In May 2010, TTC was requested to re-examine the Uniliver site which was initially included in the original 14 sites investigated. The Uniliver site (28 acres) is bounded by the CN Rail tracks on the north and south sides of the property, the Don Valley Parkway/Lake Shore Boulevard on/off ramp to the west, and Cinespace film studio, Enbridge Gas and the City of Toronto Works yard to the east. Due to past industrial use on the site, it was determined that the buildings and site would require considerable amount of environmental clean-up to make the site suitable for construction. It was also determined that the existing buildings on site would have to be demolished to accommodate the required maintenance building and storage tracks. The requirements for property acquisitions for this site, the need for demolition of existing structures and anticipated environmental clean-up on site would delay the completion of the project by three years. Further, the construction of the facility at this location was deemed to have substantially higher costs than the recommended Ashbridges Bay site. As a result, the Uniliver site was not recommended for the location of the LRV Maintenance and Storage Facility. Both the City of Toronto Council and the Toronto Transit Commission were in agreement with this recommendation.

On June 9, 2010, the City of Toronto Council approved the use of Ashbridges Bay Site for locating the LRV Maintenance and Storage Facility. The City of Toronto currently owns the land at the Ashbridges Bay site.

**Connecting Track Selection**

As a result of the February 18, 2010 preliminary consultation meeting - and at the request of local residents - TTC agreed to examine several potential routes that would connect the Ashbridges Bay LRV Maintenance and Storage Facility to the existing streetcar service. Several of the options were identified by residents who attended the pre-consultation meeting. Others were developed by TTC. A total of nine connecting track route options and two sub-options were evaluated through a detailed screening process in order to determine the most feasible route.

The selection of the connecting track routes was guided by the Reasoned Argument Approach. The Reasoned Argument Approach provides a clear and thorough rationale of the tradeoffs between the various evaluation factors and criteria and the reasons why one option is technically preferred over another.

The selection of the recommended connecting tracks route was guided by the following key requirements:

- The connecting track options would not affect features of provincial importance
- No property displacements
- Operates on roads that are suitable for higher order transit service
- Potential future revenue transit corridor
- Can be built in 2013 to support the new Ashbridges Bay LRV maintenance and storage facility
- Compliance with the City of Toronto Official Plan

In evaluating the nine connecting track route options, a mixed-traffic Leslie Street route was identified as the technically preferred because it was the most balanced and reasonable option – relative to potential community, traffic and economic considerations.

What distinguished Leslie Street from all of the other route options was the limited number of operational challenges. Of the nine options, Leslie Street would provide the most direct route between the future Ashbridges Bay Maintenance and Storage Facility and existing streetcar service along Queen Street East. This would result in a lower capital and operation and maintenance costs associated with construction and operation of the track compared to the other routes examined. Most of the other track route options would incur expenditures nearly twice the cost of Leslie Street. That said, costs alone did not justify the Leslie Street route.

In evaluating the potential effects on traffic, 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, June 2006. Alternatively, Pape Avenue is a local road designed to carry only local traffic; Lake Shore Boulevard East is a major arterial designed to carry through trips, but because of its significant traffic volumes, would not be able to accommodate two LRV tracks in mixed-traffic operations effectively; and Connought Avenue is too narrow to accommodate two LRV tracks without having to displace residential properties or on-street parking.

Leslie Street does have its operational challenges, specifically potential queuing at the Lake Shore Boulevard East / Leslie Street intersection, which can be addressed by transit signal priority or other measures. It is important to recognize that the majority of the LRVs will operate during off-peak periods; as a result, traffic effects should be minimal as traffic volumes are lower during off peak roadway times.

In TTC’s analysis of the route options, Leslie Street registered near the top relative to the number of residential dwelling units fronting a corridor. The Connought Avenue options had fewer residents fronting the corridor; however, the high probability of having to take property and/or on-street parking along Connought Avenue in order to accommodate two LRV tracks made this group of options infeasible. The Coxwell Avenue option, while limited in the number of residential units fronting that particular corridor, was also not practical because of the inability to effectively operate two LRV tracks in mixed-traffic along Lake Shore Boulevard East. The Pape Avenue option had the most residential properties fronting it, although that alone was not the reason to exclude it from consideration. Significant operational challenges, tight curves and relatively high costs also justified its exclusion.

On June 2, 2010 the Toronto Transit Commission requested that TTC staff consider the Knox Avenue / Eastern Avenue / Russell Yard track route option and prepare report to Toronto City Council. The Knox Avenue / Eastern Avenue / Russell Yard route option was suggested because it would have TTC LRVs operating past fewer residential properties. However, the Knox Avenue / Eastern Avenue / Russell Yard option was not recommended, because:

- It would eliminate storage capacity that is required to accommodate 204 LRVs;
- Properly acquisition requirements on Queen Street to provide the turning radius required for LRVs would delay the project beyond the LRVs delivery date and would add to the project costs;
- This option would result in disruptions to Canada Post’s South Central Lettermail Processing Plant operations on the southeast corner of Knox Avenue and Eastern Avenue; and
- The creation of an access to the Ashbridges Bay LRV maintenance and storage facility on Lake Shore Boulevard East and Knox Avenue would require the construction of curved streetcar tracks along the north edge of the site, which would significantly affect the Martin Goodman Trail and the safety of trail users.

On June 9, 2010 Toronto City Council approved the TTC Knox Avenue / Eastern Avenue / Russell Yard staff report and TTC’s recommendation against this option.

As a result of this comprehensive assessment undertaken for all route options, Leslie Street was identified as the technically preferred route, providing the most balanced option relative to community, traffic and economic considerations. The number of residential properties fronting Leslie Street was comparable to other options; however, Leslie Street would experience minimal operational challenges, enable more efficient service between the proposed maintenance and storage facility and existing streetcar network, and would result in reasonable capital and maintenance costs. On June 9, 2010, Toronto City Council approved the connecting track alignment along Leslie Street.

**The Ashbridges Bay Site**

The site of the proposed Ashbridges Bay LRV maintenance and storage facility is located north of the existing Ashbridges Bay Wastewater Treatment Plant, west of Leslie Street and south of Lake Shore Boulevard East. In
addition, the study area includes the Leslie Street corridor between Commissioners Street and Queen Street East for the establishment of the connecting tracks between the LRV maintenance and storage facility and the existing streetcar tracks along Queen Street East.

The Toronto Official Plan designates the project site as Employment Area and Parks and Open Space. The majority of the project site is designated Employment, and strips of land fronting on Leslie Street and Lake Shore Boulevard East are designated Parks and Other Open Space.

Land use designations within the study area are comprised of Regeneration Area to the west (within the Central Waterfront Area); Employment Area, Mixed Use Area, Neighbourhood, and Parks and Open Space to the north; and Employment Area to the east and south. There are no adjoining properties that are designated for residential development. The areas to the north designated Neighbourhood (i.e., residential) are separated from the proposed project site by areas of existing developed non-residential land uses and land use designations.

The entrance to Toronto’s Tommy Thompson Park is located in the southernmost portion of Leslie Street near the study area. The park is located on the Leslie Street Spit, which extends five kilometres into Lake Ontario and is over 500 hectares in size. The Martin Goodman Trail stretches along the northern portion of the proposed project site along Lake Shore Boulevard East.

The Maintenance and Storage Facility

The new maintenance and storage facility will provide storage for and a maintenance building for 204 LRVs. The new LRVs are expected to begin operating in 2013. It is estimated that the LRVs would operate nearly 12,000 trips per weekday along Leslie Street between the Maintenance and Storage Facility and existing Queen Street East streetcar service. The portion of Leslie Street that the LRVs would operate on would not be part of a TTC revenue service route.

A majority of the LRV trips will leave the new maintenance and storage facility prior to the morning rush hour period and will return to the facility outside of the evening rush hour period. A breakdown of the Leslie Street LRV trips would include:

- 85 outbound trips, between 5:00 and 7:00 a.m.
- 30 inbound trips between 9:00 and 10:00 a.m.
- 30 outbound trips between 2:00 and 3:00 p.m.
- 45 inbound trips between 7:00 and 9:00 p.m.
- 40 inbound trips between 1:00 and 2:00 a.m.

The maintenance and storage facility would employ nearly 470 employees. A majority of the employees (300) would work during the day. The shift times will start at 7:00 a.m., 3:00 p.m., and 11:00 p.m., with corresponding end times nearly eight hours later.

The proposed design features:

- The Main Facility ................................................. 22,642 m²
  - Ground Floor .......................................................... 17,441 m²
  - Second floor: administration ...................................... 2,142 m²
  - Second floor: maintenance platforms ............................... 3,041 m²
- An Electrical Substation Building ................................. 700 m²

The LRV maintenance and storage facility will be a state of the art complex. The building will be architecturally pleasing as well as designed to the Toronto Green Standards. Portions of the main carhouse will include a vegetative green roof. The area surrounding the site will be designed as part of a Landscape Design Competition facilitated by the City and TTC.

The shop portion of the facility is proposed to be one storey (with internal maintenance platforms and catwalks) and average 13.5 metres in height, while the office portion of the maintenance facility is to be two storeys and 9.2 metres high. The maintenance building is generally oriented in an east-west direction.

Various servicing and maintenance activities, scheduled inspections and unscheduled repairs will be performed on the new low floor LRVs at the proposed Ashbridges Bay Maintenance and Storage Facility, including:

- Daily Inspection
- Daily Sweep and Dust
- Sand Replenishment
- Exterior Washing
- Fare Extraction
- Floor Wash
- Car Interior Cleaning
- Undercar Cleaning
- Compressed Air Blow-Down
- Carbon Inspections
- Scheduled Inspections
- Life Cycle Maintenance
- Corrective Maintenance/Running Repairs
- Component Changeouts
- Body Repairs
- Vehicle Repainting
- Wheel Truing
- Special Work Instructions
- Brake Performance Rate Test
- Graffiti Removal

Preliminary estimates indicate the need for 210 parking spaces. A combination of permeable pavement, vegetated green roof, water re-use, oil and grit separator and a wet pond will also be located within the site to achieve the City’s stormwater quality requirements.

An existing Hydro One duct bank currently crosses under the northwest corner of the proposed maintenance and storage facility. In order to mitigate this, the duct bank will require relocation. As part of the development for the facility, a new concrete encased duct bank will be constructed with an alignment that is outside of the maintenance and storage facility property. Following construction of the duct bank, new cabling will be installed and the tied in to the existing junction boxes.

Potential Effects of the Final Site Design

It is recognized that the proposed Ashbridges Bay LRV maintenance and storage facility will result in effects on the existing environment in the study area. The following provides an overview of the potential environmental effects associated with the project, as well as the recommended mitigative measures.

Terrestrial Natural Heritage

Although the property provides some habitat for common urban adapted plant and animal species and has been identified as part of Toronto’s Natural Heritage System in the Official Plan, the site is degraded with predominantly non-native vegetation and none of the features or functions qualifies as provincially significant. The following mitigation is recommended:

- Clearing vegetation and trees between August 1 and April 14, so that no destruction of bird nests occurs, in order to be in compliance with the Migratory Birds Convention Act.
Additional mitigation for the loss of vegetation and wildlife habitat will consist of each building containing a ‘green roof’ on the main carhouse. These roofs will be low-maintenance green roofs; which will sustain sedums, grasses and other low herbaceous vegetation. These roofs will provide some habitat for insects and occasionally for birds. These roofs will also provide other positive environmental functions such as: stormwater retention, minimizing of urban heat island effect, and the reduction of dust and smog levels.

A Tree Inventory and Assessment for the proposed LRV maintenance and storage facility site documented 238 trees or groups of trees on the site, their size and condition (excellent, fair or poor). The total number of individual trees is estimated to be near 370. Of these trees, seven were found to have a diameter breast height (dbh) measurement of 30 centimetres or higher. Trees located on the mound within the site must be removed to accommodate the proposed development. Since the entire site will be altered during the mound removal work on site and thereafter, the only option for preserving trees is to transplant them. However, due to the issue of contaminated soil on the site, it is recommended that no trees be transplanted in order to prevent spreading the contamination to other locations.

The Tree Protection By-law (Chapter 813, Article 3) of the Municipal Code requires a permit to injure or destroy any tree having a dbh (diameter at breast height – diameter measured at 1.4 metres above the ground) equal to or greater than 30 centimetres within the City. The seven trees identified with a dbh measurement of 30 centimetres or higher will require removal. Trees along the right-of-ways (Lake Shore Boulevard East and Leslie Street) will be preserved where reasonable. Many of these trees are newly planted, so the root zone is not likely to be extensive. The seven trees removed is not required.

Once construction is nearing completion, TTC will plant new trees around the perimeter of the operations area. TTC anticipates that these new trees will be recognized as a healthy contribution to the Toronto’s urban forest.

Hydrogeology and Groundwater

Given that this site is not the major source of groundwater recharge in the area and contaminated fill is being left in place below the final grade of the site, maintaining recharge through natural infiltration in the area where the mound will be removed is not required.

In fact, reducing recharge at this site will likely result in a net benefit. Installing an impermeable layer that will restrict downward vertical migration of precipitation over the site and collecting the runoff generated in stormwater retention ponds will help minimize the transportation of adversely affected groundwater off-site.

Vehicle parking areas to the south of the investigated fill area are proposed to be constructed with an impermeable sublayer to reduce on-site infiltration. Though a portion of the northwest corner of the site outside of the investigated fill area is being maintained as parkland that will not be covered by impermeable surfaces (i.e., pavement). However, given the groundwater quality at the site, a liner to restrict the downward vertical migration of precipitation would further minimize infiltration and the transportation of adversely affected groundwater off-site.

With approximately 83% of the site capped or covered with an impermeable layer (concrete, asphalt, or geo-membrane, etc.), the potential for the mobilization of contaminants remaining in the fill material off-site will be reduced and result in a net benefit.

Following removal of the fill mound, shallow groundwater elevations should be verified through the installation of groundwater monitoring wells. Updated groundwater elevation data will assist in determining the requirements for dewatering during construction of the facility and the stormwater management pond.

Temporary construction dewatering may be required when constructing the stormwater management pond and on-site features. However, no significant effects were identified as a result of temporary construction dewatering, although an assessment should be conducted to determine the need for a Permit to Take Water (PTTW). No other specific mitigation measures are proposed related to groundwater.

In accordance with applicable legislation, spills that occur during construction and or during the operation of the facility will be cleaned up immediately and/or appropriate mitigative measures put in place to limit the potential for adverse affects to groundwater quality. Furthermore, during construction, the contractor will be required to have a contingency plan for control and clean-up of spills.

Contaminated Soils

The proposed Ashbridges Bay LRV maintenance and storage facility and particularly the mound area were delineated in subsurface investigations in 2009 and 2010. Soil and groundwater results provided in the subsurface investigations indicated that the mound and fill material at the site are contaminated with metals/inorganics, VOCs, petroleum hydrocarbon compounds, P AHs and PCBs above the applicable MOE Table 3 Site Condition Standards. Additional insight was also provided on the composition of fill materials at the site, which included wood, glass, paper, cardboard, plastic, rubber, brick, concrete rubble, block, clay pipe, rebar and tires. Evidence of coal, ash, and peat were also found in the lower layers of the mound. While the subsurface investigations noted that the soil impacts at the site are primarily limited to the imported fill materials or the native soils lying directly below the fill material and generally do not extend into the underlying native soils.

Subsurface investigations, completed by Terraprobe in 2009 and AMEC in 2010, for the purpose of characterizing soil for disposal indicated representative fill samples, were within the O.Regulation 347 Schedule 4 Leachate Quality Criteria for metals and inorganics, VOCs, SVOCs, and PCBs and as such the fill would be classified as non-hazardous per O.Reg. 347 for the purpose of waste disposal. In addition, based on the results of bulk PCB analyses, the soil would not be classified as PCB waste per O.Reg.362.

The contaminated nature of the on-site soils present challenges for the development of the site including:

- Transportation and disposal of excavated soils
- Health and safety of workers during excavation or construction
- Off-site migration of soils from surface erosion, and surface soil contamination of trucks and equipment
- Potential for dust generation from excavation and construction activities and dust migration beyond the construction zone
- Containment and treatment of groundwater may be necessary if dewatering is required
- Potential requirement for mitigating methane gasses and VOC vapours; and
- Possible human health risk to the workers and occupants using the constructed facilities

---


November 16, 2010
Testing from the Terraprobe 2009 and AMEC 2010 subsurface investigations indicate that materials excavated from the site exceed the applicable MOE Table 3 Site Condition Standards and must be treated as waste material. However, the material is classified as non-hazardous waste per Ontario Regulation 347 for the purpose of waste disposal. Therefore, the excavated materials will be disposed of an MOE approved facility licensed to accept this type of waste.

Due to the unknown origin, significant volume and inherent heterogeneity of the fill materials that are present at the Site, the excavation and removal of fill will be monitored continuously. As conditions warrant, additional assessment of the fill materials will be undertaken to verify that appropriate soil handling and disposal methods are utilized.

TTC has commissioned a human health risk assessment for the operation of the maintenance and storage facility, which will address TTC indoor and outdoor workers as well as sub-surface construction workers (i.e., utility workers). The human health risk assessment is being conducted in general accordance with the technical requirements of Schedule C – Risk Assessment of Ontario Regulation 153/04 as amended under Ontario Regulation 511/09. The human health risk assessment is to be finalized following removal of the soil mound and construction, through additional soil and groundwater sampling, that worst case conditions have been addressed.

The preliminary findings of the human health risk assessment for the identified unacceptable risks associated with direct soil and indirect soil contact pathways and direct and indirect groundwater contact pathways. As such, risk management measures are required to block these exposure pathways and reduce risks to acceptable levels. Risk management measures to be implemented include the following:

- a cap across the site to prevent direct access to impacted soil,
- a sub-slab ventilation system, and
- a health and safety plan to protect subsurface utility workers.

Specifically, the soil removal contract will include capping of the site with a 1.5 metre layer of clean fill and/or pavement structure. The health and safety plan will be developed in accordance with the final human health risk assessment, prior to opening of the maintenance and storage facility.

Additional soil and groundwater sampling will be conducted following completion of the soil removal contract and prior to the risk assessment being finalized to ensure that the human health risk assessment addresses the final worst case on-site conditions.

Continued air and groundwater monitoring during construction, and routine air and/or groundwater monitoring following construction may be required long term.

While additional mitigation measures, as described above, are required soil removal and the construction of the facility, if proper mitigation measures are implemented prior to construction, the functionality of the Ashbridges Bay LRV maintenance and storage facility will not be affected, although ongoing monitoring or treatment activities will be required at the site.

**Stormwater Management**

For the purposes of stormwater management, the site will be developed in accordance to the requirements of the Toronto Green Development Standard and the Toronto and Region Conservation Authority (TRCA). Discharge rates from the site need to be controlled for up to the two year storm (post to pre) and water balance up to the reduction of 50% of the annual volume of runoff is required. The site is required to reduce the annual pollutant load of sediment up to 80% in accordance with the MOE enhanced water quality criteria.

During the construction phase, a temporary erosion and sediment control pond will be used on the site. Any dewatering required for the installation of sewer pipes shall be contained in holding tanks, monitored and treated (if required) prior to discharge from the study area.

Both stormwater quality and quantity reductions from the site will be addressed in a multi component approach utilizing low impact development (LID) best management practices (BMPs) and traditional end of pipe technologies. Low impact development is a term used in stormwater management for the selection of technologies to manage stormwater runoff that that reduces runoff from being conveyed to the storm sewer system. Some examples of unit processes common to LID techniques include infiltration, evaporation, and water re-use. The implementation of LID BMPs (green roofs, permeable pavement and water re-use) will reduce the annual runoff volume by 50% and reduce the annual pollutant load.

The wet pond will be lined in order to prevent upholding due to the potential high groundwater table. In addition, it will serve to prevent exfiltration in the surrounding granular bedding and vertical migration of water into the existing soils. Likewise the permeable pavement will be lined to prevent vertical migration of stormwater runoff.

The study area will be separated into two separate catchments intended to discharge stormwater to Lake Shore Boulevard East and Leslie Street trunk sewers. The Lake Shore Boulevard East Catchment is 6.48 hectares in size and the Leslie Street Catchment is 1.43 hectares. The Lake Shore Boulevard East catchment incorporates a vegetated green roof, water re-use, evaporation and a wet pond in a multi-component approach to address both quality and quantity control. Likewise, the Leslie Street connection incorporates permeable pavement followed by an oil and grit separator.

As an outcome of the proposed stormwater management mitigation measures, a Certificate of Approval (C of A) from the Ministry of the Environment will be required. The C of A will define the requirements (frequency of sampling and water quality samples) to monitor the discharge of the stormwater after the site is developed.

As the site is located within the Lower Don Lands floodplain, proposed means to mitigate flood effects on the site will be accomplished when the final site grade is set at an elevation of 79.0 mASL. The final finished grade is higher than the estimated regional flood water level of 77.4 mASL.

The site drainage system will be designed to account for the partial submergence and sediment found in the Leslie Street storm sewer and Lake Shore Boulevard East storm sewer system. This will include connecting the site's storm sewer to Lake Shore Boulevard East by matching pipe offsets in order to minimize backwater to the site. As the site is located at a much higher elevation than Lake Shore Boulevard East, the sewer system will be raised to a higher elevation to minimize the effects of back water.

Water quantity control measures implemented on the site will keep post development flow rates down to predevelopment flow rates as per the requirements of the City of Toronto. Water quantity will be managed by both LID practices and the wet pond.

The strategy of employing a multi component approach to address stormwater quality ensures that the City of Toronto requirements for stormwater quality are achieved. The combination of permeable pavement, vegetated green roof, water re-use, oil and grit separator and a wet pond are the principle systems in place to achieve this requirement.

**Land Use**

The Toronto Official Plan designates the project site as Employment Area and Parks and Open Space. The majority of the project site is designated Employment, and strips of land fronting on Leslie Street and Lake Shore Boulevard East are designated Parks and Other Open Space.

The Employment Areas are “places of businesses and economic activity”, and is the primary designation for industrial-type land uses, such as is proposed for the project site and related supporting uses. The proposed use of the project site is a permitted use within the Employment Area designation, and supports the Development Criteria policies for the designation. The Parks and Other Open Space designations permit a variety of public uses, including public transit where supported by appropriate assessment.
1. Introduction

The Toronto Transit Commission (TTC) and the City of Toronto are undertaking an Environmental Assessment (EA) for the new Ashbridges Bay Maintenance and Storage Facility (MSF) for Light Rail Vehicles (LRVs). This facility will service and store new LRVs schedule to arrive in 2013. In addition, new non-revenue service tracks are required to provide a connection from the proposed facility to the existing streetcar tracks along Queen Street East. The project is being conducted under Ontario Regulation 231/08 following the Transit Project Assessment (TPA) Process.

1.1 Overview of Environmental Project Report

This Environmental Project Report is organized into nine sections:

Section 1 Introduction
Provides the background and context for the study and introduces the Transit Project Assessment Process.

Section 2 Project Description
Describes the site selection process for the maintenance and storage facility and provides the elements of the site layout, the evaluation of the connecting tracks route options and the preferred connecting track design.

Section 3 Existing Conditions
Describes the baseline natural environment, social environment and traffic and transportation in the area.

Section 4 Potential Environmental Effects and Mitigation Measures – Proposed Site Design
Presents the assessment of environmental effects, including an outline of mitigation measures and net effects for the design of the LRV maintenance and storage facility.

