Appendix B-11: Technical Agencies
Group Meeting Materials and Minutes
Technical Agencies Group Meeting
Summary Report for October 5, 2017 at 1:00 p.m.

On Thursday, October 5, 2017, the City of London hosted a meeting with the Technical Agencies Group (TAG). Agencies invited to attend TAG included those with approvals and/or a direct technical interest in the project (see attached list of attendees). The meeting was held at the Central Library, 251 Dundas Street, London. The meeting was hosted by a panel of staff from the City, LTC and the Consultant.

The meeting ran from 1:00 p.m. to 3:00 p.m. and a total of 20 representatives signed in at the meeting.

Project Director, Jennie Ramsay welcomed attendees and provided an introduction to the meeting, noting that City staff and the Consultant team are here to provide a project update and listen to comments and concerns.

Jennie Ramsay started the meeting with an overview of the project, including information on SHIFT and the approved Bus Rapid Transit network. The Group reviewed the elements of bus rapid transit systems with examples from other cities in North America and examined a sample of the Rapid Transit Master Plan concept drawings. Information on the Transit Project Assessment Process was provided, including anticipated timelines. Other information communicated to the Technical Agencies Group included:

- The current state of design is conceptual, and understanding concerns now will help to shape the preliminary engineering design to mitigate impacts.
- The Project Team is currently working on developing alternative design solutions for the 24 kilometre network with 9 focus areas identified as a priority.
- The role of the Technical Agencies Group was provided:
  - Ask questions and provide input to help us develop and evaluate designs and identify mitigation measures
  - Share your concerns related to potential construction and operational impacts
  - Bring information back to your agency at key points in the process
  - 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
Next steps include future meetings with the Technical Agencies Group to present technical recommendations and gather feedback.

For the latest information and updates visit the SHIFT website at www.SHIFTLondon.ca or contact the SHIFT project team at shift@london.ca or (519) 661-4889.

SHIFT is on social media: @shiftldnont

Throughout the meeting, attendees asked questions and provided feedback. The following summary of questions/comments and responses is a combination of the individual feedback and discussions. Many questions were focused on utility impacts. It was agreed that it is beneficial to meet with utilities as a group. Individual meetings are also planned with many of the agencies to discuss specifics.
<table>
<thead>
<tr>
<th>Question / Comment</th>
<th>Response</th>
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</thead>
<tbody>
<tr>
<td>How will public input be reflected during the study process?</td>
<td>Two Public Information Centres (PIC) are planned. PIC5 will allow the public to provide feedback on alternative design solutions before the Transit Project Assessment Process (TPAP) commences. PIC6 will allow the public to provide feedback on the preliminary engineering design and the draft EPR during the formal 120-day TPAP process.</td>
</tr>
<tr>
<td>How many meetings is this group expected to have?</td>
<td>The Project Team understands that there is overlap between the Technical Agencies Group and the Utilities Coordination Committee. The Project team recognizes the time commitment associated with attending both meetings, and are open to perhaps instituting a new RT Specific sub-committee or group to present information and gather feedback, as well as additional meetings with Technical Agencies Group.</td>
</tr>
<tr>
<td>How much is known about the utility relocations required?</td>
<td>Meetings are happening both internally at the City and with private utility companies to understand and coordinate utility works, and to confirm where relocations may be required. The lifecycle of public utilities is also being considered.</td>
</tr>
<tr>
<td>Are concrete foundations required for the stations?</td>
<td>The design of each station will be reviewed. A strategy has been developed and presented to the Utilities Coordination Committee, which can be presented again or circulated. The Project Team has been assembling information on the existing plant, which will be circulated to utilities to confirm.</td>
</tr>
<tr>
<td>Will above ground furniture/plant information be provided?</td>
<td>Yes, it will be shown on the Rapid Transit preliminary engineering design drawings.</td>
</tr>
<tr>
<td>How will the City be moving forward with plant changes?</td>
<td>The City currently comments on utility plans and notes where works are. The City plans to have additional staff to assist in the review, approval and coordination of Rapid Transit with other projects, including utilities.</td>
</tr>
<tr>
<td>When will the illumination design be developed?</td>
<td>The illumination design will be developed later on in this study phase, as the preliminary design is advanced.</td>
</tr>
<tr>
<td>Question / Comment</td>
<td>Response</td>
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<tr>
<td>Is there Hydro One infrastructure in the Rapid Transit corridors?</td>
<td>Yes, the Talbot Transformer Station, 230kv. Hydro One can provide some information on location and depth, but it should not be relied upon.</td>
</tr>
<tr>
<td>When will construction begin?</td>
<td>Quick start is proposed to start in 2019 with light surface improvements. Linear Rapid Transit infrastructure will start in 2020 in downtown and work towards the east corridor. There is no detailed construction timing yet, and phasing will be refined as the design develops.</td>
</tr>
<tr>
<td>What is the proposed construction phasing?</td>
<td>Construction timing will be coordinated with upcoming projects in an effort to avoid reconstructing recent work.</td>
</tr>
<tr>
<td>Will the City allow multiple utilities to work on the same site at the same time?</td>
<td>Yes, it is being considered, similar to the plans for Dundas Place. The City understands that each utility needs their own contractor to work on their own plant and that this will influence construction timing.</td>
</tr>
<tr>
<td>What structures will be impacted by the project?</td>
<td>The University Drive bridge, the bridge at Western Road over Medway Creek, the Western Road pedestrian tunnel, the Highbury Avenue overpass, the CN underpass, Clark’s bridge on Wellington Road at the Thames River and Kensington Bridge will be impacted. The Project Team is aware that utilities exist on the bridges. There was a request to provide for future utilities on these crossings.</td>
</tr>
<tr>
<td>Several private utilities noted concerns around capital and operating budgets, resources to design and construct, property acquisition, and the construction schedule.</td>
<td>The City will work with utilities to understand constraints and develop an implementation strategy that works for all involved. Property acquisition has begun with willing sellers. In many areas the design needs to be refined with input from utilities to confirm the extent of property required.</td>
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</tbody>
</table>
Technical Agencies Group: Meeting #1

TPAP Pre-Planning Consultation
October 2017
Agenda

1. Introductions
2. Study Overview & Process
3. Role of Technical Agencies Group
4. Review of RTMP Concept Drawings
5. Discussion and Questions
6. Next Steps
Introductions

Technical Agencies Group (TAG): Representatives from agencies, at the provincial, regional and local level, with direct interest or mandates related to technical aspects and/or approvals of the London Rapid Transit EA.

