



Toronto Transit Commission

# **Sheppard Maintenance and Storage Facility – Draft Environmental Project Report Executive Summary**

Date: April 2010

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# 1. Introduction

The Toronto Transit Commission (TTC) is undertaking Preliminary Design and Environmental Assessment (EA) for a new Maintenance and Storage Facility (MSF) for Light Rail Vehicles (LRVs) on Sheppard Avenue East at Conlins Road. This facility will maintain and store LRVs on the approved Sheppard East Light Rail Transit (LRT) lines, as well as other Transit City lines.

Transit City is premised on developing a widely-spaced network of 8 new electric light-rail lines, each on its own right-of-way, which will reach across the City of Toronto. In total, Transit City will see construction of 120 km of new transit lines will added over the entire city. The light-rail lines would provide fast, reliable and environmentally-sustainable LRT services to all areas of Toronto, particularly to areas which do not presently have higher order transit services. By 2031, the new light-rail lines are projected to carry 175 million riders per year.

The Environmental Assessment is being conducted under Ontario Regulation 231/08 following the Transit Project Assessment (TPA) Process. The Transit Projects Regulation exempts the proponent of a transit project (in this case TTC) from the requirements under Part II of the EA Act. Under the Transit Projects Regulation, certain projects must follow the TPA Process in order to be exempt (the current project falls under this requirement). The TPA Process is a proponent-driven, self-assessment process that does not require the transit project to be approved by the Minister of the Environment before proceeding. Therefore, the TPA Process provides a defined framework for the proponent to follow in order to complete the accelerated assessment of the potential environmental effects and decision-making within the 120 day assessment timeline.

## 1.1 The Sheppard Site

The TTC undertook a property search to identify potential locations to accommodate the Sheppard MSF. Several factors were considered in the site selection process. Fundamentally, the site had to be of a sufficient size to accommodate all of the facility components and be in close proximity to the LRT network in order to provide access to the Sheppard LRT line. In addition, it was preferable to acquire a single, vacant parcel of land rather than acquire multiple adjacent properties and/or displace existing residences or business.

The Sheppard/Conlins site was found to be of sufficient size to accommodate all of the TTC's requirements for the facility. The site is owned by the Province of Ontario (Ministry of Transportation) and is currently a vacant lot.

The property identified as the preferred location for the Sheppard MSF is located at the northwest corner of Sheppard Avenue East and Conlins Road in the City of Toronto, Scarborough District (see Exhibit 1). The vacant site is approximately 12.9 hectares (31.8 acres) in size and located north of Sheppard Avenue East, west of Meadowvale Road, east of Morningside Avenue, and south of a decommissioned former Canadian Pacific Railway corridor (and south of the Rouge River Valley). The site extends to the north of Sheppard Avenue approximately 900 m. The property also fronts on Thornmount Drive along a portion of its western boundary and is adjacent to an unopened road allowance for Conlins Road on the eastern boundary.

The surrounding land uses are zoned/designated generally industrial to the west, residential and institutional to the east, commercial to the south, and natural areas to the north (Rouge Park and Toronto Zoo). More specifically, the land uses to the west and south of the site include industrial, retail, commercial and warehouse uses. Immediately to the east is the unopened Conlins Road right-of-way (ROW), which currently contains a short driveway for the parklands to the east, as well as a watercourse which discharges to the Morningside Creek. To the east of the Conlins Road ROW is a small 3 acre park and two proposed school sites (currently unconstructed). Further to the east is a residential development made up of single family detached homes. The site is bordered on the immediate north by a former rail corridor that is now owned by the City of Toronto and proposed to be redeveloped into a

recreational trail. North of the former rail corridor is the Rouge River valley, which is part of Rouge Park. The Rouge River Valley Area of Natural or Scientific Interest (ANSI), and the Morningside Creek Forest Environmentally Significant Area (ESA), lies within this area.

## 1.2 The Maintenance and Storage Facility

The recommended site layout features the following key components:

- Indoor Maintenance and Repair Facility (Carhouse). The proposed carhouse building will be approximately 16,900 m<sup>2</sup>, and will feature a vegetated green roof, and the entire building will be designed to comply with Toronto Green Standards;
- Maintenance of Way (MoW) Building. The MoW will be approximately 1,500 m<sup>2</sup>, and will provide office and shop areas for servicing the LRT right-of-way;
- Electrical Substation Building. The substation building will be approximately 890 m<sup>2</sup>, and it will provide electrical power to the Sheppard LRT line as well as the storage yard, MoW and carhouse; and
- Outdoor LRV Storage Yard. The yard will provide storage for approximately 100 LRVs. An area within the yard is available for future storage track expansion. The complete track system within the yard will be embedded in concrete and will employ the current mitigation system of the rubber “boot” system.

