London’s Bus Rapid Transit System

HERITAGE WORKSHOP
November 7, 2017

Agenda

1. Introductions
2. Overview of Transit Project Assessment Process
3. Archaeology and Heritage Approval Process
4. Role of London Advisory Committee on Heritage
5. Potential Resource Screening during CHSR
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Introductions

Our Rapid Transit Initiative November 7, 2017

Shift is a bold and important initiative for transportation for London. Investing in Rapid Transit as part of the transportation system, along with cars, buses, bikes and pedestrians, to help our city grow and prosper.

Bus Rapid Transit (BRT) is public transit designed for higher capacity and increased reliability using dedicated lanes, transit priority at intersections, new technology and real-time information to attract riders.

The London Plan sets the vision for the next 20 years, with goals to encourage higher density, infill development, protect agricultural land, and create a more sustainable, vibrant and livable city.

The Rapid Transit Master Plan was approved by Council in July 2017. Public comment period lasted 45-days, and feedback received will help to refine the designs.

What is Shift?

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Why does London need Rapid Transit?

• A new transportation choice that will help shape London's future.
• Rapid Transit fits with other established plans, including The London Plan, to support transit-oriented development along the Rapid Transit corridors and create a vibrant street-level experience for pedestrians.
• Rapid Transit will influence how pedestrians, cyclists, cars and trucks move in all parts of the city.
• An improved, faster, reliable transit service will attract more transit riders and development along the corridors.
• Annual transit ridership in London in 2016 was 22.6 million, with more transit riders per capita than comparable urban areas.

Background

• Council approved the Rapid Transit Master Plan and Updated Business Case on July 25, 2017.
• Approval of the RTMP confirmed the BRT Network and its corridors.
• Feedback we’ve received will help to refine the conceptual level designs of the RTMP through the TPAP study phase.
• Ontario’s EA Process for transit projects is structured into five technical phases.

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Transit Project Assessment Process (Phase 3)

- **Phase 3 TPAP Pre-planning Activities** will identify and evaluate design alternatives to develop preferred alternative.
- This phase includes:
  - conducting public and stakeholder consultation
  - identifying impacts and related mitigation measures
  - additional assessment of impacts to natural, cultural, archaeological and socio-economic environments.
  - updating and completing a range of technical analysis.
  - PIC #5 to obtain feedback from the public to aid in the evaluation of design alternatives
- The outcome of Phase 3 is a draft Environmental Project Report (EPR) with supporting technical appendices, preliminary engineering design, and a consultation summary.

Phase 3: Developing alternative designs

- The project team has begun developing alternative design solutions for many areas of the approved BRT corridors
- Alternative designs will be evaluated against a wide range of criteria, based on the following principles:
  - Community building and revitalization
  - Transportation capacity and mobility
  - Ease of implementation and operational viability
  - Natural environment and climate change
  - Economic development and city building
- Design decisions will need to be made that are complex
Transit Project Assessment Process (TPAP)

- **Phase 4 TPAP and Environmental Project Report (EPR)** provides a formal opportunity for stakeholders and the public to comment on the draft EPR.
- This phase includes:
  - Notice of TPAP Commencement to trigger the 120-day TPAP period following review of the Draft EPR by the MOECC.
  - 120-day period formal public consultation including PIC #6.
  - Final EPR documenting consultation and findings of the 120-day period.
  - Notice of EPR Completion to trigger a 30-day formal review period during which objections may be submitted to the MOECC.
  - 35-day period for the Minister to give notice if objection received.
- The outcome of Phase 4 is a Final Environmental Project Report (EPR) and issuance of a Statement of Completion.
TPAP: Matters of Provincial Importance

Natural Heritage
- Park, conservation reserve or protected area
- Extirpated, endangered, threatened, or species of special concern and their habitat
- Wetland, woodland, habitat of wildlife or other natural heritage area
- Area of natural or scientific interest
- Stream, creek, river or lake containing fish and their habitats

Hydrogeology
- Area or region of surface water or groundwater or other important hydrological features
- Areas that may be impacted by a known or suspected on- or off-site source of contamination such as a spill, a gasoline outlet, an open or closed landfill site, etc.

