

1.0 INTRODUCTION

This Environmental Project Report assesses the effects of the proposed Downtown Ottawa Transit Tunnel (DOTT) project on the social, physical and natural environments. The City of Ottawa, as proponent, has prepared this Environmental Project Report in accordance with the Province of Ontario's Transit Project Assessment Process (Regulation 231/08 under the Ontario's *Environmental Assessment Act*).

This section provides the background and overview of the study including location and rationale for the proposed project, relationship of the proposed project to other transportation-related studies and an outline of the entire report contents.

Sections Include:

- 1.1 Project Description
- 1.2 Purpose of the Project
- 1.3 Study Background
- 1.4 Relationship with Other Studies, Projects and Future Undertakings
- 1.5 Report Organization



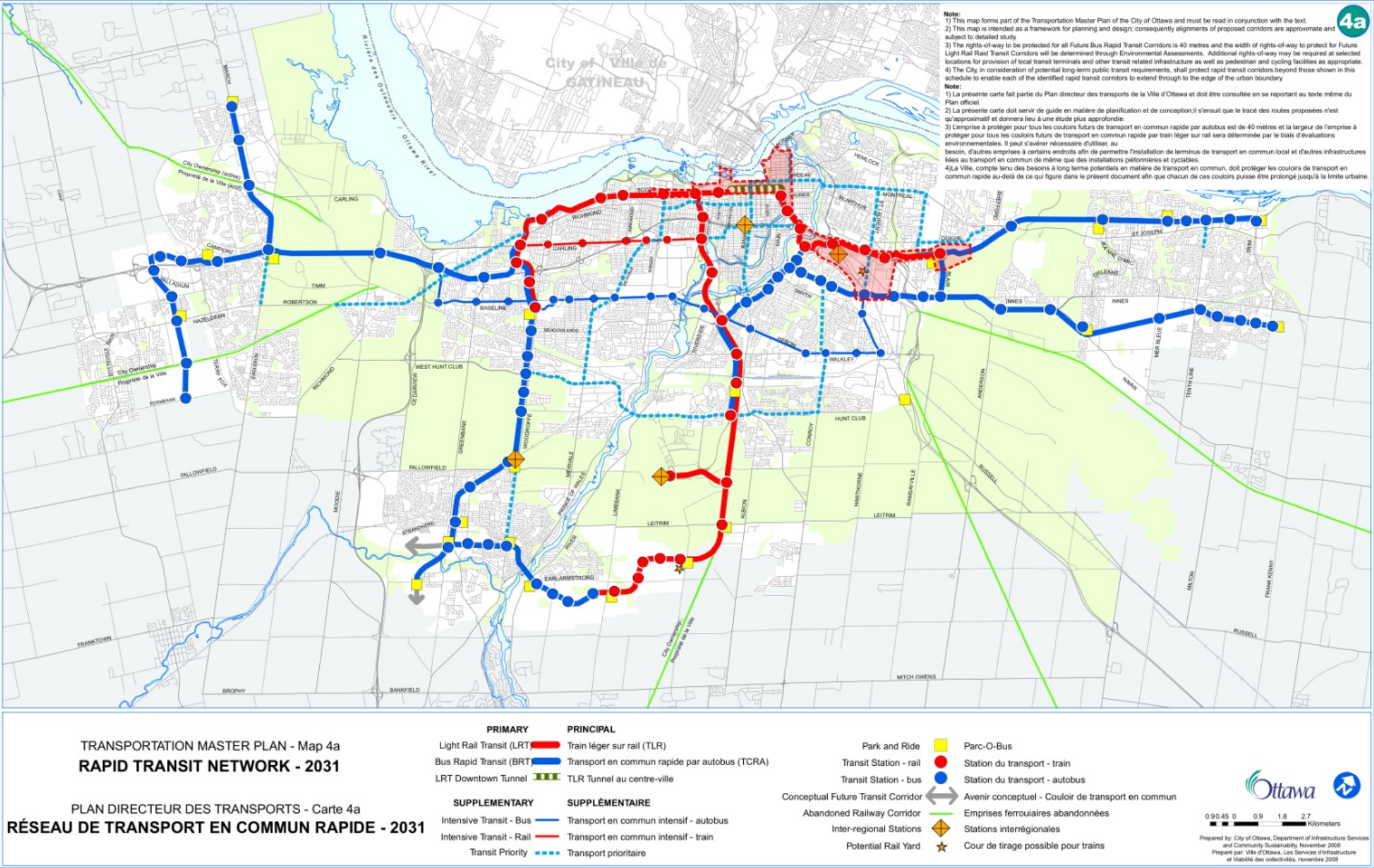
1.1 Project Description

Ottawa's Transportation Master Plan (TMP) contains a vision for transit to be developed by 2031. In the first phase, the City of Ottawa will invest in 40 km of new light rail transit (LRT)