Jennie A. Ramsay, P.Eng.
Project Director, Rapid Transit
Environmental & Engineering Services
City of London
Ph. (519) 661-CITY (2489) ext. 5823
What is Shift?

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 in the next study phase.
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.
• The RTMP is wrapping up a 45-day Public Review Period.
• Feedback we’ve received will help to refine the conceptual level designs of the RTMP through the next phase of the study.
• Ontario’s EA Process for transit projects is structured into five technical phases.

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Needs and Justification</th>
<th>Completed with Approval of RTMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 2</td>
<td>Alternative Solutions</td>
<td></td>
</tr>
<tr>
<td>Phase 3</td>
<td>Pre-planning for TPAP</td>
<td>Current Project Assignment (TPAP)</td>
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<tr>
<td>Phase 4</td>
<td>TPAP &amp; Environmental Project Report</td>
<td></td>
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<tr>
<td>Phase 5</td>
<td>Implementation</td>
<td>Detailed Design &amp; Construction</td>
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</table>
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.
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.
Transit Project Assessment Process (TPAP)

We Are Here

Pre-Planning & Consultation

- Continue Environmental Studies
- Develop Alternative Designs
- Consult with Agencies, Aboriginal Communities, Stakeholders and the Public
- Assess Impacts & Mitigation
- Develop Preliminary Engineering Design
- Draft Environmental Project Report (EPR)

Transit Project Assessment Process

- Consult with Agencies, Aboriginal Communities, Stakeholders and the Public on Draft EPR and Preliminary Engineering Design
- Document findings in Final EPR

Notice of Commencement
120-days

Notice of Completion
30-days

Public Review of Final EPR & Opportunity for Objections
35-days

Minister’s Review & Decision (if objection received)

Statement of Completion
TPAP: Matters of Provincial Importance

- 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
Approved BRT Network

- 22.5 km of dedicated median 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
Study Process Summary

The following reports were developed based on the BRT network approved in the Rapid Transit Master Plan:

*Rapid Transit Corridors EA Project Management Plan: Updated and Expanded Scope*  
&  
*Shift Communications and Consultation Plan*

These reports were presented to Council in September 2017, and addresses both matters of provincial importance and due diligence for planning and design matters that address local public interests.

These reports are available on our website: [shiftlondon.ca](http://shiftlondon.ca)
Rapid Transit Corridors EA: Project Management Plan
Updated & Expanded Scope

- The Rapid Transit Corridors EA: Project Management Plan has been updated based on the approved Rapid Transit Master Plan (RTMP)
- The updated Project Management Plan provides a guide to remaining deliverables included in TPAP
- Planned technical studies include:
  - Civil and Structural engineering
  - Station and Streetscape design
  - Traffic modelling
  - Geotechnical and Contamination assessment
  - Utility impacts and stormwater management
  - Natural, social and economic assessments
  - Cultural heritage and archaeology
  - Noise, vibration, and air quality analysis
Rapid Transit Corridors EA: Project Management Plan
Updated & Expanded Scope

• A Consultation and Communications Plan was presented to Council in September 2017
• Consultation is planned in the coming months with residents, Aboriginal (First Nations) communities, government and technical agencies, and other stakeholders to develop the preliminary engineering design
• Creation of Community Stakeholders Group, Municipal Advisory Group, and Technical Agencies Group
• PIC #5 is planned for December 2017, prior to TPAP commencement
• PIC #6 is planned for May 2018, during the 120-day time-limited TPAP
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.
Focus Areas
Role of Technical Agencies Group

• Ask questions and provide input to help us develop and evaluate designs and identify mitigation measures
• Share your concerns related to potential construction and operational impacts
• Bring information back to your agency at key points in the process
• 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
RTMP Concept Drawings
Discussion and Questions
What’s Next?

- Meetings to gather information
- Technical work will continue, including traffic, natural environment, cultural heritage, utility and stormwater, among others
- Alternative designs will be developed
- Project team will evaluate the designs and make technical recommendations
- Meet with this group to present the technical recommendations and gather feedback
- Present a recommended design to the public at PIC #5 for review and feedback
Stay Connected

Website: shiftlondon.ca
Email: shift@london.ca
Technical Agencies Group Meeting

Summary Report for November 22, 2017

On Wednesday, November 22, 2017, the City of London hosted a meeting with the Technical Advisory Group (TAG) to provide an update on the progress of the SHIFT Rapid Transit project since the last meeting held October 5th, 2017. The meeting was held in the Stevenson & Hunt meeting room at the London Central Library and ran from 2:00 to 4:30 p.m.

The meeting was attended by agencies having an approval or technical interest in the project. A complete list of those in attendance at the November meeting is attached. The meeting was hosted by representatives of the City, LTC and the Consultant Team.

