improvements. This alternative was carried forward for further analysis in combination with other alternatives.

Alternative 3 – Transit Priority Improvements:

This alternative includes special traffic signals for transit vehicles only and road design changes to give transit vehicles priority over other vehicles. This could include things like reserved lanes for streetcars at intersections only, to bypass other vehicles. The assessment concluded that some minor benefits could be provided relative to added costs, however they would be low, because the transit service would be only marginally more attractive while it would have little to no effect on traffic operations, and community and business objectives. This alternative was carried forward for further analysis in combination with other alternatives.

Alternative 4 – Transportation System Strategies:

Examples of this alternative include travel demand management measures such as pricing strategies for parking, employer-paid transit passes, transportation system management such as improved travel information message signs, and lanes reserved for use by high occupancy vehicles (HOV). This alternative was not carried forward to Phase 3 because the assessment concluded that travel demand management measures would not

adequately address the travel needs on St. Clair Avenue West itself and could only reasonably be effective as part of a City-wide strategy to reduce dependence on the automobile.

Alternative 5 – Major Transit Improvements on other East-West Streets:

This alternative includes improvements on other parallel routes such as Eglinton Avenue, Rogers Road, Davenport Road, or Dupont Street by using signal priority, queue jump lanes, transit service level improvements and lanes reserved for use by high occupancy vehicles. This alternative was not carried forward to Phase 3 because the assessment concluded it would not have any significant direct benefits for travellers in the St. Clair corridor and did not adequately address the major objectives for transportation service, including transit service reliability, and community and business.

Alternative 6 – Exclusive Transit Lanes on St. Clair Avenue West:

This alternative includes exclusive lanes for transit use on all or a portion of St. Clair Avenue West. This could be accomplished with signs and pavement markings, or with some form of physical separation such as curbs, landscaped strips, or textured pavement. A number of design options would be considered for this alternative. This alternative was carried forward to Phase 3 because the assessment concluded that this alternative provided the highest net benefits, particularly with regard to the categories of transportation service, community and business, and natural environment.

Alternative 7 – Change Transit Technology

This alternative includes replacing the existing streetcars with other types of transit vehicles. Options would include new types of buses such as hydrogen fuel cell or hybrid buses, operating in mixed traffic or in High Occupancy Vehicle lanes; or supplementing the current streetcar vehicles with higher-capacity articulated streetcars. Replacement of streetcar services with buses operating in High Occupancy Vehicle lanes was evaluated in some detail as the only viable alternative within this group of alternatives. This option was not carried forward for a number of reasons including parking interference with buses, transit service capacity (buses could not carry sufficient passenger volumes to satisfy future demands or attract new riders), negative effects regarding air quality, noise and traffic congestion, and the fact that converting the streetcar line would not be, overall, cost-effective because of the need to buy new buses for the line and to construct new garage space in which to house them.

Alternative 8 – Road Widening: St. Clair Avenue West or Parallel Roads:

This alternative could increase capacity for private vehicles or include additional lanes for use by high-occupancy vehicles only. Widening might occur on one or both sides of the street, depending on location. This alternative was not carried forward to Phase 3 because the assessment concluded the impacts would be significant to existing development, and it would not cost-effectively address the needs along St. Clair Avenue

West, especially in terms of the key transportation, land use, urban design, and business and community criteria

Alternative 9 – Combination of Some of the Above Options:

This alternative could potentially consist of elements of all the above alternatives to reflect the opportunities and constraints of the different road sections and distinct areas along St. Clair Avenue West. The assessment concluded that some combination of Alternatives 2, 3, and 6 should be considered for further assessment during Phase 3.

2.4 Development & Evaluation of Design Concepts

Two planning alternatives were carried forward to the conceptual design stage based on the results of the Phase 2 evaluation, which included input received by the various community groups, stakeholders, and the general public. The short-listed alternatives were identified as:

Alternative 6: Streetcars in exclusive transit lanes on St. Clair Avenue West

Alternative 9: Combination alternative including:

Alternative 2: Minor Transportation Improvements

Alternative 3: Transit Priority Improvements

Alternative 6: Exclusive Transit Lanes (in short sections)

A number of common design objectives were identified when developing alternative design concepts. These included:

- Maintain existing vehicular capacity on St. Clair Avenue West;
- Provide wider streetcar platforms (Increase platform width from 1.5 metres to up to 2.4 metres, depending on location);
- Maintain existing sidewalk widths as much as possible.

The study team carried forward two alternative design concepts, one for Alternative 6 and one for Alternative 9. The preliminary concepts were presented to the public community at a community workshop and public open house meetings in the Spring of 2004.

Alternative 6: Design Concept for Exclusive Transit Lanes

The design concept carried forward for Alternative 6 features (cross-section illustrated in Figure SR-1):

- Two centre lanes of St Clair Avenue West (between Yonge Street and Gunns Road) are reserved for the exclusive use of streetcars and emergency vehicles by means of a raised (15 centimetres/six inches), but mountable, trackbed that would allow unauthorized vehicles to access these lanes, if required;
- Two general purpose traffic lanes in each direction during peak periods at most locations;

- Left and/or U-turns at signalized intersections with exclusive signal phases;
- Left-turns introduced at some major intersections where they are currently prohibited (e.g. Keele Street, Spadina Road, Russell Hill Road, Bathurst Street, Avenue Road, Dufferin Street);
- Pedestrian and cycling access across the streetcar tracks at all locations;
- On-street parking would be permitted on both sides of the street during weekday off-peak periods and on weekends.

Alternative 9: Design Concept with Centre Left-Turn Lane and Streetcars in Through Lanes

The design concept carried forward for Alternative 9 (cross-section illustrated in Figure SR-1), features:

- Two through lanes for general traffic, including streetcars, in each direction during peak periods;
- A permanent centre two-way left-turn lane between the streetcar tracks;
- Left turns permitted at most intersections;
- On-street parking would be permitted on both sides of the street during weekday off-peak periods and weekends.

BIA Proposal: Streetcar in Mixed Traffic with Sidewalk Loading

A third alternative proposed by one of the local BIAs during the evaluation of planning alternatives, was also carried forward for analysis regarding its effects on traffic and transit operations. This alternative was promoted as a better option for pedestrians and businesses. Its features included:

- Two through lanes for general traffic, including streetcars in the centre lanes
- Near-side stops with passenger loading from the sidewalk
- No platforms
- No left turn lanes at intersections
- Parking in lay-by areas
- Widened sidewalks at intersections for passengers and other pedestrian or business-related activities.

2.5 Traffic Impacts and Modelling of Design Concepts

A significant issue in the development and comparison of the design concepts was the implications for traffic operations along and around St. Clair Avenue West. In order to ensure that traffic flows and operations were assessed in detail, experts in the area of traffic microsimulation worked with the study team to develop a state-of-the-art model of the St. Clair Avenue West study area, that reflected all of the details of traffic movement on St. Clair Avenue West and roads in surrounding neighbourhoods.

The model is able to measure changes in travel speeds, travel times, delays, traffic diversion, and congestion based on different intersection designs, changes in access, parking, new signals, to name just a few. Some highlights of the model results are shown in Table SR-3 and Table SR-4.

Table SR-3: Microsimulation Comparisons of Auto and Transit Travel Times and Speeds (PM Peak Hour)

Alternative/Measure	Existing	Alt. 6	Alt. 9	BIA Proposal
Average auto travel time for average vehicle (minutes)	6.3	6.2	6.3	7.3
Average auto speed (km/h)	25	26	25	22
Average streetcar travel time westbound * (minutes)	28	23	27	27
Average streetcar travel time eastbound ** (minutes)	27	24	26	26
# streetcars making complete trips	17	20	17	17

* from Avoca Avenue to Gunns Road

** from Gunns Road to Avoca Avenue

Table SR-4: Microsimulation Comparisons of Sidestreet Travel Changes (PM Peak Hour – Vehicle-kilometres travelled)

North/South side streets between:	Existing	Alt. 6	Alt. 9	BIA Proposal
Old Weston-Dufferin North side	595	545	560	760
Old Weston-Dufferin South side	635	565	635	810
Dufferin to Bathurst North side	700	700	715	810
Dufferin to Bathurst South side	750	650	720	770
Bathurst to Avoca North side	720	600	705	735
Bathurst to Avoca South side	495	535	485	615
East/West Side streets between:	Existing	Alt. 6	Alt. 9	BIA Proposal
Old Weston-Dufferin North side	250	250	230	320
Old Weston-Dufferin South side	245	220	250	285
Dufferin to Bathurst South side	885	815	850	850
Bathurst to Avoca North side	1045	1060	1130	1560
Bathurst to Spadina South side	720	700	760	835

A comparison of levels of service for existing conditions and traffic flows and intersection configurations for Alternative 6 is shown in Table SR-5. The analysis shows that the projected traffic flows under Alternative 6 result in minor variances in level of service from existing conditions and are within an acceptable range for an urban arterial during peak periods.

The results of the micro-simulation model provide a number of useful insights into the traffic impacts of the three transit alternatives. Table SR-3 shows that there is very little impact on average auto travel times and speeds along St. Clair Avenue West during the

afternoon peak-hour under the conditions created by Alternatives 6 and 9, whereas the BIA Proposal impacts both these measures in a noticeably negative manner. All three alternatives improve streetcar travel times in both directions with Alternative 6 yielding the most significant gains, particularly for westbound streetcars.

When looking at traffic impacts on sidestreets, the micro-simulation model can be used to calculate changes in total vehicle-kilometres traveled (VKT) during the afternoon peak-hour associated with each of the three transit alternatives. VKT figures provide a measure of the amount and intensity of travel. These figures are shown in Table SR-4 for both the north/south and the east/west streets along defined sections St. Clair Avenue West and can be compared to the existing or baseline conditions. Alternative 6 reduces the total VKT figures on both the north/south and east/west streets and, consequently, has generally beneficial impacts in terms of reducing traffic infiltration. Alternative 9 marginally reduces the total VKT figures on the north/south streets and marginally increases them on the east/west streets. In contrast, the BIA Proposal significantly increases total VKT on all the adjacent streets. These increases in VKT are attributable to the negative impacts that the BIA Proposal has on traffic along St. Clair Avenue West which, as a result, is encouraged to use or infiltrate the sidestreets.