and vehicles to service these lines, as well as bus rapid transit technology and additional bus lanes. Figure 1-1 illustrates the planned rapid transit network for the City of Ottawa, out to the year 2031. The cornerstone and first phase of this plan is to run

electric light rail transit from Tunney's Pasture Station to Blair Station along the Transitway and through a tunnel underneath the downtown core.

Figure 1-1: TMP Rapid Transit Network



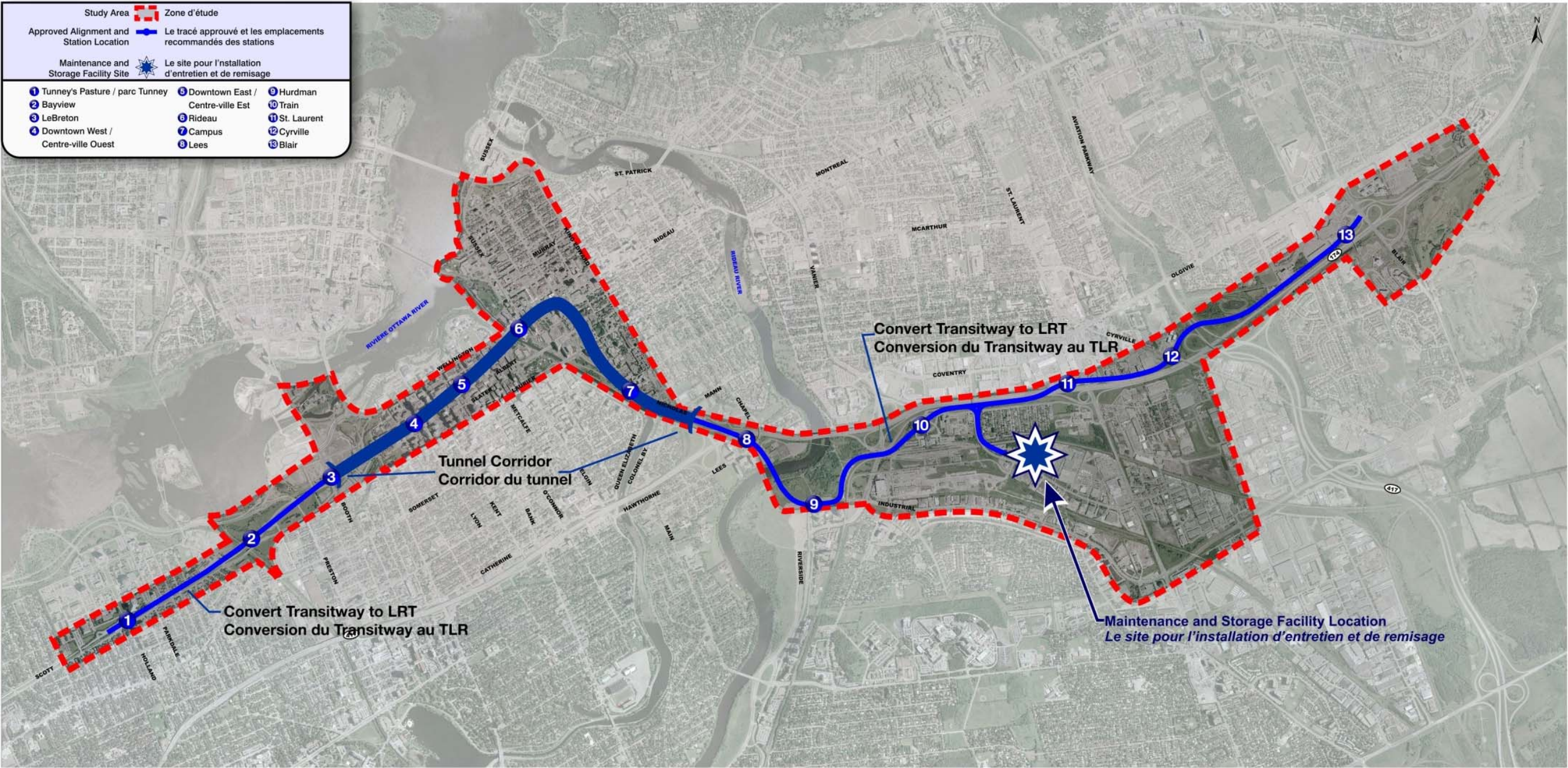
The Downtown Ottawa Transit Tunnel (DOTT): Tunney’s Pasture to Blair Station via a Downtown LRT Tunnel, will see the conversion of part of the current rapid transit system (The Transitway) serving the City of Ottawa from Bus Rapid Transit (BRT) to electric Light Rail Transit (LRT) technology.