Jennie Ramsay, the SHIFT Project Director, welcomed attendees and provided an introduction to the meeting, the focus of which was outlined as:

a) Study Progress
b) Consultation Update
c) What we heard last time
   • Looking for more details on utility relocations required
   • Concrete foundations at stations
   • Implementation timing
   • Underground Services Coordination
   • Sample walk-through of utilities mapping
d) Focus Area Updates

The update on study progress focused on a review of the four options that have been developed for the Richmond Street corridor north of Oxford Street and two options for Richmond Street south of Oxford.

The four options north of Oxford included:

1) Two Lane Centre Running BRT;
2) Two Lane Curb-Side Running BRT;
3) Four Lane Centre Running BRT;
4) Four Lane Curb-Side Running BRT.

The two options for Richmond south of Oxford included:

1) Two Lane Centre Running BRT;
2) Four Lane Curb Side BRT.

The presentation looked at typical sections; station/platform configurations; intersection configurations and touched on the potential impacts, advantages and disadvantages associated with each option.

Although the Curb-Side and Centre Running configurations were presented in some detail for just the Richmond Street corridor, it was noted that these two different configurations are also being considered along other sections of the full 24 km of RT corridor. A decision on the final
configuration will be made after the public consultation process is completed in December and January.

IBI Group advised on the progress that has been made on utilities and underground services since the last meeting noting the following:

1) A complete inventory of municipal services has been completed for the entire 24km corridor; The inventory includes information of the asset condition, age, and material compiled from City of London GIS and asset rating data base;

2) An initial analysis has been completed to identify municipal services that will be in conflict with the proposed RT in accordance with the criteria that was previously developed and circulated;

3) That information is currently being reviewed by the City; In addition to the conflicts identified by IBI Group, the City will be completing its own evaluation of its infrastructure to determine what elements may need to be considered for replacement on the basis of infrastructure renewal or to service new growth;

4) Ultimately the intent is to develop an inventory of infrastructure works within the RT corridors with the trigger for works being identified as being RT related; growth related or infrastructure renewal.

The intent is to take a similar approach with private utilities – with IBI Group identifying those areas where potential conflicts are anticipated as a result of RT; it is then anticipated that each utility will review the information and provide its own evaluation of the extent of work that may be required as a result of the anticipated conflict. It was noted that the specific details regarding the plant in conflict (e.g. type/ material/size/# of cables/voltage/etc.) for each utility may not be known plus overhead facilities may also include plant from one or more communication company. It is expected that each utility company can add to the information and provide details.

In addition to RT conflicts, it is expected that each utility will add its own requirements with respect to infrastructure renewal/replacement and needs regarding future growth.

IBI provided a brief walk through of the spreadsheets and mapping that will be prepared for each utility. It is anticipated that this information will be completed the week of November 27th and circulated to each utility. The immediate objective is to obtain preliminary cost estimates for RT related utility works for inclusion in the TPAP EPR.

Throughout the meeting, attendees asked questions and provided feedback. The following summary of questions/comments and responses is a combination of the individual feedback and discussions:
<table>
<thead>
<tr>
<th>Question / Comment</th>
<th>Response</th>
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<tbody>
<tr>
<td>When will cost estimate information be required?</td>
<td>The EPR will be drafted early in the new year. The EPR will include updated cost estimates for the entire project and including utility relocations. Additional information on timing will be provided but at this time it is expected that cost estimates will be required by the end of January to mid-February.</td>
</tr>
<tr>
<td>There is a lot of utility work required. Utilities will need advance notice to allow for the budgeting, design and relocation of works. What information is known about the schedule and how utility works are to be handled?</td>
<td>A preliminary schedule for the implementation of RT was included in the Master Plan. Certainly, the impact on utilities could have an impact on schedule – and this will form part of the input into the current preliminary design process to refine the schedule going forward. Project procurement and delivery alternatives as well as construction alternatives could also have an impact on scheduling. All these items are up for review and some may not be resolved for some time. The intent is that a strong liaison will continue with all utilities in order that they are fully informed.</td>
</tr>
<tr>
<td>Will there be an opportunity to discuss and review cost sharing with the City?</td>
<td>Yes.</td>
</tr>
</tbody>
</table>
Agenda

1. Update On Project Status
2. Overview of City Utility Relocation Process
3. Rapid Transit and Utilities in Other Municipalities
4. Utility Review/Coordination Update
5. Discussion and Questions
6. Next Steps
Project Update

- Open Houses are scheduled for late February and early March

- Preliminary Preferred Design will be presented to Council in April 2018 (tentative) through the Draft Environmental Project Report

- 6-month Transit Project Assessment Process (TPAP) follows Council approval (through to Fall 2018)

- Detailed Design follows TPAP (2019)

- Quick Start (2019)
City Utility Relocation Process

Overview

Transportation Master Plan
- 2013 - BRT plan identified in 2030 Smart Moves
- 2014 - BRT corridor projects identified in Transportation DC -2014

RTMP & EA (2015-2018)
- 2015 – Master Plan initiated
- Utilities become key stakeholder
- 2017 – Master Plan approved and completed (routes and technology are selected)
- 2017/2018 EA Phase 3 begins
- Regular meetings held (UCC, TAG, one-to-one)
- Review of conflicts and establish high level estimates
- 2018 – EA Approval (Fall 2018)

We are here

Detailed Design (2019 – Future)
- As-Builds provided, regular coordination and regular meetings held with team
- Move Order issued
- Agreement Identified (MAA, Franchise, PSWHA, etc.)
- Work plan, cost estimated and completion date requested and produced
- Work with project team to coordinate construction timing/phasing

Implementation (2020-2028)
- Option 1 – Relocation of infrastructure prior to project construction
- Option 2 – Relocation of infrastructure under general contractor
Rapid Transit and Utilities in Other Municipalities

