



**Toronto Port Authority
Proposed Pedestrian/Services
Tunnel and Perimeter Road
Project**

**Environmental Screening
Scoping Document**

DRAFT May 31, 2010



**Dillon Consulting
Limited**

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1.0 PROJECT

1.1 Background

The Tripartite Agreement between Transport Canada, the Toronto Port Authority (the "TPA") and the City of Toronto (1983, amended in 2003) governs the activities related to the Billy Bishop Toronto City Airport ("BBTCA"). For example, the TPA must not:

- construct or permit to be constructed additional runways or extensions to existing runways;
- expand the airport beyond the area in the agreement;
- permit jet-powered aircraft (with the exception of medical evacuations and other emergency use and during the CNE air show); and
- permit aircraft generating excessive noise to operate to and from the airport (with the exception of medical evacuations and other emergency use and during the CNE air show).

Further, the Tripartite Agreement requires that the TPA not cause a nuisance to occupiers of lands or premises adjoining or in the vicinity of part of the lands at the BBTCA, with the proviso that the operation of the BBTCA in accordance with the Agreement shall not be deemed to be a nuisance.

The proposed Pedestrian/Services Tunnel and Perimeter Road project (the "Project") does not involve any change to the Tripartite Agreement. For example, the maximum aircraft activity permitted by the Tripartite Agreement (i.e., the maximum number of slots that commercial aircraft can use) would not change regardless of whether or not the Project was to proceed. It is expected that the maximum aircraft activity may be achieved before the Project would be constructed and operated. The number of passengers that can use the BBTCA is limited by the permitted aircraft activity (as well as other factors, such as the capacity of the aircraft and whether the airlines using the BBTCA are able to attract passengers, which affects how full the aircraft are). The environmental assessment (EA) will include considerations of whether the project will cause changes to aircraft activity and vehicular traffic. These matters will be considered as part of the EA, including to determine the effects of the Project.

1.2 Project Location and Description

Project Location

The site of the Project is Toronto, Ontario south of the foot of Eireann Quay (formerly called Bathurst Street) and at the BBTCA. The BBTCA tunnel would go through the bedrock that joins the land side and airport side under the approximately 120 m wide Western Gap. On the airport side, the perimeter road would generally follow just inside the airport's existing security fence. (See **Figure 1.1**).

