

# TORONTO TRANSIT COMMISSION REPORT NO.

**MEETING DATE:** JUNE 2, 2010

**SUBJECT:** REQUEST FOR APPROVAL OF THE  
REPLACEMENT FLEET MAINTENANCE AND STORAGE  
FACILITY  
TRANSIT PROJECT ASSESSMENT STUDY

## **ACTION ITEM**

---

### **RECOMMENDATION**

It is recommended that the Commission:

1. Approve the recommendation, of the joint City/TTC Replacement Fleet Maintenance and Storage Facility (MSF), (Ashbridges Bay MSF) Transit Project Assessment Study, as described in the attached "Ashbridges Bay Light Rail Vehicle Maintenance and Storage Facility, Draft Environmental Project Report, Executive Summary", for:
  - a. Locating the MSF on the property at the southeast corner of Lake Shore Boulevard East and Leslie Street (Ashbridges Bay Site) adjacent to the Ashbridges Bay Wastewater Treatment Facility;
  - b. The construction of a non-revenue service connection from the existing streetcar network at Queen Street to the proposed Ashbridges Bay Maintenance and Storage Facility, via Leslie Street;
2. Note that five public consultation open houses/presentations have been held. In addition, consultation with local Councillors, local community groups and stakeholders have been held;
3. Forward this report to the Toronto City Manager with a request to submit a report to the June 8/9, 2010 Toronto City Council meeting recommending that City Council approve the recommendations of the Ashbridges Bay MSF Transit Project Assessment Study and authorize staff to submit the EPR to the Ministry of the Environment; and
4. Forward this report to the Ontario Ministry of the Environment, for information.

### **FUNDING**

Funding of \$345 million for the project is included under Project 3.9 LRT Replacement

Maintenance & Storage Facility, as outlined on pages 839-841 in the TTC 2010-2014 Capital Program which was approved by City Council on December 8, 2009. Additional costs for the impacted soil removal will be required and are currently under review and the impacts will be reflected in the 2011-2015 Capital Program budget.

## **BACKGROUND**

The Toronto Transit Commission (TTC) currently operates a streetcar fleet comprised of 196 Canadian Light Rail Vehicles (CLRVs) and 52 Articulated Light Rail Vehicles (ALRVs) that were manufactured in the mid to late 1970's and 1980's respectively. This fleet of 248 vehicles services the downtown area of the City of Toronto and carry 70 million people per year. Storage of the vehicles, as well as scheduled inspections and running repairs of these vehicles are currently performed at two carhouses: Roncesvalles Carhouse, built in 1895 and at Russell Carhouse, built in 1924.

The existing vehicles have reached the end of their useful life and are scheduled for replacement with 204 new Low Floor Light Rail Vehicles (LRVs). The new LRVs, which are almost twice as long as the current CLRV streetcars, will carry 80% more passengers per vehicle and will be 100% low floor, providing accessibility for customers in wheelchairs, with strollers, or who have mobility difficulties. The design of the vehicles will be single ended, equipped with trolley poles similar to the existing streetcars and be outfitted with the latest state of the art propulsion, control and communications equipment. In total the new fleet will increase system capacity by approximately 35% (up from the current 70M passengers per year to approximately 95M per year) which will accommodate forecast growth for 20 or more years on the existing streetcar system.

The maintenance facility and storage requirements necessary to support the new LRVs were identified in the TTC Streetcar Maintenance and Storage Facility Master Plan approved by the Commission on May 21, 2008. The report recommended the construction of a new LRV MSF with a maintenance capacity of 210 vehicles and a storage capacity for 100 LRVs while maintaining the existing Russell and Roncesvalles Carhouses for storage of approximately 50 vehicles at each location and daily maintenance functions.