Section 5 Potential Environmental Effects and Mitigation Measures – Proposed Track Design
Presents the assessment of environmental effects, including an outline of mitigation measures and net effects for the design of the LRV connecting track.

Section 6 Monitoring
Outlines the framework of monitoring activities that will be conducted throughout project construction and operations.

Section 7 Future Commitments
Outlines future project commitments before, during after construction.

Section 8 Consultation
Identifies the public, agency and First Nations consultation program that occurred during the preliminary planning and Transit Project Assessment Process, including input from various interested parties and the proponent’s responses.

Section 9 References
Provides a bibliography of the sources referenced throughout the report.

1.3 Study Overview and Purpose

On June 29, 2009 the City of Toronto Council approved the TTC capital budget allowing the TTC to complete the purchase of 204 Light Rail Vehicles to replace its aging streetcar fleet. The Toronto Transit Commission and the City of Toronto have identified the site of a maintenance and storage facility to accommodate the replacement fleet of new low floor LRVs. The selected site for the facility, previously identified in consultation with area residents and stakeholders, will be located at the southeast corner of Lake Shore Boulevard East and Leslie Street in the City of Toronto.

The new LRVs will replace the streetcars that TTC currently operates throughout Toronto. The existing streetcars are between 30 and 40 years old and are nearing the end of their functional use. As opposed to the existing streetcars, the new 204 LRVs:

- Are nearly twice as long with the ability to carry more passengers per vehicle – reducing crowding;
- Are wheelchair accessible;
- Are designed with a strong focus on safety, security and customer convenience in all aspects of design;
- Will increase system capacity by approximately 35% (up from the current 70 million passengers per year to approximately 95 million per year. This will accommodate forecast growth for 20 or more years on the existing streetcar system;
- Provide bright and easy to read light emitting diode (LED) route/destination signs;
- Include improved interior and exterior lighting and air conditioning; and
- Accommodate bicycles and baby strollers in the passenger compartment.

The existing Roncesvalles and Russell Carhouses will not be able to accommodate the complete maintenance operations and storage of the new 204 LRVs. Both facilities have insufficient space to service and store the new vehicles, and would have required rebuilding and expanding existing facilities into adjacent residential neighbourhoods to accommodate the entire new fleet. The new facility will require 22 acres of property and must be located in close proximity to the existing streetcar network.

A new maintenance and storage facility is required to ensure the new LRVs are maintained in a state of good repair. In addition, almost double the storage track currently available is required to accommodate the new LRVs. The new LRVs are expected to begin operating in 2013. It is estimated that the LRVs will operate over 2,000,000 trips per year to approximately 95 million per year. This will accommodate forecast growth for 20 or more years on the existing streetcar system;

- Provide bright and easy to read light emitting diode (LED) route/destination signs;
- Include improved interior and exterior lighting and air conditioning; and
- Accommodate bicycles and baby strollers in the passenger compartment.

The LRV maintenance and storage facility will employ approximately 470 employees. A majority of the employees (300) will work during the day. The shift times will start at 7:00 a.m., 3:00 p.m., and 11:00 p.m., with corresponding ends times nearly eight hours later.

The purpose of this study was to evaluate the environmental effects associated with the construction and operations of new facility, as well as the alignment options developed to connect the LRV tracks to the existing tracks on Queen.
2.3.3 Parking

Parking stalls were sized according to the City’s parking standards by-law (Section 4(17)), which include the following:

- **Length**: 5.6 metres
- **Width**: 2.6 metres
- **Drive Aisle**: 6 metres

Preliminary calculations indicate the need for nearly 210 parking spaces. As the maintenance and storage facility is considered a public service use, parking requirements per the zoning by-law are not applicable.

2.3.4 Stormwater Management Wet Pond

A wet pond will be located within the site as the principle stormwater best management practice to achieve the City’s stormwater quality requirements. The wet pond is sized to achieve 80% annual average Total Suspended Solids (TSS) removal (MOE Enhanced water quality). The total drainage area is 8.56 hectares and 79% impervious. Wet pond volumes for Water Quality are listed in Table 2-1. Additional stormwater management measures incorporated within the site is discussed in Section 4.1.3.2.

### Table 2-1 Study Area Wet Pond Volumes

<table>
<thead>
<tr>
<th>Wet Pond Component</th>
<th>MOE Criteria</th>
<th>Volume (m$^3$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent Pool</td>
<td>186.8 m$^3$/ha</td>
<td>1564.6</td>
</tr>
<tr>
<td>Active Storage</td>
<td>40 m$^3$/ha</td>
<td>342.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>1907.2</strong></td>
</tr>
</tbody>
</table>

2.3.5 General Site Access and Circulation

Site access will be restricted to the existing signalized intersection at Leslie Street and Commissioners Street in an effort to limit conflicts with the Martin Goodman Trail. LRVs and vehicles will access the site through existing driveways into the Ashbridges Bay Sewage Treatment Plant and neighbouring City works yards.

Employees will access the parking area along a dedicated road south of the carhouse. This access route does not cross the LRV tracks. A tree-covered walkway immediately north of the parking area will provide a protected pedestrian access route to a designated crosswalk, crossing the LRV tracks and service road, to the main building entry.

Service vehicles are required to cross the LRV tracks to access the service road immediately south of the carhouse. The service road will provide access to the materials and procurement loading area, the carhouse unloading area the drop-off track, the substation building, the outdoor storage area, and the perimeter of the storage yard.

LRV operators will access the vehicles from the operators waiting and assembly room at the west end of the carhouse building. Marked paths throughout the storage yard will define the access routes for the operators and maintenance personnel accessing the yard.

2.4 Connecting Tracks Route Options

As a result of the pre-consultation meeting held on February 18, 2010 - and at the request of local residents - TTC agreed to examine several potential routes that will connect the Ashbridges Bay LRV maintenance and storage facility to the existing streetcar service (see Figure 2-4). Several of the options were identified by residents who attended the pre-consultation meeting. Others were developed by TTC. A total of nine connecting track route options and two sub-options were evaluated through a detailed screening process in order to determine the most feasible route. A summary of the screening results and analysis are detailed in Sections 2.4.1 to 2.4.10.

2.4.1 Evaluation/Screening Methodology

The nine connecting track route options were evaluated based on the following factor areas and criteria:

- **Access, Parking and Property Effects**
  - Number of access points traversed (i.e., driveways, parking lots, etc.)
  - Number of single family dwelling units adjacent to the route
  - Number of multi-family dwelling units adjacent to the route
  - Dwellings located at north corner of Queen Street
  - Potential effects on property and/or parking
- **Noise**
  - Number of LRV turns required from yard to Queen Street
  - Length of connecting track route
- **Pedestrian**
  - Location of existing pedestrian crossings (excluding trails)
- **Cycling**
  - Number of new crossings of recreational trails (i.e., potential effect on the Martin Goodman Trail, other trails)
- **Land Use / Planning**
  - Existing land use designation
  - Recent or approved development applications
  - Consistency with the City of Toronto Official Plan
  - Potential corridor for revenue service
- **Transit Operations**
  - Estimated travel time between the Ashbridges Bay maintenance and storage facility and existing streetcar service
  - Potential operational challenges for accommodation of connection tracks (i.e., configuration at roadway and/or intersections)
  - Number of signalized intersections traversed
  - Number of LRV turns required
  - Ability to construct connecting tracks by 2013
- **Traffic Operations**
  - Route length (kilometres)
  - Existing roadway width(s)
  - Right-of-way width(s)
  - Number of travel lanes on roadway
  - Roadway(s) classification
  - Existing traffic volumes (24 hour two-way traffic volumes)
  - Existing on street parking (times and restrictions)
- **Social, Cultural and Ecological Factors**
  - Community facilities adjacent to the route
  - Number of cultural and heritage features adjacent to the route (identified in the City of Toronto’s Inventory of Heritage Properties)
  - Sensitive environmental features adjacent to the road
- **Economic/Financial Factors**
  - Capital costs
  - Operation and maintenance costs

The evaluation criteria tables for the connecting tracks route options are identified in Appendix B.
### Connecting Tracks Route Options

The nine connecting tracks route alternatives considered in this evaluation are shown on Figure 2-4 and are further described below.

**2.4.2.1 Coxwell Avenue / Lake Shore Boulevard East / Leslie Street**

The Coxwell Avenue/Lake Shore Boulevard East route extends 1.9 kilometres from Queen Street East south to Lake Shore Boulevard East along Coxwell Avenue, west to Leslie Street and south to Commissioners Street where the route connects to the proposed Ashbridges Bay maintenance and storage facility site.

**2.4.2.2 Connaught Avenue / Eastern Avenue / Leslie Street**

The Connaught Avenue / Eastern Avenue / Leslie Street route extends 1.5 kilometres from Queen Street East south to Eastern Avenue, west to Leslie Street and south to Commissioners Street where the route connects to the proposed Ashbridges Bay maintenance and storage facility site.

**2.4.2.3 Connaught Avenue / Eastern Avenue / Woodfield Road / Lake Shore Boulevard East**

The Connaught Avenue / Eastern Avenue / Woodfield Road / Lake Shore Boulevard East route extends 1.7 kilometres from Queen Street East south to Eastern Avenue, east to Woodfield Road, south to Lake Shore Boulevard East, west to Leslie and south to Commissioners Street where the route connects to the proposed Ashbridges Bay maintenance and storage facility site.

**2.4.2.4 Connaught Avenue / Eastern Avenue / Knox Avenue**

The Connaught Avenue / Eastern Avenue / Knox Avenue route extends 0.8 kilometres from Queen Street East south to Eastern Avenue, west to Knox Avenue and across through Lake Shore Boulevard East where the route connects to the proposed Ashbridges Bay maintenance and storage facility F site.

**TTC Russell Yard / Eastern Avenue / Knox Avenue (Sub-option)**

The TTC Russell Yard / Eastern Avenue / Knox Avenue route extends 0.8 kilometres from the existing TTC Russell Yard (located on Queen Street East near Greenwood Avenue), south to Eastern Avenue, west to Knox Avenue and across through Lake Shore Boulevard East, where the route connects to the proposed Ashbridges Bay maintenance and storage facility site. This route was screened upon request of the Toronto Transit Commission after the analysis of the nine connecting track options was completed.

**2.4.2.5 Leslie Street**

The Leslie Street route extends 0.8 kilometres south from Queen Street East to Commissioners Street, where the route connects to the proposed Ashbridges Bay maintenance and storage facility site.

**2.4.2.6 Carlaw Avenue / Commissioners Street**

The Carlaw Avenue / Commissioners Street route extends 1.9 kilometres south from Queen Street East and east along Commissioners Street where the route connects to the proposed Ashbridges Bay maintenance and storage facility site.

**2.4.2.7 Carlaw Avenue / Lake Shore Boulevard East**

The Carlaw Avenue / Lake Shore Boulevard East route extends approximately 1.7 kilometres south from Queen Street East, east along Lake Shore Boulevard East and south on Leslie Street to Commissioners Street, where the route connects to the proposed Ashbridges Bay maintenance and storage facility site.

**2.4.2.8 Pape Avenue / Eastern Avenue / Leslie Street**

The Pape Avenue / Eastern Avenue / Leslie Street route extends approximately 1.6 kilometres south from Queen Street East, east on Pape Avenue and south on Leslie Street to Commissioners Street, where the route connects to the proposed Ashbridges Bay maintenance and storage facility site.

**2.4.2.9 Cherry Street / Commissioners Street**

The Cherry Street / Commissioners Street route extends 3.7 kilometres south from the existing King Street streetcar service along Cherry Street and east along Commissioners Street, where the route connects to the proposed Ashbridges Bay maintenance and storage facility site.

**Cherry Street / Lake Shore Boulevard East / Carlaw Avenue / Commissioners Street**

The Cherry Street / Lake Shore Boulevard East / Carlaw Avenue / Commissioners Street route extends approximately 3.2 kilometres south from the existing King Street service along Cherry Street, east along Lake Shore Boulevard East, south along Carlaw Avenue and east along Commissioners Street, where the route connects to the proposed Ashbridges Bay maintenance and storage facility site.

### Recommended Connecting Tracks Option

The selection of the connecting track routes was guided by the Reasoned Argument Approach. The Reasoned Argument Approach provides a clear and thorough rationale of the tradeoffs between the various evaluation factors and criteria and the reasons why one option is technically preferred over another.

The selection of the recommended connecting tracks route was guided by the following key requirements:

- No property displacements
- Cost-effective
- Operates on roads that are suitable for higher order transit service
- Potential future revenue transit corridor
- Can be built in 2013 to support the new Ashbridges Bay LRV maintenance and storage facility
- Compliance with the City of Toronto Official Plan, (i.e., route has been identified as a Higher Order Transit Corridor)

### Recommendation and Justification

In evaluating the nine connecting track route options, a mixed-traffic Leslie Street route was identified as the technically preferred because it was the most balanced and reasonable option—relative to potential community, traffic and economic considerations.

What distinguished Leslie Street from all of the other route options was the limited number of operational challenges. Of the nine options, Leslie Street would provide the most direct route between the future Ashbridges Bay maintenance and storage facility and existing streetcar service along Queen Street East. This would result 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 capital, operations and maintenance expenditures nearly twice the cost of Leslie Street. That said, costs alone did not justify the Leslie Street route.

In evaluating the potential effects on traffic, 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...
2.6 The Preferred Connecting Tracks

2.6.1 Preferred Connecting Track Design– Mixed Traffic

Guided by the Reasoned Argument Approach (refer to Section 2.4.4 for a description), a mixed-traffic scenario was identified as the technically preferred design to accommodate LRVs along Leslie Street. The criteria to assess the connecting track designs included:

- Potential effect on Martin Goodman Trail
- Potential displacement of residential properties, businesses and other institutions
- Potential displacement of built and cultural heritage resources
- Potential air quality effects
- Potential noise and vibration effects
- Potential effect on-street parking and adjacent sidewalks
- Potential effect on future traffic operations

In assessing both options, the mixed-traffic and exclusive lane scenarios will similarly result in:

- No displacement or reconfiguration of the Martin Goodman Trail
- No displacement of existing residences, businesses and institutions, built and cultural heritage resources
- No emissions, except potential dust associated with construction
- Comparable noise and vibration effects, with appropriate mitigation measures in place

Recognizing these similarities between the two track designs, the mixed-traffic scenario demonstrated clear advantages from the exclusive lane option, including:

1. Allowing four lanes of general purpose traffic to operate along Leslie Street at all hours of the day; the exclusive lane option will restrict travel on two lanes, resulting in significant traffic delays along Leslie Street and parallel north-south roads – even during off-peak periods.
2. Ensuring all existing on-street parking on Leslie Street will be maintained on Leslie Street; the exclusive lane option will require the displacement of all parking on Leslie Street.
3. Ensuring access to all driveways and parking lots is maintained; the exclusive lane option will eliminate access from the opposite lane (no left turns).
4. Preserving all left-turn operations; the exclusive lane option will prohibit left turns from Leslie Street to Mosley Street, Sears Street and Memory Lane.
3. Existing Conditions

The following sub-sections provide a description of the existing conditions on the site, and where appropriate, the surrounding lands. This section has been divided into the follow factors:

- Natural Environment
- Social Environment
- Traffic and Transportation

The information documented in this section is also available in the following technical reports:

- Tree Inventory and Assessment Report (Arborist Report), February 2010;
- Subsurface Investigations TTC LRV Maintenance & Storage Facility; Lake Shore Boulevard East and Leslie Street, October 2009;
- Phase I Environmental Site Assessment and Contaminated Sites Screening Report, February 2010;
- Phase II Environmental Site Assessment, March 2010;
- Cultural Heritage Resources Assessment, October 2009 (revised April and July 2010);
- Stage 1 Archaeological Assessment Report, October 2009 (revised July 2010);
- Traffic Impact Study, September 2010;
- Noise & Vibration Environmental Assessment Report, September 2010;
- Stormwater Management Report, August 2010;
- Air Quality Assessment Report, February 2010; and

3.1 Natural Environment

3.1.1 Terrestrial and Wildlife Natural Heritage

3.1.1.1 Methodology

Several sources were used to assess both the significant species and the natural heritage features within the study area, as well areas 2 to 5 kilometres away from the specific site. These sources included:

- Topographic mapping of the site;
- Natural Heritage Information Centre (NHIC), Ontario Ministry of Natural Resources for species risk information and vegetation communities rankings;
- Ontario Ministry of Natural Resources wetlands, Areas of Natural and Scientific Interest (ANSIs), fisheries and aquatic habitat information;
- Natural Resources Values Information System (NRIVIS) layer data; and

A site investigation was conducted on October 20, 2009 to document existing conditions such as terrain and vegetation.

Vegetation Conditions

The proposed project site consists of abandoned industrial land located in a heavily industrialized area of Toronto. As such, it has a history of intensive land use and therefore is very disturbed. Most of the site lies within a fenced-in area that restricts access by the general public. The subject property has a long history of soil importation and filling and therefore it is very disturbed. A considerable amount of fill has been brought to the site, and graded to form a low flat topped hill that stands up to 15 metres above the surrounding lands. Young trees and shrubs cover parts of the hill, but most of these appear to have been planted. A sign on the west part of the site indicates that at least part of the site was planted by Metro Works and Boy Scouts in 1995. This corresponds well with the size of many of the trees and the shrubs. The study site is composed of young, culturally influenced vegetation communities, including: meadows, thickets, and deciduous plantations. Most of the site lies within a fenced in area that restricts access by the general public.

The vegetation community names and codes have been adapted from the Ecological Land Classification (ELC) system (Lee et al. 1998). While ELC is the standard method for describing vegetation in Ontario, it is not inclusive enough to include all vegetation types, particularly culturally influenced ones such as those present in the subject site. The trees and shrubs are essentially all planted and therefore vegetation has not developed naturally. The site has not been mowed for the past several years, consequently grasses and forbs grown in adventively and most of the site is meadow. The vegetation types are mapped Figure 3-1 (Existing Vegetation Features Figure) and described below.

CUM1 – Cultural Meadow

The site is mostly covered with graminoid (grass-dominated) meadow vegetation that is largely co-dominated by Quack Grass (Agropyron repens), Kentucky Bluegrass (Poa pratensis), Red Fescue (Festuca rubra) and Smooth Brome Grass (Bromus inermis). A variety of broad-leaved forbs are represented. The most abundant species include Canada Thistle (Cirsium arvense), Cow Vetch (Vicia cracca), Chicory (Cichorium intybus), Birdsfoot Trefoil (Lotus corniculatus), Heath Aster (Aster ericoides) and Wild Carrot (Daucus carota).

CUP1-4 – Carolina Poplar Deciduous Plantation

Three rows of Carolina Poplar (Populus deltoides) have been planted along the western portion of the site, parallel to Leslie Street and just east of the pedestrian sidewalk. The trees are 8 to 10 metres tall with a diameter at breast height (dbh) of 10-15 centimetres. A few Green Ash (Fraxinus pennsylvanica) and Bur Oak (Quercus macrocarpa) are mixed in among the poplars. Additional ornamental street trees have been planted along Lake Shore Boulevard including Ginkgo (Ginkgo biloba), Green Ash, Silver Maple (Acer saccharinum) and Kentucky Coffee-tree (Gymnocarpus dioica).

CUP1-4a – Eastern Cottonwood Deciduous Plantation

Stands of young Eastern Cottonwood (Populus deltoides) approximately 12 metres tall are situated on the north and south edges of the flat-topped hill. The trees range from 10-25 centimetres dbh. Occasional Staghorn Sumacs and Manitoba Maple saplings occur below the canopy, while ground layer is dominated by Late Goldenrod (Solidago altissima) and Smooth Brome.

CUS1 – Exotic Cultural Savannah

Planted ornamental trees are present in two groups: along the south part, just north of the treatment plant parking lot, and outside of the fence in the northeast corner. The trees are now mostly in the range of 3 to 8 metres tall and occupy about 25% cover simulating savannah structure of meadow among scattered trees. Tree cover in the south portion include mainly: Norway Maple (Acer platanoides) and Austrian Pine (Pinus nigra), but a number of other species are also present including Honey Locust (Gleditsia triacanthos), Catalpa (Catalpa sp.), Horse-chestnut (Aesculus hippocastanum) and White Spruce (Picea glauca). Tree regrowth in the northeast area is largely Norway Maple, Silver Maple (Acer saccharinum), Black Alder (Alnus glutinosa) and Japanese Tree Lilac (Syringa reticulata). Meadow vegetation as described in CUM1 (above) surrounds the trees.

CUT1-1 – Staghorn Sumac Cultural Thicket

Staghorn Sumac (Rhus typhina) forms a linear thicket along the western crest of the flat-topped hill. These were likely planted but are spreading outward. Some Manitoba Maple saplings are growing among the thicket.
east, and the adjacent lands in that direction add some additional poor quality habitat. Tommy Thompson Park (Leslie Street Spit) exists about 600 metres to the south. This site is a large block of natural habitat in various successional stages along the Lake Ontario shoreline. There may be some movement of wildlife between the site and Tommy Thompson Park, particularly birds as there is a strip of vacant meadow to the south of the site and along the west side of the Ashbridges Bay Water Treatment Plant.

Lake Shore Boulevard which borders the site, is an extremely busy wide road and therefore there is no landscape connection northward. Similarly Leslie Street and various commercial and industrial lands occur to the west and there is no connectivity in that direction.

Summary of Terrestrial and Wildlife Natural Heritage

No Provincially Significant Wetlands (PSW), Areas of Natural or Scientific Interest (ANSII) or Environmentally Significant Areas (ESA) occur within the subject property. Neither does it contain significant valleylands nor significant woodland. A Threatened Species was observed flying over but the site does not provide any potential breeding habitat or special foraging habitat and therefore it does not constitute habitat of an Endangered or Threatened Species.

The designation of Significant Wildlife Habitat is the responsibility of the planning authority and the site is not so designated. Various criteria are used to assess if significant wildlife habitat is present as identified by OMNR (2000) which include: a) seasonal concentrations of animals, b) rare vegetation communities, c) specialized habitats for wildlife, d) habitat for species of conservation concern (other than endangered or threatened species), and e) animal movement corridors. There are no seasonal wildlife concentrations. The site is young and entirely on fill and consisting mostly of non-native flora, therefore no rare vegetation communities are present. Similarly, there are no specialized habitats for wildlife and no species of conservation concern are present. There may be some movement of wildlife between the site and the Leslie Spit or the small area of habitat immediately to the east, but the linkage dead ends, and it does not link between core areas of habitat. In summary, the site does not contain significant wildlife habitat.

3.1.2 Hydrogeology and Groundwater

3.1.2.1 Methodology

Desktop Study

The Desktop Study for the hydrogeologic assessment of the LRV maintenance and storage facility is based upon information from the following sources:

- Subsurface investigation, TTC LRV Maintenance and Storage Facilities Lake Shore Boulevard East and Leslie Street by the Terraprobe Limited;
- Phase II Environmental Site Assessment, LFLRV Maintenance and Storage Facilities Fleet Replacement Project, Lake Shore Boulevard East and Leslie Street, Toronto, Ontario by AMEC Earth and Environmental (DRAFT);
- Ministry of the Environment (MOE) Water Well Records Database.

Field Work and Data Collection

The field work and data collection undertaken for the study area included a site visit on October 15, 2009 to assess hydrogeologic conditions within the site boundaries and water level measurements to confirm groundwater elevations described in the subsurface investigation - completed by Terraprobe in October of 2009. The most recent water level data are documented in the AMEC Phase II ESA. Groundwater levels were measured by AMEC for all exiting on-site monitoring wells on March 9, 2001.