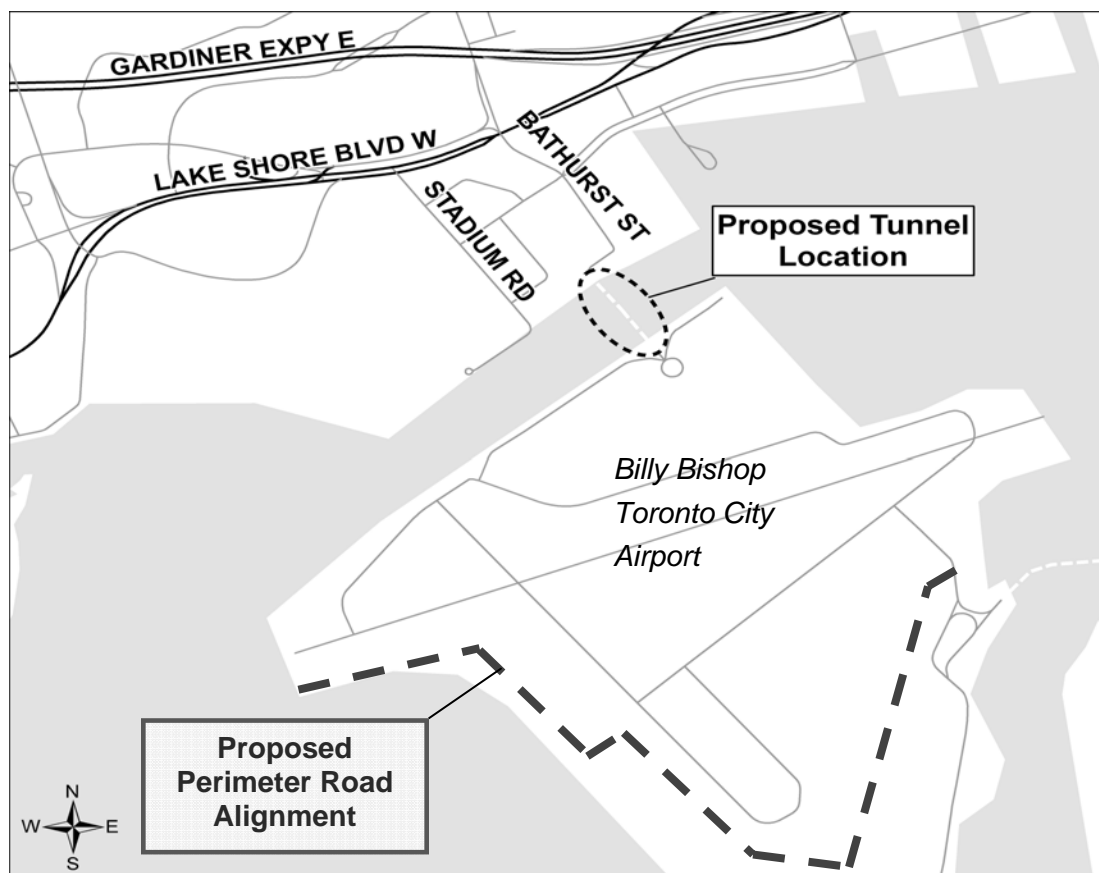


Figure 1.1: Project Location

Project Description

The Project would involve the construction of pedestrian/services tunnel access through the bedrock between the land side and airport side and a perimeter road to improve security access to airport lands. The pedestrian tunnel would improve airport passenger access to the BBTCA. The tunnel would also allow for improved access for airport related services (e.g. fiber optics cable). Ferry service would continue for other access, such as the movement of goods,

materials and vehicles, as well as a backup to the BBTCA Tunnel. The scope of the proposed Project is described in Section 3.

1.3 Scheduling

Subject to completion of the EA, and any other matters that the TPA would need to complete to proceed with the Project, construction initiation could be expected as early as January 2011, with completion anticipated within 18 months of that.

2.0 CANADA PORT AUTHORITY EA REGULATIONS AND CEEA

In accordance with the Canada Port Authority Environmental Assessment Regulations (the “*Port Authority EA Regulations*”), which were made under the Canadian Environmental Assessment Act (the “CEAA”), the Toronto Port Authority (the “TPA”) is conducting this Screening Level Environmental Assessment (EA) for the Project, which is considered to be a “physical work” being proposed by the TPA.

3.0 SCOPE OF THE PROJECT

3.1 Project Components Description

Section 6 of the *Port Authority EA Regulations* requires the TPA to determine the scope of the Project to which an EA is to be conducted. The Project will include the following components:

- Pedestrian/services tunnel access through the bedrock under the Western Gap of the Toronto Harbour, including moving sidewalks;
- Elevator/escalator/stairwell facilities at either end of the BBTCA Tunnel to transition between the tunnel access elevation and ground level;
- Connecting structures between the elevator/escalator/stairwell facilities and the existing ferry Passenger Transfer Facility buildings on the land and airport sides;
- Potentially minor reconfiguration of the existing access, circulation and parking areas on the land and airport sides; and,
- Construction of an airport perimeter road using material excavated from the tunnel access.

For the purpose of the EA, it is assumed that the total length of the BBTCA Tunnel would be approximately 130 - 180 m with a width of approximately 8 - 10 m and height of approximately 5 - 8 m. The approximate depth of the tunnel access would be 25 - 40 m.

The total length of the airport perimeter road would be approximately 2 kilometres.

The components included in the Project for the purpose of the EA are further described in **Table 3.1**.

For the purpose of the EA, **Figures 3.1.1 & 3.1.2** illustrate a planning-level concept for the Project. Given that the EA is part of the project planning stage, this has been included for illustrative purposes and to allow for an assessment of the reasonable maximum effects of the Project. As is usual, the project design may be further advanced as a result of the EA, and will be subject to a more detailed final design process. The conceptual design that has been developed for the purpose of this EA represents the reasonable largest “footprint” of the Project (i.e., that would reasonably have the most impact). As such, the EA is conservative in assessing potential impacts of the proposed Project.