The study concluded that the existing carhouses and yard facilities could not be modified to maintain the new LRVs due to structural (seismic building code compliance requirements) and spatial limitations (building roof height and distances between tracks). In addition, yard facilities are required to accommodate the new LRVs. They require approximately double the storage track that is currently available at Roncesvalles and Russell yards as the new vehicles are almost twice as long as the existing streetcars. Storage track deficiencies at the existing carhouses would begin with the first delivery of the new LRVs in 2013 and continue to escalate proportionally with the addition of new vehicles into the fleet.

TTC/City approved the LRV replacement for streetcars in the summer of 2009. TTC awarded the contract to Bombardier in August 2009 for the purchase of 204 LRVs to replace the aging existing fleet. The LRV MSF is required by 2013 to meet the new vehicle arrivals.

TTC staff conducted an extensive property search and analysis for sites that could be considered for the new facility. Initial search criteria used were: property size (approx. 22 acres); community considerations, proximity to existing streetcar network; minimal relocation of existing businesses and their facilities; and minimal crossings of existing rail road tracks. Fourteen sites were investigated as potential locations and with property size the first screening criteria, six of these sites met the minimum property size requirement. A further screening was performed based on community considerations, operational issues, cost and potential for the site to meet the required schedule. Following this evaluation, three sites met the criteria: Ashbridges Bay, Eastern Avenue, and Unwin Avenue. A conceptual yard layout was prepared for each of the three sites along with potential connection track alignments from each of the locations to the existing streetcar network. These three sites, along with the connection track routes, were presented to the public at Public Open House meetings held on June 16, 17 and 18, 2009. Based on the above noted evaluation criteria and feedback from the Public Open House, the Ashbridges Bay site was selected as the technically preferred site and the one that registered the least opposition. The proposed routing to the existing streetcar network associated with this site, as presented at the Public Open House, was along Leslie Street to Queen Street.

At its meeting on December 16, 2009, the TTC Commission approved the location of the Ashbridges Bay MSF in the southeast corner of Lake Shore Boulevard East and Leslie Street (Ashbridges Bay site) adjacent to the Ashbridges Bay Treatment Facility.

Following the Public Open House held on February 18, 2010, TTC conducted an evaluation and assessment of nine potential route alternatives for the connection track, to link the MSF to the existing streetcar network at Queen Street. A public presentation was given on April 8, 2010, outlining the evaluation undertaken to determine the technically preferred route of Leslie Street as the connection track.

This report provides a summary of the preliminary planning public consultation process, results of the Ashbridges Bay MSF Transit Project Assessment Study, and the rationale supporting the various elements of the recommended preferred design for the Ashbridges Bay MSF and Connection Track alignment on Leslie Street.

## **DISCUSSION**

### **Purpose of the Ashbridges Bay Maintenance and Storage Facility Project**

The objective of this project is to provide a MSF for the new LRVs that will serve the existing streetcar system. The maintenance facility is required to ensure the new LRVs are maintained in a state of good repair in order for the streetcar system to provide reliable, high-capacity, environmentally-sustainable transit service to the public. Outdoor storage space is also required to store 100 LRVs which provide daily revenue service to the existing streetcar system.

Tracks connecting the MSF to the existing streetcar network at Queen Street are required for vehicles to be placed into revenue service.

#### Site Location and Study Area

The property for the Ashbridges Bay MSF is located in the southeast corner of Lake Shore Boulevard East and Leslie Street, north of the existing Ashbridges Bay Wastewater Treatment Plant in the City of Toronto. The site on which the Ashbridges Bay MSF is situated is approximately 22 acres in size and is currently vacant. The site is located close to the existing Queen Street East streetcar tracks minimizing non-revenue deadhead operating costs; meets the minimum property requirements; and can be constructed without the displacement of residence and / or businesses.

The study area for the site selection process extended from Mimico in the west end of the City of Toronto, to Ashbridges Bay (Woodbine Avenue).

The study area for the project site is illustrated in Exhibit 1. The study area for the assessment of the connection track required to connect the MSF to the existing streetcar network extends as far east as Coxwell Avenue and as far west as Cherry Street between Commissioners Street and Queen Street. Exhibit 2 illustrates the nine connection track route alternatives assessed in the study.

