

**ST. CLAIR AVENUE WEST
EXCLUSIVE RIGHT-OF-WAY FOR STREETCARS PROJECT**

**Author: David Crichton, P.Eng.
Manager, Design & Construction
Technical Services, City of Toronto**

**Paper prepared for presentation at the Geometric Design – Road Medians for
Access Control and Separation Session of the 2007 Annual Conference of the
Transportation Association of Canada
Saskatoon, Saskatchewan**

ABSTRACT

In 2004, the City of Toronto and Toronto Transit Commission (TTC) completed a Class Environmental Assessment (Schedule C) study for transit improvements on St. Clair Avenue West from Yonge Street to Gunns Road. An Environmental Study Report (ESR) was prepared. The preferred design concept in the ESR was for the two centre lanes of St. Clair Avenue to be reserved for exclusive use by streetcars protected by a raised trackbed. Before the study, the TTC tracks were shared between streetcars and vehicles. Construction for the first phase of the project from Yonge Street to Vaughan Road was substantially completed in 2006.

The proposed paper will document the implementation of this dedicated right-of-way and how the community reacted to this change.

Detailed design modifications were made, where feasible, in response to the concerns expressed by the community. These concerns included the following:

- the dedicated right-of-way acting as a barrier to the access and left hand turns;
- sufficient capacity for vehicles and on-street parking;
- lane widths;
- the reduction of sidewalk space for pedestrians;
- the possible use of bicycle lanes and
- the availability of funding for streetscaping and beautification of the reconstructed right-of-way.

The introduction of a dedicated right-of-way in place of the lanes shared between vehicles and streetcars had a significant impact on the community. The project was extremely controversial because the local Councillors and public were concerned as to how the right-of-way could be shared equitably between the competing use of streetcars, vehicles and pedestrians and what effect this would have on the local businesses. The community was also concerned on the effect of the actual construction on traffic and the adjacent businesses.

The proposed paper will describe how the project team managed public consultation and modified the detailed design, where feasible, to alleviate these public concerns.

INTRODUCTION

The streetcar tracks on St. Clair Avenue West from Yonge Street to Gunns Road were in poor condition and had to be replaced.

In 2004, the City of Toronto and Toronto Transit Commission (TTC) completed a Class Environmental Assessment (Schedule C) study for transit improvements on St. Clair Avenue West from Yonge Street to Gunns Road. An Environmental Study Report (ESR) was prepared.

The preferred design concept in the ESR was for the two centre lanes of St. Clair Avenue to be reserved for exclusive use by streetcars protected by a raised trackbed. Before the study, the TTC tracks were shared with vehicles.

The Environmental Study Report was approved by City Council in September, 2004, and was submitted to the Ministry of the Environment (MOE).

Detailed design and public consultation commenced in early 2005, as permitted through the legislation.

On June 3, 2005, the M.O.E. indicated that the request for a Part II Order for the St. Clair EA had been turned down. This meant that the City/TTC were free to proceed with construction. The M.O.E. placed conditions on the approval relating to specifics on the community consultation process during the detailed design and construction phases.

The project is being carried out as a joint effort between the TTC and the City.

Construction commenced in September, 2005. Save Our St. Clair (S.O.S.), a community group opposed to the St. Clair Avenue dedicated right-of-way project, initiated a judicial review in an attempt to halt the project. The continuation of work on the Contract was suspended as a result of an initial decision by the Ontario Divisional Court on October 11, 2005.

On February 21, 2006, as a result of a second decision, the Ontario Divisional Court dismissed the judicial review application of S.O.S. Leave to appeal was not sought by S.O.S. and so the City/TTC could recommence with construction. Construction for the first phase of the project from Yonge Street to Vaughan Road recommenced in August, 2006 and was substantially completed in December, 2006. The streetcars were back in service in February, 2007.

PUBLIC CONSULTATION

Extensive public consultation took place during the Environmental Assessment.

In addition, during the design phase, the City established a Community Consultation Group (CDCG) to obtain public input for urban design components of the project. A number of workshops were held with this Group in 2005 and 2006. The idea of those workshops was to receive input from this Group with regard to the urban design components of the project.

Also, the Ministry of the Environment (M.O.E.) imposed a condition that the City and the TTC form a St. Clair Avenue West Transit Community Liaison Committee (T.C.L.C.) to provide advice on the detailed design and construction of the Project. This committee met a number of times in 2005 and 2006.

The introduction of a dedicated right-of-way in place of the lanes shared between vehicles and streetcars had a significant impact on the community. The project was extremely controversial because the local Councillors and public were concerned how the right-of-way could be shared equitably between the competing use of streetcars, vehicles, pedestrians and what effect this would have on the local businesses. The community was also concerned about the effect of the actual construction on traffic and the adjacent businesses.

There were concerns that the raised trackbed would act as a barrier to access and left hand turns. There were concerns for the lack of on-street parking and that there would be insufficient capacity for vehicular traffic. At the same time, there was a desire for bicycle lanes. There were concerns on the reduction of sidewalk space for pedestrians and at the same time the narrow width of lanes was a concern. Lastly, there were concerns on the limited funding available for streetscaping and beautification of the reconstructed right-of-way.