Table 3.1 – Project Components Description

Project Component	Project Component Description	Physical Works and Activities
Construction Activities		
Tunnelling	Construction of tunnel access approximately 8-10 m wide and approximately 5-8 m high, approximately 25-40 m below the existing land grade.	<p>Typically for tunnels of this size, the tunnel access would be excavated by an incremental method referred to as the Sequential Excavation Method (SEM) or New Austrian Tunnelling Method (NATM). This would require that the tunnel access cross section be divided into smaller sections which are incrementally excavated and supported. The openings are finally combined to form the final desired cross section. This method would ensure that the tunnel access can be excavated safely without uncontrolled collapses in the shale below the Western Gap. Any water ingress into the tunnel access during the excavation will be pumped to an on-site storage/treatment facility before being released, likely into the Western Channel. The actual tunnel excavation method will be determined by the contractor. It is expected that the tunnel access would be advanced from the airport side, which would result in the excavated materials being used on the airport property for an airport perimeter road that is proposed as part of the Project, or disposed of by the contractor. For the purpose of the EA (i.e., to consider potential impacts), we are assuming that the materials removed to construct the tunnel would be used to construct the road bed for the new perimeter road on airport property. A barge may be required for the movement/ temporary storage of materials during construction or to facilitate the construction of some project elements.</p> <p>During construction of the tunnel access, groundwater will be encountered that may seep into the open tunnel sections as they are advanced. This water will be removed by pumping and conveyed to storage/treatment facilities before discharge,</p>

Project Component	Project Component Description	Physical Works and Activities
		likely into the Western Channel. Similarly, depending on the method of shaft construction, ground water and/or slurry may require on-site treatment before discharge.
Vertical Shafts	Construction of two vertical shafts at the south and north end of the tunnel access.	Excavation of the two shafts would be carried out by mechanical methods involving excavation machinery with support of the deep excavation sides with an engineered, continuous wall. Excavated materials would be placed in trucks for removal and/or used for airport perimeter road construction. Construction of the shafts may require the use of a barge to hold excavation equipment and or cranes. It is expected that the need for the handling of ground water during construction will be minimal with the use of water tight shaft walls.
Sidewalks and Elevators/ Escalators	Construction and installation of sidewalk and elevator/stair/escalator facilities into the tunnel access and vertical shafts.	This would require the delivery and installation of tunnel and shaft heating and ventilation equipment, moving sidewalk facilities, elevators, stairwells, escalators and other finishing elements such as lighting, signage, wall treatments, etc.
Building Elements	Building construction	This would include construction of structures to connect the elevator/stair/escalator areas with the existing buildings on both sides.
Access Areas (including sidewalks, roads, parking, FPTF)	Minor temporary work required for access to the FPTF/tunnel entrances (including adjustments to sidewalks, circulation road, ferry passenger transfer facility (FPTF), and parking areas).	<p>No changes to any existing roadways are expected as a result of the Project. Changes to the FPTF's access/vehicle entranceway may be required. Number of available parking spaces may be reduced.</p> <p>Work would include site preparation, road base construction, granular and drainage, possible lane closures, paving, sidewalks, curb and gutter, illumination, pavement markings, signage and landscaping plantings. This may also include minor alterations of the FPTF on both the Island and mainland sides.</p>

Project Component	Project Component Description	Physical Works and Activities
Perimeter Road	Construction of an airport perimeter road for security access using the excavated materials from the tunnel and vertical shafts.	Work would include site preparation, road base construction, granular and drainage.
Water Management	Stormwater and groundwater management plans during construction, including Permit To Take Water (PTTW).	This would require the preparation of plans to manage water flow during rain and storm conditions, potential seepage into the tunnel and shafts during excavation, and overall drainage during construction activities. It is expected that the need for the handling of groundwater during vertical shaft construction will be minimal with the use of water tight shaft walls.
Operation Activities		
Pedestrian Tunnel Use and Maintenance	Use of tunnel by airport passengers and staff. Regular inspection of the tunnel and maintenance activities as required for safe operation.	No major physical works or activities are expected during the pedestrian tunnel operations period.
Water Management	Stormwater would be conveyed to the storm system, which would be designed through the facility detailed design process. Groundwater would be monitored for potential seepage into the shafts/tunnel.	Construction/updating of an appropriate storm drainage system and groundwater management plan for potential seepage maintenance.
Perimeter Road Use and Maintenance	Use of the perimeter road by airport security staff. Some typical road maintenance activities are expected to keep the road in good condition.	No major physical works or activities are expected to maintain the perimeter road in good operating condition. Maintenance activities would include periodic grading and snowploughing as necessary and required.
Decommissioning Activities		
No decommissioning activities are planned, but at the appropriate time in the future, decommissioning would be expected to occur in compliance with law.		