#### The Process to Date

The preliminary planning and Transit Project Assessment study has involved a number of phases including the development of a preferred Ashbridges Bay MSF site layout, an assessment of connection track alignment options, an assessment of the impacts of their construction and operation, and the identification of mitigating measures that will be undertaken to minimise the impacts of proceeding with the project. These phases included:

1. The completion of an LRV Maintenance and Repair Facilities Master Plan study which identified the need for a new facility to maintain the new 204 LRVs purchased to replace the current vehicle fleet and additional tracks required to store 100 of the LRVs.

2. Site selection process to identify a parcel of land of sufficient size to accommodate the facility and meet the site selection criteria to meet the operational needs. This involved the Public consultation that took place in June 16, 17 and 18, 2009.
3. Data collection and analysis on existing transportation facilities, the natural environment, and the social environment was completed for the study area.
4. For those areas where issues had been identified, alternative solutions were developed and analyzed. A public meeting was held on February 18, 2010 to present the preliminary design concept for the MSF and the connection track to Queen Street and to gain feedback from the public. The preferred options were incorporated into the preferred project design.
5. A detailed screening process which evaluated nine alternative routes to determine the most feasible route to connect the Ashbridges Bay MSF to the existing streetcar network. The nine alternative routes and the evaluation undertaken to assess the preferred alignment was presented at a public consultation meeting held on April 8, 2010.
6. Environmental issues were identified and alternative methods were selected for the alignment to minimize and/or mitigate adverse impacts.
7. Meetings were held with City of Toronto departments including Toronto Water, and key stakeholders including: the Ministry of the Environment, Hydro One, the Toronto and Region Conservation Authority, Toronto Film Executive and Loblaws Companies Limited.
8. A comprehensive public consultation program was conducted to allow members of the public to review the proposed project, provide comments and outline any concerns. Since June 2009, five public consultation open houses/presentations have been conducted, as well as community consultation through local Councillors and community groups (Ashbridges Bay Neighbourhood Liaison Committee, Port Lands Action Committee). Information was posted on the City and TTC websites. Opportunities were provided for the public to comment verbally, by email or by fax. A summary of responses prepared for all concerns and comments will be included in the EPR.
9. This process has resulted in the development of a preferred design for Ashbridges Bay MSF, and a preferred alignment and associated design for the connection track between the MSF and Queen Street along Leslie Street.

#### Preferred Design

#### Maintenance and Storage Facility

The preferred site layout proposed for the Ashbridges Bay MSF includes the following primary components and is illustrated on Exhibit 3:

- *Indoor Maintenance and Repair Facility (Carhouse).* The proposed carhouse building will be approximately 22,642 m<sup>2</sup>. The building will be designed to comply with Toronto Green Standards including a 50% vegetative green roof and will be oriented on the south side of the property. Automobile and truck access to the building will be via Commissioners Street;
- *Electrical Substation Building.* The substation building will be approximately 700 m<sup>2</sup>, and it will provide electrical power to the Ashbridges Bay MSF as well as to the connection track from the facility to Queen Street along Leslie Street;
- *Outdoor LRV Storage Yard.* The yard will provide storage for approximately 100 LRVs;
- *LRV Access.* From the site, LRVs will access Leslie Street connection track from the MSF via one access point at Leslie Street/Commissioners Street intersection;
- *Stormwater Management Pond.* A stormwater management pond will be provided on site, to meet Toronto Green Standards Initiatives and City of Toronto Wet Weather Flow Management Guidelines, and will be located in the east end of the property;
- *Acoustical Wall.* An acoustical barrier, if required, may be installed along the north and west borders of the yard to mitigate noise effects;
- *Perimeter Landscaping.* Setbacks along Leslie Street and Lake Shore Boulevard are provided to facilitate landscaping; and
- *Toronto Green Standards.* The development of the site will comply with the City's Toronto Green Standards.