3.1.2.2 Findings

Physiography

The wider study area is located within the Iroquois Plain physiographic region, which is characterized by a prominent ridge located near Eglinton Avenue, north of the study site. The ridge represents the former Lake Iroquois shoreline. Soils to the south of the paleo-shoreline are generally comprised of fine silts and sands and dip gently southwards towards Lake Ontario. Till soils can often be found at surface in upland areas; however, within our study area, Lake Iroquois shoreline sediments would be expected normally at surface.

Geology

According to surficial geological mapping in Urban Geology of Canadian Cities, deposits of Lake Iroquois shoreline deposits are expected to be present at surface over most of the study area. These deposits consist of sand and silty sand that are generally well drained. Geological mapping also shows that deposits of silty clay to clayey silt till of the Sunnybrook Formation may be present on site at surface. However, it is most likely to be found beneath the Iroquois Shoreline deposits according to cross-sections generated by Karrow and White. Interbedded shale and siltstone of the Georgian Bay Formation lie beneath the Sunnybrook till. This geologic sequence is confirmed by MOE water well records collected within a one kilometre radius of the study area.

Geotechnical and environmental subsurface investigations completed within the proposed maintenance and storage facility area, and documented by Terraprobe in October 2009 and AMEC in 2010, show the site is underlain by four major soil deposits; a Surficial Fill deposit, an Organic Silt to Organic Clay, a Sand and Silty Sand Deposit, and a Silty Clay Till Deposit. This sequence of granular materials is all underlain by shale bedrock.

The results of intrusive assessment work indicates that the fill materials are highly variable, being composed of soil containing varying amounts of clay, silt sand and gravel along with various amounts of debris including (but not limited to); brick, concrete, concrete footings, steel, organic material, wood, glass, wire, tires, rubber, fabric, cardboard, ash, cinder and plastic. Below the fill, borehole logs from the field investigations are generally consistent with the stratigraphic sequence described by Karrow and White, and MOE water well records within one kilometre of the site.

Drilling investigations were completed along the Leslie Street corridor by AMEC in 2010. Soil stratigraphy along the Leslie Street corridor is generally consistent with that observed on the site. Furthermore, MOE water well records within one kilometre of the corridor indicate a similar, if not identical, geologic sequence beneath this alignment.

Further investigation completed by AMEC between January 4 and February 19, 2010 determined that beneath the surficial fill deposits there is a layer of peat and organic silty clay to clayey silt with discontinuous silty sand, sand and peat layers ranging in thickness from 1.6 to 8.2 metres (AMEC, 2010). These organic deposits are underlain by a layer of sandy silt to silt sand, which is believed to be a part of the Scarborough Auclair Complex. These sandy silt deposits ranged in thickness from 2.97 to 5.79 metres across the site (AMEC, 2010). A layer of silty clay till, which is believed to be the Sunnybrook Till, was encountered below the sandy silt to silt sand. This till unit was found to be approximately 6.5 metres thick in the northern portion of the property becoming thin to the south where it eventually pinches out (AMEC, 2010).

Below the till, deposits of interbedded shale and siltstone of the Georgian Bay Formation were encountered.

Hydrogeology

- Groundwater Flow

Groundwater elevations measured in the shallow and deep monitoring wells by AMEC in 2010 indicated that the shallow water table and deeper potentiometric surface lie within the surficial fill materials. Due to the presence of
Community Context

The study area borders the Leslieville (Ward 30) and the Beaches-East-York (Ward 32) neighbourhoods in the City of Toronto. Collectively, the two communities comprise 106,645 residents and 31,114 employees. (City of Toronto, 2006)

Parks and Recreation Facilities

The study area comprises one park – Maple Leaf Forever Park located near Leslie Street and Memory Lane. Additional parks located in the vicinity of the study area include:
- Leslie Grove Park (located near Queen Street East and Jones Avenue);
- Jonathan Ashbridge Park (located near Eastern Avenue and Woodfield Road); and
- Greenwood Park located north of Dundas Street East at Alton Avenue.

The entrance to Toronto’s Tommy Thompson Park is located in the southernmost portion of Leslie Street near the study area. The park is located on the Leslie Street Spit, which extends five kilometres into Lake Ontario and is over 500 hectares in size. The park represents some of the largest existing natural habitat on the Toronto waterfront. Wildflower meadows, cottonwood forests, coastal marshes, cobble beaches and sand dunes are just some of the habitats at Tommy Thompson Park. Wildlife flourishes at the park, which provides one of the best nature viewing areas in the Greater Toronto Area (GTA). Other recreational opportunities include hiking, cycling, rollerblading and fishing.

The Martin Goodman Trail stretches along the northern portion of the proposed project site along Lake Shore Boulevard East. The Martin Goodman Trail is one of the most heavily used recreational and commuter trails in Toronto, and serves as the primary east-west cycling and pedestrian route across the City’s waterfront. Extending across the length of the Port Lands, the Martin Goodman Trail is used for walking, cycling and rollerblading. It connects to other waterfront trails and recreational areas, including Tommy Thompson Park.

Toronto Bikeway #4 is primarily an east-west trail located on the north side of Lake Shore Boulevard East. The trail extends between Don Roadway (west) and Woodbine Park (east). The trail provides a direct link to several other trails leading downtown and to the waterfront.

Figure 3-6 View of Martin Goodman Trail along the site

There are no recreational facilities and/or community centres in the immediate study area. The nearest community centre is the S.H. Armstrong Community Recreation Centre, located near Queen Street East and Woodfield Road, approximately 1.7 kilometres from the proposed site.

Schools, Libraries and Religious Institutions

The study area encompasses no schools, libraries or religious institutions. There are two schools in the vicinity of the project study area:
- St. Joseph Catholic School is located in the Leslieville community on Leslie Street, north of Queen Street East; and
- The Duke of Connaught Public School is located in the Beaches-East-York community near Queen Street East and Woodfield Road.

There is one church in the vicinity of the project study area – St. Joseph Catholic Church, located adjacent to St. Joseph Catholic School. The Jones Branch of the Toronto Public Library is located on Jones Avenue North of Queen Street East.

Employment Areas

The employment character of the study area is predominantly industrial and commercial. The sales and service industries are the leading employers in the area, with modest levels of employment in business and finance, art, culture, recreation and sport and social science, education and government.

Hospitals, Nursing Homes and Emergency Care Facilities

The study area comprises no major hospitals or emergency care facilities. The City of Toronto EMS Training Centre is located within the study area at the southwest corner of the Knox Avenue and Eastern Avenue intersection.

The Avondale Retirement Residence and Physiotherapy Clinic is located within the study area at the corner of Leslie Street and Queen Street East. Avondale Retirement Residence is part of the Allegro network, one of the country’s largest groups of high-end autonomous and semi-autonomous retirement residences.

The Heritage Nursing Home is located within the study area, on the south side of Queen Street East between Jones Avenue and Leslie Street. The Heritage Nursing Home is a 201-bed long term care facility and provides standard, semi-private and private accommodations and in house clinic services.

Tourism

The Leslieville neighbourhood offers a vibrant restaurant scene and nightlife. Historically, Leslieville is home to the Film District, and as such, it is populated by quaint shops, including a number of vintage stores. The Beaches-East-York neighbourhood has two main attractions: the Beach and Queen Street East- with its diverse mix of shops, sidewalk cafes, pubs and restaurants.

Ashbridge Estate is an historic home located adjacent to the study area at Queen Street East and Woodfield Road between the Leslieville and Beaches-East-York communities. The Ashbridge Estate was once the home of the Ashbridge family, one of the founding families of Toronto, who immigrated from to Toronto from Pennsylvania in 1793. The Ashbridge Estate includes two homes and several gardens.

Residential Areas

Residential neighbourhoods within the study area are located along Leslie Street north of Lake Shore Boulevard East.

The nearest homes exist at the corner of Leslie Street and Eastern Avenue, approximately 300 metres from the proposed LRV maintenance and storage facility. In total, Leslie Street comprises 48 single family units and 53 multi-family residential properties between Queen Street East and Lake Shore Boulevard East. South of Lake Shore Boulevard East, the area is primarily industrial and commercial.
3.2.2.3 Summary of Existing Community Features and Recommendations

The study area contains a diverse mix of residential, industrial and commercial uses. Single family and multi-family residential uses exist on both sides of Leslie Street between Eastern Avenue and Queen Street East. Two cycling trails traverse the study area – located opposite to one another along Lake Shore Boulevard East. A retirement home and nursing home are located near the Queen Street East / Leslie Street intersection.

3.2.3 Cultural Heritage Resources

3.2.3.1 Methodology

An inventory of existing Cultural Heritage Resources for the proposed Ashbridges Bay LRV Fleet Maintenance and Storage Facility study area was conducted in accordance with the Ontario Heritage Act (2005), the Environmental Assessment Act (2006), the Ontario Planning Act (2005) and related Provincial Policy Statement (2005). The goals of the Cultural Heritage Resource Assessment are:

- To present a built heritage and cultural landscape inventory of cultural heritage resources in the study area; and
- To provide mitigation recommendations with respect to potential disruptions and displacements of heritage resources identified during data collection and/or field review.

3.2.3.2 Findings

The Cultural Heritage Resource Assessment determined that, one cultural heritage resource in the study area was previously identified and listed on the City of Toronto’s Inventory of Heritage Properties. Further, a field review in combination with a review of historic mapping resulted in the identification of seven additional cultural heritage resources. No properties located within the study area have been designated under the Ontario Heritage Act.

The eight identified cultural heritage resources are located along the northern portion of the study area, along Leslie Street between Queen Street East and Lake Shore Boulevard East (see Figure 3-7). The identified resources represent early twentieth century land use and development in this part of the City of Toronto. Six of these are built heritage resources, which include two commercial structures and four industrial structures. One of the commercial structures is listed on the City of Toronto’s heritage inventory. The other two resources identified are cultural heritage landscapes, both of which are residential streetscapes. There are no features located in the study area which are designated under the Ontario Heritage Act.

3.2.3.3 Summary of Existing Cultural Heritage Resources and Recommendations

A total of eight cultural heritage resources are located along Leslie Street between Lake Shore Boulevard East and Queen Street East. There are no features located in the study area which are designated under the Ontario Heritage Act.

Based on the results of the field inventory and identification of potential effects, the following mitigation measures are recommended:

- Construction activities should be planned so as to ensure that associated vibration effects do not adversely affect resources set in close proximity to road right-of-ways; and
- Where any identified, above ground, cultural heritage resources are to be affected by loss or displacement, further research should be undertaken to identify the specific heritage significance of the affected cultural heritage resource and appropriate mitigation measures should be adopted.

The complete Cultural Heritage Assessment Report is provided in Technical Report # 5 - Cultural and Heritage Assessment Report: Built Heritage Resources and Cultural Heritage Landscapes October 2009 (revised April and July 2010).
3.2.4 Archaeology

3.2.4.1 Methodology

The Stage 1 archaeological assessment of the proposed LRV maintenance and storage facility study area was conducted in accordance with the Ontario Heritage Act (2005) and the Ontario Ministry of Culture’s (MCL) Draft Standards and Guidelines for Consultant Archaeologists (2009). The goals of the Stage 1 archaeological assessment are:

- To provide information about the geography, history, previous archaeological field work and current land condition of the study area;
- To evaluate in detail the archaeological potential of the study area which can be used, if necessary, to support recommendations for Stage 2 survey for all or parts of the proposed Ashbridges Bay LRV maintenance and storage facility; and
- To recommend appropriate strategies for Stage 2 survey, if necessary.

A one kilometre buffer was used around the study area to collect background data.

3.2.4.2 Findings

The Stage 1 archaeological assessment determined that no archaeological sites have been registered within or immediately adjacent to the study area. However, the Ashbridges site (A(Gt-1), known as the Ashbridge Estate, was identified as being located within one kilometre of the study area. A review of the geography, as well as local knowledge of the study area’s nineteenth-century land use, suggested that the potential for the recovery of Aboriginal or early Euro-Canadian cultural material within the proposed project site is low.

The MCL’s Draft Standards and Guidelines for Consultant Archaeologists list characteristics that indicate where archaeological resources are most likely to be found (2009: 5-6). Archaeological potential is confirmed when one or more feature of archaeological potential is present.

Per Section 1.3.1 of the MCL standards and guidelines, the proposed new LRV fleet maintenance and storage facility does not meet the criteria used for determining archaeological potential. The corridor for the connecting tracks to Queen Street East, however, meets three of the criteria used for determining archaeological potential:

- Water sources: primary water source, secondary water source, or a past water source (i.e., Lake Ontario);
- Areas of early Euro-Canadian settlement (i.e., Leslieville); and
- Early historical transportation routes (i.e., Leslie Street, Queen Street East).

These criteria characterize the corridor for the connecting tracks to Queen Street East as having the potential to identify both Aboriginal and Euro-Canadian archaeological sites. However, based on the results of the site inspection, it was determined that the both the proposed LRV maintenance and storage facility and the connecting tracks to Queen Street East have been previously disturbed, negating archaeological potential.

The complete Stage 1 Background Study and Property Inspection is provided in Technical Report # 6 - Stage 1: Background Study and Property Inspection (revised July 2010).

3.2.4.3 Summary of Archaeology and Recommendations

The Stage 1 archaeological assessment determined that no archaeological sites have been registered within or immediately adjacent to the study area. The Ashbridges site (A(Gt-1), known as the Ashbridge Estate, was identified as being located within 1 kilometre of the study area. Based on the results of property inspection, it has been determined that both the proposed LRV maintenance and storage facility site and the Leslie Street connecting track route have been previously disturbed, negating archaeological potential. As a result, the Ashbridges Bay LRV maintenance and storage facility site and connecting track route did not require additional archaeological assessment.

The Stage 1 archaeological assessment report was submitted to the Ministry of Culture in July, 2010 to ensure that any concerns may be addressed prior to the design phase. On September 13, 2010 the Ministry of Culture accepted the recommendations of the Stage 1 archaeological assessment report.

3.2.5 Noise and Vibration

3.2.5.1 Methodology

Identification of Sources and Receivers

A review of the site and surrounding land uses was completed using a combination of on-site observations as well as aerial photography. The dominant source of noise and vibration in the area was observed to be vehicular traffic from Leslie Street and Lake Shore Boulevard East. The following were determined to be the closest noise and vibration receptors to the proposed site:

- Residences along Leslie Street (R1);
- Residences along Eastern Avenue (R2); and
- The marina along Ashbridges Bay Park Road (R3).

Although the MOE does not consider a park as a noise sensitive receptor, Tommy Thompson Park (CR4) was analyzed to identify potential noise and vibration effects at that location. Figure 3-8 illustrates the location of the noise sensitive receptors and monitor locations. For this analysis, Tommy Thompson Park was identified as a day-time receptor only, since it is not a campground with regular overnight uses. The analysis was completed at the park entrance on Leslie Street, the closest point to the proposed TTC facility.
Based on ambient monitoring data collected at monitor location M2, the Leq16 and Leq8 are greater than the 55dBA and 50dBA minimum, respectively. The transportation source sound level limits at Leslie Street receptors (R1) are shown in Table 3-9.

Table 3-9  Sound Level Limits for Transportation Sources

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Sound Level Limit (dBA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td></td>
</tr>
<tr>
<td>Daytime (07:00-23:00)</td>
<td>63</td>
</tr>
<tr>
<td>Night-time (23:00-7:00)</td>
<td>59</td>
</tr>
</tbody>
</table>

3.2.5.5 Stationary and Transportation Source Vibration Criteria

All vibration sources at the LRV maintenance and storage facility, as well as the new LRVs operating on Leslie Street should comply with ISO 2631-2. Evaluation of human exposure to whole-body vibration – Part 2: Continuous and shock-induced vibration in buildings. This publication sets a maximum RMS velocity limit of 0.14 mm/s or 83dB (re 10mm/s) at frequencies between 10 and 100 Hz within residential buildings during night time. This limit corresponds to 1.4 times the threshold of human perception for vibration. Typically, streetcar vibration does not produce vibration levels below 10 Hz. This criterion applies to all receptors.

3.3 Traffic and Transportation

3.3.1 Existing Road and Traffic

3.3.1.1 Existing Roads

Existing roads within the study area include:

- Leslie Street – north-south arterial roadway with four through lanes from Queen Street East to Commissioners Street
- Lake Shore Boulevard East – east-west arterial roadway with six through lanes
- Queen Street East – east-west arterial roadway with four through lanes
- Eastern Avenue – east-west arterial roadway with two through lanes
- Commissioners Street – east-west, low volume collector
- A more detailed description of area roads and their functions are provided below.

Leslie Street

Leslie Street functions as a north-south arterial roadway with four basic lanes from Queen Street East to Lake Shore Boulevard. South of Commissioners Street, Leslie Street functions as a collector road with two basic lanes to its southern terminus. It has a posted speed limit of 50 kilometres/hour. Leslie Street intersects with the other arterial roads, including Queen Street East, Eastern Avenue and Lake Shore Boulevard East, as well as a collector road – Commissioners Street. All intersections are signalized. Auxiliary left turn lanes are provided to Lake Shore Boulevard East, and an auxiliary right turn lane is provided on the northbound approach. A signalized intersection is also provided at the Loblaw/Price Chopper access located between the Leslie Street intersections with Eastern Avenue and Lake Shore Boulevard East.

The provision and restriction of on-street parking along Leslie Street between Commissioners Street and Queen Street includes:

- Commissioners Street to Lake Shore Boulevard East – no stopping at any time;
- Lake Shore Boulevard to commercial access – no parking at any time;
- Commercial access to Eastern Avenue – mix of no stopping and no parking during weekday peak traffic periods (i.e., 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.); and
- Eastern Avenue to Queen Street East – no parking during weekday peak direction traffic periods (i.e., southbound 7:00 to 9:00 a.m. and northbound 4:00 to 6:00 p.m.).

Additionally, there are standard “no parking” or “no standing” restrictions adjacent to intersections and TTC bus stops.

Lake Shore Boulevard East

Lake Shore Boulevard East functions as an east-west arterial roadway with six through lanes and a posted speed limit of 60 kilometres/hour. At the signalized intersection of Lake Shore Boulevard East and Leslie Street, there are auxiliary left turn lanes for both the eastbound and westbound approaches.

Queen Street East

Queen Street East functions as an east-west arterial roadway with four through lanes (no auxiliary left or right turn lanes), a posted speed limit of 50 kilometres/hour, on-street parking, and a TTC streetcar route. The intersections Queen Street East / Carlaw Avenue and Queen Street East / Leslie Street are signalized and have shared left-turn/through and shared through/right-turn lane configurations on all approaches.

Eastern Avenue

Eastern Avenue functions as an east-west arterial roadway with four through lanes at signalized intersections (no auxiliary left or right turn lanes, with the exception of a westbound auxiliary left), a posted speed limit of 50 kilometres/hour, on-street parking, and a TTC express bus route. The intersections Eastern Avenue / Carlaw Avenue and Eastern Avenue / Leslie Street are signalized and provide shared left-turn/through and right-turn/through lanes on all approaches.

Commissioners Street

Commissioners Street functions as an east-west, collector road that provides access to adjacent properties and other sites in the Port Lands. It has two through lanes and a posted speed limit of 50 kilometres/hour. Commissioners Street forms a T-intersection at Leslie Street (signalized); however, there is also a gated access driveway on the opposite side of Leslie Street. Auxiliary left and right turn lanes are provided on the Commissioners Street approach to Leslie Street, and an auxiliary right turn lane is provided on the Leslie Street southbound approach (provides the lane drop for the two basic lanes south of Commissioners Street).

3.3.1.2 Base-Year Traffic Volumes

In accordance with the accepted methodology for the traffic assessment of TTC initiatives, the existing traffic volumes represent the horizon year condition for forecasting. Since turning movement traffic counts are not typically collected in low traffic volume periods, such as the early morning departure time for LRVs leaving the maintenance facility, traffic volumes for some of the peak hour periods had to be estimated.

The City of Toronto provided Automatic Traffic Recorder (ATR) counts of 24 hour traffic volumes on Leslie Street between Queen Street East and Eastern Avenue, and between Lake Shore Boulevard East and Commissioners Street. The hourly breakdown of traffic over the 24 hour period, and specifically the percentage relationships between off peak and peak hours, was used to provide estimation factors for the peak hours that were not captured in actual traffic counts. The percentage factors used, and the known peak hour that the factors were applied are shown in Table 3-10 below.

| November 16, 2010 | 33 |
## 4. Potential Environmental Effects and Mitigation Measures – Proposed Site Design

### 4.1 Natural Environment

#### 4.1.1 Terrestrial Natural Heritage

The proposed Ashbridges Bay LRV maintenance and storage facility site comprises approximately 8.5 hectares. Currently, it is mostly covered with cultural graminoid (grass-dominated) meadow vegetation dominated by non-native grasses growing on fill soils. The grass is periodically mowed which prevents woody vegetation and limits its value as providing habitat for native plant and animal species. A small amount of low functioning marsh (>0.2 hectares) grows in a ditch on the north side of the site. Thickets or young deciduous plantations that occur on the created hill feature have been mostly planted.

#### 4.1.1.1 Potential Effects

Development on the site including tracks, carhouse building, substation and stormwater pond requires that all of the existing vegetation will need to be removed. Table 4-1 shows the amounts of each vegetation type that currently exists and will be removed.

<table>
<thead>
<tr>
<th>Vegetation Type</th>
<th>Code</th>
<th>Area (ha)</th>
<th>To Be Removed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Meadow</td>
<td>CUT01</td>
<td>5.87</td>
<td>Yes</td>
</tr>
<tr>
<td>Carolina Poplar Deciduous Plantation</td>
<td>CLP1-1</td>
<td>0.29</td>
<td>Partly</td>
</tr>
<tr>
<td>Eastern Cottonwood Deciduous Plantation</td>
<td>CLP1-4s</td>
<td>0.40</td>
<td>Yes</td>
</tr>
<tr>
<td>Exotic Cultural Savannah</td>
<td>CUS1</td>
<td>1.25</td>
<td>Yes</td>
</tr>
<tr>
<td>Staghorn Sumac Cultural Thicket</td>
<td>CUT1-1</td>
<td>0.13</td>
<td>Yes</td>
</tr>
<tr>
<td>Sandbar Willow Cultural Thicket</td>
<td>CUT1-2</td>
<td>0.36</td>
<td>Yes</td>
</tr>
<tr>
<td>Common Reed Mineral Meadow Marsh</td>
<td>RAM1-12</td>
<td>0.20</td>
<td>Yes</td>
</tr>
<tr>
<td>Cattail Mineral Shallow Marsh</td>
<td>MAS2-1</td>
<td>0.05</td>
<td>Yes</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>8.54</td>
<td>8.45</td>
</tr>
</tbody>
</table>

All of the vegetation on site will be removed except for one third of the Carolina Poplar plantation along the west side. Nearly all of the woody vegetation has been planted within the past 15-20 years and therefore it does not result in the loss of truly natural habitat. This consists of 5.87 hectares of meadow and 2.58 hectares containing trees and shrubs. It contains a mix of native and non-native species. The cultural meadow has developed on its own but is comprised primarily of non-native species. In addition 0.25 hectares of degraded marsh vegetation growing in a ditch will also be displaced.

Further, the wildlife habitat on the site has not been identified as providing significant wildlife habitat, although it provides habitat for some common wildlife such as birds and mammals that use early successional habitats. Virtually all of this habitat will be removed with the undertaking of this project. Only a narrow strip of Carolina Poplar will remain on the west side along the sidewalk.