Figure 3.1.1: Conceptual Design of Project (Site Plan)

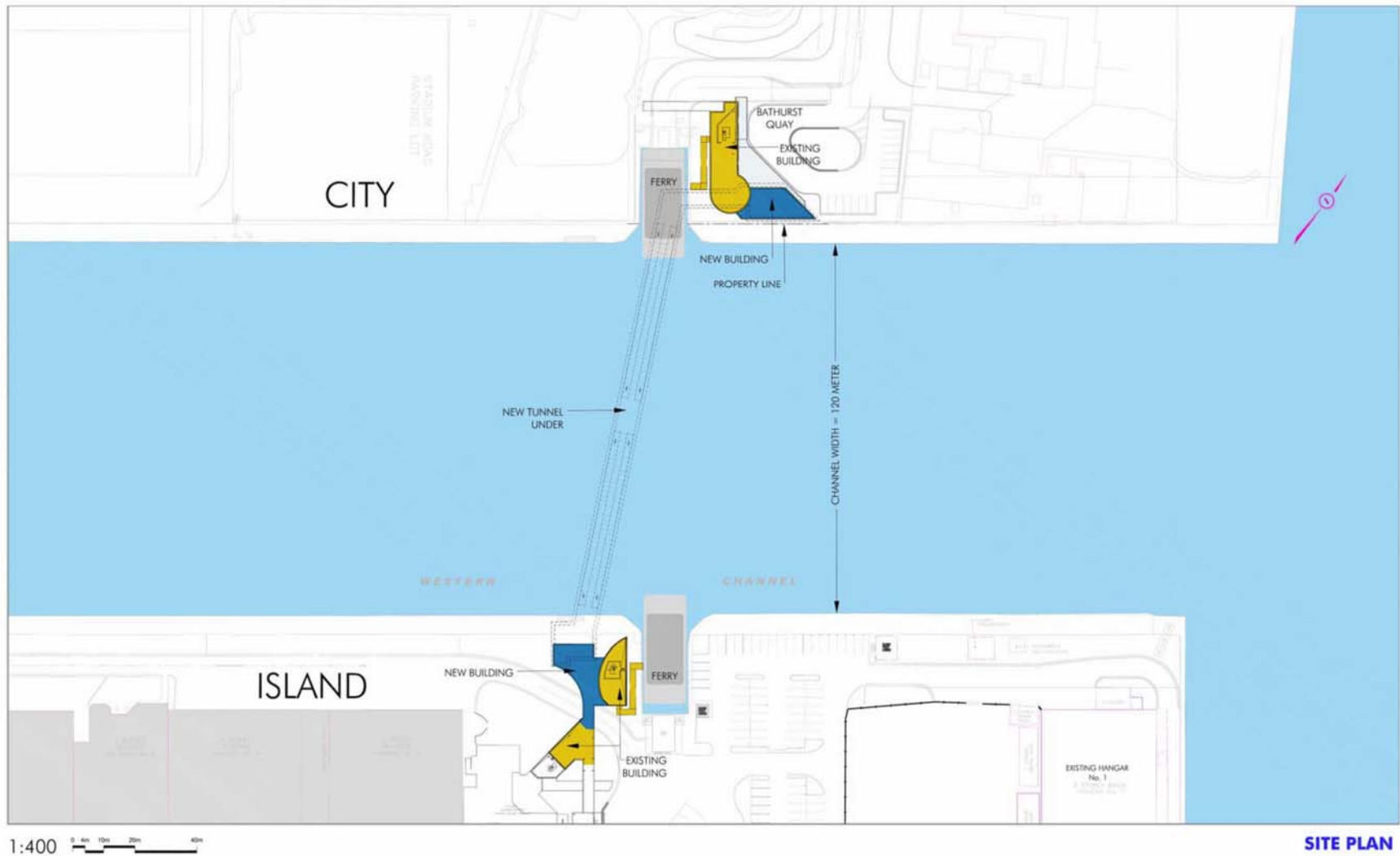
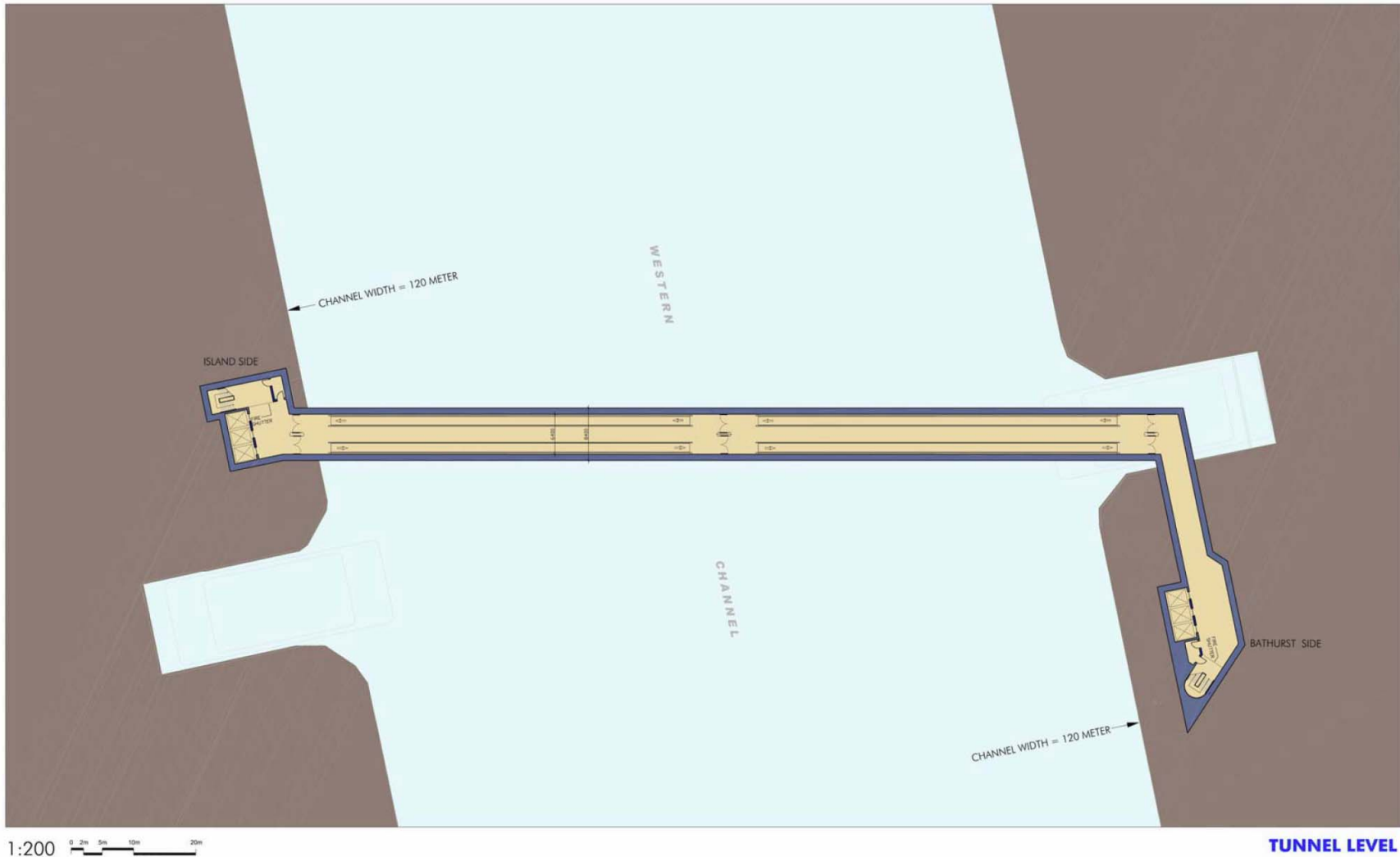