The most important feature of the project involves construction of a new LRT tunnel to replace the existing on-street BRT operation which uses reserved bus lanes in the Albert and Slater Street corridors. The tunnel will allow for improved transit operations by separating transit from other traffic, and provide increased transit capacity needed to meet forecasted ridership on

this segment of the City’s rapid transit network to the year 2031 and beyond.

Figure 1-2 illustrates the proposed LRT alignment, station locations and Maintenance and Storage Facility site.

Figure 1-2:
Study Area and
Major Project
Features



1.1.1 LRT Alignment and Stations

The DOTT project is comprised of approximately 12.5 km of new electrified light rail transit, between Tunney's Pasture and Blair Stations, primarily on the existing Transitway corridor. Thirteen (13) LRT stations are planned along this route, including four (4) underground stations serving downtown and the University of Ottawa in a new 3.2 km long LRT tunnel.

The LRT tunnel will run from east of the existing LeBreton Station across the downtown core area until it reaches the area around the Rideau Centre shopping mall. It will then curve south easterly and reach grade at the eastern portal, located north of the existing Lees Station. East and west of the downtown tunnel the existing Transitway will be converted from bus rapid transit to light rail transit technology. Conversion of the existing Transitway represents approximately 9 km of the total 12.5 km length of the alignment.

A more detailed description of the planned LRT alignment and stations is contained in Section 9.0 of this report.

1.1.2 Maintenance and Storage Facility

To support operation of the line, a Maintenance and Storage Facility will be required to: house the new light rail vehicles (LRVs) which will run on the line; maintain the LRVs running on the line, and on future extensions to the City's LRT network, and; provide maintenance, signalling, communication and control facilities needed for safe operation of the line and the City's entire LRT network.

The site of the Maintenance and Storage Facility is located immediately south of the proposed LRT alignment, in the vicinity of the existing OC Transpo St. Laurent bus maintenance and garage complex. A connecting track under Belfast Road and the VIA Rail corridor will be required to link the Maintenance and Storage Facility with the DOTT line.

A detailed description of the planned Maintenance and Storage Facility is contained in Section 9.0 of this report.

1.2 Purpose of the Project

The purpose of the project is to improve Ottawa's existing rapid transit network by implementing the first priority project identified in the City's TMP. This will provide needed rapid transit capacity through the downtown area to alleviate existing bus congestion issues and accommodate forecasted population and employment growth to the year 2031 and beyond. The conversion of the existing BRT corridor to LRT technology and the construction of a LRT tunnel under the downtown will bring a faster, more efficient, and environmentally-friendly transit system to Ottawa.

The existing Bus Rapid Transit service through downtown accommodates over 10,000 riders, per direction, during peak hours. Currently, this transit service is limited to approximately 180 buses an hour per direction as the on-street BRT operation in the downtown is limited by the capacity of the signalized intersections along the corridor. These intersections must satisfy competing demand for buses, traffic, pedestrians and cyclists travelling along and across the corridor. Increasingly, downtown Ottawa's transit system is plagued by delays due to general traffic conflicts, accidents, inclement weather and special events. The unreliability of transit downtown ripples through the system, causing dissatisfaction as riders are unable to accurately determine their travel time in advance. Effectively, the existing rapid transit system has reached its capacity through the downtown to serve neighbourhoods within the Greenbelt and surrounding communities. The system will no longer be able to expand service to meet projected demand beyond 2018.