Detailed design modifications were made, where feasible, in response to these concerns expressed by the community.

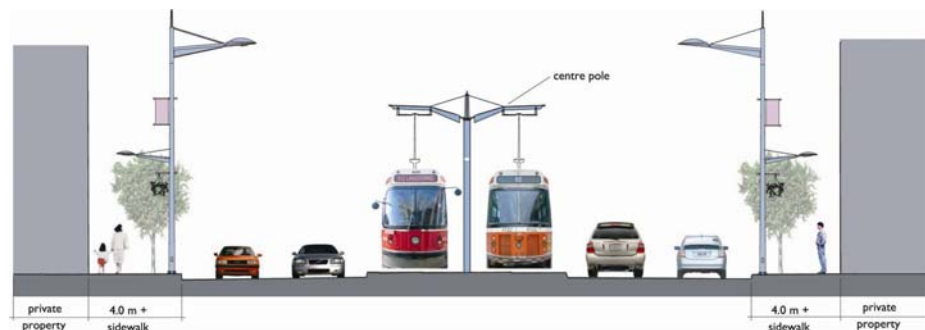
IMPLEMENTATION OF PREFERRED DESIGN CONCEPT

The ESR developed a preferred design concept for the project. This design concept was modified and tested to mitigate, where feasible, the concerns expressed by the community with regard to the dedicated right-of-way. The details and discussion on the Preferred Design Concept follows:

1. Two centre lanes reserved for streetcars protected by a raised trackbed

There were concerns expressed that the raised trackbed would act as a barrier to access from and to side streets and for left hand turns. There were also concerns that emergency vehicles would have difficulty in mounting the trackbed.

typical project street section



With respect to emergency vehicles mounting the trackbed, tests with emergency vehicles were carried out on Queens Quay West, where there is an existing raised trackbed with various heights at 2 inches, 4 inches, 6 inches and 8 inches. The tests demonstrated that emergency vehicles had no difficulty mounting a 6 inch trackbed. The design for the trackbed consists of a 4 inch vertical rise topped with a 2 inch rolled portion.



At intersections, where left hand turns were permitted, the trackbed was brought back to the intersection grade and the details for the left hand turns are described further in this section.

As two of the traffic lanes were required to accommodate the traffic during the peak periods and one of the lanes was to be utilised for parking during off-peak periods, it was not possible to introduce bicycle lanes, even though a section of the community wanted bicycle lanes.

2. During peak periods, two traffic lanes in each direction to accommodate current peak period traffic volumes

There was a concern that with the two centre lanes being reserved exclusively for streetcars there would not be sufficient capacity for vehicular traffic.

Before the study, the centre lanes were shared between streetcars and vehicular traffic and so there were three lanes in each direction for traffic. This was reduced to two lanes in each direction with the introduction of the trackbed exclusively for streetcars.

Current traffic volume counts showed that during peak periods, two traffic lanes in each direction provided sufficient capacity to accommodate all current peak period traffic volumes for St. Clair Avenue West.

3. During off-peak periods and weekends, one traffic lane and one parking lane in each direction to accommodate off-peak traffic volumes

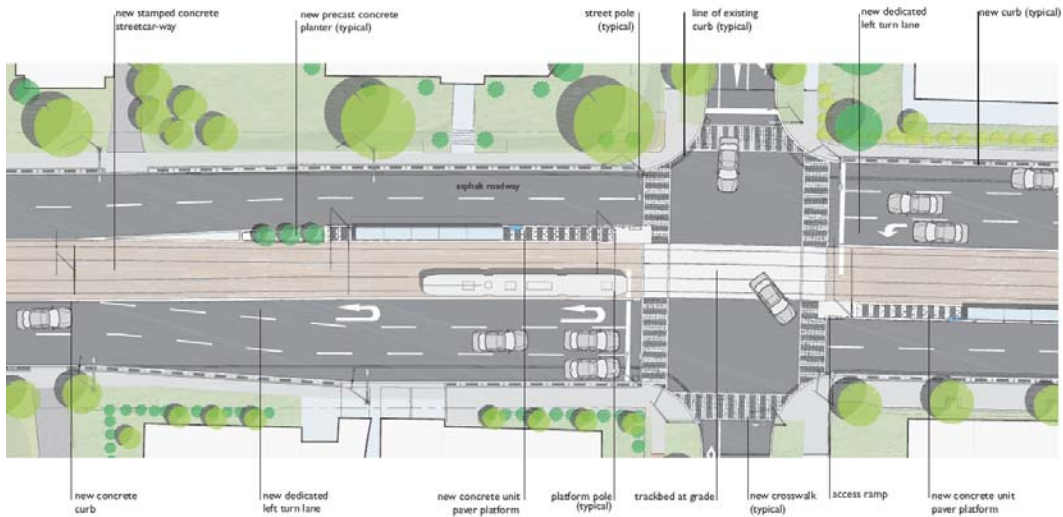
Traffic volume counts taken as part of the study showed that one lane of traffic in each direction was sufficient to accommodate the off-peak and weekend traffic volumes.