It is important to note that all vegetation clearing (in all habitats, such as meadow, shrub or treed areas) is subject to the federal Migratory Birds Convention Act (1994) since some migratory birds nest there. Under this act it is illegal to destroy almost all bird species and their active nests. As the site contains breeding birds, vegetation clearing should not take place between April 15 and July 31. It is possible to remove vegetation at the beginning and end of this timing window (when fewer birds are breeding) in smaller areas if the vegetation is thoroughly checked for bird nests first by an appropriately qualified biologist and no nests are found.

#### 4.1.2 Mitigation

Although the property provides some habitat for common urban adapted plant and animal species and has been identified as part of Toronto’s Natural Heritage System in the Official Plan, the site is quite degraded with predominantly non-native vegetation and none of the features or functions qualifies as provincially significant. Clearing vegetation and trees between August 1 and April 14 will be undertaken to ensure that no destruction of bird nests occurs, in order to be compliant with the Migratory Birds Convention Act.

Additional mitigation for the loss of vegetation and wildlife habitat will consist of creating a ‘green roof’ on top of the main facility building. The green roof should be a low-maintenance green roof which will sustain sedums, grasses and other low herbaceous vegetation. It will provide some habitat for insects and occasionally for birds. The green roof will also provide other positive environmental functions such as: stormwater retention, minimizing of urban heat island effect, and the reduction of dust and smog levels.

#### 4.1.3 Net Effects

With the appropriate mitigation measures in place, no net effects are anticipated from the removal of vegetation on site.

### 4.2 Tree Removal

#### 4.2.1 Potential Effects

The Tree Inventory and Assessment (see Technical Report # 1) for the proposed Ashbridges Bay Fleet LRV maintenance and storage facility site documented 345 trees or groups of trees on the site, their size and condition (excellent, fair or poor). The total number of individual trees is estimated to be near 337. Of these trees, seven were found to have a diameter breast height (dbh) measurement of 30 centimetres or higher and therefore fall under the City of Toronto’s Private Tree By-law (City of Toronto Municipal Code, Chapter 813, Article III, ‘Private Tree Protection’). Those trees are mainly Eastern Cottonwood and Carolina Poplar as well as one Silver Maple. Trees located on the mound within the site must be removed to accommodate the proposed development. Since the entire site will be altered during the mound removal work on site and thereafter, the only option for preserving trees is to transplant them. However, due to the presence of contaminated soil on the site, it is recommended that no trees be moved in order to prevent spreading the contamination to other locations.

The Tree Protection By-law (Chapter 813, Article 3) of the Municipal Code requires a permit to injure or destroy any tree having a dbh (diameter at breast height = diameter measured at 1.4 metres above the ground) equal to or greater than 30 centimetres within the City. The seven trees identified with a diameter at breast height measurement of 30 centimetres or higher will likely require removal. The complete list of trees to be removed is enclosed in Technical Report # 1 – Tree Inventory and Assessment Report, February 2010.

#### 4.2.2 Mitigation

There are many social, economic, and environmental benefits associated with trees in a community, including aesthetics, increased property value, improved air quality, and food and shelter for birds and other wildlife. Efforts should be made to preserve trees where reasonable and outside of areas of potentially contaminated soil.

The seven trees removed within the proposed site development will be replaced at a 3-to-1 ratio (21 trees) in accordance with City of Toronto’s Private Tree By-law. A preliminary planting plan has been prepared for the fringes along Leslie and Lake Shore, more as an aesthetic visual barrier than for habitat function. These trees will be distributed between the corners of the site - several will be planted at the landscaped intersection of Leslie Street and Lake Shore Boulevard East, others will be planted at the entrance on Leslie Street and in the parking lot, while the remaining will be planted near the northeast corner of Lake Shore Boulevard East. The trees will also be incorporated into the landscape design.
interpreted to be primarily to the southeast towards Lake Ontario (Figure 4-1). The presence of the finer textured Organic Silt to Organic Clay Deposit that underlies the surficial fill deposit is expected to limit the downward migration of groundwater from the surficial fill materials into the deeper groundwater flow system. Nonetheless, given that the elevation of Lake Ontario is approximately 72 mASL and the permeable nature of the surficial soils groundwater flow, it is anticipated to be downwards as well as laterally within the fill unit. The inferred local groundwater flow direction is interpreted to be primarily to the southeast towards Lake Ontario (Figure 4-1).

Groundwater levels measured in the two on-site monitoring wells on October 15, 2009 range in depth from 74.07 to 74.95 mASL. The detailed design of the stormwater sewers and stormwater management pond has been completed, and based on the proposed invert elevations, construction of the sewer and stormwater pond will occur below the water table.

One stormwater management pond is planned for the southeast corner of the site. The groundwater elevations in the southeast corner of the site, i.e., BH29 to BH33, ranged from 75.95 mASL to 79.21 mASL which is above the proposed bottom of the pond (75.07 mASL). As such, temporary dewatering during construction of the stormwater management pond is likely required. An impermeable lining to hold water and limit the interaction between stormwater and groundwater will be implemented for this pond, as the fill material on-site will not significantly restrict infiltration. Overall, construction of the LRV at the site may temporarily affect groundwater flow due to dewatering activities; however, operations of LRVs at this site are not anticipated to affect groundwater flow over the long term.

Groundwater Quality

Groundwater quality samples were collected from boreholes BH H and BH D on August 18, 2009 by Terraprobe Limited and analyzed for the following parameters: metals and inorganics, petroleum hydrocarbons F1 to F4, volatile organic compounds (VOCs), Polyaromatic Hydrocarbons (PAHs) and creosol. The results of these analyses were compared to O. Reg. 153/04 Table 1 and Table 3 Site Condition Standards and can be found in Technical Report # 2 - Subsurface Investigations TTC LRV Maintenance & Storage Facility: Lake Shore Boulevard East and Leslie Street, October 2009. Excedences of Table 1 and Table 3 guidelines were observed at BH D and BH H for PAHs, VOCs and metals/ inorganics.

Groundwater quality samples were collected from 20 on-site monitoring wells by AMEC in February 2010 and analyzed for the following parameters: metals and inorganics, petroleum hydrocarbons F1 to F4, VOCs, PAHs and PCBs. The results of these analyses were compared to O.Reg. 153/04, as amended, Table 3 Site Condition Standards and can be found in Technical Report # 4, Phase II Environmental Site Assessment, AMEC, March 2010. Several parameters exceeded the applicable Technical Report # 3 Site Condition Standards in groundwater at the site and included sodium, chloride, vinyl chloride, 1,2-dichloroethane, ethylbenzene, xylenes, PHCS F1 to F4, several PAHs and PCBs. In addition, measurable free phase hydrocarbons were noted at monitoring well BHD.

Based on the groundwater analytical results and the available historical information, the primary source of the soil and groundwater impacts appears to be related to the quality of the fill materials. Removal of a significant portion of the upper fill materials and the addition of permeable granular materials will reduce the travel time for infiltrating water to reach the water table and the lower aquifers. This will likely promote further and more rapid contaminant migration within the affected fill to the aquifer units below as well as laterally towards Lake Ontario.

Construction of the maintenance and storage facility at the proposed site in the short term may affect groundwater quality without mitigation. However, the long term operation of the maintenance and storage facility is not anticipated to affect groundwater quality given that the majority of the area will be covered by impermeable material such as concrete, pavement and rooftops. Since temporary construction dewatering is required, collection, analyses, and possible treatment of discharged water will be needed prior to disposal/discharge off-site. If discharged to municipal sewer, discharged water will be required to meet municipal discharge by-laws (Toronto Municipal Code- Chapter 681-Sewers).

Aquifers and Wells

No significant aquifer units were identified at surface or within the shallow subsurface at the site. Currently, the thick deposits of fill material at surface provide little protection to deep aquifer units below. However, with the proposed removal of fill, the remaining thickness of impermeable material will be significantly less, thus reducing protection to the deep aquifer units below. The Organic Silt and Organic Clay act as a leaky confining layer but the layer is not continuous across the site. No active groundwater supply wells or groundwater users were identified in this area, which is municipally serviced for potable water by the City of Toronto who obtains their potable water from Lake Ontario.

Construction of the maintenance and storage facility at the proposed site in the short-term may affect groundwater aquifers without mitigation. However, the long-term operation of the maintenance and storage facility is not anticipated to affect aquifers or wells given that the majority of the area will be covered by impermeable material restricting recharge to the affected soil and thus contaminant migration.

Stormwater Management

The proposed site will be paved and constructed with two buildings for the intended land use. This will disturb the pavement and rooftops.

Existing storm sewers on Leslie Street and Lake Shore Boulevard East are partially submerged and partially full of sediment due to Lake Ontario. The partial submergence could cause backwater to the onsite drainage system. In order to overcome this issue, the pipes connecting to both Lake Shore Boulevard and Leslie Street will be matched as closely as possible to the obvets of the receiving trunk sewers.


4.1.3.2 Mitigation

Hydrogeology and Groundwater

Given that this site is not the major source of groundwater recharge in the area and contaminated fill is being left in place below the final grade of the site, maintaining recharge through natural infiltration in the area of the former mound is not required. There may even be a net benefit to reducing recharge at the site. Installing an impermeable layer that will restrict downward vertical migration of precipitation over the site and collecting the runoff generated in stormwater retention ponds will help minimize the transportation of adversely affected groundwater off-site.

Vehicle parking areas to the south of the investigated fill area will be constructed with an impermeable sub layer to reduce on-site infiltration. Though a portion of the northwest corner of the site outside of the investigated fill area is being maintained as parkland, it will not be covered by impermeable surfaces (i.e., pavement). However, given the groundwater quality at the site, a liner to restrict the downward vertical migration of precipitation would further minimize infiltration and the transportation of adversely affected groundwater off-site.

With approximately 83% of the site capped or covered with an impermeable layer (concrete, asphalt, or geo-membrane, etc.), the potential for the mobilization of contaminants remaining in the fill material off-site will be reduced and result in a net benefit.
Subsurface investigations completed by Terraprobe in 2009 and AMEC in 2010\(^{13}\) for the purpose of characterizing soil for disposal indicated representative fill samples, were within the O.Reg. 558/00 Schedule 4 Leachate Quality Criteria for metals and inorganics, VOCs, SVOCs, and PCBs and as such the fill would be classified as non-hazardous per O.Reg. 347 for the purpose of waste disposal. In addition, based on the results of bulk PCB analyses, the soil would not be classified as PCB waste per O.Reg.362.

### 4.1.4 Potential Effects

The contaminated nature of the soils on the site present challenges for the development of the site including:

- Transportation and disposal of excavated soils
- Health and safety of workers during excavation or construction
- Off-site migration of soils from surface erosion, and surface soil contamination of trucks and equipment
- Potential for dust generation from excavation and construction activities and dust migration beyond the construction zone
- Containment and treatment of groundwater may be necessary if dewatering is required
- Potential requirement for mitigating methane gases and VOC vapours
- Possible human health risk to the workers and occupants using the constructed facilities

As discussed below, mitigation measures are required during the construction phase and during the development of the site design to account for the contaminated fill material on site.

#### 4.1.4.2 Mitigation

Testing from the Terraprobe 2009 and AMEC 2010 subsurface investigations indicate that materials excavated from the site exceed the applicable MOE Table 3 Site Condition Standards and must be treated as waste material. However, the material is classified as non-hazardous waste per Ontario Regulation 347 for the purpose of waste disposal. Therefore, the excavated materials will be disposed of an MOE approved facility licensed to accept this type of waste. Due to the unknown origin, significant volume and inherent heterogeneity of the fill materials that are present at the Site, the excavation and removal of fill will be monitored continuously. As conditions warrant, additional assessment of the fill materials will be undertaken to verify that appropriate soil handling and disposal methods are utilized.

The results of the subsurface investigations indicate that the soil samples representative of the fill materials are impacted above the applicable MOE Table 3 Standards and impacts have been identified in samples of the fill material across most of the site. As such, it is likely not feasible to fully remediate the Site to MOE Table 3 Standards.

The contractors responsible for soil removal and construction of the maintenance and storage facility will be required to develop and implement a site specific safety plan, which ensure compliance with the following acts and regulations:

- Occupational Health and Safety Act,
- The Regulations for Construction Projects,
- Workplace Hazardous Materials Information System (WHMIS) Regulations,
- Workplace Safety and Insurance Board (WSIB) Regulations,
- Municipal By-Laws,
- Industrial Regulations,
- Technical Standards Safety Authority (TSSA),
- Environmental Site Assessment (ESA),
- The Environmental Protection Act and Regulations, and
- Any other legislation, regulations and standards as applicable.


As the human health risk assessment is to be finalized following removal of the soil mound and confirmation, through additional soil and groundwater sampling, that worst case conditions have been addressed.

Specifically, the soil removal contract will include capping of the Site with a 1.5 metre layer of clean fill and/or pavement structure. The health and safety plan will be developed in accordance with the final human health risk assessment, prior to opening of the Maintenance and Storage Facility.

#### 4.1.4.3 Net Effects

Additional soil and groundwater sampling will be conducted following completion of the soil removal contract and prior to the risk assessment being finalized to ensure that the human health risk assessment addresses the final worst case on-site conditions.

**Continued air and groundwater monitoring during construction, and routine air and/or groundwater monitoring following construction will be required long term.**

With proper mitigation measures in place prior to construction, there will be no effects associated with removal of contaminated soil from the site.

### 4.1.5 Air Quality

**4.1.5.1 Potential Effects**

During construction of the facility, there will be a potential for nuisance dust at the construction sites; however, this can be mitigated (see below). Sources of dust would include material handling and construction site activities.

During operations, there will be several servicing and maintenance activities at the Ashbridges Bay LRV maintenance and storage facility that have the potential to produce emissions. These activities include washing and cleaning services, compressed air blow-down, body repairs and vehicle painting and maintenance welding. The washing activities will be with water-based cleansers, which are generally considered an insignificant source of contaminants. The compressed air cleaning of the traction motors and selected roof-mounted components will generate dust emissions. The body repair activities will include minor collision repairs, panel replacements, door and window replacements and other system parts replacements. The parts replacements will not result in emissions, but the minor collision repairs will generate insignificant releases of dust from body work repair work. Vehicle repainting for either touch-up painting of collision repairs or complete vehicle repainting will generate releases of paint solvents and paint overspray particulate. Maintenance welding will generate fumes containing particulate and metals.

In addition to the servicing and maintenance activities, there will be emissions from the combustion of natural gas used for comfort heating in the building.
The closest sensitive receptor to vibration for the proposed maintenance and storage facility is located approximately 240 metres from the site. As such, vibration from moving LRVs will be below the MOE vibration criterion. No significant vibration effect is expected at any receptors in the area. Table 4-4 summarizes the results of the vibration predictions for LRVs operating in the maintenance and storage facility.

**Table 4-4** Vibration Effect Summary for Stationary Sources

<table>
<thead>
<tr>
<th>Receptor</th>
<th>Vibration Impact (mm/s)</th>
<th>Vibration Limit (mm/s)</th>
<th>Compliance?</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>&lt;0.14</td>
<td>0.14</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### 4.2.5 Mitigation Measures

During construction, continuous noise monitoring devices will be located at the site boundaries. The construction contractor will be required to comply with anti-noise by-laws. In addition, the contractor will be required to apply noise abatement measures to reduce public exposure to noise.

In anticipation of maintenance and storage facility operations, TTC will construct a 3.5 metre acoustical barrier along the west and north sides of the maintenance and storage facility. No other noise and vibration mitigation measures are required. Noise and vibration will be monitored regularly at the maintenance and storage facility to ensure MOE standards are not exceeded.


### 4.2.6 Net Effects

Since the maintenance and storage facility’s predicted noise and vibration effects comply with the MOE sound level limits and vibration criterion, no additional noise or vibration control recommendations are required.

### 4.3 Utilities: Hydro One Duct

#### 4.3.1 Potential Effects

A concrete encased duct bank is a series of electrical cables housed in round ducts (typically PVC) and encased in concrete to protect the electrical lines that are beneath the ground from damage. An existing Hydro One 115kv direct buried cable currently crosses under the northwest corner of the proposed maintenance and storage facility site. As a result, the duct bank will require relocation due to construction of the facility.

#### 4.3.2 Mitigation Measures

In order to accommodate the relocation of the existing Hydro One 115kv cables, a new concrete encased duct bank will be constructed with an alignment that is outside of the maintenance and storage facility property. Following construction of the duct bank, new cabling will be installed and the tied in to the existing junction boxes.

#### 4.3.3 Net Effects

The duct bank will be relocated and the electrical lines will continue to function.

### 4.4 Traffic and Transportation

The facility will accommodate approximately 100 streetcars with a potential of 85 LRVs in service at any one time. The LRVs are intended to provide revenue service along Queen Street, and will enter into service from the facility via Leslie Street northbound early in the morning and will return to the facility via Leslie Street southbound primarily during the mid to late evening. The section of Leslie Street that the LRVs will run on is not part of a TTC revenue service route, and therefore, its use will be limited to trips to/from the maintenance facility. Light rail vehicle access to the facility will be provided via tracks located along the north leg of the Leslie Street/Commissioners Street intersection, and the southbound to eastbound left turn movement (entering the facility) and the westbound to northbound right turn movement (exiting the facility) will be part of the intersection traffic control (signalized intersection).

There will be approximately 470 employees at the facility, who will work during three shifts with the majority of workers (300) on the day shift. The shift times will start at 7:00 a.m., 3:00 p.m., and 11:00 p.m., with corresponding end times approximately eight hours later. As previously identified in the site design (Figure 2-3), employee vehicular access to the facility will be provided via Commissioners Street east of Leslie Street, and as such, all employee traffic will travel through the Leslie Street/Commissioners Street intersection. The intersection currently provides access to the Ashbridges Bay Wastewater Treatment Plant.

#### 4.4.1 Projected Future Traffic Conditions

Throughout the day, the amount of LRV traffic to/from the facility will vary. The majority of the LRVs will be put into service early in the morning (+/- 85 over a one to one and a half hour period), a small number will return or depart during the day as related to peak and off peak service (+/- 10-30 return at 9 a.m. and 30 out at 2 p.m.) in and out per hour, and higher numbers (+/- 45 in per hour) will return during the evening as the service terminates.

A summary of site traffic volumes for each peak hour is shown in Table 4-5. In addition, Table 4-6 illustrates future staffing at the Ashbridges Bay maintenance and storage facility. A detailed discussion of the methodology and assumptions used in estimating the site traffic volumes is presented in Technical Report # 7 – Traffic Impact Study, September 2010.

**Table 4-5** Schedule of Future LRV Trips

<table>
<thead>
<tr>
<th>Analysis Period</th>
<th>LRVs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inbound</td>
</tr>
<tr>
<td>5:00 a.m. – 6:00 a.m.</td>
<td>0</td>
</tr>
<tr>
<td>6:00 a.m. – 7:00 a.m.</td>
<td>0</td>
</tr>
<tr>
<td>7:00 a.m. – 8:00 a.m.</td>
<td>10</td>
</tr>
<tr>
<td>8:15 a.m. – 9:15 a.m.</td>
<td>10</td>
</tr>
<tr>
<td>9:00 a.m. – 10:00 a.m.</td>
<td>30</td>
</tr>
<tr>
<td>2:00 p.m. – 3:00 p.m.</td>
<td>0</td>
</tr>
<tr>
<td>3:00 p.m. – 4:00 p.m.</td>
<td>10</td>
</tr>
<tr>
<td>4:30 p.m. – 5:30 p.m.</td>
<td>10</td>
</tr>
<tr>
<td>7:00 p.m. – 8:00 p.m.</td>
<td>45</td>
</tr>
<tr>
<td>11:00 p.m. – 12:00 a.m.</td>
<td>10</td>
</tr>
<tr>
<td>1:00 a.m. – 2:00 a.m.</td>
<td>40</td>
</tr>
</tbody>
</table>

* The 10 inbound and outbound light rail vehicle trips identified will not be regularly scheduled to operate. Table 4-5 includes these trips to assess the potential effects of operating light rail vehicles during these time periods.
### Table 4-6 Future Staffing by Ashbridges Bay LRV Maintenance and Storage Facility Employees

<table>
<thead>
<tr>
<th>Shift</th>
<th>Arrivals</th>
<th>Departures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shift 1</td>
<td>6:30 a.m. – 7:00 a.m.</td>
<td>7:30 a.m. – 8:00 a.m.</td>
</tr>
<tr>
<td></td>
<td>269</td>
<td>87</td>
</tr>
<tr>
<td>Shift 2</td>
<td>2:30 p.m. – 3:00 p.m.</td>
<td>3:30 p.m. – 4:00 p.m.</td>
</tr>
<tr>
<td></td>
<td>114</td>
<td>269</td>
</tr>
<tr>
<td>Shift 3</td>
<td>10:30 p.m. – 11:00 p.m.</td>
<td>11:30 p.m. – 12:00 a.m.</td>
</tr>
<tr>
<td></td>
<td>87</td>
<td>114</td>
</tr>
</tbody>
</table>

#### 4.4.2 Mitigation Measures

The following mitigation measures are recommended to alleviate potential circulation and access issues at the proposed maintenance and storage facility site, as well as at the Leslie Street / Lake Shore Boulevard intersection:

- Lengthen northbound left turn lane on Leslie Street at Lake Shore Boulevard to facilitate turning movements.
- Provide an exclusive southbound left turn lane on Leslie Street at Commissioners Street to facilitate LRV and vehicle movements; provide an exclusive westbound right turn lane and a shared left through lane for the east leg of Commissioners Street. The functional plan for the Ashbridges Bay LRV maintenance and storage facility in Figure 4-2 below presents these requirements.
- Combine access to the site with the existing Martin Goodman trail crossing. In addition, LRVs will operate under a protected traffic phase when crossing the Martin Goodman Trail, minimizing opportunities for conflicts with pedestrians, cyclists or automobile traffic. Permissive LRV movements will also be allowed, but during periods when pedestrians, cyclists and automobiles are present, LRV operators must wait for the protected phase before proceeding.

#### 4.4.3 Net Effects

With appropriate mitigation measures in place, the traffic and safety effects associated with LRV movements and employee traffic are projected to be negligible.
5.1.3.3 Net Effects
Significant net or residual effects related to contaminated soils are not anticipated for the proposed track connection.

5.1.4 Air Quality

5.1.4.1 Potential Effects
During construction of the connecting track, there will be a potential for nuisance dust at the construction sites. Sources of dust would include material handling and construction site track-out onto the public roads. During operation of the tracks, there will be no potential air quality effects, as the electric LRVs have no equivalent tailpipe emissions.

5.1.4.2 Mitigation
Mitigation of dust during construction will be in accordance with the measures detailed in the Dust management plan, and will include such actions as dust suppression (water), road sweeping, and cleaning of vehicle tires at wash stations prior to leaving the construction site to control track-out onto public roadways. The plan will include opportunities for adaptive management, in which the intensity of the control measures would be increased if site inspection or the ambient monitoring indicate this is warranted to prevent off-site effects on air quality.

5.1.4.3 Net Effects
During construction the net effects on air quality will be local to the construction areas and would be negligible. As previously stated, with no emissions from the LRVs, there will be no net air quality effects during operation.

The complete Air Quality Assessment for the Ashbridges Bay Fleet LRV maintenance and storage facility is provided in Technical Report #10 – Air Quality Assessment Report, February 2010.