1.3 Study Background

Transit capacity in downtown Ottawa has been a topic of discussion for many years. Even during the initial planning for Ottawa's BRT system in the mid-1970s, the former Regional Municipality of Ottawa-Carleton suggested the eventual need for a grade separated rapid transit facility through the

downtown, such as a tunnel. In the late 1980s a study was undertaken to examine the feasibility of grade separating the Transitway through the Central Area linking the existing East/Southeast and West/Southwest Transitways. The study examined both above and below-ground alternatives as well as alternative alignments and station configurations in the Central Area. Regional Council decided to continue with further extension of the bus Transitway as the first priority, leaving the expensive grade separation of the downtown section until it was required. Planning for Ottawa's BRT system also recognized the likelihood of the eventual need to convert from BRT to LRT technology. As such, many elements of the existing Transitway have been designed and constructed to allow future conversion to LRT technology, as is currently contemplated.

1.3.1 Prior Planning Work

On 12 September 2007, Ottawa City Council directed staff to initiate a Planning and Environmental Assessment (EA) study for the Downtown Ottawa Transit Tunnel (DOTT). This decision was based in large part on findings of the *Mayor's Task Force on Transportation*, which was formed in 2007 to re-examine the City's public-transit needs and priorities and make recommendations for immediate, short, medium and long-term development of an integrated rapid-transit plan for the City. A downtown transit tunnel was central to the Task Force's plan, with the recommendation that the City move forward with its construction as a priority.

Subsequently, the Statement of Work for the transit tunnel study was approved at a joint City of Ottawa Transportation and Transit Committee meeting on 21 November 2007, which identified the scope of the study and the level of effort to undertake the work. The DOTT Planning and Environmental Study was initiated in June 2008. The timing of a downtown tunnel option was discussed in the context of the TMP and strategic rapid transit network development (See Section 3.0). It was acknowledged that an electrified light rail transit tunnel was an important component in addressing transit service improvements required now and in the future.

Originally, the DOTT study area spanned from Bayview Station through the downtown core, between Wellington Street and Laurier Avenue West, to King Edward Avenue (and encompassed Lowertown West and the By-ward Market areas), and extended southerly to include Hurdman Station and the VIA Rail Station. On 19 November 2008 the Joint Transportation and Transit Committee, during its deliberation of the draft 2008 TMP, approved a staff recommendation to extend the study limits to include Tunney's Pasture Station in the west and Blair Station in the east. This would align the scope of the Study with the light rail transit portion of Phase 1, Increment 1, of the City's rapid transit network. This project is a component of the City's overall plan for transportation service and infrastructure improvements required to support future growth.

Ottawa City Council approved the Downtown Ottawa Transit Tunnel Planning and Environmental Study (Interim report) – Corridor Alignment and Station Alternatives report on 27 May 2009. A series of recommendations were approved including the recommended alignment and station options for DOTT (see Appendix B: Progress Reports to Transit Committee and Council). Other recommendations directed staff to undertake a number of activities related to the project including release of a Request for Information to assess the private development industry's interest in partnering in the project; a bus operation plan for Albert Street in the vicinity of LeBreton Flats; a conceptual transit plan for surface operations; incorporating principles related to transit service and operations of the Rideau commercial district; and, reporting on issues related to the Transit System during construction of the project. These matters were addressed and incorporated in the planning study as appropriate.

On January 13, 2010, following approval of the functional design for the Recommended Plan (see Appendix B: Progress Reports to Transit Committee and Council), the City of Ottawa initiated the Transit Project Assessment Process for the DOTT (Tunney's Pasture to Blair Station via a Downtown LRT Tunnel)

project (the Transit Project). The DOTT study is the City's first project to follow the expedited maximum six-month Environmental Assessment process for transit projects. Ontario Regulation 231/08 allows proponents to build on past planning decisions (outlined above and discussed further in Section 3.0) to advance a transit project through an Environmental Assessment.