4. Left-turn lanes at signalized intersections to permit left-turn and U-turns on their own exclusive signal phases

One of the biggest concerns with the community was how vehicles would make left-hand turns from St. Clair Avenue and how vehicles from side roads would get access to the far side lanes. In order to achieve these traffic movements, left-turn lanes were introduced at signalized intersections, where the trackbed was brought back to grade. These left-hand turns, where U-turns were also to be permitted to allow traffic from side streets to access the far-side lanes, would have their own exclusive signal phases. The intersections had to be widened to allow for the introduction of the left-turn lanes. This was crucial for the exclusivity of the streetcars, as vehicles making left hand turns in the existing condition where the

centre lanes were shared, was the biggest factor in impeding efficient streetcar movement.

new street configuration



The minimum width for traffic lanes is generally 3.2 metres. However, in order to minimise the amount of space lost to the sidewalks and pedestrians at intersections, City Traffic Operations permitted lanes with a minimum width of 3.0 metres as a special case to mitigate community concerns for the reduced space at intersections.

5. **On-street parking on both sides during off-peak periods and new off-street parking resulting in the retention of the existing parking supply**

Another big concern with the local businesses was that they would lose parking spaces, which are essential for their clients and their businesses.

During off-peak periods, parking will be permitted except at the intersections which had to be widened to allow for an additional lane for left-turn lanes. In order to retain the existing parking supply, the Toronto Parking Authority are committed to adding a number of parking lots to replace the parking spaces lost at intersections.

6. **Enhanced Streetscape – decorative pavers, streetcar shelters and platforms, decorative street lighting, TTC poles, traffic signals, hydro undergrounding and public art**

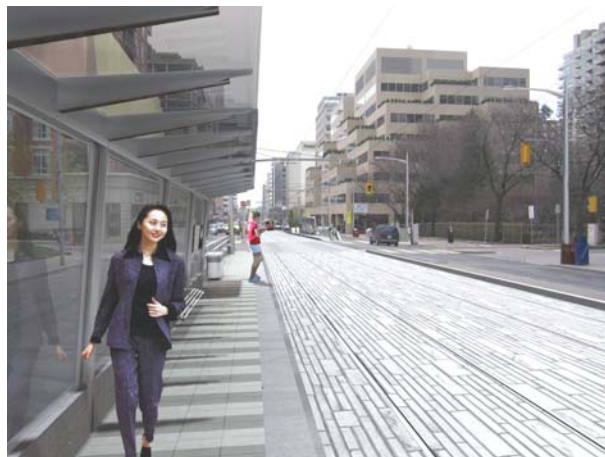
In order to make the project more palatable to the community, it was decided to provide urban design for enhanced streetscape with input from the community and specifically the workshops held by the CDCG. In addition, the Project team consulted with the local Business Improvement Areas (BIA's).

For crosswalks, it was decided to provide decorative unit pavers. Also a decorative band of unit pavers was placed between the curb and sidewalk.



The raised concrete bed for the track allowance was finished with a stamping pattern and decorative unit pavers were used for the streetcar platforms. The shelters were custom designed with structural steel/aluminium frames, glass and art panels above the glass roof. Precast concrete planters were installed at one of the ends of the platform.

platform (proposed)



The custom designed decorative steel streetlighting poles are painted to match the streetcar power traction poles. At intersections, an effort was made to design a multifunctional pole, which would carry the services for streetlighting, traffic signals, secondary hydro lines and TTC power traction supply. The lighting fixture arms were made to match the streetcar power traction pole arms.

A Public Arts Consultation Group was set up to provide input in the public art components of the project.

At the public meetings and workshops held in 2005 and 2006, the community requested strongly that they would like Toronto Hydro to underground their plant along the entire length of St. Clair Avenue. The main reason was for aesthetic reasons to reduce the clutter and congestion of existing wood hydro poles in place before the project commenced. Normally, if the existing condition is overhead wiring, any relocation work required at intersections is done overhead.

The City and Toronto Hydro agreed to cost share to have the work done. The City did eventually approve additional funding for most of the hydro undergrounding work to be done along St. Clair Avenue. However, because the decision was only made after the track reconstruction had commenced for Phase 1 of the work, there is a section where the hydro lines were only partially undergrounded.

CONCLUSION

The construction of Phase 1 of the work from Yonge Street to Vaughan Road, for a length of approximately 2.4 km, was substantially completed in December, 2006.

Streetcar service between St. Clair West Station and Gunns loop resumed on January 7, 2007 and service between Yonge Street and St. Clair West Station resumed on February 18, 2007.



The streetlighting, installation of streetcar shelters and landscaping will be completed in the summer of 2007.

Since the streetcar service was restored, the number of complaints on the project have subsided considerably. The flow of traffic and operation of the traffic signals is being monitored on an ongoing basis and minor adjustments are being made, where required. In general, the operation of the dedicated right-of-way is working well.

The construction of Phase 2 from Westmount Avenue to Caledonia Road will commence in September, 2007. However, despite the successful completion and operation of Phase 1 of the project, there is still opposition to the completion of the project from a small, but vocal, segment of the community.