**Typical**
- Project initiated by Road Authority
- Region of Waterloo/Region of York/London
- Covered under the ACT (PSHWA)
- Utility relocations would fall under specific operating agreements with the City or default to PSHWA in absence of agreement (no different than what is done today)

**Atypical**
- Project initiated by an agency other than Road Authority
- Example - Metrolinx Project
- May not be covered under the ACT
- May require individual agreements and this is reviewed on, case by case basis
Utility Review/Coordination Update

- Information Provided

- Meetings Held: Union Gas, London Hydro, Bell;

- Required by **February 16th**:  
  - Confirmation of Conflicts  
  - Initial Cost Estimates  
  - Identification of Property Requirements

- Next Steps
Discussion, Questions and Next Steps
Stay Connected

Website: shiftlondon.ca

Email: shift@london.ca

Call: 519-930-3518

Facebook: shiftldnont
Twitter: @shiftldnont
Instagram: @shiftldnont
Thank you.
Date: Mar. 5, 2018  
Date of meeting: Mar. 1, 2018  
Location: London Public Library, Central Branch  
Time: 2:00pm – 3:00pm  
Purpose: Meeting with Technical Agencies Group (TAG) to provide an update on the BRT project and review the recommended conceptual design option that the City is moving forward with.

<table>
<thead>
<tr>
<th>Attendees</th>
<th>Organization</th>
<th>E-Mail</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashley Rammeloo</td>
<td>City of London</td>
<td><a href="mailto:arammelo@london.ca">arammelo@london.ca</a></td>
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<td>Ardian Spahiu</td>
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<td>Jaden Hodgins</td>
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<td>Joe Heyninck</td>
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<td>Margaret Parkhill</td>
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<tr>
<td>Mark Snowsell</td>
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<td>Rob Elliot</td>
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<td>Abdul Salak</td>
<td>Rogers</td>
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<td>Utility Rep</td>
</tr>
<tr>
<td>Richard Boniger</td>
<td>Rogers</td>
<td><a href="mailto:Richard.boniger@rci.rogers.com">Richard.boniger@rci.rogers.com</a></td>
<td>Utility Rep</td>
</tr>
</tbody>
</table>

Any omissions or errors in these notes should be forwarded to the author immediately.
Andrew Zuk | Bell | Andrew.zuk@bell.ca | Utility Rep
---|---|---|---
Rob Crichton | London District Energy | Roderick.crichton@londond e.ca | Utility Rep
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Ismail Sheikh | London Hydro | sheikhi@londonhydro.com | Utility Rep

**DISTRIBUTION:** All Attendees and the following: Jennie Ramsay (City), Brian Hollingsworth (IBI), Margaret Parkhill (IBI), Eric Peissel (WSP), Andrew Shea (WSP),

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
<th>Action By</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>City presented an update on the BRT project and highlighted the recommended preliminary design that the City is moving forward with; overview of upcoming project timelines and milestones: Environmental Project Report (EPR) to Council April 9, 2018, TPAP follows, etc.; summary of consultations and feedback; discussion of station features. City noted that cost estimates will not be reviewed in this meeting; City will be booking individual meetings with utility companies next week to review cost estimates provided.</td>
<td>INFO</td>
</tr>
<tr>
<td>2</td>
<td>IBI noted that they have received most of the cost estimates from utilities on time</td>
<td>CITY, IBI</td>
</tr>
</tbody>
</table>

Any omissions or errors in these notes should be forwarded to the author immediately.
and they and the City appreciate the efforts made by utility companies to compile this information. Cost estimates have not been received from London District Energy. IBI will meet with London District Heating early next week to review routes and potential conflicts.

The BRT design and preferred alternatives have developed since the engineering drawings were previously circulated to utility companies; therefore, the City & IBI will be assessing the changes/differences in the current drawings and the drawings that were previously provided. Overall the changes are minor.

City/IBI will be setting up individual meetings with utility companies starting next week.

<table>
<thead>
<tr>
<th>3</th>
<th>IBI/City have not shown all the property requirements on the BRT design drawings yet. To date they have assumed approximately 1.0m as a typical offset between the back of sidewalk and the proposed property limit to allow for utility surface elements such as poles, hydrants and pedestals.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In London Hydro’s assessment of impacts and preliminary cost estimates, they assumed a 1.5m corridor beyond the sidewalk. London Hydro will have to check with their Consulting Engineer regarding the 1.5m figure, however, this may be for aerial encroachment.</td>
</tr>
<tr>
<td></td>
<td>Rogers asked if this 1.5m utility corridor would be considered for buried utilities.</td>
</tr>
<tr>
<td></td>
<td>City advised that the corridor behind sidewalk is not specifically for buried utility running lines but essentially for the surface elements listed above.</td>
</tr>
<tr>
<td></td>
<td>Start.ca noted that ideally they would like a 2-3m utility corridor off the property line.</td>
</tr>
<tr>
<td></td>
<td>City advised that this is not greenfield development and there are a lot of property constraints and 2-3m is not realistic or feasible. City/IBI will proceed with 1.5m beyond sidewalk per the discussion for assessing future property needs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4</th>
<th>London Hydro inquired about the timing for the construction of the Adelaide grade separation project.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>City identified that this is planned for 2021, in advance of the north BRT corridor construction.</td>
</tr>
<tr>
<td></td>
<td>London Hydro inquired about the timing of the Wharncliffe &amp; Horton grade separation project.</td>
</tr>
<tr>
<td></td>
<td>City identified that the timing for his is similar to the Adelaide grade separation, but there would be coordination of these two projects so they are not at the same time and north-south traffic movements are not significantly impacted.</td>
</tr>
</tbody>
</table>