5.2 Social Environment

5.2.1 Community Features

5.2.1.1 Potential Effects
No displacement of existing residences, businesses and institutions are anticipated as a result of the proposed connecting tracks design. No displacement of the Martin Goodman Trail is expected. The connecting tracks will intersect the trail immediately north of the trail at the Leslie Street and Commissioners Street intersection. As a result, potential safety issues should be addressed to minimize opportunities for collisions.

5.2.1.2 Mitigation
Mitigation measures will be incorporated into the trail design to combine the access to the site with the existing trail crossing point. In addition, LRVs will operate under a protected permissive traffic phase when crossing the Martin Goodman minimizing opportunities for conflicts with pedestrians, cyclists or automobile traffic. Permissive LRV movements will also be allowed, but during periods when pedestrians, cyclists and automobiles may be present, LRV operators must wait for the protected phase before proceeding.

5.2.1.3 Net Effects
With appropriate mitigation measures in place, no net effects associated with the safety of users of the Martin Goodman Trail are anticipated.

5.2.2 Built Heritage

5.2.2.1 Potential Effects
Assuming that new curbs and sidewalks will be confined to the existing road right-of-way, between Lake Shore Boulevard East and Queen Street East, there are no anticipated effects on cultural heritage resources associated with the proposed connecting track design. Further, related construction activities are expected to have minimal direct and indirect effects on identified cultural heritage resources.

5.2.2.2 Mitigation Measures
There are no anticipated effects of the proposed connecting tracks design on cultural heritage resources, and therefore further mitigation measures are not required.

5.2.2.3 Net Effects
Since no mitigation is required, there are no net effects to consider.

5.2.3 Archaeology

5.2.3.1 Potential Effects
There are no anticipated effects to any archaeological resources associated with the proposed connecting track design.

5.2.3.2 Mitigation and Net Effects
No mitigation is required, and there are no net effects to consider.

5.2.4 Noise and Vibration

5.2.4.1 Potential Noise Effects
Sound level calculations were performed in accordance with the Ministry of Environment Guidelines outlined in Reference 4 and by the Guidelines of the Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT) using STAMSON prediction software. A speed of 50 kilometres/hour and a vehicle type of Canadian Light Rail Vehicle (CLRV), representing an existing streetcar model, was used in the prediction calculations.

Table 5-2 summarizes the potential noise effects on properties as a result of LRVs travelling along Leslie Street. The properties residing closest to the centre lane are located seven and ten metres away on the west and east side of Leslie Street, respectively. The analysis incorporates the total number of inbound and outbound LRV trips during the day (between 7 a.m. and 11 p.m.) and during the night time period (between 11 p.m. and 7 a.m.). Noise effects that exceed the MOEE/TTC sound level limit are underlined and bold.

November 16, 2010
As reflected in Table 5-2, the predicted night time noise effect of LRV operations on the nearest properties along Leslie Street exceeds the sound level limits by 8dBA and 6dBA, respectively. Alternatively, the predicted daytime noise effect exceeds the sound level limit by 2dBA at seven metres away from the LRV centre lane. As described in the MOEE/TTC protocol, mitigation should be considered for impacts exceeding the sound level limits by greater than 5dBA where it is determined to be technologically, economically, and administratively feasible to implement.

### 5.2.4.4 Potential Vibration Effects

The centreline of the LRV track running along Leslie Street is expected to run within seven metres of the nearest properties along Leslie Street. The vibration impact is predicted to be 0.25 mm/s at 50Hz, which exceeds the MOEE/TTC vibration limit of 0.14 mm/s. An impact of 0.25 mm/s is approximately twice the threshold of human perception to vibration. Properties located along Leslie Street within 15 metres of the proposed LRV track centreline will be exposed to vibration levels exceeding the limit. At further distances, the occasional LRV pass-by may generate vibration levels above the limit in the event of a LRV that requires maintenance is still operating in service. The predicted vibration effects from different distances are summarized in Table 5-3 below.

### Table 5-3 Vibration Effects Summary

<table>
<thead>
<tr>
<th>Distance</th>
<th>Vibration Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 7 metres</td>
<td>Greater than or equal to 0.25 mm/s</td>
</tr>
<tr>
<td>7 to 15 metres</td>
<td>0.25 to 0.14 mm/s</td>
</tr>
<tr>
<td>15 to 30 metres</td>
<td>Less than or equal to 0.14 mm/s</td>
</tr>
<tr>
<td>Greater than 30 metres</td>
<td>Less than 0.14 mm/s</td>
</tr>
</tbody>
</table>


### 5.2.4.3 Mitigation

TTC will test the new prototype LRV vehicles in early 2012. Following testing, if it is determined that an acoustic impact in excess of 64dBA (5 dBA over the limit) is predicted for the nearest residents, TTC will enforce a maximum speed limit of 25 kilometres/hour for all LRVs operating along Leslie Street between the maintenance and storage facility and Queen Street East. According to acoustic modelling results, this will reduce the predicted impact below the 64dBA allowable limit.

In order to meet the MOEE/TTC vibration limit, TTC will include in the design of the LRV tracks a slab along Leslie Street between Queen Street East and Lake Shore Boulevard East which is floated on vibration isolation rubber pads or a mat. With this measure in place, the vibration levels are expected to drop by 0.11 mm/s to 0.17 mm/s to below the vibration limit.

In addition to the mitigation measures described above, the LRV track design will be continuously-welded with the necessary joints placed away from residential properties along Leslie Street.

If prototype testing identifies the need for mitigation beyond those noise and vibration measures provided at the source (i.e., track or LRV), TTC will identify mitigation measures for affected residents and businesses along Leslie Street. These measures were identified during the July 14 and 15, 2010 workshops/meetings with Leslie Street residents and owners and are summarized below:

- Develop construction management plans and share with local community (2011)
- Conduct pre-construction surveys (Spring 2011)
- Prototype LRV measuring (early 2012)
- Assessment of noise and vibration levels on Leslie Street with new LRV data and identification of effects (Summer 2012)
- Finalize agreement with property owners if mitigation measures are required (Fall 2012)
- Complete connection track construction (mid 2013)
- Post construction surveys (Fall 2013)

If additional testing identifies that the MOE noise and vibration thresholds are exceeded beyond the levels proposed at the source, TTC will consider other potential mitigation measures (i.e., window / door replacement and air conditioning).

Presentations from the July 14 and 15, 2010 workshops/meetings are included in Appendix C.

### 5.3 Traffic and Transportation

#### 5.3.1 Potential Effects

The quality of intersection traffic operations is typically measured in terms of level of service (LOS) and volume-to-capacity (v/c) ratio. As a reminder, LOS is a qualitative measure of roadway congestion ranging from “A” to “F” while the v/c ratio is a measure of traffic demand to its traffic-carrying capacity.

In order to assess the future traffic conditions, a level of service analysis was undertaken for the key intersections using Synchro 7.0 Software, which was used to assess queue lengths for left turn movements at the Leslie Street/Lake Shore Boulevard East intersection, and for through movements along Leslie Street north of Lake Shore Boulevard East where there are closely spaced signalized intersections.

The results of the traffic analysis are presented in Tables 5-4 through 5-6 below. It should be noted that a majority of the LRVs will operate along Leslie Street outside of peak periods.

---

**Table 5-2 Noise Effect Summary for Transportation Sources**

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Noise Effect at Nearest Properties West of Leslie Street (7 m from track Centre Lane)</th>
<th>Noise Effect at Nearest Properties East of Leslie Street (10 m from track Centre Lane)</th>
<th>Sound Level Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day (0700–2300)</td>
<td>65 dBA</td>
<td>62 dBA</td>
<td>63 dBA</td>
</tr>
<tr>
<td>Night (2300–0700)</td>
<td>67 dBA</td>
<td>65 dBA</td>
<td>59 dBA</td>
</tr>
<tr>
<td>Potential Effect</td>
<td>Mitigation Measures</td>
<td>Net Effect</td>
<td>Monitoring Requirements</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------</td>
<td>------------</td>
<td>-------------------------</td>
</tr>
</tbody>
</table>
| **Stormwater Management** | • For the purposes of stormwater management, the site will be developed in accordance to the requirements of the Toronto Green Development Standard and to the requirements of the Toronto and Region Conservation Authority.  
• Both stormwater quality and quantity reductions from the site will be addressed in a multi component approach utilizing low impact development (LID) best management practices (BMPs) and traditional end of pipe technologies.  
• The wet pond on site will be lined in order to prevent uplifting due to the potential high groundwater table. In addition, it will serve to prevent exfiltration in the surrounding granular bed and vertical migration of water into the existing soils. Likewise the permeable pavement will be lined to prevent vertical migration of stormwater runoff.  
• During the construction phase, a temporary erosion and sediment control pond shall be used on the site. Any dewatering required for the installation of sewer pipes shall be contained in holding tanks, monitored and treated (if required) prior to discharge from the site area.  
• The study area will be separated into two separate catchments intended to discharge stormwater to Lake Shore Boulevard East and Leslie Street trunk sewers.  
• The site drainage system will be designed to account for the partial submergence and sediment found in the Leslie Street storm sewer and Lake Shore Boulevard East storm sewer system. This will include connecting the site’s storm sewer to Lake Shore Boulevard East by matching pipe obverts in order to minimize backwater to the site. As the site is located at a much higher elevation than Lake Shore Boulevard East, the sewer system will be raised to a higher elevation to minimize the effects of backwater. | • The strategy of employing a multi component approach to address stormwater quality ensures that the City of Toronto requirements for stormwater quality are achieved. The combination of permeable pavement, vegetated green roof, water re-use, oil and grit separator and a wet pond are the principle systems in place to achieve this requirement. | • No monitoring required |
| **Contaminated Soils** | • Potential challenges for the development of the site due to contaminated nature of existing soils, including:  
  • Transport and Disposal of excavated soils  
  • Health and Safety of Workers during excavation or construction  
  • Off-site migration of soils from surface erosion, and surface soil contamination of trucks and equipment  
  • Potential for dust generation from excavation and construction activities and dust migration beyond the construction zone  
  • Containment and treatment of groundwater may be necessary if dewatering is required  
  • Potential requirement for mitigating methane gasses and VOC vapours; and  
  • Possible human health risk to the workers and occupants using the constructed facilities | • TTC will conduct removal of the mound area as a separate contract in advance of the construction of the maintenance and storage facility. During the preparation of the soil removal contract documents, TTC has commissioned a human health risk assessment. The human health risk assessment is being conducted in general accordance with the technical requirements of Schedule C – Risk Assessment of O.Reg. 153/04 as amended under O.Reg. 511/09. The human health risk assessment is to be finalised following removal of the soil mound and confimation, through additional soil and groundwater sampling, that worst case conditions have been addressed.  
• Prior to commencement of excavation activities, a site specific health and safety plan will need to be developed by a health and safety professional.  
• Air monitoring will be undertaken at the property boundaries of the construction site, and contingency measures will be put in place to suppress dust.  
• An erosion and sediment control plan will be prepared and implemented during excavation and construction activities. Trucks and equipment will be visibly decontaminated prior to leaving the construction site. If dewatering is necessary for excavation or construction activities, the water will be contained, analyzed and treated if necessary. Discharge of water must meet municipal discharge by-laws (Toronto Municipal Code Chapter 681 - Sewers).  
• Risk management measures to block the exposure pathways and reduce risks to acceptable levels include a cap across the site to prevent direct access to impacted soil; a sub-slab ventilation system; and a health and safety plan to protect subsurface utility workers. | • With proper mitigation measure in place, there will be no effects from the removal of contaminated soil from the site. | • Soil conditions will need to be monitored as the on-site excavation and the excavation along the Leslie Street connecting track alignment progress. Additional soil sampling at the base of the on-site excavation will be required for potential contaminants of concern, including metals/organics, VOCs, PHCs, PAHs and PCBs. The sampling is required to verify that the worst case site conditions have been identified and addressed in the human health risk assessment. Additional sampling may be required during the Leslie Street connection excavation if suspected soil impacts are observed during excavation.  
• Ongoing monitoring activities during construction may include:  
  • Air and particulate monitoring program for health and safety of surrounding public including an ambient monitoring program which is to include fenceline monitoring for dust (particulate matter), and other contaminants identified to potentially be released during construction activities  
  • Air and particulate monitoring for worker health and safety to be addressed during the development of a site specific health and safety plan and will include monitoring requirements, action levels and required personal protective equipment  
  • Monitoring of trucks and equipment leaving the construction site to ensure cleaning of vehicles at wash stations is effective  
  • Erosion controls are in place.  
• Site inspections will be conducted to ensure mitigative measures are effective.  
• Continued air and groundwater monitoring following construction will be required for long term. |
### Potential Effects, Mitigation Measures, Net Effects and Monitoring Requirements Associated with the Ashbridges Bay LRV Maintenance and Storage Facility

<table>
<thead>
<tr>
<th>Potential Effect</th>
<th>Mitigation Measures</th>
<th>Net Effect</th>
<th>Monitoring Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Air Quality</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| • Potential nuisance dust (due to material handling and construction site activities) at the site during construction | • A formalized dust management plan will be implemented during construction that will include dust suppression (water), road sweeping, and cleaning of vehicle tires before leaving the construction site to control track-out. Site inspections of dust generation will be carried out as part of the program to ensure mitigation is effective at the source. For increased community protection, the program will also incorporate ambient monitoring of fence line air concentrations of dust (particulate) and other compounds identified as potentially being released during construction,  
• 24 hour / 7 day monitoring for dust during construction and the development and implementation of a contingency plan to address protocols and procedures will follow in the event that dust and other compounds are detected at or above plan levels. | • The net impact on air quality will be local to the construction areas and should be negligible. The implementation of the measures detailed in the dust management plan, as discussed above, will ensure any potential for off-site effects is minimized. | • As a component of the dust management plan during construction, an ambient monitoring program will be carried out that includes fence line monitoring for dust (particulate matter), and other contaminants identified to potentially be released during construction activities or as constituents of the dust. The air quality monitoring will provide a means to verify that the dust control measures employed are effective, and to measure dust concentrations at the fence line for increased community protection. |
| • Potential emissions associated with service and maintenance activities at the site during operation | • Particulate generated from the compressed air cleaning will be controlled with a ventilation/duct capture and control system. Painting will be conducted inside the spray paint booth which will contain the emissions and will be equipped with an exhaust system with overspray filters and an exhaust stack. Welding stations will have fume capture and control systems. | • Based the Ministry of the Environment procedure for preparing air emissions applications, the operation of the touch-up painting of minor collision repairs, the maintenance welding of the building is considered a negligible source of air contaminants with negligible net effects on air quality. The compressed air blow-down and the paint booth would be intermittent controlled sources of air contaminants with negligible net effects on air quality. | • The MOE Certificate of Approval for air emissions for the facility will include conditions which will require documentation of operating and maintenance procedures, including measures to minimize air emissions. The certificate will also include a condition to record and document environmental complaints. An environmental management and monitoring system involving observations of potential emissions both during construction and operation will be implemented to ensure these conditions are met and air emissions controlled. Thus, monitoring of the air emissions or the ambient air surrounding the facility is not planned. |
| • Potential emissions from combustion of natural gas used for comfort heating in the building. | • Energy conservation measures will be incorporated into the design and operation of the facility in order to reduce energy requirements and resultant combustion gas emissions. | • The heating of the building is considered a negligible source of air contaminants with negligible net effects on air quality. | • See above. |
| • Potential to reduce odour in 2010 and 2014 | • Reduced odour in 2010 and 2014 due to the following measures:  
  • 2010: Addressing Aeration Tanks dispersion by sending air to the incinerator stack  
  • 2014: Addressing “P Building” odours within ABTP complex (primary tanks) | • Positive net effects due to reduced odour at the site | • In accordance with the Ashbridges Bay Treatment Plant (ABTP) Certificate of Approval (A) #9898-869997 issued in July 2010, the City of Toronto will perform odour sampling at the end of the four (4) phases of the ABTP odour reduction plan. The work – not associated with the construction and operations of the Ashbridges Bay maintenance and storage facility - will be overseen by the Ministry of the Environment. |
| **Community Features** | | | |
| • Potential safety issues resulting from the Martin Goodman Trail crossing paths where the LRVs would enter and exit the Maintenance and storage facility site. | • Mitigation measures will be incorporated into the Martin Goodman Trail design to combine the access to the site with the existing trail crossing point. In addition, LRVs will operate under a protected / non-pollutive traffic phase when crossing the Martin Goodman Trail. Minimizing opportunities for conflicts with pedestrians, cyclists or automobile traffic. Permissive LRV movements will also be allowed, but during periods when pedestrians, cyclists and automobiles may be present, LRV operators must wait for the protected phase before proceeding. | • With appropriate mitigation measures in place, no net effects, associated with the safety of users of the Martin Goodman Trail, are anticipated. | • No monitoring required |
| **Built Heritage** | | | |
| • The site does not contain cultural heritage resources and therefore there are no anticipated effects. | • None | • Since no mitigation is required, there are no net effects to consider | • No monitoring required |
| **Archaeology** | | | |
| • The site does not exhibit an archaeological potential, thus no effects to any archaeological resources are anticipated. | • Additional archaeological assessment for the site is not required. | • Additional archaeological assessment for the site is not required. | • No monitoring required |
| **Noise and Vibration** | | | |
| • Predicted noise levels at the site during the night | • Noise, required with the implementation of a 3.5 meter acoustic barrier. | • Since the predicted noise impact from the facility on each of the receptors | • During construction, continuous noise monitoring devices will be located at the

---

Table 6-1a

November 16, 2010

55
### Table 6-1a

**Summary of Potential Effects, Mitigation Measures, Net Effects and Monitoring Requirements Associated with the Ashbridges Bay LRV Maintenance and Storage Facility**

<table>
<thead>
<tr>
<th>Potential Effect</th>
<th>Mitigation Measures</th>
<th>Net Effect</th>
<th>Monitoring Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise</td>
<td>Predicted noise levels at the site during all time periods are well be in compliance with the MOE sound level limits, assuming a 3.5 metre high acoustic barrier extending from the site elevation upwards. The site elevation is modelled as one metre above the exterior elevation.</td>
<td>Since the predicted vibration levels from the facility comply with ISO 2631-2, no additional measures are required.</td>
<td>Noise will be monitored regularly at the maintenance and storage facility to ensure MOE standards are not exceeded.</td>
</tr>
<tr>
<td>Vibration</td>
<td>The closest sensitive receptor to vibration for the proposed maintenance and storage facility is located approximately 240 metres from the site. As such, no significant stationary source vibration effect is expected at any receptor in the area.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traffic and Transportation</td>
<td>Potential increase in traffic volumes within the vicinity of the site. Potential challenges to traffic operations and increased traffic capacities at the Leslie Street/Lake Shore Boulevard intersection.</td>
<td>With appropriate mitigation measures in place, the traffic and safety effects associated with LRV movements and employee traffic are projected to be negligible.</td>
<td>No monitoring required.</td>
</tr>
<tr>
<td>Lengthen northbound left turn lane on Leslie Street at Lake Shore Boulevard to facilitate turning movements. Provide an exclusive southbound left turn lane on Leslie Street at Commissioners Street to facilitate LRV and vehicle movements; provide an exclusive westbound right turn lane and a shared left through lane for the east leg of Commissioners Street. The functional plan for the Ashbridges Bay LRV maintenance and storage facility in Figure 4-2 below presents these requirements. Mitigation measures will be incorporated into the Martin Goodman Trail design to combine the access to the site with the existing trail crossing point. In addition, LRVs will operate under a protected traffic phase when crossing the Martin Goodman Trail minimizing opportunities for conflicts with pedestrians, cyclists or automobile traffic. Permissive LRV movements will also be allowed, but during periods when pedestrians, cyclists and automobiles may be present, LRV operators must wait for the protected phase before proceeding.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traffic</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

November 16, 2010
### Table 6-1b Summary of Potential Effects, Mitigation Measures, Net Effects and Monitoring Requirements Associated with the Leslie Street Connecting Track Design

<table>
<thead>
<tr>
<th>Potential Effect</th>
<th>Mitigation Measures</th>
<th>Net Effect</th>
<th>Monitoring Requirements and Future Commitments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Terrestrial Environment</strong></td>
<td>• Since the connecting tracks along Leslie Street would pass through an entirely urban area and no effect on terrestrial habitat are anticipated</td>
<td>• None required.</td>
<td>• No monitoring required.</td>
</tr>
<tr>
<td>• Hydrogeology and Groundwater</td>
<td>• Since construction of the tracks will not occur below the water table, and there is no change to the overall footprint of Leslie Street, no significant changes to groundwater recharge, groundwater flow, groundwater quality and aquifer/wells are anticipated with the connecting track.</td>
<td>• None required.</td>
<td>• No monitoring required.</td>
</tr>
<tr>
<td>• Stormwater Management</td>
<td>• The catchment area will not increase in size and the level of imperviousness will not change. Thus, no potential effects to stormwater quantity are anticipated as a result of the track connection.</td>
<td>• None required.</td>
<td>• No monitoring required.</td>
</tr>
<tr>
<td>• Contaminated Soils</td>
<td>• Limited soil chemical analyses were conducted on soil samples collected from the track connection area by AMEC in 2010. Soil samples were determined to exceed the MOE Table 3 Site Condition Standards for electrical conductivity and sodium adsorption ratio. The exceedances of electrical conductivity and sodium adsorption ratio are attributed to the use of road salt along Leslie Street. Table 3 Site Condition Standard exceedances were noted for electrical conductivity, sodium adsorption ratio, boron, petroleum hydrocarbons, tetrahydrofurfuryl and xylene which may be an indicator of some localized impacts. As only a limited number of samples from the track area were tested, additional soil sampling may be required as the excavation progresses to verify the soil conditions. Based on soil samples collected from the track connection area, the soil would be classified as being non-hazardous waste for disposal purposes.</td>
<td>Inspection and/or additional soil sampling during excavation for the connecting tracks will be conducted to verify the suitability of the soil for reuse and/or soil disposal options.</td>
<td>With appropriate mitigation measures in place, the net effects are predicted to be negligible. Conduct inspection and/or additional soil sampling during excavation for the connecting tracks will be conducted to verify the suitability of the soil for reuse and/or soil disposal options.</td>
</tr>
<tr>
<td>• Air Quality</td>
<td>• Limited soil chemical analyses were conducted on soil samples collected from the track connection area by AMEC in 2010. Soil samples were determined to exceed the MOE Table 3 Site Condition Standards for electrical conductivity and sodium adsorption ratio. The exceedances of electrical conductivity and sodium adsorption ratio are attributed to the use of road salt along Leslie Street. Table 3 Site Condition Standard exceedances were noted for electrical conductivity, sodium adsorption ratio, boron, petroleum hydrocarbons, tetrahydrofurfuryl and xylene which may be an indicator of some localized impacts. As only a limited number of samples from the track area were tested, additional soil sampling may be required as the excavation progresses to verify the soil conditions. Based on soil samples collected from the track connection area, the soil would be classified as being non-hazardous waste for disposal purposes.</td>
<td>With appropriate mitigation measures in place, the net effects are predicted to be negligible. Conduct inspection and/or additional soil sampling during excavation for the connecting tracks will be conducted to verify the suitability of the soil for reuse and/or soil disposal options.</td>
<td>No monitoring required.</td>
</tr>
<tr>
<td>• Potential effect of nuisance dust during construction of connecting tracks</td>
<td>• Mitigation of dust during construction would only include dust suppression as a result of material handling and construction site track-out onto the public roads. The Dust Management Plan will include opportunities for adaptive management, in which the intensity of the controls measures would be increased if site inspection or the ambient monitoring indicates this is warranted to prevent off-site effects on air quality.</td>
<td>With appropriate mitigation measures in place, the net effects are predicted to be negligible.</td>
<td>No monitoring required.</td>
</tr>
<tr>
<td>• No potential air quality effects during operation, as the LRVs do not have equivalent tailpipe emissions.</td>
<td>None required.</td>
<td>No long term air quality effects anticipated.</td>
<td>No monitoring required.</td>
</tr>
<tr>
<td>• Community Features</td>
<td>• No displacement of existing residences, businesses and institutions are anticipated as a result of the proposed connecting tracks design.</td>
<td>None required.</td>
<td>No displacement of existing residences, businesses and institutions are anticipated.</td>
</tr>
<tr>
<td>• Built Heritage</td>
<td>• Assuming that new curbs and sidewalks will be confined to the existing road right-of-way, between Lake Shore Boulevard and Queen Street, there are no anticipated effects on cultural heritage resources associated with the proposed connecting track. Related construction activities are expected to have minimal direct and indirect effects on identified cultural heritage resources. Construction activities should be planned so as to ensure that associated vibration effects do not adversely affect resources set in close proximity to road right-of-ways and where any identified above ground, cultural heritage resources are to be affected by loss or displacement, further research should be undertaken to identify the specific heritage significance of the affected cultural heritage resource and appropriate mitigation measures should be</td>
<td>No net effects on cultural heritage anticipated.</td>
<td>No monitoring required.</td>
</tr>
</tbody>
</table>
### Table 6-1b  Summary of Potential Effects, Mitigation Measures, Net Effects and Monitoring Requirements Associated with the Leslie Street Connecting Track Design