The facility is anticipated to employ approximately 470 people over three shifts with the majority of the employees on the day shift.

The development of the site will require the realignment an existing Hydro One cable which is currently located within the site boundary. As part of the development of the facility, a new concrete encased duct bank will be constructed with an alignment outside of the MSF property and will contain new cabling which will be installed and tied into the existing maintenance access chamber.

#### *Non-Revenue Service Connection Track to Existing Streetcar Network*

The non-revenue service track connection between the proposed Ashbridges Bay MSF and Queen Street East will run at-grade in mixed traffic on Leslie Street, from Commissioners Street to Queen Street East.

Nine connecting track route options were assessed and a mixed-traffic Leslie Street route was identified as the technically preferred as it was the most balanced and reasonable option relative to potential community, traffic and economic considerations.

The selection of the recommended non-revenue service connecting track route was guided by the following key requirements:

- No property displacements
- Community impacts
- Cost-effectiveness
- Operates on roads that are suitable for higher order transit service
- Potential future revenue transit corridor
- Can be built in 2013 to support new Ashbridges Bay LRV MSF
- Compliance with the City of Toronto Official Plan

Leslie Street was selected as the technically preferred connecting track route as it will have similar community impacts as the other alternatives considered but allows for more efficient transit operations between the facility and existing streetcar network, has minimal effects on existing traffic and has the lowest capital and maintenance costs.

Of the nine options, Leslie Street provides the most direct route between the future Ashbridges Bay MSF and the existing streetcar service along Queen Street East. This results in lower capital and operation and maintenance costs associated with construction and operation of the track. Most of the other track route options would incur expenditures nearly twice the cost of Leslie Street.

In addition, the Leslie Street track option will have minimal effects on existing traffic operations and no effects on on-street parking. In its existing and future configurations, Leslie Street is designed to accommodate modest traffic levels and higher-order transit such as light rail - which is also consistent with the City of Toronto's Official Plan, September 2007.

Construction of the connection track in mixed traffic was identified as the technically preferred design to accommodate the LRVs as it demonstrated clear advantages over the exclusive lane option, including:

- Allowing four lanes of general purpose traffic to operate along Leslie Street at all hours of the day;
- Ensuring all on-street parking on Leslie Street would be maintained;
- Ensuring access to all driveways and parking lots is maintained; and
- Preserving all left-turn operations.

#### Property Requirements

The proposed maintenance and storage facility is situated on lands currently owned by the Toronto Port Authority (TPA). On December 1, 2009, City Council approved a settlement with the TPA to transfer approximately 18 acres of land, situated in the southeast corner of Lake Shore Boulevard and Leslie Street to the City for the TTC. City staff is in the process of completing the transfer of land from the TPA to the City.

The remaining land required for the facility, approximately four acres, is presently owned by the City of Toronto and will be provided to the TTC for the Ashbridges Bay MSF.

As of May 10, 2010, no permanent property requirements have been identified or are anticipated for the construction of the facility of the non-revenue track connection. Any temporary property requirements for construction of the Ashbridges Bay MSF and/or connection track will be confirmed during design.

#### Future Commitments

The TTC and City have worked with the technical agencies to address environmental concerns and issues associated with the Ashbridges Bay MSF and the required connection track. The potential impacts, on traffic operations, transit operations, natural environment, socio-economic environment (including noise and vibration, traffic and air quality) and cultural environment (including archaeology and built heritage), have been identified, evaluated, assessed and mitigation measures, if required, identified. Methods identified to mitigate effects include best management practices for road salt application, analysis of runoff generated within the facility prior to discharge into the stormwater pond, risk assessment for the site, acoustic wall and/or track-based technologies within the site, track construction methods (rubber boot, continuous welded track, etc.), to mitigate potential noise effects, adjustments to signal timings to optimize traffic flow, and streetscaping along Leslie Street. The design process may lead to refinement or modification of the proposed conceptual design. It is anticipated that such changes will be minor and will not alter the original project intent or commitments to the public and involved agencies.