Any omissions or errors in these notes should be forwarded to the author immediately.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>London Hydro stated that they are inquiring about these projects because they also have significant impacts on London Hydro’s infrastructure. London Hydro expressed concern about the accumulative impact of all these projects from an engineering design and construction perspective and the need to coordinate the timing all these projects</strong></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td><strong>London Hydro expressed concern about the ability to complete road cuts for future servicing and maintenance of underground infrastructure, as the BRT lanes and centre median will impact their ability to manage traffic.</strong></td>
</tr>
<tr>
<td>6</td>
<td><strong>Start.ca requested more detail for King St between Wellington and Rectory. City noted that these drawings are available to Start.ca</strong></td>
</tr>
<tr>
<td>7</td>
<td><strong>Rogers inquired about the possibility of using the 1.5m centre median area for a utility corridor. City noted that this will not be used for a utility corridor; other than potentially locating City-owned utilities such as street lighting and communications. Maintenance would be an issue for private utilities in the centre of the road.</strong></td>
</tr>
<tr>
<td>8</td>
<td><strong>London Hydro inquired about lighting to stations and providing electrical servicing for these facilities. City/IBI advised that stations will be illuminated with lighting and it would most likely be powered through the grid (i.e. not solar). London Hydro requested to be involved more with coordinating power requirements for stations in the downtown area (with consideration of LH’s secondary network system downtown).</strong></td>
</tr>
<tr>
<td>9</td>
<td><strong>London Hydro inquired about potential electric vehicle charging requirements. This may have a big “pull” on London Hydro’s system. Again, LH would like to be included more in these discussions and planning. City noted that they are still early in the feasibility study for electric vehicles, and they will keep London Hydro posted on this.</strong></td>
</tr>
<tr>
<td>10</td>
<td><strong>Start.ca asked if new drawings would be provided through the FTP site. IBI responded that new drawings will be provided, but first need to review the changes, as per item #2</strong></td>
</tr>
</tbody>
</table>
The foregoing represents the author’s understanding of the major items of discussion and the decisions reached and/or future actions required. If the above does not accurately represent the understanding of all parties attending, please notify the author.

Minutes Prepared by:

Jaden Hodgins  
Engineer-in-Training  
Rapid Transit, City of London  
jhodgins@london.ca  
519-630-2736
Join us...

OPEN HOUSE
FEBRUARY 28 TO MARCH 3

View the latest plans for how Bus Rapid Transit (BRT) may fit within our neighbourhoods.

The City of London will present technically preferred options for the BRT network.

5 opportunities to explore and ask questions – pick the one that works for you!

- **February 28:**
  - 11 a.m. - 2 p.m.
  - Central Library, 251 Dundas St.
  - Presentation at 12 p.m.

- **February 28:**
  - 5:30 p.m. - 8:30 p.m.
  - Oakridge Secondary School
  - 1040 Oxford St. W.
  - Presentation at 6:30 p.m.

- **March 1:**
  - 5 p.m. - 8 p.m.
  - Western University, London Hall
  - 1140 Western Rd.
  - Presentation at 6 p.m.

- **March 3:**
  - 9 a.m. - 12 p.m.
  - Redeemer Evangelical Lutheran Church
  - 1 Frank Pl.
  - Presentation at 10 a.m.

- **March 3:**
  - 3 p.m. - 6 p.m.
  - Fanshawe College, H1013 Cafeteria
  - 1001 Fanshawe College Blvd.
  - Presentation at 4 p.m.

These are family-friendly events – feel free to bring your kids! If you require any special accommodation, please contact the Rapid Transit Office at shift@london.ca or 519-930-3518.

Visit shiftlondon.ca for full event details.
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Purpose of Open House

- To show the public the preferred design options for the BRT network and gather feedback to help refine the designs.
  - The Rapid Transit project team will bring these recommended designs forward to Council in the form of a Draft Environmental Project Report (EPR) on April 9.
  - Comments and feedback collected at the open house events will be included in the Draft EPR for Council and will be considered by the Project Team during the Transit Project Assessment Process (TPAP), which includes a formal consultation process.

- To share the preliminary design concepts for BRT stops.
Rapid Transit Timeline

**January 2015 to July 2017**

**Rapid Transit Master Plan**

Winter 2015
- The Rapid Transit Master Plan (RTMP) launches for London’s Rapid Transit initiative with the first Public Information Centre in February.

July 25, 2017
- City Council approves the Rapid Transit Master Plan (RTMP), which gives the green light to a BRT system and defines the BRT network.

**August 2017 to Spring 2018**

**Planning and Consultation Phase**
- Environmental Studies to assess potential impacts and mitigation.
- Consulting with the public, stakeholders, heritage experts, advisory committees, business and property owners, First Nations.

August 3 – September 18, 2017
- 45-day public review period for Londoners to give feedback on the RTMP.

December 9, 2017 – January 24, 2018
- BRT team hosts nine public consultation events to outline design options for key areas of the BRT network and gather feedback.

**We Are Here - February - March 2018**
- After refining the design options based on stakeholder input and key criteria, BRT team hosts five public events to present recommended designs to the public and collect feedback.

Spring 2018
- BRT team presents Draft Environmental Project Report (EPR) to City Council for review and approval. Report defines the BRT project and includes supporting studies and a consultation summary.

**Transit Project Assessment Process**

120 Days TPAP Consultation Period
- Consult with the public, property owners, business, regulatory agencies and First Nations communities.
- Prepare final Environmental Project Report.

Spring/Summer 2018
- Draft EPR is reviewed by Technical Agencies. Beginning of Transit Project Assessment Process (TPAP) – TPAP is a formal process for transit projects in Ontario with time-limited reviews and approvals.