The most important conclusions from these results are:

- Alternative 6 does not result in auto speed or travel times changing compared to existing conditions;
- Streetcars benefit under Alternative 6 in several ways including reductions in round trip times of 8 minutes but more importantly increasing the schedule adherence to allow an additional 3 streetcars to make a round trip each hour;
- Supplemental data from the model regarding schedule adherence shows that travel time variability improves by 30% for Alternative 6 while variability worsens by 10% for Alternative 9;
- Alternative 6 does not result in increases in neighbourhood traffic, compared to the existing situation, as show in Table SR-3. Both north-south and east-west side streets show no increases in all but two areas which increase by 2% and 8%; and
- The BIA Proposal shows a marked decrease in auto travel speeds and a resulting increase in travel on side-streets.

2.5 Evaluation of Design Concepts

The evaluation of the design concepts presented at the final public meetings resulted in Alternative 6 being identified as the Preferred Design Concept. Subsequent to the final public meetings, the study team members attended 18 meetings with different stakeholder groups. These meetings brought forward suggestions for modifications and changes to the Preferred Design Concept that were considered and, where warranted, incorporated into the design concept by the project team. A summary of the final evaluation of the two concepts is shown in Table SR-6 (attached). The detailed evaluation, based on the 36 criteria and 72 measures, is included in the Draft Environmental Study Report (ESR).

The final evaluation of the two design concepts was completed in August 2004 and resulted in the following conclusions regarding the technically preferred alternative (exclusive lanes for transit):

- The quality of the transit service offered on St. Clair Avenue West would improve significantly, and this improvement would be sustainable in the long term, even if traffic volumes increase and congestion worsens;
- The plan allows retention of 93 per cent of all current on-street parking and, with the addition of more off-street parking, will achieve an overall increase in parking;
- All current traffic volumes on St. Clair Avenue West can continue to be accommodated and operate at an acceptable level of service (as shown in Table SR-5);
- The performance of some of today's worst intersections on St. Clair Avenue West would be improved, so that queuing and congestion would be reduced for all road users;
- Emergency vehicles (Police, Fire, EMS) would have a new opportunity to improve their response times and performance because they would be able to travel, at any time, in the unrestricted lanes reserved for only them and transit;
- The plan allows and encourages all current street activities and pedestrian movements so as to retain the community's sense of connectedness;
- The pedestrian environment, streetscape, and public spaces would be improved;
- There would be negligible effects on local residents' access to their own residential streets, and on the amount of traffic using local streets;
- There would be negligible effects on access to businesses, and on loading and deliveries; and,
- More pedestrians and shoppers would be attracted to the street by the improved quality of transportation provided.

3. Responding to Public Concerns: Operational Issues

From the outset of the project, the project team has met with various stakeholder groups and individuals to discuss a range of issues and concerns about the study, the process, and development of a plan for St. Clair Avenue West. All comments and issues raised have been documented in a public consultation document that is included in the draft ESR. Outlined below are some of the major concerns identified by the community and how these issues and concerns have been addressed by the project team:

Concern: Creating a Physical Barrier along St. Clair West

Response: Concerns were raised early in the study that a barrier would be created along the centre of St. Clair Avenue West which would impede pedestrian and vehicle movement and visually divide the street. The study team was very conscious of the concern about creating either a visual or physical separation along the street. As a result, the preferred design options for the streetcar lanes **do not** include a barrier, as illustrated in Figures SR-2a,

SR-2b, and SR-2c (attached) for different areas along St. Clair Avenue West. The project team has developed a design solution for the streetcar lanes that promotes street activity and maintains connectivity along and across the street. The design would make it easier and safer for pedestrians, shoppers, and cyclists to cross the street, and would bring a much-needed differentiation of appearance to an otherwise wide and unattractive paved roadway.

Concern: Retention of On-Street Parking

Response: The business community raised significant concerns about the lack of available parking and the potential of losing some of the existing on-street parking as a result of the project. The criteria used to evaluate alternatives included measures to identify the impacts of parking losses on the business community.

Through a process of continual and intensive refinement, the study team determined that, with the exclusive streetcar lanes concept for St. Clair Avenue West, almost 93% (571 of 611 spaces) of existing on-street parking spaces can be retained. The spaces which would be lost are distributed across several areas, the most significant of which is the St. Clair West BIA (including the proposed BIA expansion area between Glenholme Avenue and Winona Drive).

The City and the TTC are working with the TPA to find locations to provide additional off-street parking in deficient areas prior to the project construction. Prior to the transit study, the TPA had identified existing deficiencies along St. Clair Avenue West in three locations; Vaughan Road area, Hillcrest Village and the vicinity of St. Clair Avenue West and Oakwood Avenue (St. Clair West BIA). The TPA has protected funding to address these shortages in its Council approved capital program. The TPA is presently discussing the potential establishment of a combined parking garage/public space at Northcliffe Blvd. with EDCT to satisfy a portion of these existing deficiencies and potentially relieve shortages arising from the transit initiative. Any additional parking deficiencies arising out of the reduction in on-street parking would need to be identified and funded outside of the TPA's current Capital Funding envelope. Under the current revenue sharing arrangement between the City and the TPA there are no funds available for these projects. Up to three additional sites may be required including Hillcrest Village, St. Clair West BIA and Corso Italia which could have a capital cost of up to \$2,000,000 per location.

Also, the City and the TPA have identified a number of locations where permanent on-street parking on side-streets could be provided to supplement parking on St. Clair Avenue West.

Concern: Economic Effects of Exclusive Transit Lanes

Response: Throughout the study, the local business community expressed strong concerns about the inconvenience to automobile travel and reductions in on-street parking as result of the project. It should be noted that successful retail strips are not solely dependent on access to parking. Other factors such as street design, strong merchants' associations, and the economic climate all contribute. The project team researched the economic effects of similar new or improved transit lines on businesses through case studies across North America and consistently found that investments in rail streetcar/light rail transit have positive economic benefits to land values and retail activity.

In Toronto, Spadina Avenue is one example of recent exclusive streetcar lanes where 53 out of 62 businesses surveyed indicated that, although business was disrupted during construction, the end result was that the new design of the avenue either did not affect their businesses or improved them. Other indicators for Spadina Avenue, such as an increase of 280,000 sq.m. of retail floor space, significant increases in development, and expanding retail and commercial area support the fact that Spadina Avenue remains economically strong and vibrant after the introduction of the exclusive streetcar lanes.

Concern: Emergency Access to Neighbourhoods and St. Clair Avenue West

Response: The need for emergency services to access neighbourhoods along St. Clair Avenue West was identified early on in the study as a critical criterion for evaluating options and was fundamental in developing the preferred design concept.

The project team has been working intensively with Emergency Medical Services, Fire Services and Police Services representatives to develop a design that allows unimpeded access for emergency vehicles to, from, and along the streetcar lanes. Several concepts were developed along with design parameters that lead to the selection of the current concept. The exclusive streetcar lanes will provide emergency vehicles with unrestricted access to neighbourhoods on both sides of St. Clair Avenue West.

Because these vehicles would travel on lanes which would be free of general traffic, it is possible that their access and response times would improve. Toronto Police Services, Fire Services, and Emergency Medical Services have no objections to the current concept, subject to resolution of a small design element pertaining to the surface treatment of the space between the tracks. These City Divisions/Services are continuing to work with the project team to identify the best possible design.

Concern: Neighbourhood Traffic

Response: Community associations and other stakeholders identified a concern about possible traffic infiltration into adjacent neighbourhoods as a result of changes to traffic capacity along St. Clair Avenue West. The related issue of safety impacts on the side streets was also raised as a concern if traffic volumes were to increase.

The project team continually revised the design concept for the exclusive streetcar lanes to ensure that there would be enough capacity to accommodate all existing traffic volumes along St. Clair Avenue West. The proposed designs would bring improvements to some of the worst current "bottleneck" intersections. The results of the microsimulation modelling, shown in Tables SR-2 and SR-3 show improved transit services can be achieved with minimal impact on estimated traffic flows on side-streets.

In particular, the addition of exclusive left-turn lanes that would be available 24 hours a day, 7 days a week, instead of the current peak-period restrictions or total restrictions, would facilitate more efficient traffic movements at intersections. New left-turn lanes would be added at Avenue Road, Bathurst Street, Oakwood Avenue, Dufferin Street, Caledonia Road, Old Weston Road and Keele Street.

The project team consulted with Toronto District School Board and Toronto District Catholic School Board to ensure their understanding of the design concept and to invite them to participate in any future consultation. There would be some changes to local traffic patterns due to changes in left-turn access and this has been analysed in detail. Some local sidestreets would experience less traffic than they do today, while others would experience more. None would experience significant increases in traffic. Recommendations are being developed to implement measures to limit the effects of any traffic increases. In addition, a standard monitoring program would be used to evaluate changes in traffic patterns and address any problems that might arise.

Concern: Transit Service Benefits

Response: The project team received a number of comments about the transit service benefits of exclusive lanes, about possible better measures of transit service quality and about the need for exclusive lanes for the streetcar service. Other comments included suggestions for improving signal operations to help both transit and vehicle operations.

St. Clair Avenue West currently has transit signal priority implemented at the majority of traffic signals but continues to experience operational problems for both streetcars and vehicles.

The benefits of exclusive streetcar lanes would be much more reliable and regular service, a significant reduction in short-turning, much-reduced variability in travel times, significantly reduced waiting times for streetcar passengers, reduced trip times, and more efficient service. These benefits would be achieved because streetcar service would be protected from traffic, collisions, and any other delays and obstructions experienced by streetcars operating in general traffic.