Through the implementation process, construction methods and staging will be evaluated to minimize impacts to the surrounding properties. This will include mitigation plans to address traffic staging, noise, air quality, etc. Ongoing liaison with technical agencies and the community is anticipated. The TTC and City of Toronto will comply with regulatory government agencies' regulations, standards and directives.

Following the May 19, 2010 design charrette held to engage the community in the urban design landscaping completion organized to generate an exciting vision for the landscaping around the future Ashbridges Bay facility, TTC will host a follow up community meeting for presentation of the concept designs developed for the area. A landscape design will be selected and the selected firm will carry on with detail design.



Schedule

The Transit Project Assessment process will be completed in December 2010. Construction of the facility is anticipated to commence in spring 2011. The construction of the Ashbridges Bay MSF and the connection track to Queen Street is scheduled to be completed in 2013.

Transit Project Assessment Process

Under the Transit Projects Regulation of the *Environmental Assessment Act*, transit projects, such as the Ashbridges Bay MSF, are exempt from the requirements under Part II of the *Act*. The new regulation has created a process which allows for a Provincial assessment of potential environmental impacts to be completed and the report to gain approval within six months.

The preliminary planning has been completed for the project and the Transit Project Assessment Process Notice of Commencement will be issued on June 9, 2010. Public consultation has been included throughout the planning process and further consultation will be conducted on mitigating measures. The attached report, entitled "Ashbridges Bay Light Rail Vehicle (LRV) Maintenance and Storage Facility Transit Project Assessment, Draft Environmental Project Report Executive Summary" provides additional details on:

1. The process followed to develop the project;
2. The rationale for the design elements selected for the Ashbridges Bay MSF and connection track between the MSF at Commissioner Street and Queen Street East; and,
3. A summary of the environmental impacts of the project and net effects following proposed mitigation measures.

Complete details on the Ashbridges Bay MSF and connection track, including conceptual design of the facility layout and connection track alignment, will be contained in the project's EPR, which will be finalized in fall 2010. The EPR will be placed on the public record for the mandatory 30-day review period in late fall 2010.