Spring/Summer 2018
- The BRT team hosts Public Information Centre as part of formal 120-day TPAP consultation period to give Londoners another opportunity to provide input on the BRT plans.

30 Days Public Review

Fall 2018
- 30-day Public Review of Final EPR. Written objections on Matters of Provincial Importance can be made to the Ministry of Environment and Climate Change.

35 Days Minister Review

Fall 2018
- 35-days for Minister to consider the transit project. Minister of Environment and Climate Change makes decision and responds to any written objections.

Winter 2019
- BRT team moves into detailed design phase.

Design Phase

2019
- BRT team continues consultation with the public, property owners, businesses, regulatory agencies and First Nations communities to refine the detailed design.

Construction Phase

2019/20
- Shovels in the ground! Construction begins with quick-start elements of BRT in 2019, such as smart traffic signals. BRT route construction begins in 2020, with an expected 8-year timeline to complete the full 24-km network.
Why BRT for London?

Within the next two decades, London will grow by 84,000 people – which could mean more road congestion, greater urban sprawl, and increased expense to support our growing city.

- **35% increase in transit service** hours means less waiting for the bus.

- **230,000 tonnes less green house gas** emissions with BRT.

- **Reduced road widening requirements** along parallel corridors.

- **40% of Londoners** will have a BRT stop within walking distance of their home.

- **60% of Londoners** will be able to walk to work from new BRT stops and stations.

- **Revitalize 24 kms** of main arterials that serve as gateways into our City.
What is Bus Rapid Transit?

- **Dedicated lanes** – lanes that only buses can travel on – for more reliable service.
- **Frequent service**, with a bus every 5 to 10 minutes during rush hours.
- **Better connections** to local transit, with connecting service provided every 10 – 20 minutes.
- **Service is rapid and reliable** because buses aren’t stuck in congestion with regular traffic.
- **Smart signals** implemented city-wide will support smoother traffic flow for all commuters – on buses, in personal vehicles, and on bicycles.
What is Bus Rapid Transit?

Modern design features
• Accessible
• Real-time scheduling information
• Attractive shelters
• Pedestrian and cycling connections
• Integrated design with surrounding community

Frequent service
• 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 – it strengthens local service.
• Combined transit service will increase by 35% between 2015 and 2035.

Spacing of stops
• Average spacing is 705 metres (walking half-way will take 5 to 7 minutes)
BRT vehicle specifications

- Vehicles are high capacity, accessible and offer comfortable seating.
- Vehicles run primarily in dedicated lanes, but also have the flexibility to operate in mixed traffic.
- A bus running every 5 minutes per direction on the north corridor can move up to 1,320 people per direction per hour.
Recent Public Consultation

To gather public feedback on the BRT route design options, nine public information sessions were held between Dec. 9, 2017 and Jan. 24, 2018.

- **9 consultation events**
  between Dec. 9, 2017 – Jan. 24, 2018

- **789 attendees**

- **267 comments**
  received at the event

- **88 comments**
  received via email

- **325 Londoners**
  told us what features they’d like to see at BRT stops
Arriving at recommended design options

- Recommended designs are rooted in the following guiding principles for BRT, as laid out in the Rapid Transit Master Plan (RTMP):

- More than 25 criteria – ranging from natural and built heritage to safety and ease of construction – were considered during evaluation of the design options.

- Public and stakeholder input gathered during public information sessions, meetings, emails and discussions was critical to the determination of recommended design options.

- Many examples where public/stakeholder input has influenced the recommended designs.
Designs presented

The Public Information Centres hosted in December 2017 and January 2018 brought forward design options across the BRT network. The Open House events from February 28 to March 3 will bring forward recommended designs for the following key areas:

• Richmond Street North
• Richmond Row
• Dundas Street
• Wellington Road south
• Wellington Curve
• Oxford Street West
• Downtown Couple
• Turnarounds:
  - North
  - South
  - East
  - West

PLUS:
• Early concepts for BRT stops
Rapid Transit stop design

Along with public input, the project team considered the following elements in development of stop design concepts:

- **Protection from the weather.**
- **Adequate lighting.**
- **Provide map information.**
- **Protection from road splashes.**
- **Next bus information panel**
- **Resilient, high quality materials.**
- **Area for public art or heritage.**
- **Provide seating.**
- **Ease of maintenance from platform side.**
- **Canopy design that is contemporary and unique.**
- **Advertising panels for additional revenue.**
- **Provide space for conduits.**
- **Supportive of all types of mobility.**
- **Panel separations to be transparent with a distraction pattern.**
- **Designated areas with adequate corridor widths for accessibility.**
- **Enclosed heated area.**
Early concept for BRT stops

Public feedback helped shape design

- Over 325 surveys were received from Nov. 2017 to Jan. 2018, highlighting these elements as most important:
  1) Real-time bus information
  2) Fully enclosed shelter
  3) Benches
  4) Partially enclosed shelter
  5) Area maps with landmarks

Key considerations for stop design

- Sustainability, safety, accessibility, and design excellence.
- Stops will build on a neighbourhood’s assets and potential to make spaces that promote people's health, happiness, and well being.

Evolving design

- Preliminary design concepts for BRT stops have been developed, but these designs are not final – design will evolve based on public input and other technical criteria.
Early concept for BRT stops

This concept illustrates what shelters and platforms could look like, and confirms:

- Width of the sheltered area and platform width
- Passenger information, call buttons and other elements will always be located in the centre of the platform
- Access ramp and railings
- Location of stop name signage, lighting level (intensity of lighting), presence and location of tactile strips
Stop design will evolve

Design must be consistent across the City to make stops easy to find, but certain aspects can be customized:

• Materials, colours and finishes of platform surface and/or wall panels
• Art, neighbourhood maps or information and cultural heritage
• Canopy length, size of heated/enclosed area
• Placement and amount of benches and seating
• Height and length of panels at the back of the platform. Curbside platforms will have some panels removed so pedestrians can access the platform at multiple locations
• Amount of bicycle parking and on which sidewalk
• Curbside platforms can be narrower or integrated with sidewalk
RECOMMENDED DESIGNS
FOR NORTH CORRIDOR
RICHMOND STREET
Oxford St. to University Dr.