Figure 3.1.2: Conceptual Design of Project (Tunnel Level)



3.2 Scope of Assessment

Subsection 10 (2) of the *Port Authority EA Regulations* identifies the factors to be considered in this EA.

10(2) *Every screening of a project shall include a consideration of the following factors:*

- (a) the environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;*
- (b) the significance of the effects referred to in paragraph (a);*
- (c) comments from the public that are received as part of an assessment process, if any; and;*
- (d) technically and economically feasible measures that would mitigate any significant adverse environmental effects of the project.*

"Environment" means the components of the Earth, and includes:

- (a) land, water and air, including all layers of the atmosphere;
- (b) all organic and inorganic matter and living organisms; and
- (c) the interacting natural systems that include components referred to in paragraphs (a) and (b).

"Environmental effect" means, in respect of a project:

- (a) any change that the project may cause in the environment, including any change it may cause to a listed wildlife species, its critical habitat or the residences of individuals of that species, as those terms are defined in subsection 2(1) of the *Species at Risk Act*;
- (b) any effect of any such change referred to in paragraph (a) on
 - (i) health and socio-economic conditions,
 - (ii) physical and cultural heritage,
 - (iii) the current use of lands and resources for traditional purposes by aboriginal persons, or
 - (iv) any structure, site or thing that is of historical, archaeological, paleontological or architectural significance, or
- (c) any change to the project that may be caused by the environment, whether any such change or effect occurs within or outside Canada.