Improving transit service on St. Clair Avenue West would not only provide much better service for existing passengers, but would also attract new riders to the streetcar line. Based on 2001 detailed travel survey data (GTA Transportation for Tomorrow Survey, 2001), there is a significant number of individuals who would choose to use more reliable and faster streetcar service such as that which would be achieved through the use of exclusive transit lanes. In the short-to-medium term, as many as 8000 new riders per day would be attracted to improved service on St. Clair Avenue West. In the long-term, 15,000-20,000 new riders per day could be attracted to the service as a result of the combined effects of the better quality and speed of service, growth in population and employment in the area, and higher transit usage across the City.

The Preferred Design Concept is not only of benefit to transit riders, but also for people who live, work and shop along St. Clair Avenue West, as a result of the many improvements proposed.

Concern: Sidewalk Widths and Pedestrian Impacts

Response: The generous sidewalks along St. Clair Avenue West are an important feature for both pedestrians and merchants, particularly west of Bathurst Street. The public commented on the need to retain the sidewalk widths for the street activity generated by the shops, cafes and restaurants along the corridor. The impact on sidewalk widths was an important component of the evaluation criteria against which all the design alternatives were tested.

In any exercise like this, there are trade-offs required in allocating the total space available among road users such as transit and general traffic, pedestrians, merchants, cyclists, and utilities such as hydro poles. Throughout the development of the design concepts, the project team sought to produce a design that would allow St. Clair Avenue West to operate effectively as a road for transit and traffic, while minimizing the need for sidewalk reductions and limiting increases in street crossing times for pedestrians.

The preferred design concept requires reducing the widths of sidewalks at several locations along St. Clair Avenue West. However, St. Clair Avenue West has unusually wide sidewalks in most locations – wider than most other arterial streets in Toronto – and, even with the required reductions, would still have sidewalks of 3 to 4 metres on both sides of the street, in most locations. At key intersections, widening of the pavement is required and, in most cases, property acquisition is being undertaken through conditions of approval for active developments. The project team is working with district planning staff to ensure that adequate property is provided for this purpose.

4. Beautification of St. Clair

Apart from the operational concerns described above, the study team recognized from the outset that the reconstruction of the streetcar tracks provides an excellent opportunity to help improve the appearance and attractiveness of St. Clair Avenue West. In this manner, the transit improvement project can bring together both the functional and aesthetic elements of in a mutually beneficial fashion.

The aesthetic or beautification elements of the project design include such features as enhanced sidewalks, transit shelters, platforms, street trees, new streetlighting, public art and improvements to major local landmarks such as the entrance to Earls Court Park. The preservation and rejuvenation of the unique character of the St. Clair Avenue West corridor is an important aspect of the project.

The project team has evaluated a range of elements that could be incorporated into the track reconstruction project including complementary connections with the surrounding neighbourhoods and green spaces. The urban design enhancements along St. Clair Avenue West that could be part of the project include:

4.1 Pedestrian Improvements

The combination of public transit and retail activity along St. Clair Avenue West requires special attention be paid to the pedestrian environment. There are a number of elements that would receive special treatments, including intersection crossings, transit platforms, and shelters, benches, street furniture, lighting, and streetscaping. Examples of these types of treatments are shown in Figure SR-3 (attached).

At signalized intersections, the pedestrian areas need to be well defined. This could be done in a variety of ways including coloured, textured pavement, interlocking brick, or painted patterns. Cross-walk paths would be textured for people with visual impairment, and audible traffic signals would be introduced as an additional aid. It is envisioned that the major signalized intersections would have a unique treatment for pedestrian areas. The minor signalized intersections may have a different type of treatment.

Another area of pedestrian improvement is to provide buffers along parking areas that are directly adjacent to sidewalks. These buffers could include planters, benches, bollards or some combination to produce a safer, more inviting pedestrian environment. An example of this type of treatment is shown in Figure SR-4 (attached).

The existing sidewalks along St. Clair Avenue West are mostly in good condition and are scheduled for partial replacement in some areas over the next several years. The preferred design concept requires that some sidewalks be modified to accommodate intersection changes. Therefore, there would be opportunities to provide sidewalk treatments in these areas. The treatment of sidewalks will be part of the detailed design phase of the project and will be the subject of community input.

4.2 Streetcar Platforms and Shelters

The current streetcar platforms and shelters are substandard and in poor condition. The public expressed numerous concerns about the safety of the platforms due to their narrow width, the lack of protection provided by the deteriorated railings and limited weather protection.

The reconstruction of intersections for the exclusive transit lanes would provide an opportunity to build new, improved, wider, more attractive platforms at all streetcar stop locations and to introduce substantial and attractive shelters and railings. New platforms would be made wide enough that they could accommodate wheelchairs and mobility aids so that, when the Toronto Transit Commission acquires accessible streetcars in the future, the St. Clair Avenue West line and its platforms will be compatible.

Part of the pedestrian improvements component that would be incorporated into the project would include improved definition of the pedestrian space at intersections to make access to the platforms safer.

A custom-designed shelter for the St. Clair streetcar could provide identity to the line as well as be a feature of the urban design strategy. A custom-designed shelter could also incorporate public art features that reflect the culture, heritage or other notable aspects of the corridor.

4.3 Key Locations

A number of "key locations" along St. Clair Avenue West have been identified for special streetscape, urban design and/or public art features, thereby adding to the character of the street. Five of the unique sites are:

- (a) Avenue Road intersection – this is a major intersection with two City parks located on the north side;
- (b) Tweedsmuir Avenue to Bathurst Street (area on top of the underground streetcar loop) has a large unused pavement surface which could be used to create a gateway to the "main street" retail area west of Bathurst Street as well as improving to connections between the north side and the green spaces on the

- south side;
- (c) Oakwood Avenue intersection – with the historical Oakwood Collegiate situated at the southwest corner, this intersection is a high-volume transit passenger and pedestrian location. Public art could be incorporated at this location recognizing the commemoration of Oakwood Collegiate’s 100th Anniversary in 2005;
 - (d) Lansdowne Loop alongside J.J. Piccininni Centre serves many uses including pedestrian access to Earls court Park but is not very attractive. The Loop could be redesigned to create a more visible, prominent and inviting access to Earls court Park; and,
 - (e) Gunns Road Loop – as the western-most origin and terminal for the streetcar line, this location could be improved to provide a much more inviting and interesting environment for transit passengers transferring to and from the streetcar line.

The Community would be invited to identify other key landmarks along St. Clair Avenue West which warrant special treatment.

4.4 Public Art

The project team is working with community groups, including local artists who have expressed an interest in contributing to the project, to integrate public art along St. Clair Avenue West. There is a strong arts community in the St. Clair Avenue West area that has spent its energies over the last several years on a major community arts project associated with the Wychwood Barns property. This group and others have met with the project team to discuss public art features for the project. The discussion to date has been focused on art themes and distinctive sites that reflect the heritage and values characteristic of St. Clair Avenue West. There is a desire from the arts community to contribute to the project as well as participate in future consultation.

There are a number of opportunities for public art along the streetcar line including:

- Integrated art at streetcar platforms
- Art at unique sites (discussed above)
- Discrete art at locations such as a potential public square at Northcliffe Boulevard
- Art integrated into street furniture or sidewalk designs.

As part of ongoing consultation with the community during the design phase, a community design consultation group will be established to work with the design team. Representatives of the arts community will be included in this group.

The project team will develop a proposal to engage the St. Clair Avenue West and local arts communities in order to provide input on the development of a public art program and themes for the St. Clair streetcar line, and report back to Council on the plan.

4.5 Connecting to Public Spaces and Parks

There are a number of public spaces along the length of the corridor with different treatments or levels of connectivity to St. Clair Avenue West. The public space/parks corridors include:

- Sir Winston Churchill Park (east of Spadina Road)
- Cedarvale Ravine (north of St. Michael's College)
- Wychwood Car Barns (south of St. Clair Avenue West on Wychwood Avenue)
- Earls court Park (west of Lansdowne Avenue)
- Joseph J. Piccininni Centre

As well, there are a number of smaller parkettes located along the corridor, providing much-needed public spaces in this busy area.

Improvements made as part of the transit project will complement revitalization/beautification plans for parts of the St. Clair Avenue West proposed by local BIAs and other interest groups in the community.

A recent Capital Improvement Plan was completed for the St. Clair West Revitalization Committee (SWRC) that included a number of suggestions for potential projects in the area between Keele Street and Gunns Road and Glenhome Avenue.

One of the potential projects is the creation of a partially underground parking lot, covered by a raised public square on the northwest corner of St. Clair Avenue West and Northcliffe Boulevard. The property at this corner is owned by the Toronto District Catholic School Board (TDCSB).

The TPA and City Parks are currently investigating the potential to develop this site for this dual purpose. The estimated cost to create a public square on this site, assuming the parking structure and roof are constructed by TPA, is \$1-1.5 million. City Parks has indicated that it will include this project in its budget for 2006, pending the outcome of discussions between TPA, TDCSB and City staff.

Another area identified as requiring special treatment is the Lansdowne streetcar loop immediately adjacent to the Joseph J. Piccininni Community Centre. The loop serves many uses including streetcar stop, bus stop, access to rear laneways and pedestrian access to the park. It is an unattractive and uninviting area. An urban design concept has been developed for this loop and is illustrated in Figure SR-5. This project could be funded through the City's civic improvement program, administered by the Urban Design section of the City Planning Division. The approximate cost for these improvements is \$500,000.