The proposed uses of the buildings and property are more specifically described as:

- LRV vehicle servicing, preventative inspections, and corrective maintenance;
- LRV vehicle body repair;
- LRV vehicle sanding and painting;
- LRV vehicle wheel truing;
- Track and overhead power maintenance;
- TTC administrative and security offices;
- LRV vehicle parts storage (inside storage);
- TTC employee break, change, and exercise rooms;
- TTC employee training;
- LRV vehicle brake testing;
- Outside LRV vehicle storage;
- Electrical substation building; and
- MoW building.

The LRVs will enter into service along Sheppard Avenue early in the morning (5:00 a.m. to 7:00 a.m.) and will return to the maintenance facility during the evening (7:00 p.m. to 9:00 p.m.) and very early morning (1:00 a.m. to 2:00 a.m.) at the end of daily service. The LRVs will run in an exclusive right-of-way located in the centre median of Sheppard Avenue.

There will be approximately 350 employees at the facility working in three shifts with the majority of workers (approximately 200) on the day shift. The shift times start at 7:00 a.m., 3:00 p.m., and 11:00 p.m. Employee vehicular access to the facility will occur via Thornmount Drive, which is primarily accessed from Sheppard Avenue via Watertower Gate.

In order to accommodate the proposed uses for the site, the development of the site will require:

1. **Realignment of the Existing Drainage Watercourse at the South End of the Property**  
From the west property boundary, the surface water will be conveyed within a new box culvert

## **2. Realignment of the Existing Sanitary Sewer Line that Crosses the Centre of the Site (east-west)**

The existing City of Toronto 1050 mm diameter trunk sanitary sewer that crosses the site will need to be relocated because it will be beneath the proposed LRV storage yard and carhouse maintenance building and the City must be able to maintain permanent access to the sewer. It is proposed to relocate the sewer along the east side of the site, between the eastern most storage track and the ravine lands located in the northeast portion of the site. To the north of the site, the sewer will run within the former rail corridor westwards until it reconnects with the existing trunk sewer in the former rail corridor to the north of the site. The existing sewer pipe remaining within the site will be capped and abandoned in place. In conjunction with this relocation, it will be necessary to construct a new 250 mm diameter access sanitary line from Thornmount Drive south to Sheppard Avenue East within an existing City of Toronto easement on privately owned lands.

## 2. Effects Assessment of the Final Design

It is recognized that the proposed Sheppard MSF will result in effects on the existing environment in the study area. The following sections provide an overview of the potential environmental effects associated with the project and the recommended mitigative measures.

### 2.1 Terrestrial Natural Heritage

The Rouge River Valley ANSI and Morningside Creek Forest ESA will be unaffected by the proposed project as they lie outside the property. However, the facility will require a sanitary sewer to be built within the former rail corridor, with an associated 15 m ROW. The sewer realignment will encroach on the ANSI setback. Construction of this sewer will require the removal of some existing vegetation. To ensure that construction activities do not inadvertently impact the remaining vegetation and trees adjacent to the construction zone, tree protection barriers and silt fences will be used to protect the valley. Once construction of the sanitary sewer pipe is completed, the presence of the buried pipe will not affect vegetation nor wildlife in the ANSI.

The proposed facility will require removal of approximately 300 scattered trees on the property that do not form forests. This includes the removal of trees associated with the sanitary sewer realignment noted above. In order to mitigate for the tree removal, approximately 700 trees will be planted on the property and along the existing watercourse to the east of the site, leading to approximately 1.13 hectares of naturalized areas in the long term. Trees that remain on the site will be protected using tree protection barriers during construction.

### 2.2 Aquatic Environment

The proposed facility will require the realignment of the existing watercourse. Water will be conveyed within a box culvert in the southern portion of the site, and will end at an outflow to the existing drainage channel running to the east of the property boundary. The resulting impact would be a net loss in function of approximately 200 m of intermittent, warm water contributing fish habitat. There is no fish passage from Morningside Creek into the watercourse, due to a concrete overflow tower and perched culvert outlet into Morningside Creek at the north end of the subject property. In keeping with The Department of Fisheries and Oceans “No Net Loss” Policy for the Management of Fish Habitat (1986), it is contended that through aggressive mitigation and enhancement plantings along the north flowing reach of the watercourse (approximately 400 m of watercourse), it is possible to mitigate and off-set the productivity loss incurred by the proposed undertaking. Mitigation strategies that will be employed during construction include timing restrictions, implementation of an erosion and sediment control plan including heavy grade silt fencing, and suspension of construction during wet weather conditions. Based on this assessment of habitat sensitivity and the relative net effects of the proposed project (post mitigation), the project is therefore deemed to represent a low/no risk to fish habitat.