During the "project planning phase", consultation undertaken on the study involved over 200 stakeholder groups, including community organizations, property owners and businesses within the study area, institutions, approval agencies and groups with a special interest in the study. In addition, several Agency, Business and Public Consultation Group meetings (up to six meetings each), three formal Public Open Houses and presentations were conducted in February, June and October 2009. Individual meetings were also arranged with groups such as the Downtown Coalition, Viking Rideau Corporation, the University of Ottawa, Public Works and Government Service Canada (PWGSC), the National Capital Commission (NCC) and a number of community-based associations and interest groups. A project website (www.ottawa.ca/tunnel) was established along with a dedicated e-mail address (dott@ottawa.ca) to allow the public to contact the study team directly.

1.4 Relationship with Other Studies, Projects and Future Undertakings

As a component of the City's overall rapid transit network, the DOTT project is related to several other rapid transit projects and studies currently underway or planned to be initiated in the near future. The following is a synopsis of the major projects and studies which influence this project or which will be influenced by the implementation of the DOTT project.

1.4.1 The Transportation Master Plan

Ottawa's TMP outlines the transportation infrastructure needed to support the City's projected population and employment levels for the year 2031. Key to the proposed rapid transit

network identified in the TMP is the construction of a tunnel across downtown Ottawa, which is needed to provide additional rapid transit capacity for the year 2018 and beyond. Conversion of the existing Transitway between Tunney's Pasture and Blair Station from bus to rail technology and construction of the tunnel is identified as a priority project of the TMP.

1.4.2 Western LRT Corridor

The TMP update identifies future conversion of the existing BRT corridor to LRT west and southwest from the DOTT terminus of Tunney's Pasture Station to Baseline Station. The alignment shown in the TMP uses the existing rapid transit corridor between these two points, which consists of dedicated Transitway facilities between Tunney's Pasture Station and Dominion Station, and between Lincoln Fields Station and Baseline Station. Between Dominion Station and Lincoln Fields Station, buses currently operate in mixed traffic using the Ottawa River Parkway, which is owned by the National Capital Commission and used by OC Transpo under an operating agreement, which expires in 2031.

Based on concerns expressed by the National Capital Commission and area residents over potential use of the Ottawa River Parkway corridor for LRT, City Council directed that the Western LRT Corridor Planning and Environmental Assessment consider use of alternate corridors for the regional transit corridor. These alternate corridors would either involve extension west from Tunney's Pasture Station, or branch off from the DOTT corridor at Bayview Station to reach Baseline via an alternate routing (e.g. Carling Avenue).

Regardless of the final route chosen for the Western LRT Corridor, the design of the DOTT project will need to accommodate either continued operation of Tunney's Pasture as a terminus station, or the extension of LRT to the west, either to Baseline Station or an intermediate point. Operationally, the proposed Western LRT Corridor project will operate as an extension to the DOTT, regardless of the route chosen.

The Maintenance and Storage Facility included as part of the DOTT project has been designed to accommodate maintenance and storage of the light rail vehicles associated with extension of the LRT from Tunney's Pasture to Baseline Station. The communications control centre built as part of the DOTT project will be capable of managing operation of the entire LRT network, including the proposed Western LRT Corridor project.

1.4.3 O-Train Corridor LRT Conversion

Although the previous North-South LRT project was cancelled in 2007, the 2008 TMP update confirmed the need to convert this corridor to electric LRT between Bayview Station and Riverside South as part of phase 1 of the 2031 rapid transit network. This corridor will connect with the DOTT project at Bayview Station, therefore the design of this station will need to accommodate transfer of passengers between the two lines, as well as a track connection between the two corridors. Operationally, this LRT corridor will be interlined with operations on the DOTT with trains sharing the corridor through downtown when the O-Train is converted to an electrified system in the future. The rail infrastructure proposed for the DOTT line has been designed to accommodate this feature. In addition, the station design does not preclude access to the Prince of Wales bridge spanning the Ottawa River to the City of Gatineau if the opportunity for interprovincial transit, for rail or bus is ever realized at this segment of the light rail system.

The Maintenance and Storage Facility for the DOTT project can accommodate heavy maintenance of the electric light rail vehicles required for operation of this corridor, but a separate storage and light maintenance facility will need to be incorporated into this project. The communications control centre built as part of the DOTT project will be capable of managing operation of the entire LRT network, including this corridor.

1.4.4 Interprovincial Transit Strategy

Currently, interprovincial transit services between Ottawa and Gatineau, Québec are operated on-street by both OC Transpo and the Société de transport de l'Outaouais (STO). These services are impacted by many of the same conditions which affect the existing BRT service in the Albert and Slater corridors.