4.6 Street-tree Replacement/Additions

A conditions assessment of existing street trees along St. Clair Avenue West shows that most trees are in fair to good condition within the study corridor. The majority of street

trees are planted in pit pavers or in turf areas. Turf plantings are found within the sidewalk/ boulevard areas or in one of several parks or parkettes within the corridor, such as EarlsCourt Park and the parkettes abutting the Avenue Road/St. Clair Avenue West intersection. The Toronto Maintenance Management System is used by City of Toronto's Parks & Recreation Division to regularly update and verify the type, ownership, condition and status of all street trees. It also sets out schedules for replacement of damaged, dying or dead trees, usually during the following growing season. Urban Forestry staff from the Parks & Recreation Division will work closely with the project team during design and construction to ensure that current standards for tree plantings, including species, sizes, tree pits, and pit covers are applied. They will also assist in reviewing appropriate locations where additional tree plantings may occur, including locations suggested by the community and area BIAs, as appropriate.

The project design team will develop a detailed implementation plan for landscaping, with particular attention to street trees, in consultation with the City's Urban Design section and the City's Tree Advocate.

4.7 Streetlighting Improvements

An assessment of the existing streetlighting along St. Clair Avenue West indicates that the current state of the street lighting plant does not warrant any near-term changes. Lighting levels do not meet all of the City's standards, though any upgrades would have to be scheduled in the context of a City-wide Capital program to address lighting level deficiencies on arterial roads. However, the St. Clair Avenue West Transit Project may provide an opportunity to co-ordinate the required street lighting improvements. The potential to improve streetlighting along the corridor will be investigated in more detail during detailed design.

5. Commitments to Future Work

5.1 Continuing Public Consultation

Throughout the public consultation process, the public has made it clear that there are still important details that need to be brought to the community before a final design is completed. City and TTC staff have made a commitment to the public that the completion of this Environmental Assessment is not the end of the public consultation process for this project. The continuation of the public consultation process through the detailed design and construction phase will be important in order to bring forward the best design and implementation plan that reflects the public's priorities and feedback. The project team is recommending that a group consisting of community representatives, business interests and other stakeholders be formed and participate in this process.

Consultation among City departments, the TPA, and Toronto Hydro will be necessary throughout the design process.

5.2 Business Outreach Program

The TTC and City will work with the business community to develop, document and commit to a Business Outreach and Consultation Program.

This program will include elements such as:

- Scheduling construction by section of the street so as to avoid peak sales seasons;
- Maintaining vehicular access along St. Clair Avenue West in each direction (one lane will be kept operational);
- Advance notification of upcoming construction activity, so that business owners can schedule deliveries;
- Maintaining city services such as garbage pickup;
- Maintaining sidewalk access throughout the construction periods;
- Accelerating construction schedules by working 24 hours per day, seven days a week, as appropriate;
- Organizing set-up of materials storage at suitable sites along the corridor so as to minimize the period of disruption along St. Clair Avenue West;
- Maintaining a community liaison construction officer on-site, who will be committed to addressing business issues and other related community concerns;
- Encouraging construction staff and local residents to patronize local businesses;
- Developing a communication plan to ensure that the public is aware of the activities, location and schedule of construction including a website and contact number.

5.3 City-BIA Joint Projects

The City's BIA Office (within the Economic Development, Culture and Tourism Department) liaises with BIAs across the City to develop and undertake joint City-BIA funded projects through its Capital Improvement Program. This program is intended to improve the streetscape within the BIAs. There are five BIAs along St. Clair Avenue West:

- Wychwood BIA
- Hillcrest BIA
- St. Clair West BIA
- Corso Italia BIA
- St. Clair Gardens BIA

The City, through its BIA capital cost share program, has previously approved funding in the amount of \$ 408,000 gross/ \$ 204,000 net for streetscape improvement projects in the five BIA's along St. Clair Avenue West.

Reconstruction of the streetcar right of way may provide opportunities for construction efficiencies if the BIA streetscape improvement work is coordinated with the TTC construction.

How these streetscape improvements can be co-ordinated with the project construction and/or how the City could enhance the BIA's planned improvements with its own construction work will need to be worked out further with the BIAs through the detailed design process.

The Economic Development Division has also been working on an Employment Area Revitalization strategy with the St.Clair West Revitalization Committee (SWRC). A capital design strategy has been completed for the area along St.Clair Avenue from Glenholme Avenue on the east to the CPR/CNR tracks just west of Old Weston Road. The City/TTC's detailed design process for the project will incorporate, wherever possible, the priorities identified by SWRC.

The Economic Development Division will also include a request for funding in the 2005 capital budget to begin implementation of elements of the SWRC capital design strategy.

6. Next Steps in EA Approvals Process

If City Council approves the recommendations in this report, the Draft Environmental Study Report (ESR) will be filed on the public record for a minimum of 30 days according to the requirements of the Class EA process.

During this period, members of the public, interest groups and government agencies may request that a Part II Order be issued. A Part II Order, if granted by the Minister of Environment, elevates the status of the project from a Class EA Study to an Individual Environmental Assessment.

If a Part II Order request is received, the Ministry of the Environment must review the reasons for the request and initiate a 45-day staff review, followed by a 21-day Ministerial review period.

Should the project be "bumped-up" to an Individual EA, the project cannot proceed until the proponent completes an Individual Environmental Assessment Study and receives approval from the Minister. If a Part II Order is not granted or if no requests or objections are received during the 30-day filing period, the project is approved under the Environmental Assessment Act and may proceed to detailed design and construction.

Conclusions:

The need to replace the streetcar tracks on St. Clair Avenue West presents the City with the opportunity to reassess the functioning and design of this important corridor in terms of both local, community revitalization objectives and wider, city-building goals. Council recognized these prospects for positive change and, in February 2003, approved funding for the St. Clair Avenue West Transit Improvements Class Environmental Assessment (EA) study.

At the local level, there is a pressing need to upgrade the 512 St. Clair streetcar service and, at the same time, create a more pleasant and inviting pedestrian environment to strengthen and invigorate activities along the street.

The 512 St. Clair streetcar route is one of the most heavily used TTC services, carrying approximately half of all the trips made along St. Clair Avenue West. However, the streetcar service, which today runs in mixed traffic, is subject to considerable delays and disruptions imposed by the other traffic that uses the same road space. This results in unreliable streetcar service and, in particular, adds to the need to employ the frustrating practice of short-turning streetcars. In a typical afternoon rush hour, about one out of every five streetcars never makes it to its planned destination because they fall so far behind schedule. Traffic forecasts indicate that traffic volumes on St. Clair Avenue West can only be expected to increase, resulting in a further deterioration of streetcar service.

At a strategic level, the St. Clair streetcar project presents one of the first major opportunities to begin implementing the planning policies of the City's new Official Plan and other related city-building objectives such as Council's Term Priority to "make Toronto a clean and beautiful City". The three key objectives of the Official Plan are to protect neighbourhoods, manage growth and offer more sustainable transportation choices. The transit concept being proposed for St. Clair Avenue West promotes these objectives in a clear, thoughtful and demonstrable way.

The transportation planning policies of the Official Plan recognize that, in a mature city like Toronto, the emphasis has to be on using the available road space more efficiently by encouraging more people to travel by transit to reduce congestion, pollution and energy consumption. This requires enhancing the attractiveness of bus and streetcar services through improving their frequency, speed, reliability and comfort.

A key means of bringing about surface transit improvements is by giving greater priority to buses and streetcars on City roads. This has proven to be the only workable and sustainable approach in the world's major cities – London, New York, Hong Kong, Berlin, and Paris - and is the approach advocated in the recommendations of the EA study for St. Clair Avenue West.

Much hinges on the outcome of the EA study and, if adopted, it will help set the stage for the upcoming "Avenue Study" for St. Clair Avenue West which will look at the broader land use planning and urban design issues in this area. Consequently, it is important to get this vital project right and deliver the showcase example that will achieve the twin objectives of improved transit service and community revitalization, and provide a boost to the entire City-building agenda.

The terms of reference for the St. Clair Avenue West Transit Improvements EA reflect the larger significance of the project. Although focussing on the primary issue of improvements to the quality of transit, the study also pays considerable attention to a host of related issues which include: business impacts; the needs of other road users; pedestrian safety; environmental concerns, and urban design features. Notably, the project team worked closely with the community by engaging in more than 51 public meetings, workshops, and many informal stakeholder meetings, plus thousands of contacts (by e-mails, letters, phone calls and web-site

hits), in a combined effort to identify opportunities for the revitalization and “beautification” of St. Clair Avenue West.

The EA study is being undertaken in accordance with the Municipal Class Environmental Assessment process which imposes a number of formal requirements on the conduct of the study. Public involvement has been a vital and ongoing part of the study process and the project team has gone far beyond the legislated requirements for public participation. The section of St. Clair Avenue West between Yonge Street and Gunns Road (just west of Keele Street) is made up of a number of vibrant and diverse residential, business and institutional communities that have expressed a wide range of interests and views on the streetcar project.

The EA study identified and evaluated nine planning alternatives for transit improvements on St. Clair Avenue West. These were evaluated against criteria that the community helped to develop, and two of the nine alternatives were short-listed to be carried forward to the “conceptual design” stage. It was important to garner feedback from all affected and interested groups and to take the time to listen and respond. Eventually, Alternative 6, the “Exclusive Transit Lanes” option emerged as the Preferred Design Concept.

Throughout the evaluation process, every effort was made to respond to local concerns, and the result is a Preferred Design Concept which, though not yet resolved in every detail, is very mindful of the need to take into account community issues, concerns and aspirations. In particular, the recommended design concept has been continually adjusted and refined to address key concerns relating to: possible “barrier effects”; potential loss of on-street parking; threat of adverse effects on businesses; reduced access for emergency vehicles; capacity for current traffic volumes on St. Clair Avenue West; traffic infiltration on local streets, and reductions in sidewalk widths. It was critical to deal with these concerns in developing an alternative that, on balance, offers the greatest net benefits. Overall, in the Preferred Design Concept (based on exclusive lanes for streetcars and emergency vehicles) general traffic, using St. Clair Avenue West, can be satisfactorily accommodated (as shown in Table SR-5).