Recommended Design:
2 centre-running BRT lanes, 2 general traffic lanes

Feedback from stakeholders and the public:
• Minimize impacts to trees, driveways and properties
• Opinions differ regarding centre-running vs. curbside BRT
• Concerns about traffic conditions on Richmond and infiltration into surrounding neighbourhoods

Why is this design being recommended over the others?
• Offers the most reliable BRT service
• Fewer impacts to trees
• Less impacts to property than 4 general purpose lanes. Similar impact to property as curbside
• Safer due to protected left turns
• Lower cost
• Traffic can be accommodated by adding turn lanes to Richmond Street, and improvements to parallel corridors (e.g., Adelaide, Wharncliffe/Western Rd.)
• Most efficient option for winter maintenance and waste removal
RICHMOND STREET
Oxford St. to University Dr.
Recommended Design

2 centre-running BRT lanes, 2 general traffic lanes
(1 northbound, 1 southbound)
RICHMOND STREET: Traffic Impacts
Oxford St. to University Dr.

What will happen to traffic With 2 general traffic lanes?
A detailed traffic analysis was undertaken using a large area to assess trip diversions to other corridors, and a more focused assessment of the specific operations of Richmond Street.

Future traffic flows will be affected by changes to the road network:
- Widening of Western Road
- Closure of University Drive Bridge
- Opening of one lane on Blackfriars Bridge eastbound
- Grade separation of railway crossing at Adelaide Street
- Changes to traffic lanes resulting from Rapid Transit

Assessment of Impacts:
- Western Road and Adelaide Street accommodate traffic diversions
- Minimal through traffic from outside Old North diverted to local streets
- Reduced traffic capacity on Richmond Street, compared to today, induces minimal traffic diversion on parallel streets
- Travel time by car on Richmond Street increases by 1-1.5 minutes in peak hour with minimal impacts outside of rush hour
- Traffic impacts for centre vs. curbside transit lanes are similar
Richmond Street Options: Oxford Street to University Drive

Existing Conditions:
- No right-turn lanes
- Left-turn lanes only at Grosvenor and University

RECOMMENDED: Option 1:
- 2 centre-running BRT lanes (1 north, 1 south)
- Raised median
- 2 general traffic lanes (1 north, 1 south)

Option 2:
- 2 curb-side BRT lanes (1 north, 1 south)
- 2 general traffic lanes (1 north, 1 south)
- 1 centre left-turn lane

Option 3:
- 2 centre running BRT lanes (1 north, 1 south)
- Raised median
- 4 general traffic lanes (2 north, 2 south)

Option 4:
- 2 curb-side BRT lanes (1 north, 1 south)
- 4 general traffic lanes (2 north, 2 south)
- 1 centre left-turn lane

See over for comparison of these options.
### Comparison of Richmond Street Options: Oxford Street to University Drive

<table>
<thead>
<tr>
<th></th>
<th>RECOMMENDED</th>
<th>Option 2: 2 Curb BRT 2 general traffic lanes</th>
<th>Option 3: 2 Centre BRT 4 general traffic lanes</th>
<th>Option 4: 2 Curb BRT 4 general traffic lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Least Property Impacts</strong></td>
<td></td>
<td>Requires frontage from 25 properties, and 5 full properties</td>
<td>Requires frontage from 18 properties, and 5 full properties</td>
<td>Requires frontage from 21 properties, and 9 full properties</td>
</tr>
<tr>
<td><strong>Least Tree Impacts</strong></td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Impacts 90-100 trees (estimated)</td>
<td>Impacts 70-80 trees (estimated)</td>
<td>Impacts 170-180 trees (estimated)</td>
</tr>
<tr>
<td><strong>Least Cultural/Built Heritage Impacts</strong></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Potential for impacts 3 heritage properties</td>
<td>Potential for impacts 3 heritage properties</td>
<td>Potential for impacts 3 heritage properties</td>
</tr>
<tr>
<td><strong>Safer Left-turns</strong></td>
<td>✔</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Options 1 and 3 have fewer conflicts between left-turning and through vehicles, meaning safer left-turns.</td>
<td></td>
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</tr>
<tr>
<td><strong>More Reliable Rapid Transit</strong></td>
<td>✔</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Options 1 and 3 have more reliable rapid transit service with less interaction between buses and turning / stopping cars and trucks.</td>
<td></td>
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<tr>
<td><strong>Easier Mid-block Access</strong></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
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<tr>
<td></td>
<td></td>
<td>Options 2 and 4 have easier access to unsignalized side streets and driveways from the centre two-way left-turn lane.</td>
<td></td>
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</tr>
<tr>
<td><strong>Efficient Winter Maintenance</strong></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Options 1 and 3 have more efficient winter maintenance with transit lanes in the centre maintained first.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Efficient Local Transit Operations</strong></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Options 1 and 3 have more efficient local transit</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Efficient Waste Removal</strong></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Options 1 and 3 have more efficient waste removal with transit in the centre and waste removal at the curb.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Relative Cost to Construct</strong></td>
<td>$</td>
<td></td>
<td>$$</td>
<td>$$</td>
</tr>
<tr>
<td><strong>Project Team Assessment of Public Feedback</strong></td>
<td>✔</td>
<td></td>
<td></td>
<td>✔</td>
</tr>
</tbody>
</table>

*NOTE: Placement of transit lanes must match Richmond Street south of Oxford Street.*
RICHMOND STREET
Central Ave. to Oxford St. W.