<table>
<thead>
<tr>
<th>Potential Effect</th>
<th>Mitigation Measures</th>
<th>Net Effect</th>
<th>Monitoring Requirements and Future Commitments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Archaeology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are no anticipated effects to any archaeological resources associated with the proposed connecting track.</td>
<td>None required.</td>
<td>No net effects on archaeology anticipated.</td>
<td>No monitoring required</td>
</tr>
</tbody>
</table>

There are no anticipated effects to any archaeological resources associated with the proposed connecting track.
### Table 6-1b Summary of Potential Effects, Mitigation Measures, Net Effects and Monitoring Requirements Associated with the Leslie Street Connecting Track Design

<table>
<thead>
<tr>
<th>Potential Effect</th>
<th>Mitigation Measures</th>
<th>Net Effect</th>
<th>Monitoring Requirements and Future Commitments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Noise and Vibration</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The predicted night time noise effect of LRV operations on the nearest properties along Leslie Street exceeds the sound level limits by 8dBA and 6dBA, respectively. Alternatively, the predicted daytime noise effect exceeds the sound level limit by 2dBA at seven metres away from the LRV centre lane.</td>
<td>In order to meet the MOE/TTC vibration limit, TTC will include in the design of the LRV tracks a slab along Leslie Street between Queen Street East and Lake Shore Boulevard East which is floated on vibration isolation rubber pads or a mat. With this measure in place, the vibration levels at a distance of 7 metres is expected to drop by 0.11 mm/s to below the vibration limit. The LRV track design will be continuously welded with the necessary joints placed away from residential properties along Leslie Street. Following testing of the new prototype LRV vehicles in early 2012 and the implementation of committed track construction technologies, if it is determined that an acoustic impact in excess of 64dBA is predicted for the nearest residents, TTC will enforce a maximum speed limit of 25 km/hr for all LRVs operating along Leslie Street between the maintenance and storage facility and Queen Street East. According to acoustic modelling results, this will reduce the predicted impact below the 64dBA allowable limit. If prototype testing identifies the need for mitigation beyond those noise and vibration measures provided at the source (i.e., track or LRV), TTC will identify mitigation measures for affected residents and businesses. These measures include:</td>
<td>With appropriate mitigation measures in place, the net effects on residences along Leslie Street from noise and vibration associated with the proposed LRV tracks will comply with applicable standards and appropriate mitigation measures in place. The net effects on noise levels along a rail line from noise associated with the proposed LRV tracks will be measured.</td>
<td></td>
</tr>
<tr>
<td>Conduct acoustic testing of the new Light Rail Vehicle once prototype vehicles are available and provide report on results to the Toronto Transit Commission and the Toronto Film Board. Include noise and vibration monitoring and mitigation measures and construction site maintenance / upkeep requirements in construction contract documents. During operation of Leslie Street connector tracks, conduct regular track maintenance in accordance with TTC policies and procedures. Conduct post-implementation measurement of noise levels on Leslie Street between Queen Street and Lake Shore Boulevard.</td>
<td>Conduct acoustic testing of the new Light Rail Vehicle once prototype vehicles are available and provide report on results to the Toronto Transit Commission and the Toronto Film Board. Include noise and vibration monitoring and mitigation measures and construction site maintenance / upkeep requirements in construction contract documents. During operation of Leslie Street connector tracks, conduct regular track maintenance in accordance with TTC policies and procedures. Conduct post-implementation measurement of noise levels on Leslie Street between Queen Street and Lake Shore Boulevard.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Potential Effect

- The centreline of the LRV track running along Leslie Street is expected to exceed the ISO-2613 vibration limit. TTC will include in the design of the LRV tracks a slab along Leslie Street between Queen Street East and Lake Shore Boulevard East which is floated on a vibration isolation rubber pads or mat. With this measure in place, vibration levels are expected to drop between 0.11 mm/s to 0.17 mm/s, resulting in compliance with ISO standards.

- The LRV track design will be continuously-welded with the necessary joints placed away from residential properties along Leslie Street.

- If prototype testing identifies the need for mitigation beyond those measures provided at the source (i.e., track or LRV), TTC will identify mitigation measures for affected residents and businesses. These measures include:
  - Developing construction management plans and share with local community (2011)
  - Conducting pre-construction surveys (Spring 2011)
  - Prototype LRV measuring (early 2012)
  - Assessing noise and vibration levels on Leslie Street with new LRV data and identification of affects (Summer 2012)
  - Finalizing an agreement with property owners if mitigation measures are required (Fall 2012)
  - Completing post-construction surveys (Fall 2013)

- Overall, there are minimal operational deficiencies anticipated for Leslie Street during times when the LRVs will be most active along the corridor (outside of the morning and evening rush hour periods). The Leslie Street/Lake Shore Boulevard East intersection is projected to continue to operate at acceptable levels (908 °C) during these time periods. This intersection and associated signal phases or extensions that would be actuated by LRVs.

- Monitoring Requirements and Future Commitments

  - Conduct post-implementation measurement of vibration levels on Leslie Street between Queen Street and Lake Shore Boulevard.

### Mitigation Measures

- For LRV operations along Leslie Street and associated intersections.

- For the majority of the LRV traffic to and from the proposed maintenance facility will occur either well before or well after the typical peak periods of traffic. As such, the LRV traffic movements between the proposed facility and Queen Street East will have negligible effects on traffic operations along Leslie Street and associated intersections.

### Net Effect

- With appropriate mitigation measures in place, the net effects on residences along Leslie Street from vibration associated with the proposed LRV tracks will comply with applicable standards.

### Traffic and Transportation

- Review signal timings and vehicle detection capabilities along Leslie Street between Commissioners Street and Queen Street to determine where it would be beneficial to incorporate any transit priority signal phases or extensions that would be actuated by LRVs.

- The centreline of the LRV track along Leslie Street is expected to operate at acceptable levels (908 °C) during these time periods. This intersection and associated signal phases or extensions that would be actuated by LRVs.

- Monitoring Requirements and Future Commitments

  - Conduct acoustic testing of the new Light Rail Vehicle once prototype vehicles are available and provide report on results to the Toronto Transit Commission and the Toronto Film Board.

  - Conduct post-implementation measurement of vibration levels on Leslie Street between Queen Street and Lake Shore Boulevard.

### Monitoring Requirements

- Include noise and vibration monitoring and mitigation measures and construction site maintenance / upkeep requirements in construction contract documents.

- During operation of Leslie Street connector tracks, conduct regular track maintenance in accordance with TTC policies and procedures.

### Net Effect

- With appropriate mitigation measures in place, the net effects on residences along Leslie Street from vibration associated with the proposed LRV tracks will comply with applicable standards.
### 7. Future Commitments

During the Transit Project Assessment, the TTC and the City of Toronto have worked closely with key stakeholders to address and resolve all issues or concerns identified. However, not all issues can be addressed within the context of a Transit Project Assessment since the design of the maintenance and storage facility has been prepared at a conceptual level only. Accordingly, the TTC and the City have with stakeholder input, developed a list of future commitments. Supplemental commitments have also been developed under the direction of the Toronto Transit Commission board and Toronto City Council. Because commitments have a direct relationship with required permits and approvals, these are also documented in this section. Lastly, this section also identifies future commitments required under the Canadian Environmental Assessment Act and Ontario Regulation 231/08 (Transit Projects and Greater Toronto Transportation authoritie undertakings).

#### 7.1 Municipal Approvals

During the Transit Project Assessment Process, the study recommendations were presented in staff reports to the Toronto Transit Commission and Toronto City Council for approval. Through the municipal approvals process, the Commission and Toronto City Council approved motions which require follow-up actions by TTC and City of Toronto staff. The motions are listed below and any required follow-up actions are listed in the following subsections.

##### 7.1.1 Toronto Transit Commission

At its meeting of June 2, 2010, the Toronto Transit Commission approved the following motions:

Commissioner Bussin moved the following ancillary motions:

- Consider the addition of a second access route as part of the Transit Project Assessment Plan and report to City Council on the Knox/Eastern/Russell route.
- Meet with stakeholders to ensure appropriate mitigation for the Leslie Street route.
- Staff report back on the changes proposed to the Russell Streetcar Facility to accommodate the new LRV's and to consult with the public on the impacts and mitigation measures of the changes to the Russell facility.
- Ensure Design excellence for the site and also the route to include a greening strategy to Queen Street on Leslie Street.
- Establish a Construction Liaison Committee for the site and the route.

The motions by Commissioner Bussin carried.

Chair Giambrone moved the following ancillary motions:

- Direct TTC staff to comment to the Commission and the Toronto Film Board on the results of testing and vibration measurements of the prototype LRVs.
- Direct TTC Staff to maintain the connection track in a very good to excellent state of repair.
- Direct staff to collaborate with City Of Toronto Employment Services and The ATU, Local 113 on the development of a local outreach and training initiative for the Ashbridges Bay LRV Facility.

The motions by Chair Giambrone carried.

#### Table 7-1 Summary of June 2, 2010 Toronto Transit Commission Meeting Motions

<table>
<thead>
<tr>
<th>Commission Motion</th>
<th>Follow-up Action Required</th>
<th>Current Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 7-1 below summarizes the required follow-up actions and current status for each of these motions. For those motions for which actions could not be completed during the Transit Project Assessment process, follow-up actions have been added to the Future Commitments Table in Section 7.2.

---

November 16, 2010
<table>
<thead>
<tr>
<th>ID and Element</th>
<th>Lead Responsibility</th>
<th>Key Stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Terrestrial Natural Heritage</td>
<td>TTC</td>
<td>City of Toronto Urban Forestry</td>
</tr>
<tr>
<td>1.1</td>
<td>Obtain permit to remove trees protected by Tree Protection by-law (Chapter 813, Article 3).</td>
<td>TTC</td>
</tr>
<tr>
<td>1.2</td>
<td>Conduct clearing of vegetation and trees between August 1 and April 14, so that no destruction of bird nests occurs, in order to be in compliance with the Migratory Birds Convention Act. If vegetation clearing is required during the nesting season, TTC will retain a qualified avian biologist to conduct a nesting survey. If active nests are found, TTC will prepare a site-specific mitigation plan in consultation with the Canadian Wildlife Service.</td>
<td>TTC</td>
</tr>
<tr>
<td>2. Hydrogeology and Groundwater</td>
<td>TTC</td>
<td>Toronto Water / TRCA</td>
</tr>
<tr>
<td>2.1</td>
<td>Prepare an Erosion and Sediment Control Guidelines for Urban Construction, which complies with prevailing TRCA and Toronto Water guidelines and requirements.</td>
<td>TTC</td>
</tr>
<tr>
<td>2.2</td>
<td>Complete an assessment and obtain a temporary Permit to Take Water (PTTW).</td>
<td>TTC</td>
</tr>
<tr>
<td>2.3</td>
<td>Obtain permits and approvals in accordance with Ontario Regulation 166/06 (Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses) for development within the floodplain.</td>
<td>TTC</td>
</tr>
<tr>
<td>2.4</td>
<td>All monitoring wells and boreholes that are not being used for monitoring or may be destroyed during construction must be decommissioned in accordance with Ontario Ministry of Environment (MOE) Reg. 903.</td>
<td>TTC</td>
</tr>
<tr>
<td>2.5</td>
<td>Conduct additional soil and groundwater sampling of the site upon completion of the soil removal contract. This information will be used to complete the human health risk assessment.</td>
<td>TTC</td>
</tr>
<tr>
<td>2.6</td>
<td>During the operation of the maintenance and storage facility, conduct regular groundwater quality monitoring.</td>
<td>TTC</td>
</tr>
<tr>
<td>3. Stormwater Groundwater</td>
<td>TTC</td>
<td>Toronto Water / TRCA / Ministry of the Environment</td>
</tr>
<tr>
<td>3.1</td>
<td>Obtain sewer discharge permits and approvals, in accordance with City of Toronto (Toronto Municipal Code – Chapter 681 - Sewers), if any water will be discharged to municipal sewers.</td>
<td>TTC</td>
</tr>
<tr>
<td>3.2</td>
<td>Execute a Surcharge Agreement with City of Toronto, if water discharge to sanitary sewer exceeds City of Toronto Sanitary and Combined Sewer By-Law.</td>
<td>TTC</td>
</tr>
<tr>
<td>3.3</td>
<td>Conduct stormwater management, in accordance with City of Toronto, TRCA and MOE requirements (including MOE Certificate of Approval for any new stormwater management system – Section 53 of the Ontario Water Resources Act).</td>
<td>TTC</td>
</tr>
<tr>
<td>4. Contaminated Soils</td>
<td>TTC</td>
<td>Toronto Public Health</td>
</tr>
<tr>
<td>4.1</td>
<td>Prior to opening of the maintenance and storage facility, complete a human health risk assessment which will address TTC indoor and outdoor workers and sub-surface construction workers (i.e., utility workers) for the maintenance and storage facility in accordance with Ontario Regulation 153/04 as amended under Ontario Regulation 511/09.</td>
<td>TTC</td>
</tr>
<tr>
<td>4.2</td>
<td>Prior to opening of the maintenance and storage facility, develop a sub-surface utility worker and safety plan in accordance with the final human health risk assessment.</td>
<td>TTC</td>
</tr>
<tr>
<td>4.3</td>
<td>Dispose of excavated materials in accordance with applicable legislation.</td>
<td>TTC</td>
</tr>
<tr>
<td>5. Air Quality</td>
<td>TTC</td>
<td>City of Toronto Urban Forestry</td>
</tr>
<tr>
<td>5.1</td>
<td>Implement an air monitoring / dust management plan (soil removal and construction of maintenance and storage facility) and contingency plan.</td>
<td>TTC</td>
</tr>
<tr>
<td>5.2</td>
<td>Publish soil removal contract air quality monitoring results on the TTC website.</td>
<td>TTC</td>
</tr>
<tr>
<td>5.3</td>
<td>Obtain Certificate of Approval for Air, for the maintenance and storage facility in accordance with the Environmental Protection Act.</td>
<td>TTC</td>
</tr>
<tr>
<td>6. Noise and Vibration</td>
<td>TTC</td>
<td>Ministry of the Environment</td>
</tr>
<tr>
<td>6.1</td>
<td>Conduct acoustic testing of the new Light Rail Vehicle once prototype vehicles are available and provide report on results to the Toronto Transit Commission and the Toronto Film Board.</td>
<td>TTC</td>
</tr>
<tr>
<td>6.2</td>
<td>In the event that predicted source noise and/or vibration levels for the new Light Rail Vehicles operating on Leslie Street between Queen Street East and Lake Shore Boulevard exceed MOE / TTC protocols, undertake mitigation on affected properties in accordance with the process established at the July 14 and 15, 2010 public meetings (refer to Section 8.1.2.2 and 8.1.2.3 and Appendix C).</td>
<td>TTC</td>
</tr>
<tr>
<td>6.3</td>
<td>Obtain Certificate of Approval for Noise for the maintenance and storage facility in accordance with the Environmental Protection Act.</td>
<td>TTC</td>
</tr>
<tr>
<td>6.4</td>
<td>Include noise and vibration monitoring and mitigation measures and construction site maintenance / upkeep requirements in construction contract documents.</td>
<td>TTC</td>
</tr>
<tr>
<td>6.5</td>
<td>During operation of Leslie Street connector tracks, conduct regular track maintenance in accordance with TTC policies and procedures.</td>
<td>TTC</td>
</tr>
<tr>
<td>6.6</td>
<td>Conduct post implementation measurements of noise and vibration levels on Leslie Street between Queen Street and Lakeshore Boulevard.</td>
<td>TTC</td>
</tr>
<tr>
<td>7. Utilities</td>
<td>TTC</td>
<td>Hydro One Networks Incorporated</td>
</tr>
<tr>
<td>7.1</td>
<td>Submit plans to Hydro One for duct bank and cable relocation approval.</td>
<td>TTC</td>
</tr>
<tr>
<td>8. Traffic and Transportation</td>
<td>TTC</td>
<td>City of Toronto Transportation</td>
</tr>
<tr>
<td>8.1</td>
<td>Obtain permits for construction within the existing road allowances (through the City of Toronto).</td>
<td>TTC</td>
</tr>
<tr>
<td>8.2</td>
<td>Obtain Highway Alteration By-law approval for alterations to Leslie Street.</td>
<td>TTC</td>
</tr>
<tr>
<td>8.3</td>
<td>Develop traffic, cycling, transit and pedestrian management strategies to be included in construction contract documents.</td>
<td>TTC</td>
</tr>
<tr>
<td>8.4</td>
<td>Develop emergency response plans with emergency service providers to maintain fire, police and emergency medical services during construction.</td>
<td>TTC</td>
</tr>
<tr>
<td>8.5</td>
<td>Distribute summary of Traffic Impact Study results to Canada Post Corporation for review and comment.</td>
<td>TTC</td>
</tr>
<tr>
<td>8.6</td>
<td>Review suggestions raised by pedestrians/ cycling stakeholders at October 15, 2010 meeting for modifications to Leslie Street right-of-way to accommodate pedestrians and cyclists.</td>
<td>TTC</td>
</tr>
<tr>
<td>9. Land Use</td>
<td>TTC</td>
<td>City of Toronto Planning</td>
</tr>
<tr>
<td>9.1</td>
<td>Obtain Site Plan Approval for the Maintenance and Storage Facility.</td>
<td>TTC</td>
</tr>
<tr>
<td>9.2</td>
<td>Obtain building permits for the Maintenance and Storage Facility.</td>
<td>TTC</td>
</tr>
</tbody>
</table>
Table 7-3  Future Commitments

<table>
<thead>
<tr>
<th>ID and Element</th>
<th>Lead Responsibility</th>
<th>Key Stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Property</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.1 Conduct pre-construction and post-construction surveys for all properties located within 30 metres of the Leslie Street connection tracks (i.e., all properties abutting Leslie Street between Queen Street East and Commissioners Street).</td>
<td>TTC</td>
<td>Leslie Street – property owners</td>
</tr>
<tr>
<td>11. Consultations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.1 Hold further consultations with Emergency services on the maintenance and storage facility design details (for example, emergency response access to Maintenance and Storage facility).</td>
<td>TTC</td>
<td>Toronto Emergency Medical Services, Toronto Fire Services, Toronto Police Services</td>
</tr>
<tr>
<td>11.2 Form a Construction Liaison Group in consultation with appropriate City staff and local City Councillors to address key issues, facilitate communication and help minimize construction disruption including noise, traffic and dust.</td>
<td>TTC</td>
<td>Local Residents, Friends of the Spit, South Riverdale Community Health Centre, Local Businesses</td>
</tr>
<tr>
<td>11.3 Develop a plan for landscape enhancement opportunities on Leslie Street from Lake Shore Boulevard to Queen Street East in consultation with the community.</td>
<td>TTC</td>
<td>Impacted Leslie Street property owners between Queen Street East and Lake Shore Boulevard</td>
</tr>
<tr>
<td>11.4 Conduct ongoing consultations with City of Toronto City Planning – Urban Design to address requirements of Leslie Street Greening Project.</td>
<td>TTC</td>
<td>City Planning – Urban Design</td>
</tr>
<tr>
<td>11.5 Hold meetings with Canada Post Corporation during the design phase of the Project to review the road and intersection improvements on Leslie Street.</td>
<td>TTC</td>
<td>City of Toronto Transportation, Canada Post Corporation</td>
</tr>
<tr>
<td>11.6 Hold follow-up public meeting to review Leslie Street streetscape design.</td>
<td>TTC</td>
<td>City of Toronto Transportation, Pedestrian and cycling stakeholders, Local residents</td>
</tr>
</tbody>
</table>

Table 7-4  Assessment of Potential CEAA Triggers

<table>
<thead>
<tr>
<th>Potential CEAA Triggers</th>
<th>YES/NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the project being funded in whole or in part by the federal government?</td>
<td>NO</td>
</tr>
<tr>
<td>Is the project on federal land?</td>
<td>NO</td>
</tr>
<tr>
<td>Is the project likely to affect a facility regulated by the National Energy Board, e.g., oil or gas pipeline?</td>
<td>NO</td>
</tr>
<tr>
<td>Is the project likely to affect the operation of a railway company or railway property?</td>
<td>NO</td>
</tr>
<tr>
<td>Does the project involve the temporary storage of explosives on-site?</td>
<td>NO</td>
</tr>
<tr>
<td>Is the project likely to harm fish or fish habitat?</td>
<td>NO</td>
</tr>
<tr>
<td>Is the project likely to substantially interfere with navigability of waterways?</td>
<td>NO</td>
</tr>
<tr>
<td>Is the project likely to take place in, involve dredge and fill operations, draw water from or discharge to a historic canal operated by Parks Canada?</td>
<td>NO</td>
</tr>
<tr>
<td>Is the project likely to affect First Nation reserve lands?</td>
<td>NO</td>
</tr>
</tbody>
</table>
8. Consultation

TTC actively engaged residents, businesses, agencies, and other stakeholders throughout the study and during the consultation process. TTC posted relevant information on a project website, and a dedicated TTC Community Liaison Officer actively participated in the study process. During the preliminary planning stage, TTC held three workshops with residents and stakeholders to gauge their interest in the study, discuss the TPA Process in more detail and present information on the need for the new maintenance and storage facility. TTC hosted one Public Open House on July 28, 2010, after the study had officially commenced. Appendix C documents public correspondence and consultation materials presented at the public meetings; Appendix D includes agency correspondence; and Appendix E details consultation with First Nations.

Below is a summary of the consultation activities that occurred during the pre-planning stage, as well as after the study was officially commenced on June 24, 2010.

8.1 Public Consultation

8.1.1 Preliminary Planning Consultation Activities

8.1.1.1 Project Web-site and TTC Community Liaison Officer

The City of Toronto and the Toronto Transit Commission managed a dedicated website (www.toronto.ca/involved/projects/lrv) designed to keep the public up-to-date on the latest developments of the Ashbridges Bay LRV maintenance and storage facility, provided notices of future workshops and public meetings, served as a virtual library for materials presented at public events, and provided a means for the public to provide input to the project.