With respect to the proposed layout of St. Clair Avenue West, the principal elements of the Preferred Design Concept are:

- (a) Two centre lanes reserved for exclusive use by streetcars (and emergency vehicles) protected by a raised, but mountable, trackbed;
- (b) During peak periods, two general purpose traffic lanes in each direction, located on either side of the streetcar tracks;
- (c) During off-peak periods and weekends, one general purpose traffic lane and one parking lane in each direction;
- (d) Left-turn lanes at signalized intersections to permit left-turn and u-turn movements on their own exclusive signal phase;
- (e) On-street parking on both sides of the street during all off-peak periods; and
- (f) Enhanced streetscape, urban design and safety features.

Among the important features of the Preferred Design Concept are:

- (i) Significantly improved streetcar service under both current and future traffic conditions (as shown in Table SR-6);
- (ii) 93% of all on-street parking retained, accompanied by an increase in the off-street supply;
- (iii) Current traffic volumes on St. Clair Avenue West are satisfactorily accommodated (as shown in Table SR-5);
- (iv) Improved intersection designs at a number of locations that would benefit all road users and improve pedestrian safety (as outlined on page 19);
- (v) Improved access for emergency vehicles;
- (vi) Urban design improvements and support of community revitalization plans;
- (vii) Marginal effects on local access for residents, businesses and visitors, and
- (viii) Overall, a more pleasant and attractive street that enhances the quality-of-life for all those involved in activities along St. Clair Avenue West.

This report recommends that Council approve this Preferred Design Concept and the necessary funding and authorizations for its implementation.

As alluded to earlier, the Preferred Design Concept brings a number of benefits which extend beyond those strictly related to improving streetcar service on St. Clair Avenue West. Among these are significant improvements to the “public realm” as a result of enhancements to the streetscape and other design features.

These enhancements include: improved connections to parks and other open spaces; pedestrian safety features; improved designs for streetcar platforms, shelters and stops; civic improvement projects at key locations along the route; introduction of public art; street-lighting improvements, and additional tree planting and replacement.

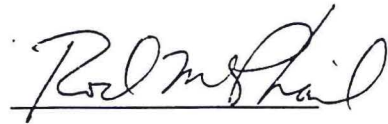
The final designs for a number of these public realm elements are still being worked on by the project team and this report recommends that a community design consultative group be established to assist in the formulation of this important “beautification” component of the project. In addition, the project team will continue to work with the St. Clair Avenue West business community to develop and document a Business Outreach Program, and staff of the City’s Economic Development Division will consult with local BIAs on opportunities to jointly fund other streetscape improvements. A number of the beautification initiatives extend beyond the purview of the transit improvement project, and this report recommends that additional funding be made available in the City and TTC capital budgets.

The City is poised, with the decision to approve and fund the St. Clair Avenue West Transit Improvements project, to make a fundamental statement about the way it envisages this City and its communities growing and developing. Upgrading transit service on St. Clair Avenue West, by giving priority to streetcars, indicates a commitment to reducing auto dependency and creating a more liveable, people-friendly, attractive and sustainable City. Improved streetcar service on St. Clair Avenue West supports the land use planning objectives of seeing this corridor develop as a vibrant, mixed-use “Avenue” where the emphasis is more on the quality of the pedestrian environment than on the accommodation of traffic.

This transit project also presents an early opportunity for Council to act on one of its Term Priorities by helping to beautify the City. In this way, the St. Clair Transit Improvements project has the potential to deliver a showcase example of the best of what this City can be.

Contact:

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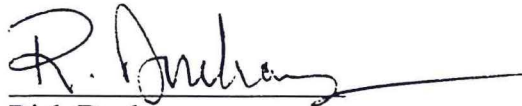
Rod McPhail
Acting Chief Planner
& Executive Director
City Planning Division



Paula M. Dill
Commissioner
Urban Development Services



David Kaufman
Acting Commissioner
Works & Emergency Services



Rich Ducharme
Chief General Manager
Toronto Transit Commission

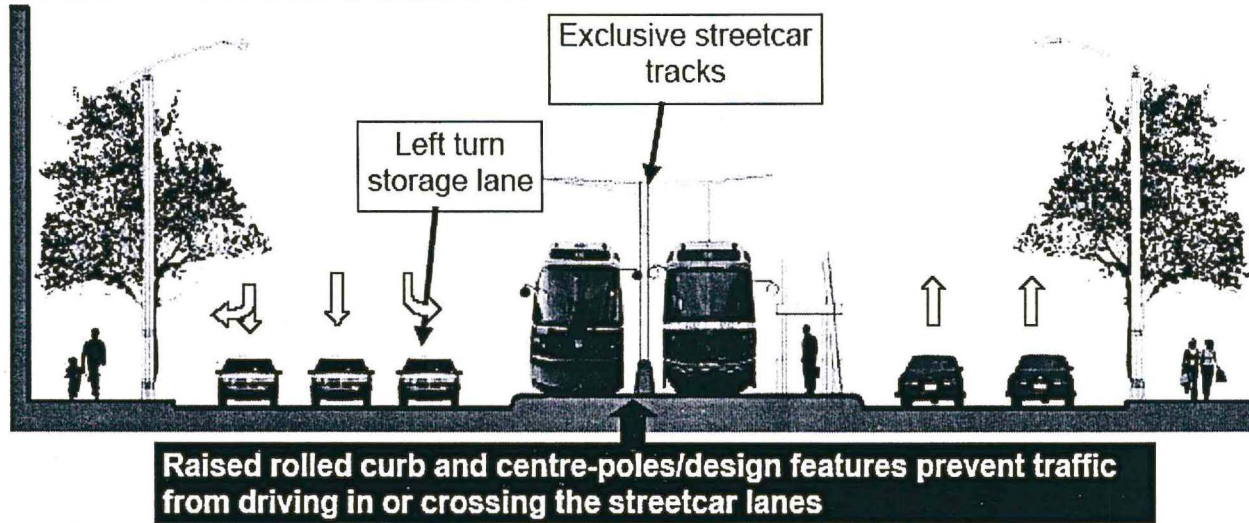


Maurice J. Anderson
President
Toronto Parking Authority

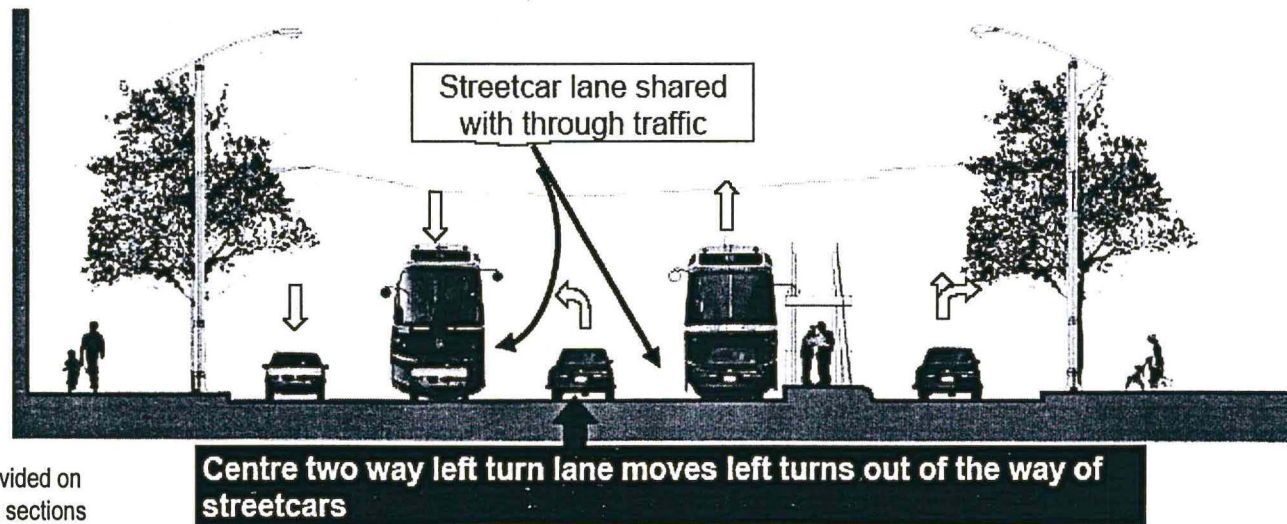
List of Attachments

- Figure SR-1: Typical Cross-sections for Alternative 6 and Alternative 9
- Figure SR-2a: Alternative 6 – Design Concept for Avenue Road/St. Clair Avenue
- Figure SR-2b: Alternative 6 – Design Concept for Dufferin Street/St. Clair Avenue
- Figure SR-2c: Alternative 6 – Design Concept for Earlscourt Avenue/St. Clair Avenue
- Figure SR-3: Streetscape Elements
- Figure SR-4: Parking Forecourt Treatment Concept
- Figure SR-5: Lansdowne Loop/Earlscourt Park Entrance – Urban Design Concept
- Table SR-2: Existing Level of Service at Key Intersections on St. Clair Avenue
- Table SR-5: Comparison of Levels of Service – Existing and Alternative 6
- Table SR-6: Evaluation of Design Concepts Summary