### 2.3 Hydrogeology and Groundwater

Overall, this site is not considered a significant groundwater recharge or discharge area. In order to help preserve the natural groundwater recharge function, at the site, although low, a number of mitigation measures are proposed to be implemented through design:

- Select vehicle parking areas will be paved with permeable pavement to facilitate infiltration and reduce runoff;
- A significant portion of the site is being maintained as landscaped or bio-retention areas that will not be covered by impermeable surfaces (such as pavement, roofs, etc.);

- Two stormwater soak-away pits are proposed for the southern edge of the site and the northwestern corner of the site.

## 2.4 Contaminated Soils and Groundwater

A Phase I Environmental Site Assessment (ESA) was completed at the site and evidence of former uses suggested the potential for soil and groundwater contamination on the site. A former aggregate gravel pit was located at the north end of the Property over a 1.1 hectare area. As well, a former asphalt manufacturing facility was located on an adjacent property located to the east of the watercourse, and asphalt and tar residues from that operation were dumped over a 0.4 hectare area on the central portion of the site. A number of other stockpiles of fill material of unknown chemical quality were found. A Phase II ESA was undertaken as a result of these findings.

The Phase II ESA environmental investigations indicate that the groundwater and soil at the site has not been significantly adversely impacted by historic farming activities, petroleum hydrocarbons and other substances associated with the neighbouring properties, including asphalt and tar dumping. One exception is one exceedance of PHC F4 fraction (gravimetric) concentration (4,000 µg/g versus the Table 3 criterion of 3,300 µg/g) collected in an area of dumped asphalt. This asphalt and tar debris will be removed prior to site development. In addition, the lateral extent of the exceedance will be delineated prior to removal and disposal of the surficial fill materials off-site.

## 2.5 Stormwater Management

As the site is currently a vacant meadow, the proposed facility will change the existing natural hydrologic cycle of the site, resulting in increased runoff rates and pollutant loads associated with a developed site. Onsite quality and quantity control measures will be observed in accordance with the City of Toronto, Toronto Green Standard and the TRCA requirements pertaining to the watercourse discharging to Morningside Creek. Specifically, all storm events up to the 100 year storm event will be controlled on the site by a stormwater management pond and 80% removal of total suspended solids will be achieved.

Low impact development Best Management Practices will be incorporated into the site and will include a vegetated roof on the carhouse, soakaway pits, permeable pavement and landscaped areas. The remaining surface water runoff will be directed to the stormwater management pond where it will receive quality and quantity control before being released to the watercourse on the east side of the property. Quantity control measures in the pond will mitigate the impact to the Regional flood line in the existing engineered channel.

The existing channel is lined with manufactured concrete block liners, which will be adequate to protect it from erosion downstream of the new culvert outlet. As a safeguard, additional erosion protection (e.g., rip rap or gabion baskets) will be provided to offset higher velocities discharging from the culvert.

As noted above, an erosion and sediment control plan will be developed for the construction of the site.

## 2.6 Land Use

The majority of the property is designated for Employment uses within the City of Toronto Official Plan (2006), with a small portion as Natural Area. A site specific policy requires development of the site to be compatible with the Toronto Zoo. An Official Plan Amendment (OPA) is required to amend the site specific policy, to allow for adjustment to the watercourse, and to allow for limited development within 10 m of the top of bank as established by the Toronto and Region Conservation Authority.

The property is zoned General Industrial which allows for industrial and warehousing uses with the holding provisions identified in the site specific policy noted above. A Zoning By-law Amendment (ZBA) is requested to permit Public Transportation Use and establish appropriate performance standards.

## **2.7 Toronto Zoo**

Potential impacts to the Toronto Zoo were investigated related to security, noise, and visual impact.

With regard to security, The TTC has committed to providing a barrier around the perimeter of the MSF (either in the form of an acoustical wall or fencing), which will be regularly maintained to prevent public from entering the former rail corridor from the Sheppard MSF.

