

MEETING DATE: August 27, 2003

SUBJECT: Union Subway Station Second Platform And Concourse Improvements

RECOMMENDATION

It is recommended that the Commission:

1. Approve the proposed layout of Union Subway Station, including a second subway platform and expansion of the concourse area to include a single TTC fare-paid area and pedestrian by-pass routes (Option 2);
2. Authorize submission of reports required under the Ontario Environmental Assessment Act and the Canadian Environmental Assessment Act, in a form acceptable to the Chief General Manager; and
3. Forward this report to City Council and GO Transit for their information.

FUNDING

There are no funding implications to the TTC from the approval of the proposed layout of Union Subway Station. The Project is funded by the Toronto Waterfront Revitalization Corporation through funds provided by three levels of government (Transport Canada, Ontario Superbuild and City of Toronto).

BACKGROUND

Over the past fifty years, development of the downtown core has significantly increased, including the recent addition of two major stadiums (Skydome and Air Canada Centre). The existing TTC Union Subway Station concourse and platform (see attached Drawing No. 1) have limited capacity to carry highly concentrated passenger demands, which frequently exceed the practical and safe capacity of stairs, escalators and the platform during AM and PM peak periods and following the end of major events. Ongoing GO Transit expansion, Union Railway Station restoration and revitalization, planned redevelopment of the Portlands and continued development of Harbourfront will further strain the capacity of Union Subway Station.

In response to these pressures, TTC staff identified the need to expand the capacity of the existing station, both at the platform and concourse levels and to address layout and functional issues.

In early 2000, joint pedestrian counts were undertaken by GO Transit, the City of Toronto and TTC in order to forecast future volumes. In September 2000, the Commission authorized staff to commence preliminary design for the project. Subsequently, ArupNapa Canada was retained to complete a simulation of future pedestrian flows and to analyze station layout options prepared by TTC staff. The Steering Committee for the studies included representatives from GO Transit, City of Toronto and TTC.

The project was halted in June 2001 pending execution of funding agreements with the Toronto Waterfront Revitalization Corporation (TWRC). Work on the project has recommenced following the eventual execution of the agreement between TWRC and TTC in November 2002.

DISCUSSION

1. Project Objectives

The purpose of the Project is to achieve the following objectives:

- a. Expand the platform capacity to accommodate normal operations and pedestrian flows resulting from surge loading events, according to Year 2021 demand forecasts;
- b. Improve passenger circulation and the distribution of passengers along the subway platform;
- c. Improve vertical circulation between the platform and the concourse;
- d. Provide a more direct connection (within the fare-paid area) to the streetcar platform and to eliminate the confusion that currently exists for transferring passengers at the concourse level; and
- e. Provide sufficient capacity to accommodate the projected growth in TTC passenger and through pedestrian volumes.

2. Initial Screening

Preliminary functional plans were developed for the platform and concourse levels of the station. These plans underwent an evaluation and screening process to select the preferred station layout.

Options for expanding the platform level of the station are constrained by the foundations of the Royal Bank Building foundations to the north and by the prohibitive costs and operational impacts of attempting to widen the existing centre platform. The construction of a new platform to the south of the existing Finch Station-bound tracks was preferred because it was found to be both technically feasible and cost-effective.

For the concourse level of the station, five layouts (including the existing layout) were developed and evaluated. An initial screening of the five concourse layouts involved consideration of the results of forecast passenger volumes to 2021. Overall passenger volumes projected for 2021 were distributed to specific pedestrian corridors for each layout option based on a route choice analysis undertaken with input from City of Toronto, TTC and GO Transit staff. Options that did not include a west by-pass, all exhibited significant congestion at the entrance to Royal Bank Plaza. Accordingly, these options were eliminated from further consideration and a more refined analysis of Options 2 and 5 (see attached Drawing Nos. 2 and 3) was undertaken for AM peak and special events scenarios.

3. Pedestrian Simulations

The main differences between Options 2 and 5, which affected the results of the pedestrian simulations, are as follows:

- a. Option 2 features a single TTC fare paid area with the primary fare collection lines located to the north and south. Pedestrians walk between Union Railway Station and the PATH system to the north by separate by-pass routes located east and west of the fare paid area.
- b. Option 5 is a similar layout to the existing station, with a central route that is shared by both TTC passengers and by-passing pedestrians, an east by-pass plus a new west by-pass.

Initial pedestrian simulations for Options 2 and 5 demonstrated that, due to future growth in demand, pedestrians would experience undesirable levels of service for both Options 2 and 5. Subsequently, Option 2 was refined further to increase the width of the west and east by-passes, thereby improving the station capacity.

Similarly, Option 5 was refined but even with widening, the ability to improve conditions in the central by-pass was limited due the conflicting movements between by-passing pedestrians moving north-south and TTC passengers moving east-west within the same area.

4. Comparison of Options 2 and 5 – Other Factors

The two options were also evaluated based on key project objectives, construction and maintenance costs, and disruption to electrical rooms, as summarized in Table 1.