Heritage & Archaeology
- Protected heritage property
- Built heritage landscapes
- Archaeological resources and areas of potential archaeological interest

Aboriginal Affairs
- Constitutionally protected Aboriginal or treaty rights and areas of concern

Approved BRT Network

Our Rapid Transit Initiative November 7, 2017
Approved BRT Network

• 22.5 km of dedicated transit lanes
• 1.5 km of transit operating in mixed traffic
• 35 BRT stations, including 1 Central Transit Hub, where the corridors all meet, near King Street and Wellington Street
• 28 articulated buses, forming a new BRT fleet, which may include fully electric buses
• Local intersection improvements for pedestrians and cyclists, plus transit signal priority measures
• Construction could start in 2019 and take 7 or 8 years to complete, in phases

Bus Rapid Transit Vehicles

• Modern high capacity buses
• Accessible, low-floor
• Bicycle-friendly
• Comfortable with enhanced passenger amenities
• Potential for electric buses
Dedicated lanes to:

- Ensure reliable service
- Avoid delays to auto traffic caused by bus boardings/alightings
- Flexibility to accommodate and optimize benefits of future modes (such as driverless vehicles)
- Context sensitive designs to create pedestrian friendly downtown zones
- Respect heritage constraints

Spacing:

- Average spacing is 740 metres (walking half-way will take 5 to 7 minutes)

Design Features:

- Attractive shelters
- Accessible
- Real time information
- Wayfinding
- Pedestrian and cycling connections
- Integrated design with surrounding community
Service frequency:
• North-and-East corridors: every 5 minutes
• South-and-West corridors: every 10 minutes

Integration with local services:
• Rapid Transit does not replace the current LTC bus system
• Local transit service will work together with Rapid Transit
• Combined transit service will increase by 35% between 2015 and 2035

City-wide Benefits of Rapid Transit
✓ RT will provide greater choice: Almost 40% of our future population and 60% of jobs will be within walking distance of BRT.
✓ RT will work together with Local Service to form an Integrated City-wide Network - Increasing service by 35% by 2035.
✓ RT will help ease congestion through Intelligent Transportation Systems (ITS).
✓ RT will save almost $300 million in road expansion projects over next 20 years.
✓ RT encourages growth, city-building and intensification.
✓ RT support a more sustainable and resilient community by reducing greenhouse gas emissions by more than 230,000 tonnes.
UPCOMING EVENTS

Public Workshop Stops & Streetscapes
November 15th | 4pm-8pm | 2nd Floor Central Library

Stakeholder Week Part II
November 21st – 22nd | Rapid Transit Office

Public Information Centers (PIC #5)
December 11th – 15th | Locations Across the City
Our Rapid Transit Initiative November 7, 2017

PUBLIC WORKSHOP STOPS & STREETSCAPES
NOVEMBER 15TH 4PM – 8PM | 2ND FLOOR CENTRAL LIBRARY

PUBLIC INFORMATION CENTRE
DECEMBER 11 - 15 | LOCATIONS ACROSS LONDON

Five meeting times will be offered the Week of December 11th.

Goals of PIC #5:
1) Present alternative design concepts along BRT corridors
2) Present assessment and analysis of impacts for concepts
3) Seek public's feedback to aid in evaluation of design concepts
Preliminary Phasing

Archaeology and Heritage: Approval Process & Legislation
Archaeology

Any activity carried out on, above or under land or water for the purpose of obtaining and documenting data from archaeological sites, including recovering artifacts. It includes monitoring, assessing, exploring, surveying, recovering and excavating (Ontario Heritage Act Regulation170/04).

Built Heritage

Built heritage means one or more significant buildings (including fixtures or equipment located in or forming part of a building), structures, monuments, installations, or remains associated with architectural, cultural, social, political, economic, or military history and identified as being important to a community. For the purposes of these Standards and Guidelines, “structures” does not include roadways in the provincial highway network and in-use electrical or telecommunications transmission towers.

Cultural Heritage Landscapes

Cultural heritage landscape means a defined geographical area of heritage significance that human activity has modified and that a community values. Such an area involves a grouping(s) of individual heritage features, such as structures, spaces, archaeological sites, and natural elements, which together form a significant type of heritage form distinct from that of its constituent elements or parts. Heritage conservation districts designated under the Ontario Heritage Act, villages, parks, gardens, battlefields, main streets and neighbourhoods, cemeteries, trails, and industrial complexes of cultural heritage value are some examples.

Cultural Heritage Value

While all archaeological and heritage resources contribute to our understanding of Ontario’s past, to warrant protection under the Ontario Heritage Act they must have cultural heritage value. This means one must value them for the important contribution they make to our understanding of the history of a place, an event or a people. The level of cultural heritage value associated with an archaeological resource may influence whether or not it meets the definition of an archaeological site under the Ontario Heritage Act and whether it will be conserved during land development activities. The ministry’s criteria for determining the cultural heritage value of archaeological resources include:

- **Information value**: The archaeological site contributes to the local, regional, provincial or national archaeological history.

- **Value to a community**: The archaeological site has intrinsic value to a particular community (such as an Aboriginal community, cultural or geographic group).