With regard to noise, noise levels at the zoo were predicted from modelling studies to be below the sound level limits set by MOE. These predictions assume that a sound barrier will be installed along the north and east sides of the facility. In addition, the TTC would implement measures to minimize wheel screech, resulting from streetcars around curved sections of track, which are the most significant source of noise. Otherwise the sound impact from the proposed facility on the zoo is likely to be negligible and the zoo has indicated, based on the outcome of the studies, that they have no concerns with the impact of noise from the facility on the animals or their operations.

The visual impact analysis indicated that the proposed facility will have limited (minimal or no impact) visibility from the Toronto Zoo property and will have no negative visual impact to the publicly accessible areas of the Toronto Zoo. The Rouge River Valley, situated between the Toronto Zoo and the site, will provide partial visual relief during winter months and total visual relief during months when foliage is present. In addition, the acoustic sound barrier noted above along with landscaping in front of the barriers will lessen the visibility of the facility from the Toronto Zoo.

## **2.8 Air Quality**

During construction of the facility there will be a potential for nuisance dust at the construction site, which could be tracked out onto public roads. A dust control program during construction would include dust suppression (water), road sweeping, and cleaning of vehicle tires before leaving the construction site to control track-out.

During operation there will be several servicing and maintenance activities at the Sheppard MSF site, which have the potential for emissions to the atmosphere, including washing and cleaning services, compressed air blow-down, body repairs and vehicle painting and maintenance welding. Mitigation measures will include ventilation and capture and control systems, and energy efficient building design to reduce combustion gas. As well, a Certificate of Approval from the MOE for air will be obtained for the facility.

Vehicle tailpipe emissions will also be present from the employee vehicles entering and leaving the site employee parking lot. The effects of the employee vehicle tailpipe emissions will be insignificant in comparison to the traffic emissions on Sheppard Avenue East to the south of the site. Employee vehicles represent a maximum of 350 vehicles per day, while the average weekday traffic count on Sheppard Avenue East is approximately 17,500 vehicles per day.

## **2.9 Noise and Vibration**

During operation, noise impacts will be mitigated by an acoustic barrier to be installed along the north and east borders of the site. As well, wheel screech will be mitigated through the use of turning enclosures, track-based technologies, and/or track layout optimizations. With these mitigation measures, the predicted sound levels at each sensitive receptor around the site are predicted to be below applicable MOE sound level limits. If the selected



mitigation measures for wheel screech prove less effective than anticipated, TTC is committed to investigating further mitigation measures.

It is anticipated that there would be potential short-term noise related effects due to construction. These effects will be short term and will be mitigated by standard mitigation measures and compliance with City of Toronto Noise By-law No. 111-2003 during construction.

With regard to vibration, LRVs only produce significant vibration levels within a distance of approximately 20 to 40 m. The closest sensitive receptor is located at a distance of approximately 80 m. Therefore, no significant vibration impact expected at any receptor.

## **2.10 Traffic and Transportation**

The Sheppard MSF will accommodate approximately 100 LRVs, which will access the site from the Sheppard Avenue/Conlins Road intersection and from a secondary access directly from Sheppard Avenue to the west of Conlins Road. Both accesses would be under the control of traffic signals. The streetcars will enter into service along Sheppard Avenue early in the morning (approximately 5:00 to 7:00 a.m.). Some vehicles (approximately 25% of the service fleet) will return to the yard in the mid morning off-peak hours. These vehicles are put back into service for the evening peak period. Vehicles will begin returning to the yard in the evening (7:00 to 9:00 p.m.) and very early morning (1:00 to 2:00 a.m.). The Sheppard line will run in an exclusive right-of-way running along the centre median of Sheppard Avenue. Peak LRV movement in and out of the site occurs outside of the morning and afternoon street peak hours when road traffic volumes are lower.

Employees will access the site primarily from Thornmount Drive via Sheppard Avenue/Water Tower Gate intersection. Employees will work in three shifts, and the majority of employee traffic to and from the facility will occur just before the morning and afternoon peak periods for street traffic. As such, any potentially noticeable traffic impacts would be experienced during the shoulders of the street peak hours.

As part of the approved Sheppard LRT Environmental Assessment Study, Sheppard will be designed to provide a centre median for streetcars, two through traffic lanes, bike lanes and auxiliary left turn lanes at intersections for regular traffic, where warranted. Signal timings will be adjusted to achieve the best possible results at the intersections. As well, for the Sheppard Avenue/Watertower Gate intersection, a longer storage lane length for the southbound left turn lane may be required.