5. Preferred Option

Based on the foregoing analyses, Option 2 is preferred because it fully achieves the TTC's project objectives (i.e. separation of TTC passengers/ through pedestrians, consolidated fare paid area, no confusion for streetcar passengers at the concourse level).

Pedestrian congestion issues can be addressed by increasing the width of the by-passes during the development of the station design.

6. Stakeholder and Public Consultation

TTC staff have undertaken a wide range of consultation initiatives for the project, including discussions with GO Transit and City of Toronto, presentations to affected property owners and special interest groups and a Public Open House, as described below.

- a. GO Transit and City of Toronto - Ongoing meetings are held between GO Transit and City of Toronto staff. Both GO and the City are mainly concerned about co-ordination with other projects (Union Station Revitalization) and ensuring that pedestrian routes between Union Railway Station and PATH are direct and of sufficient capacity. In response to these concerns, additional pedestrian analyses were conducted in Spring 2003. TTC staff will continue to work with GO Transit and the City of Toronto to achieve these objectives.
- b. Adjacent Property Owners - Meetings with key property owners in the vicinity of Union Station, including BCE Place, Royal Bank Plaza and Fairmont Royal York Hotel were held during July 2003 to introduce the project. Discussions will continue throughout the design to optimize the new and expanded by-pass routes connecting to BCE Place and Royal Bank Plaza and to address any owners concerns about construction and long-term impacts of the Project.
- c. Public Open House - Approximately 1,000 people attended the June 24, 2003 Open House, held in the concourse of Royal Bank Plaza (located immediately north of Union Subway Station). Members of the public were invited to view display boards, discuss the project with TTC staff and to complete comment forms. By July 31, 2003, approximately, 40 comment forms or emails were submitted. The majority of those who indicated a preference for the concourse layout supported the preferred option (single TTC fare-paid area and pedestrian by-pass routes). Members of the public were also of the opinion that the project should proceed as soon as possible and impacts should be kept to a minimum. They stressed that co-ordination between TTC, GO Transit and VIA Rail services and facilities is needed during and after construction. Lastly, several Open House attendees requested enhancements to station access for persons with disabilities.
- d. Advisory Committee for Accessible Transit (ACAT) - The station concept was presented to ACAT on July 31, 2003. Members recommended the use of flow through elevators and requested the installation of accessible washrooms. Staff will review these proposals during the design process and will continue to meet with ACAT.
- e. Restoration and Revitalization of Union Station Public Advisory Group - The concept was presented to the Public Advisory Group on July 14, 2003. The Public Advisory Group recommended implementation of improved bus connections to Union Station, use of ramps instead of stairs, where possible, and improved connections direct from street level. These suggestions will be reviewed and addressed during the development of the conceptual design.

7. Next Steps (see attached schedule)

Subject to Commission approval of the preferred option, as described above, the next steps for the Project are as follows:

- a. Proceed with development of the preferred option for the conceptual design of the station improvements including preliminary construction staging plan and finalization of the detailed project scope, schedule and cost;
- b. Continue to work with GO Transit, the City of Toronto, and other key stakeholders to achieve a design solution which optimises pedestrian flows and capacity within Union Subway Station and to/from Union Railway Station and the PATH system;
- c. Submit reports required under the Canadian and Ontario Environmental Assessment Acts to Transport Canada and the Ontario Ministry of the Environment; and
- d. Seek public feedback at key milestones during the design process.

JUSTIFICATION

Approval of the station preliminary concept is required to enable conceptual design to proceed on schedule and for the submission of required reports under the Canadian and Ontario Environmental Assessment Acts.

August 13, 2003

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Attachments - Table 1 – Comparison of Options 2 and 5

- Drawing No. 1 - Existing Union Subway Station
- Drawing No. 2 - Option 2 (Preferred) - Concourse Level Plan
- Drawing No. 3 - Option 5 – Concourse Level Plan
- Project Schedule

Table 1

Comparison of Options 2 and 5

Criteria	Option 2	Option 5
Separation of TTC Passengers and Through Pedestrians (<i>separate paths improve pedestrians flows and avoid conflicts</i>)	Yes	No
Availability of Queuing Space at TTC Collectors Booth and Turnstiles (<i>extra queuing space means shorter waiting times to pay fares and avoidance of conflicts with through pedestrians</i>)	Good	Fair
Ease of Streetcar Platform Access (<i>split fare paid area at concourse results in fare paid access from east end of platform only</i>)	Good (Single fare paid area)	Poor (Split fare paid area - similar to existing)
Disruption to TTC Station Electrical Rooms (<i>relocation results in station operations impacts and higher costs</i>)	No Relocation Required	Relocation Required
Area to Maintain (<i>larger area means higher maintenance costs</i>)	1,700 square metres	2,100 square metres
Comparison of Capital Costs	Lower than Option 5	Higher than Option 2 (due to expanded area and disruption to station electrical rooms)