**JUSTIFICATION**

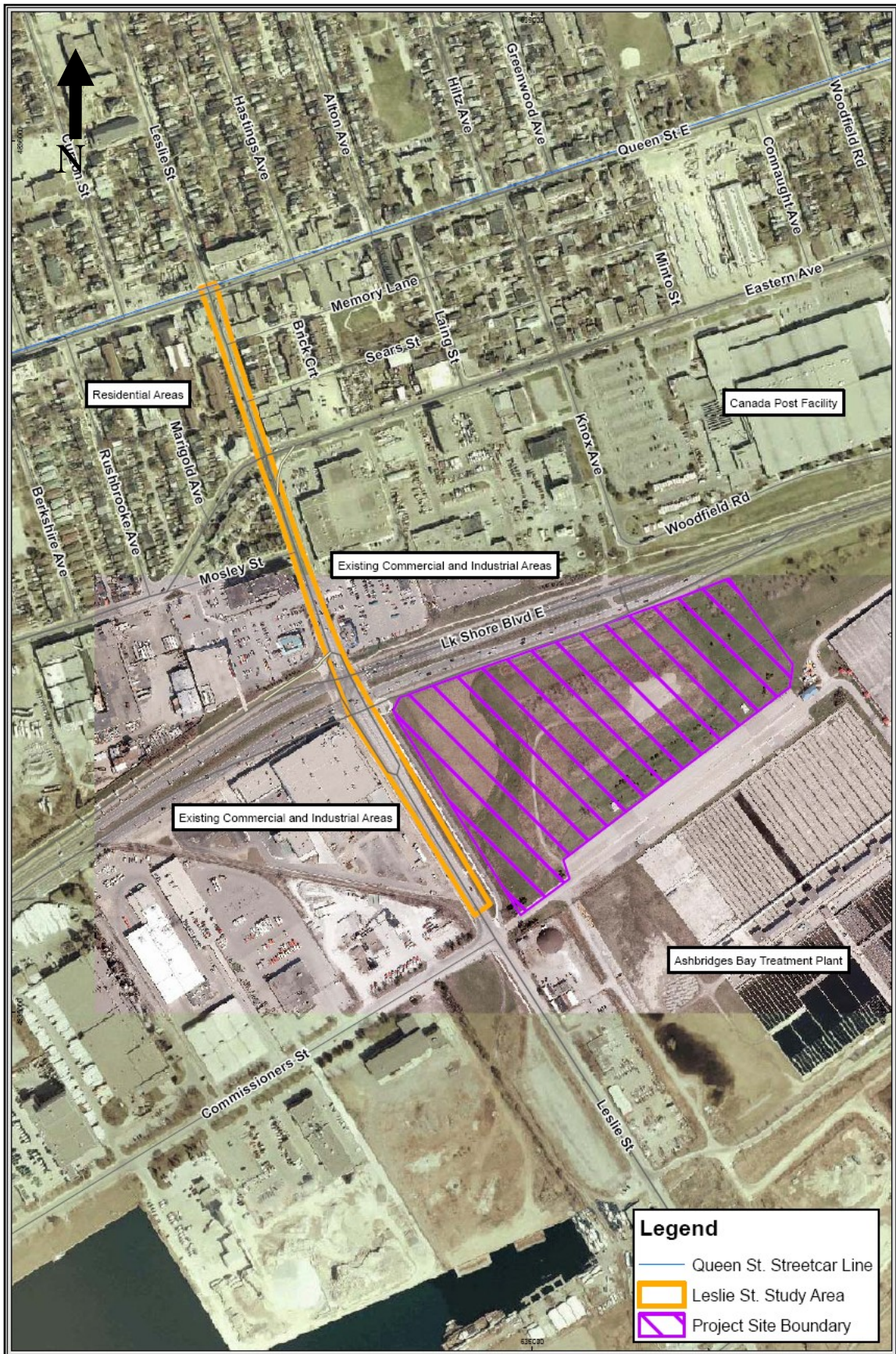
The Ashbridges Bay MSF project, including the non-revenue service connection to Queen Street East is required to support the new LRV fleet that is to start arriving in 2013.