Light Rail Vehicles will cross the sidewalk and bicycle lane along the north side of Sheppard Avenue at the facility's primary and secondary access tracks. Mitigation measures will be developed to avoid potential conflicts with pedestrians and cyclists using these facilities, and may include signing, surface treatments on the path/sidewalk, signal control, flashing lights, gates, bollards, and audible warnings. In addition, consideration will be given to improving the future operation of the Conlins Road intersection by relocating the driveway to the parklands a short distance to the east. This would result in the driveway intersecting Sheppard at an unsignalised location, and require that it be restricted to right-in/right-out movements only, but there a very low number of motorists using the driveway who would be inconvenienced by such an option.

## 3. Consultation

The general public, agencies, and interest groups were provided opportunities to review, and comment on this project during the course of the study. TTC offered a wide range of communication methods to the public, including a project web site, and a dedicated TTC Community Liaison Officer whom individuals could contact via telephone, fax, or email. Two Public Open Houses were held for the public to have direct communication with Project Team members. As well, individual meetings were held with agencies to obtain their input on this project.

### 3.1 Public Consultation Activities

#### 3.1.1 Project Web-site and TTC Community Liaison Officer

The project website ([www.toronto.ca/involved/projects/sheppardlrv](http://www.toronto.ca/involved/projects/sheppardlrv)) was a dedicated website designed to keep the public up-to-date on the latest developments of the Sheppard MSF, provide notice of upcoming Public Open Houses, serve as a virtual library for materials presented at Public Open Houses and other project documentation, and provide a means for the public to comment on the project.

The public could also comment on the Sheppard MSF by contacting the TTC Community Liaison Officer, Lito Romano, directly.

#### 3.1.2 Public Open House Round #1

Two Public Open Houses were held on February 10, 2010 and March 10, 2010 as part of the Preliminary Planning Step in advance of commencing the TPA Process under the Transit Projects Regulation. The Open Houses were both held at the Chinese Cultural Centre at 5183 Sheppard Avenue East between 6:30 pm and 9:00 pm.

Notification for the February 10, Public Open House was accomplished through the following:

- Posting on the project website;
- First class addressed mail to the following groups on January 22, 2010;
  - Properties within approximately 500 metres of the site;
  - All ratepayer groups on file with the city clerk's office who are associated with or have an interest in wards 41, 42, 43, and 44;
  - Businesses bounded by the area of Morningside Avenue, Highway 401, Meadowvale Road, and Markham Road;
  - All federal, provincial and municipal agencies, and other interested stakeholders on the project contact list;
  - Municipal councillors, and the local MP and MPP.
- Publication in the Scarborough Mirror on February 3 and 4, 2010; and
- Unaddressed Canada Post mail drop to 9006 properties within the M1B postal code area on January 25, 2010.

Not all area properties were notified of the first Public Open House through the unaddressed mail drop due to an error. As a result, a second Public Open House was held on March 10, 2009. Residents who were not notified of the first Public Open House through the unaddressed mail drop, were notified of the March 10 Public Open House through an unaddressed mail drop to 11 722 properties on March 1, 2010, and through publication of the notice in the Scarborough Mirror on March 4, 2010.

The following information was presented at both Public Open Houses in Round #1

- The purpose of the project;
- Information about the Transit City Light Rail Plan;
- How the planning process will proceed and the Transit Project Assessment Process;
- Why the Sheppard site was selected;
- The existing conditions in the study area;
- The recommended site layout and its advantages;
- Examples of how the site may be designed;
- How the potential effects associated with the facility will be assessed; and
- Study schedule and next steps.

The Public Open Houses were informal drop in sessions, with project information presented on display boards, a Frequently Asked Questions handout, a continuous loop slide show with voice over, and an open invitation to ask questions and discuss the project with the many project team members present. Participants were also invited to provide written comments through comment forms.

### 3.1.3 Public Open House #2 and Notice of Commencement

A Public Open House was held on April 7, 2010 following the commencement of the TPA Process. The Open House was held at the Chinese Cultural Centre at 5183 Sheppard Avenue East between 6:30 pm and 9:00 pm.

Notification for the Commencement of the EA was combined with notification for Public Open House #2 and was accomplished through the following:

- Posting on the project website;
- Direct mailing to all federal, provincial and municipal agencies, municipal councillors, and other interested stakeholders in advance of the Public Open House on March 22, 2010;
- Publication in the Scarborough Mirror on March 25 and 26, 2010; and
- Unaddressed Canada Post mail drop to area properties on March 24, 2010.

The following information was presented at Public Open House #2

- The purpose of the project;
- Information about the Transit City Light Rail Plan;
- How the planning process will proceed and the Transit Project Assessment Process;
- The recommended site layout;
- Examples of how the site may be designed;
- How the potential effects associated with the facility were assessed;
- Proposed mitigation measures and net effects;
- Future commitments; and
- Study schedule and next steps.