- **Value as a public resource**: The archaeological site enhances the public’s understanding and appreciation of Ontario’s past.

These **Aboriginal archaeological sites** always have cultural heritage value or interest:

- Paleo-Indian archaeological sites which represent Ontario’s earliest human occupants
- Large, dense lithic scatters, characterized by very high yields of stone artifacts
- Woodland-period archaeological sites from approximately 350 to 3,000 years ago
- Archaeological sites identified as sacred or burial sites.
Heritage Approval Process
Ontario Heritage Act (2005)

- The Ontario Heritage Act gives municipalities and the provincial government powers to preserve the heritage of Ontario, with a primary focus on protecting heritage properties and archaeological sites. The Ontario Heritage Act grants the authority to municipalities and to the province to identify and designate properties of heritage significance, provide standards and guidelines for the preservation of heritage properties and enhance protection of heritage conservation districts, marine heritage sites and archaeological resources.

- Part III.1 of the Ontario Heritage Act enables the preparation of standards and guidelines that set out the criteria and process for identifying provincial heritage properties (O. Reg. 10/06) and to set standards for their protection, maintenance, use, and disposal. The City of London has obligations under the Standards and Guidelines for the Conservation of Provincial Heritage Properties (Ministry of Tourism, Culture and Sport (MTCS 2010), requiring them to identify, protect and care for provincial heritage properties they own and manage.

Heritage Approval Process
Environmental Assessment Act (2009)

- The EAA outlines a planning and decision-making process to ensure that potential environmental effects are considered before a project begins. The EAA applies to provincial ministries and agencies, municipalities, and other public bodies. Certain “classes” of project can follow streamlined environmental assessment processes, such as the Transit Project Assessment Process (TPAP), as defined in O. Reg. 231/08 under the EAA.

- Transit projects, including the construction of new stations and facilities, and widening or expansion of linear components of the transit system, can directly or indirectly impact cultural heritage resources. As such, part of the TPAP is to determine whether landscapes and/or structures on or adjacent to the study area have or might have cultural heritage value or interest.
Heritage Approval Process
Provincial Policy Statement (2014)

2.6 Cultural Heritage and Archaeology

2.6.1 Significant built heritage resources and significant cultural heritage landscapes shall be conserved.

2.6.2 Development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved.

2.6.3 Planning authorities shall not permit development and site alteration on adjacent lands to protected heritage property except where the proposed development and site alteration has been evaluated and it has been demonstrated that the heritage attributes of the protected heritage property will be conserved.

2.6.4 Planning authorities should consider and promote archaeological management plans and cultural plans in conserving cultural heritage and archaeological resources.

2.6.5 Planning authorities shall consider the interests of Aboriginal communities in conserving cultural heritage and archaeological resources.

Heritage Approval Process
The London Plan (2016)

Cultural Heritage (Page 137)

In all of the planning and development we do, and the initiatives we take as a municipality we will:

1. Promote, celebrate, and raise awareness and appreciation of London’s cultural heritage resources.

2. Conserve London’s cultural heritage resources so they can be passed on to our future generations.

3. Ensure that new development and public works are undertaken to enhance and be sensitive to our cultural heritage resources.

“All efforts should be made to protect cultural heritage resources, including archaeological resources”
Archaeology and Heritage for Rapid Transit

Role of London Advisory Committee on Heritage

- Provide input to help us evaluate corridor designs and develop shelter and streetscape designs
- Share your concerns related to potential construction and operational impacts to heritage resources
- Review and comment on draft materials in advance of broader public meetings
- Consider the many elements within the road right-of-way that must be balanced to minimize negative impacts and provide high quality transit service
Heritage Assessment for Rapid Transit

- Cultural Heritage Constraints Report was completed and included as part of the Rapid Transit Master Plan
- Cultural Heritage Screening Report (CHSR) report will be prepared for the approved BRT network. Properties identified as being directly or indirectly impacted by the undertaking will receive specific analysis regarding impacts and mitigation. This report will be submitted to the Ministry of Tourism, Culture, and Sport for purposes of review and compliance.
- Cultural heritage specialists will work with architects and landscape designers to develop typical station designs to reflect London’s heritage.

Potential Resource Identification During CHSR

Screening for built heritage resources and cultural heritage landscapes proceeds in three main phases, plus a property visit to confirm existing conditions:

1. Research and documentation gathering;
2. Application of screening questions;
3. Property visit (if required); and
4. Recommended outcomes and reports.