A TTC Community Liaison Officer served as the direct link to the project team, and assisted residents and stakeholders with information relevant to the project.

8.1.1.2 Public Open House – June 16, 17, 18, 2009

The City of Toronto and the Toronto Transit Commission hosted a series of preliminary Public Open House events on June 16, 17 and 18, 2009 to identify the rationale for the project, the requirements of the new facility, the four sites investigated for the facility, the screening criteria used in the site selection process and the preliminary concept layout designs for each of the three sites with the highest potential. A copy of the presentation materials is included in Appendix C.

The public was notified of the project and the Open Houses through newspaper advertisements in the Beaches Mirror on June 12, 2009, and direct mail or electronic mail sent the public and businesses identified on the existing contact list developed from previous projects in the area. In addition, fliers were delivered by Canada Post ‘premium’ unaddressed ad mail within the project study area which included the Don River to the west, Gerrard Street East and Kingston Road to the north, Victoria Park Avenue to the east and Lake Ontario to the south. A copy of the June 16, 17 and 18 Public Open Houses notice is included in Appendix C.

Key issues and comments raised concerning the Ashbridges Bay site included the following:

- The site has the least effect on residential areas.
- The area is already industrial and existing business will not require relocation.
- Park space will be lost.
- The connecting tracks would complicate traffic and make the Leslie – Lake Shore intersection busier.
- The area around the site is a major access point to the waterfront trails and the Leslie Street Split.
- Existing bike paths must be preserved and improved.
- The City of Toronto may need this site for the future expansion of the Wastewater Treatment Plant.
- The site is heavily contaminated.

The complete summary report of the June 16, 17 and 18 Public Open House meetings is included in Appendix C.

8.1.1.3 Public Open House – February 18, 2010

The City of Toronto and the Toronto Transit Commission hosted a Public Open House on February 18, 2010 at the EMS Academy (895 Eastern Avenue), to gather feedback on preliminary layout designs for the maintenance and storage facility and connection track. The Public Open House was a follow-up to the three June 2009 public events which were held to present the site options identified for the proposed facility. The February 18 Open House introduced the Transit Project Assessment Process (and preliminary planning process), identified potential layouts of the maintenance and storage facility and connecting tracks and presented existing site conditions and evaluation criteria.

The Open House presented 23 detailed panels, a Frequently Asked Questions handout (available for download on the project web page at http://www.toronto.ca/involved/projects/lrv/), an audio-visual PowerPoint presentation with voice-over discussing the LRV maintenance and storage facility, and an open invitation to ask questions and discuss the plan with project team members present from the TTC, City and consulting teams. Copies of the display boards and handouts are included in Appendix C.

Participants were invited to elicit their comments on handouts and submit them at the registration table. In addition to the comment forms, project team members recorded participant comments as they arose during discussions. During a question and answer session, project staff engaged residents and stakeholders on a number of issues relevant to the study.

Notification for the February 18, Public Open House was achieved through the following:

- Posting on the project website;
- 18,141 flyer notices were delivered within the area of Kingston Road to Gerrard Street to the north, Lee Avenue to the east, Logan Avenue to the west, and south to the Lake;
- 400 notices were mailed to individuals who requested to be notified with further information on the LRV yard. Of these 400 notified, those who provided email addresses were sent email notification as well (approximately 200);
- Direct mailing to all federal, provincial and municipal agencies, municipal councillors, Member of Parliament and Member of Provincial Parliament and other interested stakeholders in advance of the Public Open House on February 5, 2010; and
- Publication in the Beaches Mirror (February 4, 2010).

A copy of the February 18, 2010 Public Open House notice is included in Appendix C.

Over the course of the Open House, a total of 119 (signed in) participants attended the meeting and 22 comment forms were submitted. The public was also able to provide comments online or via telephone. Between February 18 and March 15, TTC received 103 comments via email and telephone, many of which were questions, comments and/or requests to be added to the mailing list.

Key issues and comments raised included the following:

- General opposition and concern - from Leslie Street residents in particular - concerning non-revenue streetcar service on Leslie Street to the maintenance and storage facility.
- Site should be maintained for the Ashbridges Bay Treatment Plant purposes (submitted by Ashbridges Bay Neighbourhood Liaison Committee). See Appendix C - February 18, 2010 Summary Report for a copy of the letter.
- Recommendation from Leslie Street residents to evaluate alternative routes for track connections.
- Opposition to the proposed location of the Ashbridges Bay maintenance and storage facility.
8.1.2.4  Public Information Centre – July 28, 2010

The TTC hosted a public meeting on July 28, 2010 at the Toronto Fire and EMS Training Centre to discuss all aspects of the Transit Project Assessment Process, including an overview of the:

- Pre-planning and Transit Project Assessment Process;
- Recommended maintenance and storage facility and connecting track designs;
- Proposed measures to mitigate any potential negative project effects (and resulting net effects); and
- Proposed monitoring to verify the effectiveness of the mitigation measures.

The invitation to the July 28 Public Information Centre was distributed together with the Notice of Commencement as follows:

- On June 24 and July 8, 2010, notices were published in the Beaches Mirror and on June 24, 2010 in The Metro;
- On June 22, 2010, notices were mailed to all property owners within 40 metres of the site and connecting tracks on Leslie Street;
- On June 22, 2010, an additional 18,379 notices were delivered within the area of Kingston Road and Gerrard Street to the north, Lee Avenue to the east, Logan Avenue to the west, and south to the lake;
- On June 22, 2010, notices were mailed and emailed to all who had previously expressed interest in the project (848);
- Additional public meeting notices were delivered first class mail on July 14, 2010, to everyone within 40 metres of the project as well as to all those who expressed interest in the project to date (848);
- Mailing to all federal, provincial and municipal agencies, municipal councillors, MPs and Aboriginal communities and other interested stakeholders on June 22, 2010 and additional notices of the public meeting on July 14, 2010;
- A letter was sent to the Director of the MOE regarding First Nations consultation for the project on June 23, 2010;
- Notification was sent to: INAC – Specific Claims, LMRB, and Comprehensive Claims, and the Ontario Ministry of Aboriginal Affairs; and
- Notices were sent to the Mississaugas of the New Credit First Nation, all of the Williams Treaty First Nations, the Huron-Wendat First Nation, the Kawartha Nishnawbe First Nation, and the Métis Nation of Ontario. First Nation contact information was confirmed by the Ministry of Aboriginal Affairs and the MOE.

The complete summary report, including attendee comments, questions and responses is provided in Appendix C.

8.1.2.5  Design Competition Drop-in – August 8 and 10, 2010

TTC hosted two drop-in sessions in the local community to present the three landscape designs developed by the firms engaged in a competition to enhance the Lake Shore Boulevard East and Leslie Street edge (adjacent to the maintenance and storage facility). Attendees viewed several panels illustrating each design concept, met one-on-one with design team members and provided comments on the designs at the event or on-line (http://www.toronto.ca/involved/projects/lrv/index.htm). Comments were accepted until August 23 and forwarded to a Jury Panel, led by the City’s Urban Design team, who will select the winning design.

The event was hosted on a weekend and on a week night to attract various stakeholders, but especially residents and trail users. The drop-in sessions were held:

- Sunday, August 8, 2010 from 11 a.m. to 4 p.m. at Leslie and Lake Shore
- Tuesday, August 10, 2010 from 4 p.m. to 8 p.m. at Coxwell and Lake Shore

8.1.2.6  Notice of Completion

The Notice of Completion was issued through the following:

- Posting on the project website;
- Mailing to all federal, provincial and municipal agencies, local municipal councillors, MPs and MPPs, Aboriginal communities, and other interested stakeholders including all who had expressed interest to date;
- Publication in the Beaches Mirror on September 30, and October 7, 2010;
- Publication in The Metro on September 30 and October 1, 2010;
- 18,141 flyer notices delivered within the area of Kingston Road to Gerrard Street to the north, Lee Avenue to the east, Logan Avenue to the west, and south to the Lake on September 27, 2010;
- Emailed to the Ashbridges Bay Stakeholders List (approximately 550 individuals) September 30, 2010;
- First class addressed mail 2,593 notices sent on September 27, 2010;
- Notification was sent to: INAC – Specific Claims, LMRB, and Comprehensive Claims, and the Ontario Ministry of Aboriginal Affairs and
- The Notice of Completion was sent to the Mississaugas of the New Credit First Nation, all of the Williams Treaty First Nations, the Huron-Wendat First Nation, the Kawartha Nishnawbe First Nation, and the Métis Nation of Ontario.

Copies of the above notices are included in Appendix C.

8.1.2.7  City of Toronto – Meeting with Pedestrian and Cycling Stakeholders – October 13 2010

On October 13, 2010, the City of Toronto and TTC staff met with pedestrian and cycling stakeholders to explore options for improving pedestrian and cycling safety on Leslie Street in conjunction with the reconstruction of Leslie for new TTC access route. At the meeting the following follow-up actions were discussed. These are listed below are are summarized in Chapter 7:

- Toronto Transportation feels that there may be options to route cyclists away from Leslie,
- Ministry of Aboriginal Affairs and
- TTC will take these ideas to the design team. There will be a public meeting to review options for Leslie St. design;
- There has not been a budget allocated to the street improvements beyond that of curb-to-curb road reconstruction;
- On Leslie between Eastern and Lakeshore Blvd., there is the possibility of speed reduction measures, examining the entrances to Loblaw and Price Chopper for pedestrian safety and beautification. Toronto Transportation will talk to City Planning to look at longer term options for a north-south trail set-back along Loblaw frontage in the event of future site re-development along Lakeshore Blvd.
Table 8-1 Summary of Public Comments Received and How They Were Considered

<table>
<thead>
<tr>
<th>Comments from Public Members</th>
<th>How the Comment was Considered</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Location of the maintenance and storage facility in relation to previous efforts/funds committed to this plot of land (parks, access to the spit, etc.), loss of green space.</td>
<td>• The technical criteria for site selection included: minimum property requirements of approximately 22 acres, availability of the lands, timing required to commission the site, costs and proximity to the existing streetcar network to ensure effective service for the community. In addition, Leslie Street is identified in the City of Toronto Official Plan (2002) as a Transit Corridor.</td>
</tr>
<tr>
<td>• Increase in noise and vibrations, traffic disruption during construction, increased traffic congestion along Leslie, potential decrease in property values, negative effects on quality of life, potential loss of parking on Leslie Street</td>
<td>• Noise and vibration effects, disruption from construction of the tracks and traffic congestion will be mitigated to meet or surpass local and provincial requirements, regardless of which route is ultimately selected. Parking on Leslie Street will be maintained.</td>
</tr>
<tr>
<td>• Use the east-west Transit corridor running through the Port Lands and connecting to the proposed LRV Yard as a route alternative (wouldn’t interfere with existing residential community).</td>
<td>• This is an option that was raised at the public open house on February 18, 2010 which was reviewed by the TTC in the route alternatives for the connection track. In assessing all potential routes, capital construction cost is one of multiple variables used to make a final decision.</td>
</tr>
<tr>
<td>• Environmental effects of polluted soil on site, access to houses if ROW put in place (lives on Leslie)</td>
<td>• Potential challenges for the development of the site due to contaminated nature of existing soils, including:</td>
</tr>
<tr>
<td></td>
<td>• Transport and Disposal of excavated soils</td>
</tr>
<tr>
<td></td>
<td>• Health and Safety of Workers during excavation or construction</td>
</tr>
<tr>
<td></td>
<td>• Offsite migration of soils from surface erosion, and surface soil contamination of trucks and equipment</td>
</tr>
<tr>
<td></td>
<td>• Potential for dust generation from excavation and construction activities and dust migration beyond the construction zone</td>
</tr>
<tr>
<td></td>
<td>• Containment and treatment of groundwater may be necessary if dewatering is required</td>
</tr>
<tr>
<td></td>
<td>• Potential requirement for mitigating methane gases and VOC vapours, and</td>
</tr>
<tr>
<td></td>
<td>• Possible human health risk to the workers and occupants using the constructed facilities</td>
</tr>
<tr>
<td></td>
<td>• TTC has commissioned a human health risk assessment in accordance with Ontario Regulation 153/94 as amended under Ontario Regulation 511/09. The human health risk assessment is to be finalized following removal of the soil mound and confirmation, through additional soil and groundwater sampling, that worst case conditions have been addressed. Prior to commencement of excavation activities, a site specific health and safety plan will be developed by a health and safety professional.</td>
</tr>
<tr>
<td></td>
<td>• In addition, air monitoring will be undertaken at the property boundaries of the construction site, and contingency measures will be put in place to suppress dust. An erosion and sediment control plan will be prepared and implemented during excavation and construction activities. Trucks and equipment will be visibly decontaminated prior to leaving the construction site. Risk management measures to block the exposure pathways and reduce risks to acceptable levels include a cap across the site to prevent direct access to impacted soil; a sub-slab ventilation system; and a health and safety plan to protect subsurface utility workers.</td>
</tr>
<tr>
<td>• Removal of soil from the site</td>
<td>The removal of soil will be the first phase of the project. The successful contractor responsible for the removal of soil will be required to follow all Ministry of Environment protocols and regulations for safe removal and disposal. In consultation with the community and the City of Toronto, a designated track route has been established and is included in the Soil Removal and Capping Tender document. Vehicles involved in the soil removal will travel along either of the following routes:</td>
</tr>
<tr>
<td></td>
<td>1. Upon exiting the site, proceed westerly along Commissioners Street to the Don Roadway; then northerly, exiting the city via the Don Valley Parkway. OR</td>
</tr>
<tr>
<td></td>
<td>2. Upon exiting the site, proceed westerly along Commissioner Street to Carlaw; then north to Lake Shore Blvd and west on the Gardiner Expressway, heading out of the city. The routes address the community’s concerns of minimizing the amount of truck traffic on Leslie Street.</td>
</tr>
<tr>
<td></td>
<td>• TTC will conduct removal of the mound area as a separate contract in advance of the construction of the maintenance and storage facility.</td>
</tr>
<tr>
<td></td>
<td>• As part of the soil removal activities, TTC has commissioned a human health risk assessment which will be finalized following removal of the soil mound and confirmation, through additional soil and groundwater sampling, that worst case conditions have been addressed. Prior to commencement of excavation activities, a site specific health and safety plan will need to be developed by a health and safety professional.</td>
</tr>
<tr>
<td></td>
<td>• In addition, air monitoring will be undertaken at the property boundaries of the construction site, and contingency measures will be put in place to suppress dust. Trucks and equipment will be visibly decontaminated prior to leaving the construction site. Risk management measures to block the exposure pathways and reduce risks to acceptable levels include a cap across the site to prevent direct access to impacted soil; a sub-slab ventilation system; and a health and safety plan to protect subsurface utility workers.</td>
</tr>
<tr>
<td>• Streetcar right of way will cause major congestion and will increase risks of traffic accidents. LRV tracks will be damaged by heavy traffic (and heavy vehicles), costing more money and creating more congestion to replace tracks, effects on businesses because of traffic congestion, increase in pollution because of traffic congestion (defeating the air quality benefits from LRV).</td>
<td>• The new LRVs will not be on a dedicated right of way. This was an option that was presented for the connection track on Leslie Street. The community was asked for input on both options and overwhelmingly preferred a mixed traffic scenario.</td>
</tr>
<tr>
<td>• Will the new LRV replace streetcars? What will become of the current streetcar facility at Connaught (Russell Yard) if the new facility is built?</td>
<td>• Although the TTC has purchased 204 new LRVs, the facility will store 100 vehicles, 85 of which will leave the yard daily between 5:00 a.m. and 7:00 a.m. It should be noted that a small percentage of the vehicles will return to the facility following the morning rush period and return into service prior to the afternoon rush period. Vehicles will then return to the facility after the evening rush period commencing approximately 7:00 p.m. Under the current proposal, as no time will 204 vehicles travel continuously along Leslie Street.</td>
</tr>
<tr>
<td>• How many of these cars leave between 5:00 a.m. and 7:00 a.m.? Will the cars be traveling both east and west once they turn at Queen? If 100 cars will be stored at the new facility, why will only 70 to 80 be leaving the facility between 5:00 a.m. to 7:00 a.m.?</td>
<td>• The new LRV facility is needed to accommodate the new low floor vehicles that have been ordered by the TTC to replace the existing fleet. The current “carhouses” (Roncesvalles and Russell) have insufficient space to support the maintenance functions required for the new vehicles and have insufficient track storage capacity to accommodate the fleet of 204 LRVs.</td>
</tr>
<tr>
<td>• How will light rail operations along Leslie Street affect traffic on Knox Avenue?</td>
<td>• These carhouses will remain fully operational to service the increased ridership demand for the new LRVs and support various daily servicing functions for the new fleet of vehicles, which are expected to be in revenue service in 2013.</td>
</tr>
<tr>
<td></td>
<td>• Most of the vehicles will be traveling westbound from Leslie to feed the line, however existing stops east of Leslie Street will continue to receive transit service.</td>
</tr>
<tr>
<td></td>
<td>• Approximately 85 vehicles will be in service during peak period, as the others will be undergoing regular maintenance, service and cleaning.</td>
</tr>
<tr>
<td>• Our traffic assessment indicates that the Great River Street / Leslie Street intersection will operate at good levels of service with acceptable delays—even while the light rail vehicles operate along Leslie Street. The analysis also shows that there will be virtually no change in the delays to west-bound traffic on Queen Street during the light rail operations. It is worth emphasizing that a large majority of the light rail vehicles will operate outside of the rush hour periods. A breakdown of the Leslie Street LRV trips include:</td>
<td></td>
</tr>
</tbody>
</table>
| | • 85 outbound trips, between 5:00 and 7:00 a.m.
Table 8-1 Summary of Public Comments Received and How They Were Considered

<table>
<thead>
<tr>
<th>Summary of Comments</th>
<th>How the Comment Was Considered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concerns regarding flooding on Leslie Street</td>
<td>This will be considered as part of our design and planning process. Information will be shared with Toronto Water as well as our Operations Division.</td>
</tr>
<tr>
<td>Leslie is not a main thoroughfare, it is a short street that residents use to access local business and there are many homes and condominiums on this street.</td>
<td>TTC recognizes there are many concerns, particularly for those who live on or in the vicinity of Leslie Street between Lake Shore and Queen. In light of recent community concerns, we will explore alternate routes in more detail to ensure the recommended option is still the most feasible. We look forward to sharing this information with the community, once our analysis is complete.</td>
</tr>
<tr>
<td>Effects to business (franchisees of Price Chopper at Leslie and Lake Shore), traffic effects</td>
<td>Every effort will be made to minimize congestion in this area throughout the construction period, as we realize this is a vital corridor for local businesses. For this reason, there are no plans to completely close any street during construction. Our intent is to communicate regularly with businesses and residents, especially in the event of unforeseen circumstances which may cause an inconvenience.</td>
</tr>
<tr>
<td>What will be happening to the Martin Goodman trail during the construction of the LRV Facility and after it is built?</td>
<td>Maintaining full access to the trail is a priority and is certainly one of the criteria taken into consideration as part of our review. At no time does the TTC intend on closing any part of the trail, however a temporary re-routing may be necessary during construction of the facility or route, depending on which route is ultimately selected.</td>
</tr>
<tr>
<td>Appreciate Russell Division is still in the mix post 2013 and ingress/egress to the yard is still required - why not take advantage of the capital spend and take Connaught out of the equation? Trains could simply ingress and egress off of Queen or Eastern.</td>
<td>Given the increased ridership growth rates in the area, the entire Russell Yard will still be required to store and maintain 50 of 204 new vehicles. The remaining vehicles will be stored at the Roncesvalles facility. The Ashbridges Bay facility does not have the capacity to accommodate the entire fleet.</td>
</tr>
<tr>
<td>What is the size of the proposed site</td>
<td>The proposed facility will be approximately 20,800 square metres and will store and maintain approximately 100 new low floor LRVs.</td>
</tr>
<tr>
<td>If the competition open to professional landscape architecture firms or to anyone?</td>
<td>The selection of landscape design firms for the Ashbridges Bay Project was managed directly by our consultant, AECDM. The three firms that will be participating in this process.</td>
</tr>
<tr>
<td>If the new Leslie and Lake Shore facility goes ahead will that mean that the facility on queen east is just east of greenwood will not be needed and phased out? And presumably open for development that adds to the neighbourhood?</td>
<td>The Roncesvalles and Russell carhouses will be kept in service but, because the new vehicles are significantly larger than the existing cars, the TTC will require a third, new carhouse. The existing maintenance and storage facilities (Roncesvalles and Russell) cannot fully accommodate all the new vehicles. Both are over 80 years old, and have insufficient space within the existing buildings to service and store the new, longer streetcars. These two facilities are large enough to store only 50 new streetcars at each site out of the 204 total. Furthermore, in order to create enough space at these facilities, rebuilding and expanding into adjacent residential neighbourhoods would be required.</td>
</tr>
<tr>
<td>There was a number, in the order of 230, trips per day forecast for the connecting track. Are these one-way trips or two-way trips? How does that compare to the number of current trips on Queen St. between Connaught and Broadview including 504 &amp; 505 cars running into and out of service?</td>
<td>The 230 trips that were quoted for the connecting track include all movements; in other words, two way trips over a 24 hour period. The majority of these vehicles (85) will be exiting the facility between 5 am and 7 am. In comparison, there are approximately 90 vehicles exiting the Russell facility during the same time period of 5 am and 7 am. There will be approximately 470 employees working from this facility. These will include operators, technician trainers and support staff and will be over three shifts.</td>
</tr>
<tr>
<td>What is the proposed budget for the landscape work?</td>
<td>There will be a global construction budget, of which a portion will be dedicated to landscaping and streetscaping. The successful contractor will be required to deliver the design included in the tender drawings. The budget for this project is approximately $350 million.</td>
</tr>
<tr>
<td>What is that budget as a percentage of the project? Will it be set aside as a fixed amount to be spent on landscaping only or will it be absorbed into ‘other non-landscape related budgets when if other costs run high?</td>
<td>Plantings on public property are maintained by the City in the design of the project and the associated landscaping design. They have been and continue to play an integral role in the design of the project and the associated landscaping design.</td>
</tr>
<tr>
<td>TTC and the project team met with representatives of the South Riverdale Community Health Centre on August 11, 2010 to discuss and address concerns related to soil testing and removal. The presentation is posted on the project website. TTC held landscape design competition with direction given to competitors to integrate the Facility and landscape into the Martin Goodman Trail and Leslie Split, ensuring safety for pedestrians and cyclists. TTC and City of Toronto staff met with representative from the South Riverdale Community Health Centre on October 13, 2010 to discuss concerns of cycling and pedestrian safety.</td>
<td>Comments from South Riverdale Community Health Centre</td>
</tr>
<tr>
<td>Concerns about cyclists and pedestrian safety and the remediation of contaminated soils.</td>
<td>TTC and the project team met with representatives of the South Riverdale Community Health Centre on August 11, 2010 to discuss and address concerns related to soil testing and removal. The presentation is posted on the project website. TTC held landscape design competition with direction given to competitors to integrate the Facility and landscape into the Martin Goodman Trail and Leslie Split, ensuring safety for pedestrians and cyclists. TTC and City of Toronto staff met with representative from the South Riverdale Community Health Centre on October 13, 2010 to discuss concerns of cycling and pedestrian safety.</td>
</tr>
<tr>
<td>TTC and project team met with representatives of Loblaw Properties Limited, the consulting team, Lea Consulting to engage in the noted concerns.</td>
<td>Comments from Lea Consulting on behalf of Loblaw Properties Limited</td>
</tr>
<tr>
<td>Loblaw Properties Limited owns and operates a food store at the northeast corner of Leslie Street and Lake Shore Boulevard (17 Leslie Street, Toronto, ON). Loblaw Properties Limited expressed concerns that the exclusive lane track option would significantly affect access to the food store and Loblaw’s operations. As part of the transit project assessment process, it is crucial that Loblaw Properties Limited be included as a stakeholder and that the chosen solution for the connection of the maintenance and storage facility with the existing streetcar network creates any reduction in level of service or elimination of turning movements at either Eastern Avenue or the food store traffic signal.</td>
<td>Loblaw Properties Limited and operates a food store at the northeast corner of Leslie Street and Lake Shore Boulevard (17 Leslie Street, Toronto, ON). Loblaw Properties Limited expressed concerns that the exclusive lane track option would significantly affect access to the food store and Loblaw’s operations. As part of the transit project assessment process, it is crucial that Loblaw Properties Limited be included as a stakeholder and that the chosen solution for the connection of the maintenance and storage facility creates any reduction in level of service or elimination of turning movements at either Eastern Avenue or the food store traffic signal. TTC and project team met with representatives of Loblaw Properties Limited, the consulting team, Lea Consulting to engage in the noted concerns.</td>
</tr>
<tr>
<td>The streetcar line between Commissioners Street and Queen Street would be a non-revenue route, and is intended only to provide a linkage between the maintenance facility and the Queen Street route. With it running in mixed traffic, it would be virtually no effect on the geometry of Leslie Street, and therefore, no physical impediment to customer or truck traffic movements to or from the Loblaw’s store. As well, the highest volume of streetcar traffic would be very early in the morning (between 5 a.m. to 7 a.m.) when the streetcars are loaded on to the Roncesvalles yard and taken in the evening (after 7 p.m.) when there would be a very low number of streetcars (10 or less per hour) using this line during typical business hours since it would only be used by streetcars entering or leaving peak service periods or returning for maintenance for emergency repairs.</td>
<td>Comments from Canada Post</td>
</tr>
<tr>
<td>The loading dock on Leslie Street will still be used for maintenance for emergency repairs.</td>
<td>Comments from Lea Consulting on behalf of Loblaw Properties Limited</td>
</tr>
<tr>
<td>There would be a very low number of streetcars (10 or less per hour) using this loading dock on Leslie Street will still be used for maintenance for emergency repairs.</td>
<td>TTC and project team met with representatives of Loblaw Properties Limited, the consulting team, Lea Consulting to engage in the noted concerns.</td>
</tr>
<tr>
<td>The streetcar line between Commissioners Street and Queen Street would be a non-revenue route, and is intended only to provide a linkage between the maintenance facility and the Queen Street route. With it running in mixed traffic, it would be virtually no effect on the geometry of Leslie Street, and therefore, no physical impediment to customer or truck traffic movements to or from the Loblaw’s store. As well, the highest volume of streetcar traffic would be very early in the morning (between 5 a.m. to 7 a.m.) when the streetcars are loaded on to the Roncesvalles yard and taken in the evening (after 7 p.m.) when there would be a very low number of streetcars (10 or less per hour) using this line during typical business hours since it would only be used by streetcars entering or leaving peak service periods or returning for maintenance for emergency repairs.</td>
<td>The Canada Post South Central Lettermail Processing Plant is located at 969 Eastern Avenue, located two blocks east of Leslie Street. Canada Post has raised concern regarding the effect to their mail processing operations and their ability to meet customer service commitments due to the anticipated streetcar operations along Leslie Street. They have expressed particular concern regarding the early morning streetcar loading period of 6:00 – 7:00 a.m. as well as the evening period of 7:00 – 9:00 p.m. in regard to traffic congestion and backing for the surrounding area. Canada Post has provided a summary of the transportation grid of the processing plant. The information supplied provided two-way trip totals to the mail processing plant. Information has been received that the shipping docks located internally within the processing plant are of a sawtooth design including 504 &amp; 505 cars running into and out of service?</td>
</tr>
<tr>
<td>Comments from Canada Post</td>
<td></td>
</tr>
<tr>
<td>November 16, 2010</td>
<td>Page 71</td>
</tr>
</tbody>
</table>
8.2 Agency Consultation