The National Capital Commission is leading a study to address both short-term and long-term solutions to meet interprovincial transit requirements, including operational improvements, service coordination, and defining future corridors and linkages for new infrastructure. Options from that study will be presented for public review in early 2010, with an anticipated report to Transit Committee by mid 2010.

The design of the DOTT project will influence and be influenced by future decisions regarding interprovincial transit. The design of station facilities at Bayview and LeBreton can accommodate future upgrades in interprovincial transit service. In the longer-term, the transit technology chosen for the DOTT (LRT) and the grade-separated facility central to the whole DOTT project will be capable of accommodating future interprovincial transit travel demand.

1.4.5 Hospital Link/Cumberland Transitway Connection

The TMP update identifies a future BRT facility to connect the west end of the Cumberland Transitway (west of Blackburn Hamlet) with the DOTT and Southeast Transitways. The link connects with DOTT line at Blair Station, runs south on Blair Road to Innes, where it extends east on Innes to Blackburn Hamlet and west via Innes and Industrial to connect with the Southeast Transitway south of Hurdman Station. A Planning and Environmental Assessment Study for this facility is currently on-going and is expected to be completed later in 2010.

The design of station facilities at Hurdman and Blair can accommodate expected bus and passenger transfer volumes to and from the Hospital Link/Cumberland Transitway

Connection. The Planning Study currently underway for this project will address how the proposed facility will interface with the existing Transitway at Blair Station. Buses will access Hurdman Station via the existing Southeast Transitway.

1.5 Report Organization

The structure of the remainder of this report is organized as follows:

Section 2.0: Study Process and EA Requirements, provides an overview of Ontario's Transit Project Assessment Process and Federal Environmental Assessment process and how the DOTT project addresses their respective requirements.

Section 3.0: Project Need and Justification, describes the need and justification for the transit project, based on pre-planning work undertaken by the City of Ottawa.

The Council-approved rapid transit network as described in the 2008 TMP and its supporting documents, addresses major issues such as project need, corridor development (including surface versus tunnel), and technology assessment (such as buses versus trains). These issues were thoroughly assessed through that planning exercise and do not have to be revisited in the Environmental Assessment for the DOTT project.

Section 4.0: Consultation Program, describes the extensive consultation program undertaken to gather comments from the general public and stakeholders during both the planning and environmental assessment stages of the DOTT project.

Section 5.0: Environmental Setting, describes the existing conditions within the study area, including an overview of the prevailing social (transportation, land use, socio-cultural, municipal services, noise, vibration and air quality) and natural (physical, biological) environments. Consultation activities undertaken with respect to the environmental setting are also described.

Section 6.0: Transit Technology, provides an overview of the transit technology choice study undertaken by the City of Ottawa to select an appropriate rail technology for Ottawa’s future LRT network, including the DOTT.

Section 7.0: Project Goals, Planning Objectives and Design Criteria, presents the overriding principles developed to guide planning of the DOTT project, and the design criteria used to evaluate the alternative alignments and station designs for the project.

Section 8.0: Alternative Transit Alignments, Station Design Concepts and Maintenance and Storage Facility Sites, provides an overview of the various alternative alignments, station design concepts and Maintenance and Storage Facility sites considered during the planning phase of this study.

Section 9.0: Recommended Plan, describes the Recommended Plan for the DOTT project. The Recommended Plan documents the horizontal and vertical alignment, station locations and layouts, general arrangements of elements in the station, general arrangements for the new and revised structures along the route and documents other elements such as development connections, and pedestrian and cycling routes. The functional plan for the Maintenance and Storage Facility is also presented, including the general arrangement of functions at the site, location and purpose of the proposed buildings and details on the horizontal and vertical alignment for the connections between the facility and the mainline track.

Section 10: Environmental Effects, Significance and Mitigation, describes the assessment approach and methodology followed to address the potential environmental effects of the project which have been identified as well as mitigation measures which may be put in place to reduce or eliminate negative environmental effects.

Identification of any municipal, provincial or federal approvals or permits is provided, as well as potential mechanisms for modifying the Recommended Plan for the transit project.

Follow-up and monitoring (future commitments) requirements are also identified.