Alternative 6: Typical Cross Section Near Intersections

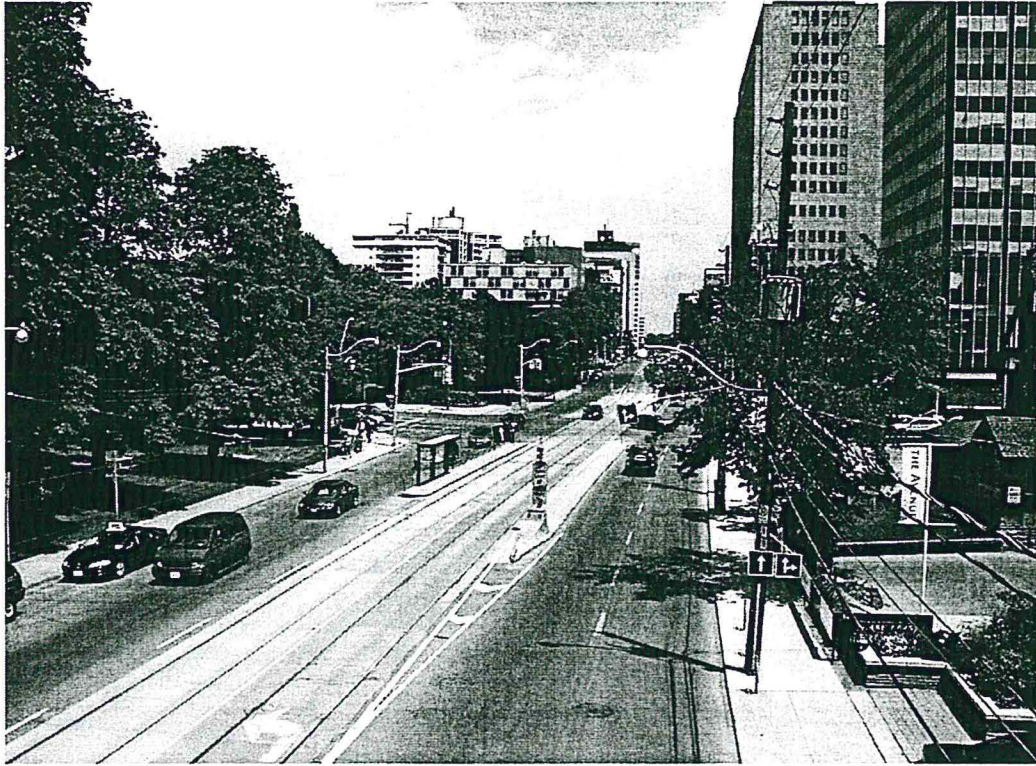


Alternative 9: Typical Cross Section Near Intersections

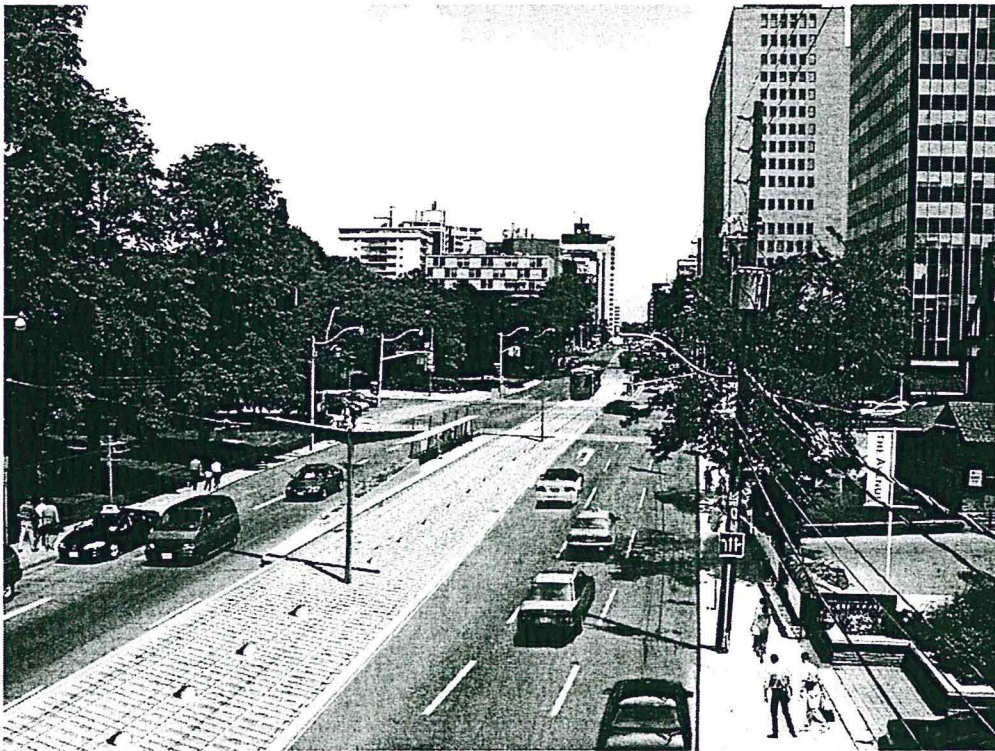


Conceptual
Not to Scale

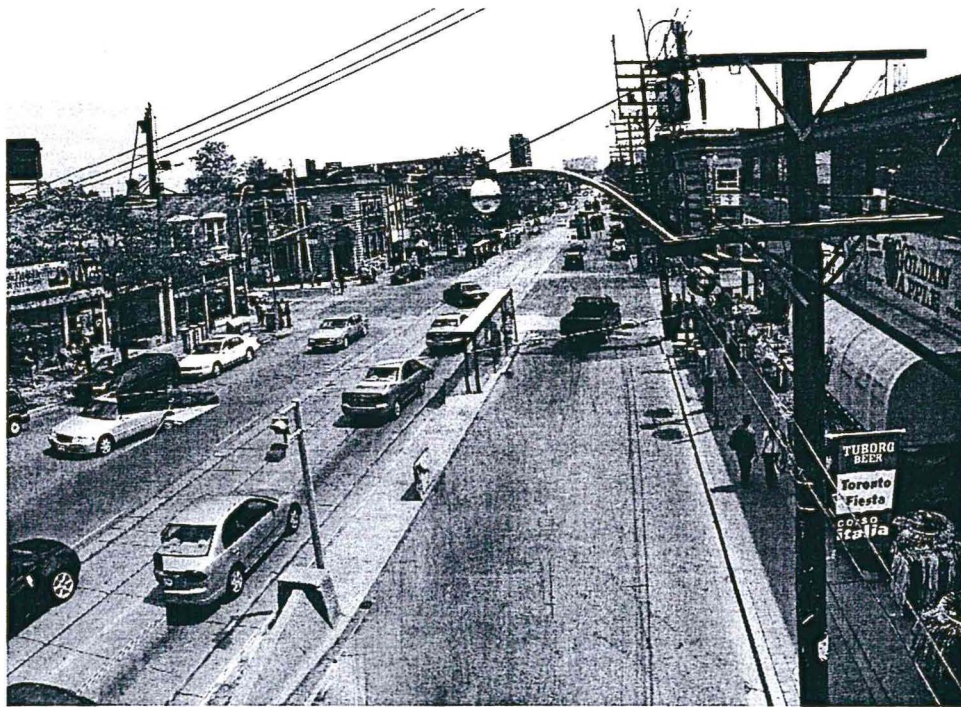
Existing Condition



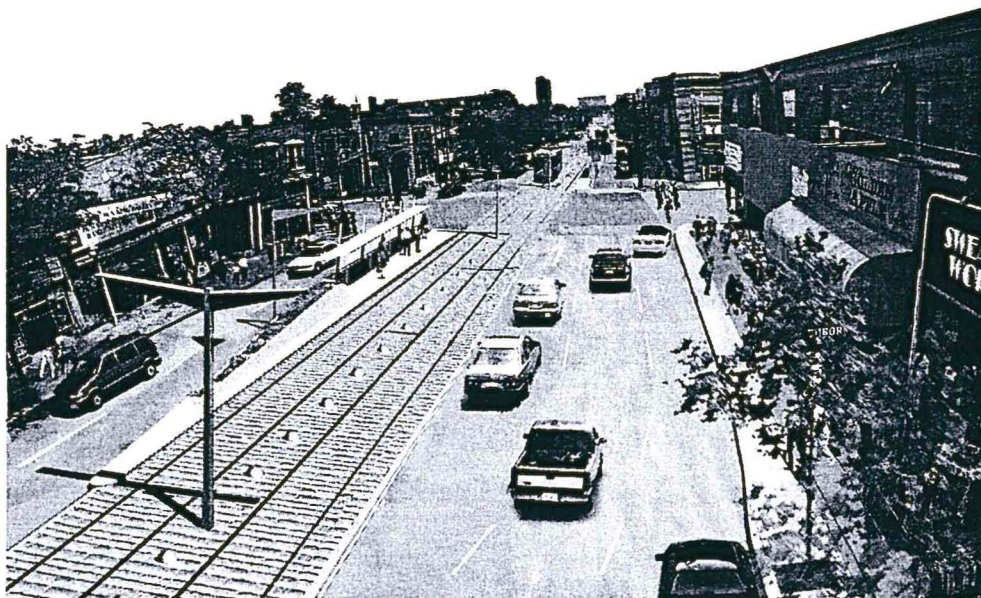
Alternative 6 - Centre Poles, Raised Bed, Rolled Curb