As with the first round of Open Houses, Public Open House #2 was an informal drop in session, with project information presented on display boards, a Frequently Asked Questions handout, a continuous loop slide show with voice over, and an open invitation to ask questions and discuss the project with the many project team members present. Participants were also invited to provide written comments through comment forms.

### 3.1.4 Notice of Completion

The Notice of Completion will be issued through the following:

- Posting on the project website;
- Direct mailing to all federal, provincial and municipal agencies, municipal councillors, and other interested stakeholders in advance of the Public Open House;
- Publication in the Scarborough Mirror; and
- Unaddressed Canada Post mail drop to area properties.

## 3.2 Key Stakeholder, Agency and Utility Consultation Activities

Consultation was carried out with a number of key stakeholders, agencies and utilities throughout the study process through meetings and written correspondence. In addition, all relevant stakeholders, agencies and utilities were circulated invitations to the Public Open Houses, the Notice of Commencement, and Notice of Completion. The following provides a summary of the agencies contacted.

- Bell Canada
- Canadian Environmental Assessment Agency
- Canadian National Railway
- City of Toronto – City Planning
- City of Toronto – Parks, Forestry and Recreation
- City of Toronto – Public Health
- City of Toronto – Real Estate
- City of Toronto – Toronto Fire Department Services
- City of Toronto – Toronto Water
- City of Toronto – Transportation Planning
- City of Toronto – Transportation Services
- City of Toronto – Urban Forestry
- City of Toronto Police Services
- Department of Fisheries and Oceans
- Emergency Medical Services
- Enbridge Gas Distribution, Inc.
- Enbridge Pipelines Inc.
- Environment Canada
- HydroOne
- Infrastructure Ontario
- Metrolinx
- Ministry of Culture
- Ministry of Energy and Infrastructure
- Ministry of Municipal Affairs and Housing
- Ministry of Natural Resources
- Ministry of the Environment
- Ministry of Transportation
- Ontario Provincial Police
- Rogers Cable
- Toronto and Region Conservation Authority
- Toronto Cycling Committee
- Toronto Hydro-Electric System Limited

- Toronto Pedestrian Committee
- Transport Canada
- Toronto Zoo

### **3.3 Aboriginal Communities Consultation**

The following Aboriginal communities, as identified by the MOE, were consulted for the Sheppard MSF:

- Alderville First Nation;
- Beausoleil First Nation;
- Chippewas of Georgina Island First Nation;
- Chippewas of Rama First Nation;
- Mississaugas of Scugog First Nation;
- Curve Lake First Nation;
- Hiawatha First Nation;
- Mississaugas of the New Credit First Nation; and
- Moose Deer Point First Nation.

All of the above noted Aboriginal communities, as well as Ms. Karry Sandy McKenzie, Co-ordinator for Williams Treaty First Nations, were sent letters to notify them of the project, invite their participation in the both rounds of Public Open Houses, and seek their input on the project. The Aboriginal communities were also circulated the Notice of Commencement and Notice of Completion. Telephone calls were undertaken after the Notice of Commencement and Notice of Completion were sent if the project team had not received any responses to the Notices.

## **4. Permits and Approvals Required**

### **4.1 Terrestrial Natural Heritage**

#### **4.1.1 City of Toronto's Ravine and Natural Feature Protection By-law**

Portions of the subject property, including those in the northeastern portion of the property and along the watercourse that runs through the southern and eastern part of the property, are within the City of Toronto Ravine and Natural Feature limit and are subject to the City of Toronto Ravine Protection By-law (Chapter 658) of the Municipal Code. The Ravine Protection By-law regulates and seeks to prohibit the injury and destruction of trees, filling, grading and dumping in ravines and associated wooded areas with the City of Toronto. An application and permit is required to do works, including tree removal in this ravine area.

#### **4.1.2 City of Toronto Private Tree By-law**

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 m above the ground) equal to or greater than 30 cm within the City. The majority of the property falls under this By-law (that which is not within the Ravine and Natural Feature limit). An application and permit is required to remove trees within this area.

#### **4.1.3 *Migratory Birds Convention Act***

Although neither a permit nor an application is required, it is noted that all vegetation clearing (in all areas, whether meadow, shrub or treed) is subject to the federal Migratory Birds Convention Act (1994). This act makes it illegal to destroy almost all bird species and their nests. As the site contains breeding birds, vegetation clearing will 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.