Subsection 10 (3) of the Port Authority EA Regulations requires the TPA to determine the scope of the factors to be considered under paragraphs 10 (2) (a), (b) and (d) [which are included above].

This EA will include consideration of the environmental effects of the Project and related factors as required by the Port Authority EA Regulations, including the environmental effects of malfunctions or accidents that may occur in connection with the project, and any cumulative environmental effects that are likely to result from the project in combination with other approved projects or activities that have been or will be carried out; the significance of the environmental effects and cumulative effects; comments from the public that are received; and technically and economically feasible measures that would mitigate any significant adverse effects of the project.

The spatial boundaries for the effects assessment are focused on the lands and waters in the vicinity of the Project site (“Principle Study Area”) including the local Bathurst Quay Community (located south of Queens Quay). For some environmental components, depending on the nature of the potential environmental effects, consideration of effects will be made using a larger study area, which could extend out to the western end of the Toronto Harbour. This will be considered in the EA, and will be described in the draft EA screening report.

The temporal boundaries of the Project include:

- 1) **Construction** (the period from initial site preparation to the completion of construction and site restoration – expected to be about 18 months), and
- 2) **Operations** (the facilities, such as the tunnel access, are expected to last in excess of 20 years).

No decommissioning activities are anticipated at this time, which is typical for this type of project. Decommissioning would be expected to comply with applicable laws.

Scope of Factors

Environmental Factors

The EA will include consideration of the effects that would be caused by the Project during the short-term construction period and longer-term operations period. Even though the EA may not need to include all of the following (for example, because the Project would not be expected to

cause a particular effect, particularly during the operations phase), the environmental factors to be considered in the assessment will include, as appropriate and necessary, the matters listed below. The EA will include consideration of the effects of the Project on aircraft activity and vehicular traffic, if any.

- Biophysical
 - Air Quality
 - Fish & Fish Habitat
 - Groundwater
 - Migratory Birds
 - Soils & Sediments
 - Species at Risk
 - Surface Water Quality and Quantity (drainage, hydrology, hydraulics and flooding)
 - Terrain & Topography
 - Vegetation
 - Other Wildlife & Wildlife Habitat

While not expressly required to be assessed unless an environmental/biophysical effect is anticipated to result in a socio-economic effect, the EA will include consideration of the effects of the Project on the following:

- Socio-economic
 - Economics/Businesses
 - First Nations
 - Heritage & Archaeological Features
 - Human Health (e.g., due to noise/vibration, air quality)
 - Land Use and Communities (existing and planned)
 - Social & Visual
 - Transportation
 - Navigation
- Effects of the Environment on the Project
 - Flooding due to extreme and/or prolonged weather events
 - Earthquakes
 - Climate Change

Construction and Operational Effects

Both short-term (construction) and long-term (operational) effects will be considered. The construction and commissioning period is estimated to be 18 months. The Project's facilities are expected to last in excess of 20 years, and the decommissioning of the Project would reasonably be expected to comply with applicable laws at the relevant time.

Potential Effects and Significance

To determine the potential for environmental effects and the significance of the effects, the following will be considered:

- What are the environmental effects of the Project?
- Are the identified effects positive or negative?
- Can the predicted negative effects be avoided or mitigated?
- After mitigation of negative effects, are there residual effects?
- Will other projects or activities cause negative effects that could combine cumulatively with effects of the Project?
- Taking into consideration any cumulative effects, what are the magnitude, geographic extent, duration and frequency of negative residual effects or positive effects?
- Are the residual negative effects reversible?
- Is the ecological setting of the undertaking sensitive?

Cumulative Effects

Activities and projects that exist, or will reasonably be expected to exist before construction of the Project, will be included in the description of the baseline environmental conditions.

As indicated, the EA will include assessment of the environmental effects of the Project, as required by the CPA EA Regs, including an assessment of cumulative environmental effects.

The consideration of cumulative effects requires that there must first be an effect of the Project. If there are Project effects, the EA will include consideration of such effects in combination with the effects of other applicable projects and activities to determine whether there would be any cumulative effects. The cumulative effects assessment will include consideration of effects from projects or activities where there is a reasonable expectation for the project or activity to occur (such as a commitment to develop a project) and there is potential for effect overlap with the Project in terms of time and space.