Existing Condition



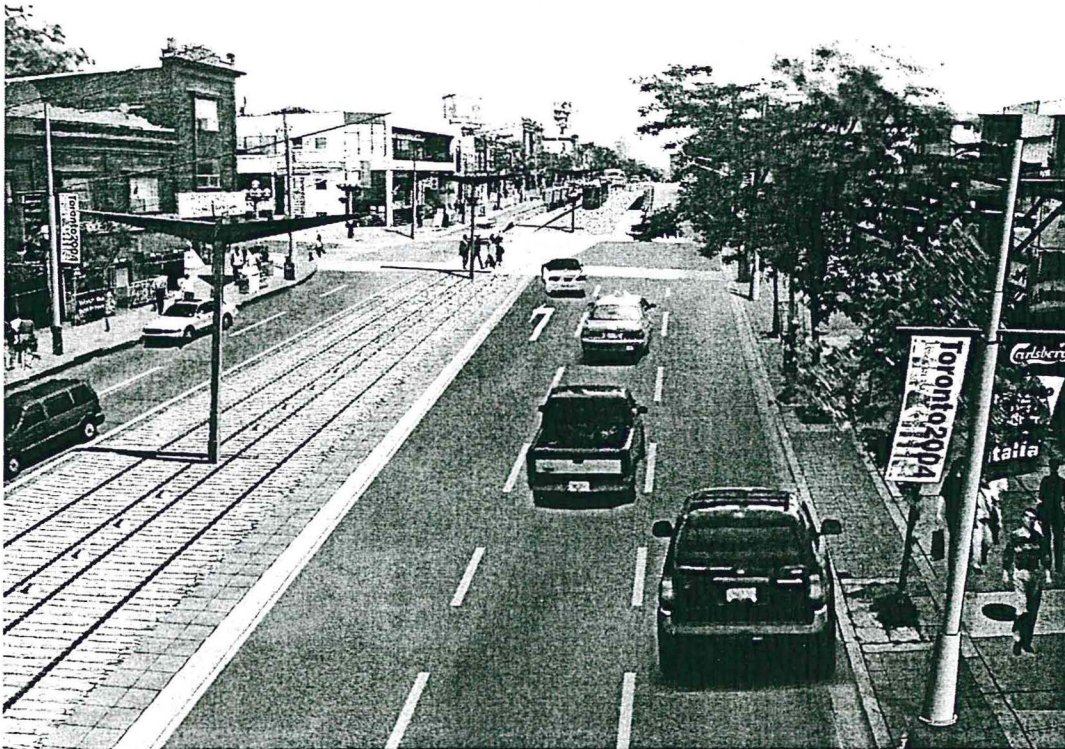
Alternative 6 - Centre Poles, Raised Bed, Rolled Curb



Existing Condition



Alternative 6 - Centre Pole, Raised Bed, Rolled Curb



St. Clair Avenue West Transit
Improvements Environmental Assessment

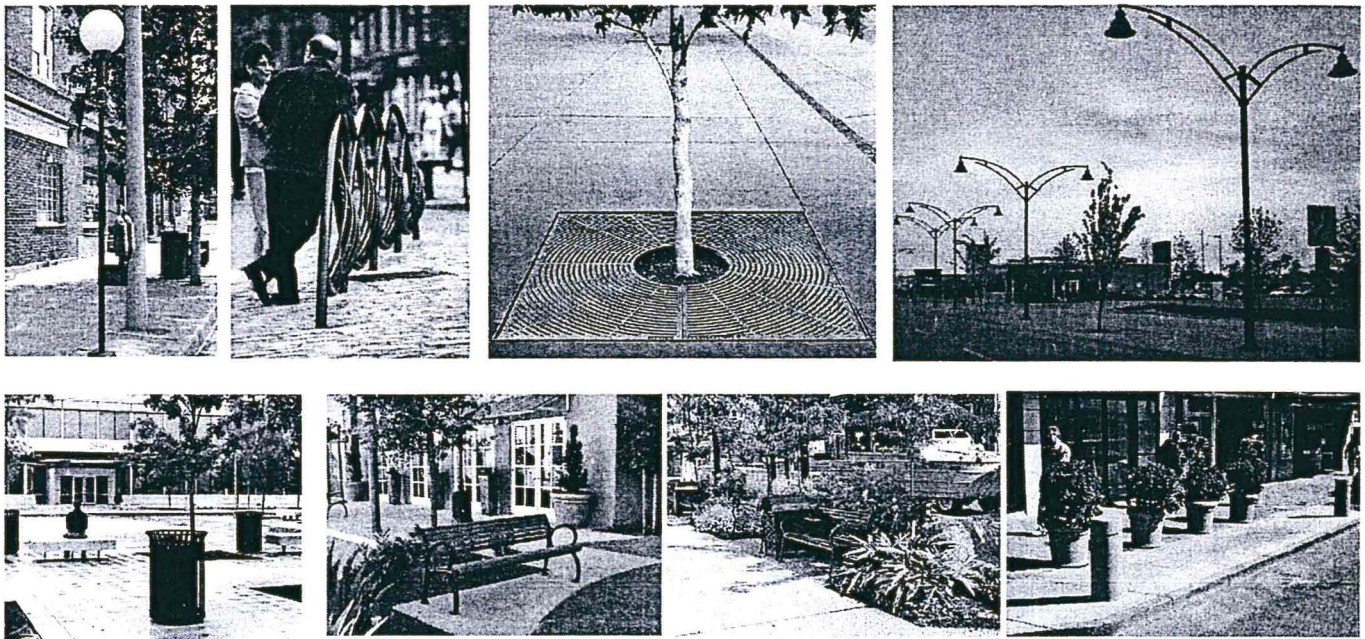
FIGURE SR-2c
View Eastbound at Earls Court Avenue

August 2004

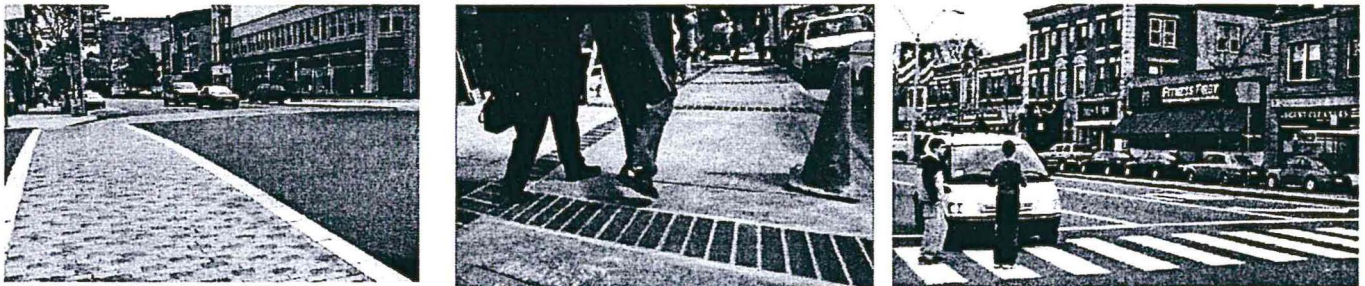
Transit Shelter Examples



Landscaping and Street Furniture Examples



Pavement Examples

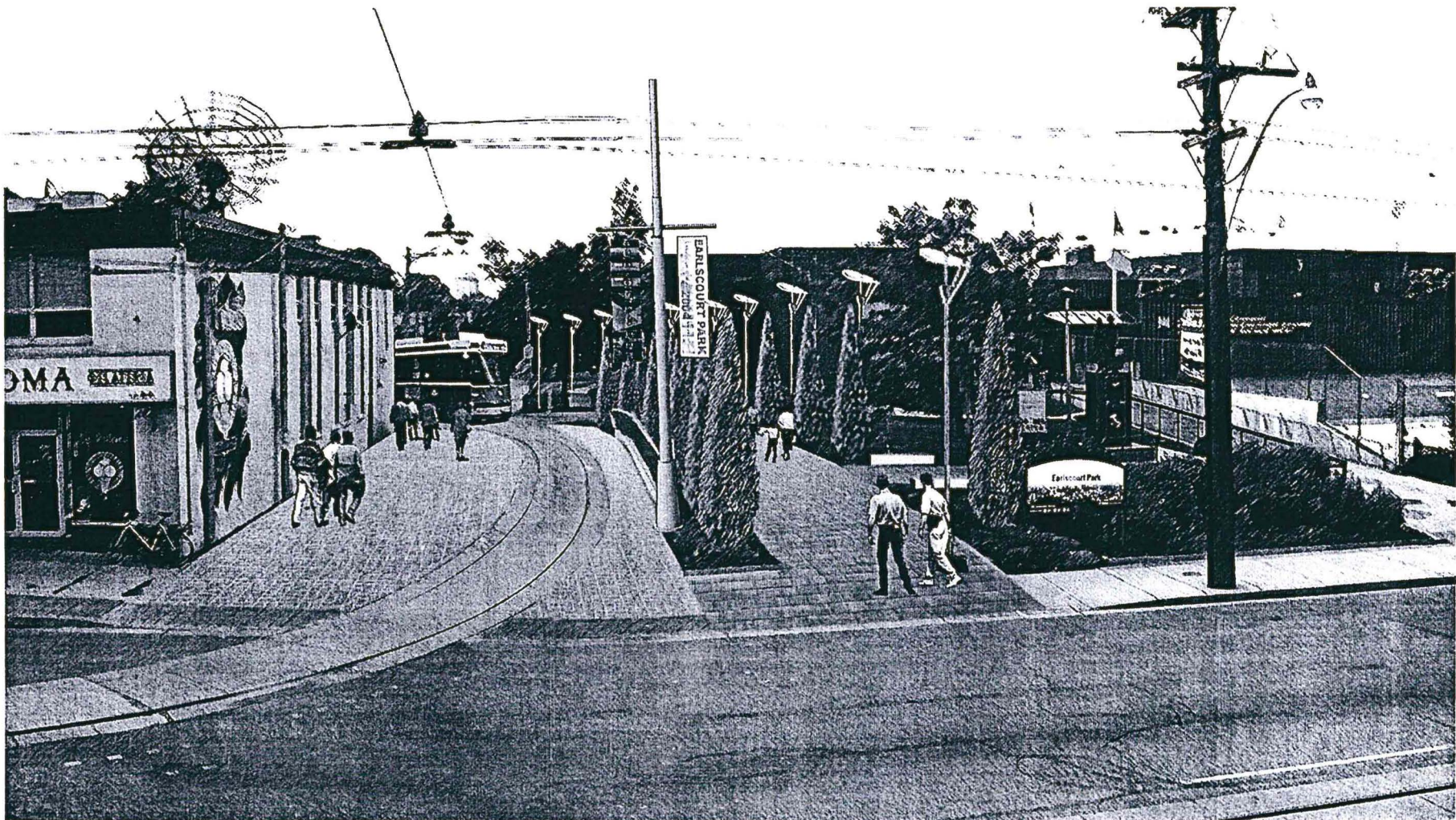


Existing Condition: View West From Vaughan Road



Alternative 6: Sample Parking Separation from Sidewalk





St. Clair Avenue West Transit
Improvements Environmental Assessment

FIGURE SR-5
Lansdowne Loop/Earlscourt Park Entrance Urban Design Concept

August 2004

**Table SR-2: Existing Level of Service at Key Intersections
on St. Clair Avenue West**

Intersection	Volume/Capacity Ratios		
	AM Peak Hour	PM Peak Hour	Off Peak Hour*
Keele St/Weston Rd	0.71	1.00	0.59
Old Weston Rd	0.72	0.92	0.56
Caledonia Park Rd	0.68	0.88	0.52
Dufferin St	0.89	0.72	0.82
Oakwood Ave	0.77	0.73	0.56
Vaughan Rd	0.99	0.84	0.75
Bathurst St	0.89	0.95	0.64
Spadina Rd	0.90	0.85	0.63
Avenue Rd	0.90	0.95	0.66
Yonge St	0.99	0.88	0.63