### **4.2 Aquatic Environment**

A permit from the TRCA for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (pursuant to Ontario Regulation 166/06) will be required for the re-alignment of the watercourse on the subject property and the sewer realignment along the east side of the property.

### **4.3 Hydrogeology and Groundwater**

#### **4.3.1 Ontario Water Resources Act (s.34) Permit To Take Water**

Under the Ontario Water Resources Act (O. Reg. 128/03), a Permit-To-Take-Water (PTTW) from the Ministry of the Environment will be obtained for the taking of water over 50,000 L/day from any given source, whether temporary or permanent for any purpose including but not limited to: diversion, potable water supply, cleaning, flushing and dewatering during transportation corridor construction, operation and maintenance. This may apply to dewatering activities associated with construction of the buried culvert. Specific details regarding the PTTW (pumping rate, drawdown, duration, etc) will need to be determined during subsequent design and construction phases.

#### 4.3.2 Ontario Water Resources Act (Wells Regulation 903) Wells

Under the Ontario Water Resources Act (O. Reg. 128/03), Regulation 903 covers all wells including public and private, municipal and rural, agricultural, commercial and industrial, as well as test holes, dewatering wells, and monitoring wells. It sets out minimum standards for sighting, constructing, tagging and reporting, maintaining and decommissioning wells. The regulation also sets out the licensing requirements for businesses and individuals engaged in well construction, pump and other equipment installation, and standards for the design, construction, maintenance and abandonment (or decommissioning) of wells. A large number of groundwater monitoring wells and boreholes/ piezometers are present on the site. All wells and borehole that are greater than 3.1 m (10 ft) in depth must be decommissioned in accordance with Regulation 903.

#### 4.4 Contaminated Soils

Certain changes in land use and/or the municipal approvals process may trigger the requirement for the filing of a Record of Site Condition (RSC). Given that the current and proposed land use will remain the same (i.e., industrial/commercial) the filing of a RSC for the property is not mandatory.

#### 4.5 Land Use Environment

An Official Plan Amendment, Zoning By-law Amendment and Site Plan Approval for the development on the site will be required from the City of Toronto. In addition, all applicable Building Permits will be obtained from the City of Toronto.

#### 4.6 Air Quality

It is anticipated that a Certificate of Approval for Air under the Environmental Protection Act, will be required for all equipment with air emissions.

#### 4.7 Noise and Vibration

It is anticipated that a Certificate of Approval for Noise under the Environmental Protection Act, will be required for all equipment with noise emissions.

#### 4.8 Traffic and Transportation

Through the Site Plan Approval Process, an Entrance Permit will be obtained from the City of Toronto in order to provide the additional access from Sheppard to the Sheppard MSF west of Conlins Road. If required, permits will be obtained to facilitate the proposed signal modifications at the Sheppard Avenue East/Conlins Road intersection.

#### 4.9 Canadian Environmental Assessment Act

This project is not anticipated to trigger the federal *Canadian Environmental Assessment Act* (CEAA). However, TTC will continue to monitor this project for potential CEAA triggers.

## 5. Commitments to Future Work

The TTC has made a number of commitments that will need to be followed through during design, construction, and operation of the Sheppard MSF. This section provides a summary of these commitments.

### 5.1 Terrestrial Natural Heritage

There is a commitment to plant trees within the property and adjacent lands (with permission of landowners such as the City). This tree planting is both required (due to tree removal compensation and Green Standards for parking lots) and recommended (to improve habitat around and in the watercourse, to replace and enhance natural habitat, to improve the viewsheds from the front and east sides of the property etc.). Associated with this will be planting specifications (soils, size of plants, precise planting configurations by species, areas of seeding, etc.), and a maintenance schedule. The latter would likely include regular watering in the first year of planting and replacement of any trees that did not survive in the second year.

### 5.2 Aquatic Environment

A comprehensive Post Construction Monitoring (PCM) program will be designed and implemented for the monitoring of off-setting and enhancement measures as outlined/required by the TRCA/DFO. The monitoring program will be conducted to ensure that the off-setting and enhancement measures were installed, maintained and are functioning as intended.

### 5.3 Hydrogeology and Groundwater

In order to help preserve the natural recharge function of the site, design measures should continue to be explored related to improving infiltration at the site, including but not limited to: permeable pavement for vehicle parking areas, maintaining large areas as landscaped or bioretention areas, and the use of stormwater soak-away pits.

During the construction phase all permits related to groundwater or groundwater taking (i.e., Permit To Take Water), must be obtained where required.

All monitoring wells and borehole that are not being used must be decommissioned in accordance with O'Reg 903.