8.2.1 Consultation Activities

TTC undertook consultation with several key agencies during the preliminary planning and TPA Process through meetings and written correspondence. In addition, all relevant agencies were circulated invitations to public events, the Notice of Commencement and Notice of Completion.

On September 8, 2010, TTC hosted a workshop with agency members on the Government Review Team to provide an overview of the project, discuss potential effects and proposed mitigation measures and confirm project commitments (i.e., permits and monitoring). TTC invited representatives from the following agencies:

- Ministry of the Environment;
- Toronto and Region Conservation Authority;
- Ministry of Natural Resources;
- Ministry of Municipal Affairs and Housing;
- Ministry of Energy and Infrastructure;
- Ministry of Culture;
- Waterfront Toronto;
- City of Toronto: Transportation Services, Waterfront Secretarial, Technical Services, Parks, Forestry and Recreation, Police Services, Urban Design, Transportation Planning, Traffic Operations, Water, Fire Department Services, Public Health, Planning, Emergency Medical Services; and
- Hydro One.

The table below summarizes the comments received from agencies.

### Table 8-2 Comments Received from Agencies and How They Were Considered

<table>
<thead>
<tr>
<th>Agency</th>
<th>Comments Received</th>
<th>How the Comment was Considered</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Toronto and Region Conservation Authority (TRCA)</strong></td>
<td>• Letter sent on March 9, 2010 in response to Notice of Public Open House; TRCA staff reviewed the study area associated with this EA and advises that the subject site is located within the floodplain of the Don River and within the Lower Don Special Area. Staff understands that the proposed works involve fill and floodplain management on the northwest corner of the property to prepare the site for construction. The project will be reviewed through Site Plan and TRCA’s Ontario Regulation 166/06 permit process. • Requested copy of handouts or display materials presented at the February 18, 2010 open house.</td>
<td>A Site Plan will be prepared for the site to comply with TRCA’s regulation and permit process. Display materials presented at the February 18, 2010 open house were mailed as requested.</td>
</tr>
<tr>
<td><strong>Toronto and Region Conservation Authority (TRCA)</strong></td>
<td>• Letter sent on June 25, 2010 in response to the Notice of Commencement; TRCA staff identified the following areas of interest within the study area: Regulated Areas: Regulation Limit, Lake Ontario Shoreline, Habitat Implementation Plans, Living City Programs (Renewable energy, sustainable communities, sustainable technologies, living city trails); TRCA Program and Policy Areas: Aquatic species and habitat, aquifers and hydrogeological features, special policy areas and special policy areas; TRCA staff requires that the preferred alternative meets the following criteria: Prevents the risk of flooding, erosion and slope instability; Protects and rehabilitates existing landforms, features and functions. TTC acknowledged TRCA comments and provided a response. In further correspondence, TRCA indicated that a meeting with TTC was not necessary.</td>
<td></td>
</tr>
<tr>
<td><strong>Canadian Environmental Assessment Agency</strong></td>
<td>• The Canadian Environmental Assessment Act applies to federal authorities when they contemplate certain actions or decisions in relation to a project that would enable it to proceed in whole or in part. A federal environmental assessment may be required when a federal authority: a) is the proponent of the project; b) Provides financial assistance to the proponent; c) Sells, leases or otherwise disposes of federal lands; or d) Issues a permit, licence or any other approval as prescribed in the Law List Regulations. If your purpose in sending us the notification of your project is to determine whether the Canadian Environmental Assessment Act applies, please be aware that simple notification will not be sufficient. A project description for the preferred alternative will be required.</td>
<td>Comments acknowledged; follow-up action not taken in assumption that a CEAA would not be triggered.</td>
</tr>
<tr>
<td><strong>Ministry of Aboriginal Affairs</strong></td>
<td>• MMA is not aware of any First Nation’s land claims submitted to the Government of Ontario that may have an effect on the City of Toronto’s proposed projects within the established boundaries of the project. First Nations or Metis communities make assertions and/or other developments occur that might require additional communities to be notified. To ensure that you are informed of any new claim or litigation MMA become aware of, we agree that we will continue to review notices regarding future development projects.</td>
<td>Comments acknowledged.</td>
</tr>
<tr>
<td><strong>Enbridge Pipelines Inc</strong></td>
<td>• Enbridge Pipelines Inc. does not have any facilities in the area of the proposed project at Leslie Street and Lake Shore Blvd East. • Enbridge Pipelines Inc. does not have any comments or concerns with the project and can be removed from the distribution list.</td>
<td>Comments acknowledged.</td>
</tr>
<tr>
<td><strong>Toronto Fire Services, Professional Development &amp; Training, Emergency Planning</strong></td>
<td>• Please be aware that Toronto Fire Station 326 use the small lane way that is located approximately 300 metres east of Leslie Street and Lake Shore Boulevard to respond to calls.</td>
<td>Toronto Fire Services was added to the project mailing list. Comments will be taken into consideration.</td>
</tr>
<tr>
<td><strong>Hydro One</strong></td>
<td>• Hydro One requested regular discussions with the project team regarding the need and scope for the relocation of the existing duct bank and the associated budget and schedule. Copies of the minutes from the five meetings with Hydro One are included in Appendix D.</td>
<td>TTC held five meetings with Hydro One between December, 2009 and September, 2010.</td>
</tr>
<tr>
<td><strong>Comments Received during Transit Project Assessment Process</strong></td>
<td>• Letter sent on August 30, 2010 containing comments in relation to the Draft Environmental Project Report (see Appendix D). Responses to comments and how these comments will be addressed in the EPR were provided to TRCA on September 10, 2010 (see Appendix D).</td>
<td></td>
</tr>
<tr>
<td><strong>Toronto Public Health (TPH)</strong></td>
<td>• During the removal of contaminated soils, risk management measures should be developed for all identified exposure pathways (i.e. inhalation, dust ingestion, dermal contact, vapours, etc.) for site workers and worker exposure will be addressed through the development and implementation of a site-specific Health</td>
<td></td>
</tr>
</tbody>
</table>
Table 8-2 Comments Received from Agencies and How They Were Considered

<table>
<thead>
<tr>
<th>Agency</th>
<th>Comments Received</th>
<th>How the Comment was Considered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidental receptors, i.e. Martin-Goodman Trail and bike pathway users, and Safety Plan.</td>
<td>The Health and Safety Plan will be developed by an appropriately qualified person under the Occupational Health and Safety Act. It will be subject to review and approval by the Ministry of Labour.</td>
<td></td>
</tr>
</tbody>
</table>

| The proponent should develop a methane management plan to be consistent with the MOE regulations and guidelines. | The implementation of methane mitigation measures meeting the requirements of the Ontario Building Code Supplementary Standard SB-9 will be incorporated into the building design and monitoring systems will be part of the long-term maintenance program at the site. Specifically, the Maintenance and Storage facility design will include a passive monitoring system for normal operational conditions and an active system will engage when the concentration reaches a pre-set upper level. | |

| The proponent should undertake a site-specific human health risk assessment. | Based on the Phase II ESA, a health and safety plan as well as appropriate management measures should be identified and implemented to mitigate exposures and protect site receptors. | |

| The proponent should address the vapour intrusion pathway into any on-site structures and develop a management plan to ensure the indoor concentrations of Contaminants of Concern (COCs) are consistent with the MOE health-based benchmarks. | These issues will be addressed in the final human health risk assessment. | |

| TPH agrees that dust control plan should consist of three parts – active measures, perimeter air monitoring, and complaint recording and response procedure. | The requirement for a contingency plan to be prepared by the contractor will be included in the soil removal contract documents. Upon exceeding an action limit defined at 80% of the maximum exposure limit, a response plan will be initiated which will include notification, investigating the source and determining and implementing what responsive actions are needed. All events would be documented detailing all activities carried out in response. If necessary, recommendations to modify the air monitoring and/or dust control program, based on the event, will be provided. | |

| The proponent should develop a background air monitoring plan and a contingency plan that addresses any exceedance above health-based benchmarks, includes plans for appropriate agency notification, and a plan for re-evaluation of site conditions have been verified through ongoing monitoring network will include fence line monitoring of both upwind and downwind locations. | In light of the fact that impacted groundwater and some impacted soils will remain on-site, the proponent should undertake a site-specific human health risk assessment. Based on the results of the risk assessment, appropriate risk management measures should be identified and implemented to mitigate exposures and protect site receptors. | |

| TTC is currently preparing a detailed air quality monitoring and dust control program and will consider TPH's comments in the development of the program. | The groundwater table lies within the impacted fill. The current migration of contaminants to the groundwater table will be mitigated due to the implementation of the project through the following: | |

| Initial baseline monitoring for dust, heavy metals and PAH will be carried out prior to the commencement of the soil removal activities. In addition, the ongoing monitoring network will include fence line monitoring of both upwind and downwind locations. | Provision of a 1.5 metre cap consisting of clean fill; pavement structure; Paying the majority of the fill; Installation of sub-surface drainage; and Installation of liners under the employees parking area and storm water management pond. Based on the Phase II ESA, a human health risk assessment (HHRA) has been conducted for the site. The draft HHRA will be finalized once site conditions have been verified through additional sampling to be completed during the soil removal contract. The HHRA outlines risk management measures and performance objectives including capping impacted soils, mitigating vapour intrusion, developing and implementing a site restoration plan and developing and implementing a health and safety plan as well as monitoring and maintenance requirements. | |

| As well, an air monitoring and dust control program will be implemented to address incidental receptors. The air monitoring and dust control program will have three components; (i) active measures, (ii) perimeter air monitoring; and, (iii) a complaints recording and response procedure. | In light of the fact that impacted groundwater and some impacted soils will remain on-site, the proponent should undertake a site-specific human health risk assessment. Based on the results of the risk assessment, appropriate risk management measures should be identified and implemented to mitigate exposures and protect site receptors. |
In addition to air monitoring during soil removal and construction, the
proponent should undertake background ambient air monitoring to assess
current site conditions. At the minimum, this should be performed at both
upwind and downwind locations and include an assessment of prevailing
wind direction, weather conditions, and ambient air concentrations of
corrosive matter and VOCs. The methodology used for the background
assessment should be sensitive enough to detect COCs at environmentally relevant concentrations. The monitoring results should
be used for comparison with data obtained during the soil removal and
construction operations.

A written contingency plan should be developed to address exceedances
above health-based benchmarks or significant exceedances above site
specific background concentrations.

The EPR indicates that potential groundwater and soil impacts might exist.

Analytical results will be compared to the appropriate ambient air quality
criteria such as the Air Quality Criteria (AQC) established under the
schedules to Ontario Regulation 419/05 or, such in which may be
determined in consultation with regulatory agencies. Results will be used
to assess the site-specificity of dust control measures and modifications
will be made to the air monitoring and dust control program as necessary based
upon the results.

In addition to air monitoring during soil removal and construction, the
proponent should undertake background ambient air monitoring to assess
current site conditions. At the minimum, this should be performed at both
upwind and downwind locations and include an assessment of prevailing
wind direction, weather conditions, and ambient air concentrations of
corrosive matter and COCs. The methodology used for the background
assessment should be sensitive enough to detect COCs at environmentally relevant concentrations. The monitoring results should
be used for comparison with data obtained during the soil removal and
construction operations.

A written contingency plan should be developed to address exceedances
above health-based benchmarks or significant exceedances above site
specific background concentrations.

The EPR indicates that potential groundwater and soil impacts might exist.

Analytical results will be compared to the appropriate ambient air quality
criteria such as the Air Quality Criteria (AQC) established under the
schedules to Ontario Regulation 419/05 or, such in which may be
determined in consultation with regulatory agencies. Results will be used
to assess the site-specificity of dust control measures and modifications
will be made to the air monitoring and dust control program as necessary based
upon the results.

Due to the potential groundwater and soil impacts along the proposed
track locations, soil removal and construction activities might result in
fugitive dust migration beyond the property line. As such, extra soil removal
activities might be necessary during the soil removal portions of the project.

The program will measure concentrations of both particulate matter
and COCs at relevant concentrations and will be used for comparison during
construction and future operations.

Once available, TTC will issue further details of the program to TPH for
review.

Monitoring to assess environmental impacts. Depending on
situation, this may be required to carry out studies to better understand
the potential impacts. Monitoring results should be used to
inform risk management measures. Dust control measures must be implemented
during soil removal and transport.

Continuous air quality monitoring will be conducted at the site perimeter for the
duration of the soil removal contract. Based upon limited soil analytical data
for soil samples collected from boreholes advanced along the proposed
Leslie Street track alignment, no significant evidence of soil impacts were
identified for PHCs, VOCs, PAHs, metals and PCDDs (i.e. concentrations
were less than the applicable MOE Table 3 Standards). Impacts related to
custard were identified (i.e. EC and SAF) however, these are not anticipated to create any issues with
respect to air quality. In this regard, conventional dust control measures
should be adequate to address potential air quality issues during construction
during the Leslie Street track alignment. However, soil conditions will be
monitored during construction and field conditions warrant air sampling
and/or additional mitigation measures will be implemented.

Perimeter air monitoring should be undertaken during
construction to evaluate the performance of dust control measures and
monitor for compliance with health-based COC benchmarks.

Site specific dust control measures should be developed to mitigate fugitive
dust migration beyond the property line.

Significant change to signal operation at Leslie Street/Lake Shore
Boulevard within the last couple months. The two-stage pedestrian
crossing has changed to a single crossing. Unsure whether a full re
analysis is required, but they may want to do some sensitivity analyses
with the new timings and operation at this intersection.

Major change to signal timings.

To date, signal timing plan has not been received (September 2, 2010).

Signal timing will impact existing condition.

The future signal timing will reflect future operations with streetcar
which may be somewhat different from existing timing. We expect them
to correspond more closely to the future signal timing.

Table 8-2 Comments Received from Agencies and How They Were Considered

<table>
<thead>
<tr>
<th>Agency</th>
<th>Comments Received</th>
<th>How the Comment was Considered</th>
</tr>
</thead>
<tbody>
<tr>
<td>TTC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>City of Toronto Transportation Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&amp; How the Comment was Considered</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 8-2 Comments Received from Agencies and How They Were Considered

<table>
<thead>
<tr>
<th>Agency</th>
<th>Comments Received</th>
<th>How the Comment was Considered</th>
</tr>
</thead>
<tbody>
<tr>
<td>TTC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>City of Toronto Transportation Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&amp; How the Comment was Considered</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


### Table 8-2 Comments Received from Agencies and How They Were Considered

<table>
<thead>
<tr>
<th>Agency</th>
<th>Comments Received</th>
<th>How the Comment was Considered</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Toronto Transportation Planning (Comments on the Traffic Impact Study (TIS))</td>
<td>• Westbound approach of Eastern Avenue at Leslie Street is currently signed and operates as an exclusive left turn lane and a thru-turn lane as bike lanes begin immediately to the west. All of the analysis was done with the westbound approach as a left/thru-turn/right</td>
<td>• Confirmed the correct lane configuration</td>
</tr>
<tr>
<td></td>
<td>• Section 5 of the Traffic Impact Study: Conclusions and Recommendations: dp: the wording implies that the streetcar crossing of the trail will be unsafe, which should not necessarily be the case. Also, please remove any reference to flashing lights or gates as potential mitigation measures.</td>
<td>• Analysis and tables have been updated to reflect the revision of the lane approach. Results remained relatively the same as before</td>
</tr>
<tr>
<td></td>
<td>• Trip Generation - The assumption that 100% of TTC employees will drive to work as a single occupant vehicle trip is unrealistic and should be adjusted to reflect the area characteristics.</td>
<td>• TTC employee modal split has been adjusted based upon a query of Transportation Tomorrow Survey (TTS) data. Results indicate an 85% auto, 17% transit and 3% other modal split in the area for home-based work trips.</td>
</tr>
<tr>
<td></td>
<td>• Northbound left-turn lane on Leslie Street at Lake Shore Boulevard is a functional plan showing the proposed extension of the northbound left-turn lane on Leslie Street at Lake Shore Boulevard is required to properly assess the implications of the required widening of Leslie Street and the impact on the streetcape, utilities, etc.</td>
<td>• Have contacted designers to develop a drawing prior to submitting the final TIS to MOE.</td>
</tr>
<tr>
<td></td>
<td>• Background Development - The City has recently received an application for a mixed use development at the former Film Studio site at 629, 633, and 675 Eastern Avenue. This application includes a transportation impact assessment, which should be included in the TIS for the Ashbridges LRV site. TTC or AECOM can arrange a time to come in and review the study for this purpose</td>
<td>• AECOM staff have reviewed the document.</td>
</tr>
<tr>
<td></td>
<td>• Comments from the Site Development Traffic generated by this mixed use development:</td>
<td>• Have accounted for the site development traffic generated by this mixed use development.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• It was determined that the impact would be during the morning and afternoon great peak hours of the street system; impact is very low and considered negligible.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Site generated traffic has been accounted for and included as background traffic under hour conditions.</td>
</tr>
<tr>
<td>Ministry of Environment (MOE)</td>
<td>Comments received from MOE and responses to these comments are provided in Attachment 1.</td>
<td></td>
</tr>
</tbody>
</table>

Correspondence letters received from the various agencies engaged in the process are included in Appendix D.

### 8.3 Aboriginal Communities Consultation

#### 8.3.1 Consultation Activities

The following Aboriginal communities, as identified by the MOE, were consulted for the Ashbridges Bay LRV maintenance and storage facility:

- Alderville First Nation
- Beausoleil First Nation
- Chippewas of Georgina Island First Nation
- Chippewas of Rama First Nation
- Conseil De La Nation Huronne-Wendat (Huron-Wendat First Nation)
- Curve Lake First Nation
- Hiawatha First Nation
- Kawartha Nishnawbe First Nation
- Metis Nation of Ontario
- Mississaugas of the New Credit First Nation
- Mississaugas of Scugog Island First Nation
- Moose Deer Point First Nation
- Williams Treaty First Nations Legal Counsel

All of the above noted First Nations were sent letters notifying them of the project, inviting them to participate in the Public Open Houses, and seeking their input and explicit interest in the project. The First Nations were also circulated the Notice of Commencement and Notice of the July 28 Public Open House including invitations for future meetings, as necessary. TTC made follow-up telephone calls with the First Nations on September 8 and 9, 2010 to further glean their potential interest in the study.

The notices to First Nations were distributed in the following manner:

- A letter was sent to the Director of the MOE regarding First Nations consultation for the project on June 23, 2010;
- Notification was sent to: INAC – Specific Claims, LMRB, and Comprehensive Claims, and the Ontario Ministry of Aboriginal Affairs; and
- The Notice of Commencement was sent to the Mississaugas of the New Credit First Nation, all of the Williams Treaty First Nations, the Huron-Wendat First Nation, the Kawartha Nishnawbe First Nation, and the Metis Nation of Ontario. First Nation contact information was confirmed by the Ministry of Aboriginal Affairs and the MOE. Each First Nation was specifically asked to advise of any interest they may have in the project so that TTC could follow up directly.

TTC contacted officials at Indian and Northern Affairs Canada (INAC) during the preliminary planning stage in June, 2009 and during initiation of the Notice of Commencement in June, 2010. As per previous correspondence received from INAC Litigation Management, Specific Claims and Comprehensive Claims, they had informed TTC that they would not respond to correspondence unless new land claims arise in the City of Toronto.