* representative of mid-day and weekend conditions

August 31, 2004

**Table SR-5: Comparison of Levels of Service – Existing and Alternative 6
Conditions for Key Intersections on St. Clair Avenue West**

	Volume/Capacity Ratios					
	Existing			Alternative 6		
Intersection	AM Peak Hour	PM Peak Hour	Off Peak Hour *	AM Peak Hour	PM Peak Hour	Off Peak Hour *
Keele St/Weston Rd	0.71	1.00	0.59	0.75	1.03	0.60
Old Weston Rd	0.72	0.92	0.56	0.68	0.82	0.63
Caledonia Park Rd	0.68	0.88	0.52	0.74	0.92	0.73
Dufferin St	0.89	0.67	0.82	0.88	0.93	0.80
Oakwood Ave	0.77	0.73	0.56	0.84	0.97**	0.74
Vaughan Rd	0.99	0.84	0.75	0.74	0.91	0.80
Bathurst St	0.89	0.95	0.64	0.98	0.97	0.67
Spadina Rd	0.90	0.85	0.63	1.00	0.93	0.92
Avenue Rd	1.00	0.95	0.66	0.99	1.00	0.72
Yonge St	0.99	0.88	0.63	1.06	0.90	0.67

* representative of mid-day and weekend conditions

** v/c at Oakwood expected to be lower due to special signal timing arrangements that are not reflected in analysis

August 31, 2004

Table SR-6: Evaluation of Design Concepts Summary

Evaluation Category	Alternative 6: Exclusive Transit Lanes	Alternative 9: Combination Alternative (Shared Transit Lanes with Centre Left Turn Lane)
Transportation Service	Overall: Positive	Overall: Neutral
	<ul style="list-style-type: none"> • Transit reliability and quality of service increases significantly: <ul style="list-style-type: none"> - Eliminates 70% of delays - Reliability improves significantly compared to existing conditions - Variability in route travel times reduced by up to 30% in peak direction 	<ul style="list-style-type: none"> • Transit reliability will decline as auto volumes increase in longer term: <ul style="list-style-type: none"> - Some improvement in transit travel times but worsening reliability compared to existing conditions - Variability in route travel times increased by up to 10% in peak direction
	<ul style="list-style-type: none"> • Person carrying capacity increases 	<ul style="list-style-type: none"> • No increase in person carrying capacity (no increase in number of streetcars completing route)
	<ul style="list-style-type: none"> • Increase in daily transit riders of 8,000 based on 2001 forecasts and by additional 7,000-11,000 daily riders by 2021 	<ul style="list-style-type: none"> • Minimal increase in daily transit riders of 2,400 by 2021
	<ul style="list-style-type: none"> • Adequate capacity to accommodate existing automobile demand 	<ul style="list-style-type: none"> • Little effect on auto capacity
	<ul style="list-style-type: none"> • 14 intersections with critical moves 	<ul style="list-style-type: none"> • 12 intersections with critical moves
	<ul style="list-style-type: none"> • Marginal change in auto travel speeds compared to existing – average speed increases to 26 km/h from 25 km/h 	<ul style="list-style-type: none"> • No change in auto travel speeds compared to existing – 25 km/h
	<ul style="list-style-type: none"> • # collisions expected to decrease by 10% of all annual collisions (conservative estimate) 	<ul style="list-style-type: none"> • # collisions expected to remain the same since more potential for conflicts
	<ul style="list-style-type: none"> • Sidewalk space affected at 24 intersections 	<ul style="list-style-type: none"> • Sidewalk space affected at 22 intersections
	<ul style="list-style-type: none"> • Removes left turn vehicle delay from streetcar lanes • Pedestrian access improved by widened platforms, median refuge 	<ul style="list-style-type: none"> • Removes left turn vehicle delay from streetcar lanes • Pedestrian access improved by widened platforms, median refuge

Table SR-6: Evaluation of Design Concepts Summary

Evaluation Category	Alternative 6: Exclusive Transit Lanes	Alternative 9: Combination Alternative (Shared Transit Lanes with Centre Left Turn Lane)
Business and Community	Overall: Neutral	Overall: Neutral
	<ul style="list-style-type: none"> • Increase in access at most major intersections during peak periods with addition of left turn lanes 	<ul style="list-style-type: none"> • Increase in access at most major intersections during peak periods with addition of centre left turn lane
	<ul style="list-style-type: none"> • Marginal decrease in vehicle access, due to change in permitted left turn movements; all movements accommodated; U-turns also permitted at signalized left turns 	<ul style="list-style-type: none"> • Minimal change in vehicle access; all movements accommodated
	<ul style="list-style-type: none"> • Pedestrian access and safety improved (especially near major intersections) and in 6 locations where platforms are added 	<ul style="list-style-type: none"> • Minimal to no change to pedestrian access and safety (limited to platform improvements, where possible)
	<ul style="list-style-type: none"> • Negligible increase in neighbourhood traffic volumes in some locations (only 2 of 11 sub-areas show increases). Maximum increase of 8% 	<ul style="list-style-type: none"> • Little or no change in neighbourhood traffic in short term, but likely to increase in long-term. (4 of 11 sub-areas show increases based on existing conditions). Maximum increase of 8%
	<ul style="list-style-type: none"> • Parking retained on both sides of street: 571 spaces retained of 611 existing (93%): - Peak period parking prohibitions on both sides of St. Clair Ave. 	<ul style="list-style-type: none"> • Parking retained on both sides of street: 541 parking spaces retained (88.5% of existing): - Parking maintained on both sides of St Clair Avenue (where permitted today) at all times
	<ul style="list-style-type: none"> • New traffic signals (allowing all-way movements) to enhance access are proposed at Poplar Plains Road, Warren Road and Alberta Avenue. • Pedestrian signal added at Tweedsmuir 	<ul style="list-style-type: none"> • New signals added at Warren Road • No signal needed at Alberta or Poplar Plains (full-moves access permitted) • Pedestrian signal at Tweedsmuir
	<ul style="list-style-type: none"> • Some currently prohibited left turn movements will be permitted e.g. at Keele Street, Dufferin Street, Old Weston Road, Bathurst Street, Avenue Road), improving access in these locations 	<ul style="list-style-type: none"> • Some currently prohibited left turn movements will be permitted (e.g. at Keele Street, Dufferin Street, Avenue Road), improving access in these locations
	<ul style="list-style-type: none"> • High degree of compliance with Official Plan policies regarding transit priority improvement on major streets, and protection of neighbourhoods. Also, high compliance with Provincial SmartGrowth policies 	<ul style="list-style-type: none"> • Low degree of compliance with Official Plan policies regarding transit priority improvement on major streets, or Provincial SmartGrowth policies
<ul style="list-style-type: none"> • High potential for urban design improvement related to platforms, shelters, streetscaping, street trees 	<ul style="list-style-type: none"> • Limited potential for streetscape improvement. Opportunity for some planted median islands and replacement of street trees in selected locations 	

Table SR-6: Evaluation of Design Concepts Summary

Evaluation Category	Alternative 6: Exclusive Transit Lanes	Alternative 9: Combination Alternative (Shared Transit Lanes with Centre Left Turn Lane)
Natural Environment	<p>Slightly positive</p> <ul style="list-style-type: none"> • Improved transit service will benefit air quality by increasing number and % of new transit riders • Additional street trees will benefit stormwater management • No degradation to air quality due to traffic congestion, as existing capacity is maintained 	<p>Neutral</p> <ul style="list-style-type: none"> • Variability in auto travel time indicates that vehicular delay may have negative effect on air quality. • Higher overall congestion levels will degrade air quality.
Cost	<p>Positive</p> <ul style="list-style-type: none"> • Additional cost beyond track replacement is approximately \$17 million 	<p>Negative</p> <ul style="list-style-type: none"> • Additional cost beyond track replacement is approximately \$30 million – includes \$12.5 million premium cost of building two separate track beds
	<ul style="list-style-type: none"> • Cost-effectiveness in terms of cost per additional customer trip is \$0.37 	<ul style="list-style-type: none"> • Cost-effectiveness in terms of cost per additional customer is \$2.67 (due mainly to lower attractiveness of service and higher capital costs)

Note: This table reflects the evaluation of the alternatives that were refined after the June 21 and 23, 2004 public open house and meetings.

APPENDIX A

REQUIRED BY-LAWS

The following traffic by-laws will be required to ensure the operational integrity and success of the preferred design concept.

- To designate the exclusive right-of-way for transit and emergency vehicle operations.
- To rescind existing left-turn prohibitions at major signalized intersections to permit left-turns and U-turns at these intersections.
- To introduce left-turn prohibitions at non-signalized intersections.
- To introduce “no-stopping” regulations in both the eastbound and westbound directions in the curb lane during peak periods.
- To introduce 30 m “no-stopping” zones upstream and downstream of all signalized intersections, to provide traffic capacity at signalized intersections and to improve pedestrian safety in association with the transit stops safety zones.

In addition, a highway alteration by-law will be required to authorize the construction associated with the intersection improvements.