-----

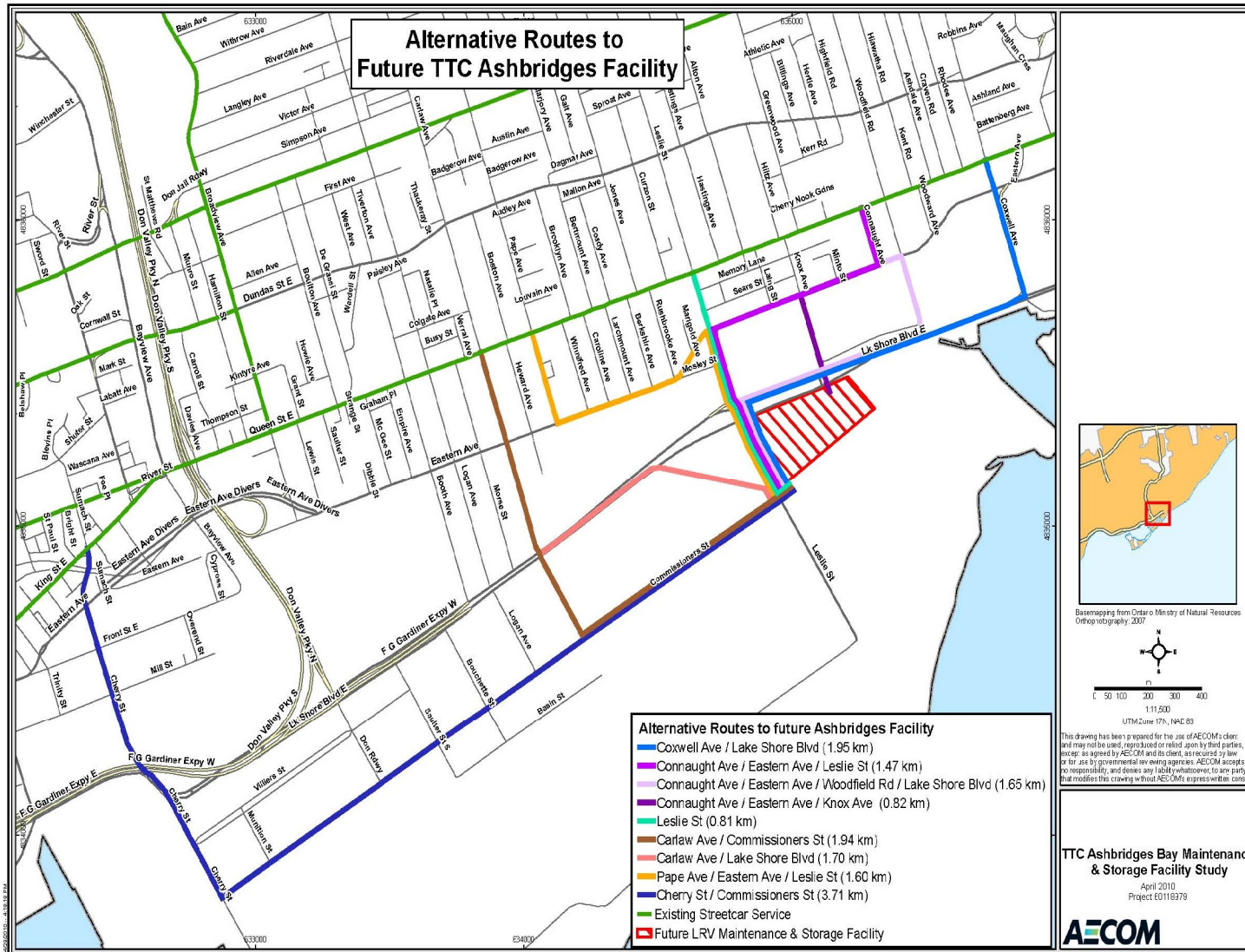
May 12, 2010  
55-11-AL

Attachments: Exhibits 1 to 3  
Draft Environmental Project Report – Executive Summary