The application of the screening questions from the MTCS Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes has the potential to identify properties requiring a Cultural Heritage Evaluation Report (CHER).
Archaeology Assessment for Rapid Transit

- Stage 1 Archaeological Assessment was completed and included as part of the Rapid Transit Master Plan
- Additional Stage 1 Archaeological Assessment will be completed for corridor changes
- Evaluation of design alternatives will consider archaeological impacts.
- Stage 2 Archaeological Assessment will be conducted for selected areas identified in Stage 1 - limited to areas around known cemeteries/church yards highlighted by City staff. Additional Stage 2 work may be required during detail design prior to construction, which will be indicated in the Environmental Project Report

Archaeology
Identifying and Testing Areas of Archaeological Potential

Predictive Model:
City of London Archaeological Master Plan
- Archaeological Master Plan provides baseline reference.

Stage 1: Background Research and Property Inspection
- Assessment of archaeological potential is completed for areas to be directly impacted by the project to ensure that no archaeological resources will be impacted.

Stage 2: Test Pit Survey or Monitoring
- Test pits are required every 5m in areas of archaeological potential (400 test pits per hectare).
Mitigation Toolbox: Potential Impacts (1 of 2)

- **Destruction, relocation or removal** of any, or part of any, heritage attribute or feature.
- **Alteration** (which means a change in any manner and includes restoration, renovation, repair or disturbance).
- **Shadows** created that alter the appearance of a heritage attribute or change the exposure or visibility of a natural feature or plantings, such as a garden.
- **Isolation** of a heritage attribute from its surrounding environment, context or a significant relationship.
Mitigation Toolbox: Potential Impacts (2 of 2)

- **Direct or indirect obstruction of significant views** or vistas from, within, or to a built or natural heritage feature.
- **A change of land use** such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open spaces.
- **Soil disturbance** such as change in grade, or an alteration of the drainage pattern, or excavation, etc.

Mitigation Toolbox: Best Management Practices (1 of 2)

The Ontario Ministry of Tourism, Culture and Sport provides eight (8) Best Management Practices (BMPs) for conservation towards built heritage:

1. Conservation work should be based on historic documentation such as historic photographs, drawings and physical evidence.
2. Do not move buildings unless there is no other means to save them.
3. Repair/conserve - rather than replace building materials and finishes, except where absolutely necessary.
4. Repair or return resources to its prior condition, without altering its integrity.
Mitigation Toolbox: Best Management Practices (2 of 2)

5. Do not destroy later additions to a building or structure solely to restore to a single time period.

6. Alterations should be able to be returned to original conditions. This conserves earlier building design and technique.

7. Buildings or structures should be recognized as products of their own time, and new additions should not blur the distinction between old and new.

8. Ease of maintenance for continuous care.

Mitigation Toolbox: Potential Mitigation Measures

Mitigation measures are related to the potential impacts and addressing BMPs. Some examples include:

Soil Disturbance: Potential of large machinery disturbing soil during construction

- Design and locate new infrastructure required along routes with existing trenches or with the largest setback from heritage buildings (centre of ROW within roadway) and along the least compact streetscapes wherever possible.
- Dust suppression activities to include wetting and use of dust suppressants such as calcium when proposed work is conducted during dry conditions.
- Negate construction methods not-suitable for work in small streetscape (such as blasting) to avoid damage from vibration and further disturbance to soil.
- BMP’s 1, 2, 4, 5, 8
Mitigation Toolbox: Potential Mitigation Measures (cont’d)

Soil Disturbance: Potential for soil disturbance near built heritage buildings

- Limit size of excavations and trenches to only a single face near built heritage. Provide 2m excavation set-backs from buildings where available.
- Prior to work, document pre-condition of historical buildings using a qualified heritage professional. Implement a building monitoring program during construction and provide necessary shoring to buildings for excavations deeper than building foundations. Shoring, bracing and underpinning to be designed by a professional Engineer Licensed in the Province of Ontario.
- Coordinate with City of London for pre and post condition assessment.
- BMP’s 1, 2, 4, 5, 8

Mitigation Toolbox: Potential Mitigation Measures (cont’d)

Destruction, Removal Or Relocation: Short-term exposure to heavy vibration/noise during construction

- Prior to work, document pre-condition of historical buildings using a qualified heritage professional. Follow Approach for Addressing Vibration Impact on Heritage Buildings for Appropriate Mitigation and implement a building monitoring program during construction to assess effects from exposure. Keep heavy equipment over existing roadways within ROW.
- Negate use of loud construction equipment which use powder actuated equipment. Conduct proposed work in accordance with City of London Noise by-laws.
- BMP’s 1, 2, 3

Regular visual inspections as part of a monitoring program during construction is always recommended to assess effects from disruption and access to built heritage.