During operation of the site, Best Management Practices (BMPs) for road salt application should be followed.

### 5.4 Contaminated Soils

The asphalt and tar debris located in the central portion of the property should be removed prior to site development.

The lateral extent of the soils that exceed Table 3 SCS criteria for PHC F4 fraction (gravimetric) near TP5 should be delineated prior to site development. All contaminated soil should be removed from the site and disposed of in an appropriate facility.

With respect to the operation of the Sheppard East LRV, BMPs and sound engineering practices (which may include environmental monitoring) will be designed and implemented to minimize potential contaminant losses to the environment; and rapid and appropriate response will be undertaken to control and remediate any spills/leaks.



## 5.5 Stormwater Management

On site quality and quantity control measures will be observed on the site in accordance with the City of Toronto, Toronto Green Standard and the Toronto and Region Conservation Authority requirements for the Rouge River. Both regulating bodies require that all storm events up to the 100 year storm event be controlled on the site and that MOE Enhanced water quality, 80% TSS (total suspended solids) removal, be achieved. Onsite water quality and quantity control will be achieved in a multi component approach incorporating low impact development (LID) Best Management Practices (BMPs) and a wet pond. LID BMPs that will be employed include root top gardens, soakway pits, permeable pavement and maximizing landscaped areas.

As per the requirements of the Greater Horseshoe Valley Conservation Authorities' Erosion and Control Guidelines for Urban Construction, an erosion and sediment control plan will be developed for the study area during construction. The site will incorporate a temporary stormwater management pond, silt fences and check dams. Filtrexx products will be incorporated for perimeter erosion and sediment control adjacent to sensitive natural features and the watercourse.

## 5.6 Noise and Vibration

The following mitigation measures will be implemented during construction:

- Ensure there is no excessive idling of construction equipment;
- Ensure all construction equipment is properly maintained and complies with MOE guidelines;
- Ensure noise muffling devices are properly installed;
- Ensure all construction activities comply with City of Toronto Noise By-law No. 111-2003;
- As per the City of Toronto Noise By-law No. 111-2003, ensure all construction activities only occur between 7:00 am and 7:00 pm, Monday to Friday, and between 9:00 am and 7:00 pm on Saturdays, Sundays and statutory holidays. If construction is to take place outside of these times, an exemption must be sought prior to commencement of construction; and
- Consider additional noise control measures and implement as appropriate should noise related complaints arise during construction.

During the detailed design stage, mitigation measures will be developed to minimize the impact of wheel screech on sensitive receptors. Mitigation approaches that can accomplish this include: Turning enclosures, track-based technologies, and/or track layout optimizations. If selected mitigation measures prove less effective than anticipated, TTC is committed to investigating further mitigation measures.

## 5.7 Air Quality

A Certificate of Approval for Air will be required for the facility.

A dust control program during construction would include dust suppression (water), road sweeping, and cleaning of vehicle tires before leaving the construction site to control track-out.

During operation of the facility particulate generated from the compressed air cleaning will be controlled with a ventilation/dust 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. 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.

## 5.8 Traffic and Transportation

The following mitigation measures will be implemented during further detailed design. The effectiveness of these mitigation measures will be further evaluated when the Sheppard MSF is operation and modified as necessary.

- For any intersection with a poor LOS, the signal timing will be adjusted to achieve the best possible results, while maintaining the same cycle length and signal phasing;
- Further alternative designs/operation options will be considered, including restricting the north leg of the Conlins Road intersection to LRV use. This approach would require that the park driveway - which is now very lightly used and is the only traffic using the north leg of the intersection - a short distance to the east, taking it out of the signalised intersection, and altering the operation of this driveway to right-in/right-out. This has the potential to significantly improve the operation of the Conlins Road intersection, with very little impact on the operation of the park;
- LRV detection equipment will be implemented, as required to actuate any special signal phases or to provide longer green extensions that may be required to clear LRV traffic through the signalized intersections;
- Traffic signals at the Sheppard Avenue/Conlins Road intersection will be co-ordinated with any new potential traffic signals to the west of Conlins Road. The co-ordination of these signals will be required to manage traffic operations and queue lengths, and minimize conflicts within the relatively short distance between the primary and secondary access points to the facility; and
- For the Sheppard Avenue/Watertower Gate intersection, a longer storage lane length for the southbound left turn lane may be required. This lane should be increased in length from 35 m to approximately 60 m. The southbound left turn lane could be lengthened by simply modifying the existing pavement markings as the road width is available on Watertower Gate.

### EXHIBIT 1 SITE LAYOUT