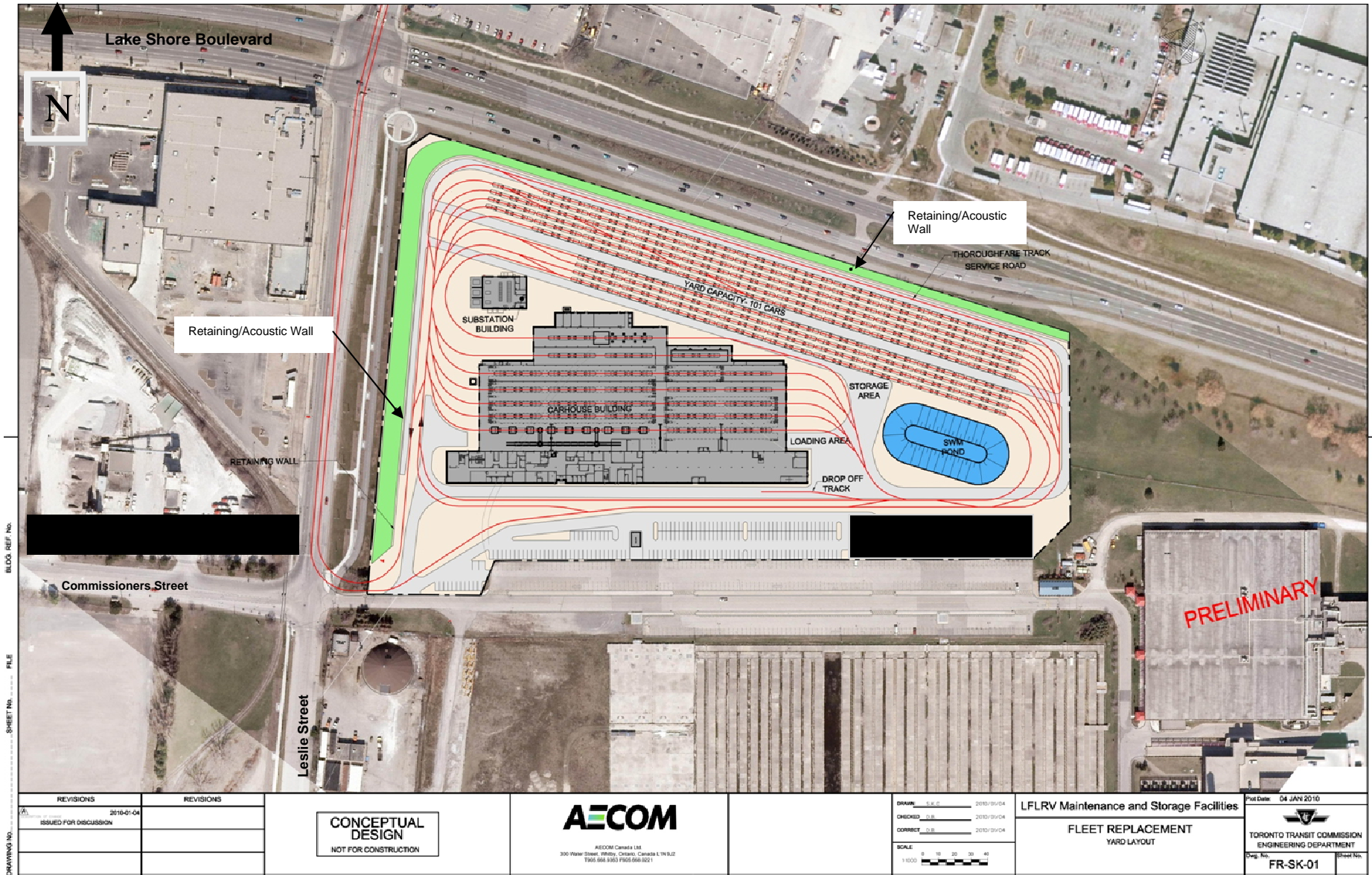
Exhibit 1 – Ashbridges Bay Maintenance and Storage Facility Site Location and Study Area



## Exhibit 2 – Ashbridges Bay Maintenance and Storage Facility Connection Track Route Alternatives



### Exhibit 3 – Ashbridges Bay Maintenance and Storage Facility Site Layout



BIDD REF No. \_\_\_\_\_  
 FILE No. \_\_\_\_\_  
 SHEET No. \_\_\_\_\_  
 DRAWING No. \_\_\_\_\_

REVISIONS	REVISIONS
2010-01-04 ISSUED FOR DISCUSSION	

**CONCEPTUAL DESIGN**  
NOT FOR CONSTRUCTION

**AECOM**

AECOM Canada Ltd.  
300 Water Street, 9th Floor, Toronto, Ontario, Canada L1W 1J2  
905.966.1933 FAX 905.966.0221

DRAWN	S.K.D.	2010/01/04
CHECKED	J.B.	2010/01/04
CORRECT	J.B.	2010/01/04
SCALE	1:1000	

LFLRV Maintenance and Storage Facilities  
**FLEET REPLACEMENT**  
YARD LAYOUT

Plot Date	04 JAN 2010
TORONTO TRANSIT COMMISSION ENGINEERING DEPARTMENT	
Proj. No.	FR-SK-01
Sheet No.	