Recommended Design:
2 centre-running BRT lanes, 2 general traffic lanes

Feedback from stakeholders and the public:
• Pedestrian and cycling safety is important
• Traffic capacity reduction is a concern
• On-street parking and loading is needed
• Need to address business impacts during construction
• Questions about walking distance to Rapid Transit stops and removal of existing local transit stops
• Potential transit delays at CP Rail crossing

Why is this design being recommended over the others?
• Offers most reliable BRT service because BRT is separated from curbside activities
• Potential to accommodate some on-street parking and loading in the form of bays
• Consistent with transit lane configuration north of Oxford Street
• Traffic can be accommodated on parallel corridors
• Most efficient option for winter maintenance and waste removal

The City will continue to work with business owners throughout the process to help mitigate impacts during construction.
RICHMOND STREET
Central Ave. to Oxford St. W.
Recommended Design

2 centre-running BRT lanes, 2 general traffic lanes
(1 northbound, 1 southbound)
Comparison of Richmond Street Options: Central Avenue to Oxford Street

<table>
<thead>
<tr>
<th></th>
<th>RECOMMENDED</th>
<th>Option 2:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Option 1: 2 Centre BRT 2 general traffic lanes</td>
<td>2 Curb BRT 2 general traffic lanes</td>
</tr>
<tr>
<td>Least Property Impacts</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Both options result in comparable impacts to adjacent properties.</td>
<td></td>
</tr>
<tr>
<td>Least Tree Impacts</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Neither option results in significant impacts to trees in the corridor.</td>
<td></td>
</tr>
<tr>
<td>Least Cultural/Built Heritage Impacts</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Both options result in comparable impacts to cultural and built heritage resources in the corridor.</td>
<td></td>
</tr>
<tr>
<td>Safer Left-turns</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Option 1 has fewer conflicts between left-turning and through vehicles, meaning safer left-turns.</td>
<td></td>
</tr>
<tr>
<td>More Reliable Rapid Transit</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Option 1 has more reliable rapid transit service with less interaction between buses and turning / stopping cars and trucks.</td>
<td></td>
</tr>
<tr>
<td>Easier Mid-block Access</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Option 2 has easier access to unsignalized side streets and driveways from the centre two-way left-turn lane.</td>
<td></td>
</tr>
<tr>
<td>Efficient Winter Maintenance</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Option 1 has more efficient winter maintenance with transit lanes in the centre maintained first.</td>
<td></td>
</tr>
<tr>
<td>Efficient Local Transit Operations</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Option 1 has more efficient local transit</td>
<td></td>
</tr>
<tr>
<td>Efficient Waste Removal</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Option 1 has more efficient waste removal with transit in the centre and waste removal at the curb.</td>
<td></td>
</tr>
<tr>
<td>Relative Cost to Construct</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Project Team Assessment of Public Feedback</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

NOTE: Placement of transit lanes must match Richmond Street north of Oxford Street.

See over for details on each option.
NORTH TURNAROUND

Recommended Design:
Expand the existing transit terminal

Feedback from stakeholders and the public:
• Make it easy to transfer between local and Rapid Transit service

Why is this design being recommended over the others?
• Offers the most reliable BRT service
• Most balanced walking distance to existing and future developments
• Easy transfers from local to Rapid Transit service
• Lower cost than new terminal; reduces throw away costs
• Easiest to implement for opening day
• Allows for integration of Rapid Transit with future Transit Village development

This design is being developed in consultation with Masonville Place.
Richmond Street Options: Central Avenue to Oxford Street

Existing Conditions:
- No right-turn lanes
- Left-turn lanes at Oxford Street West, Pall Mall Street and Central Avenue

RECOMMENDED: Option 1:
- 2 centre-running BRT lanes (1 north, 1 south)
- Raised median
- 2 general traffic lanes (1 north, 1 south)

Option 2:
- 2 curb-side BRT lanes (1 north, 1 south)
- 2 general traffic lanes (1 north, 1 south)
- 1 centre left-turn lanes

See over for comparison of these options.
RECOMMENDED DESIGNS FOR SOUTH CORRIDOR
WELLINGTON ROAD
Base Line Rd. to Bradley Ave.

Recommended Design:
2 centre-running BRT lanes, 4 general traffic lanes

Feedback from stakeholders and the public:
• Questions about left turn operation
• Opinions differ regarding centre-running vs. curbside BRT
• Cycling facilities would be appreciated

Why is this design being recommended over the others?
• Offers more reliable BRT service
• Consistent with vision for Wellington Road as a “major gateway street”
• Fewer property impacts
• Safer due to protected left turns
• More efficient winter maintenance
• Increased transit reliability
• Lower cost
• Comparable tree impacts
WELLINGTON ROAD
Base Line Rd. to Bradley Ave.
Recommended Design

2 centre-running BRT lanes, 4 general traffic lanes
(2 northbound, 2 southbound)
Wellington Road Options: Base Line Road to Bradley Avenue

Existing Conditions:
- 4 to 6 general traffic lanes (2 or 3 lanes per direction)
- Turn lanes at intersections and some driveways
- Raised median in some sections, centre left-turn lane in other sections
- Left-turn and right-turn lanes at intersections and some driveways
- Bus bays for some transit stops

RECOMMENDED: Option 1:
- 2 centre-running BRT lanes (1 north, 1 south)
- Raised median
- 4 general traffic lanes (2 north, 2 south)

Option 2: Curb BRT
- 2 curb-side running BRT lanes (1 north, 1 south)
- 4 general traffic lanes (2 north, 2 south)
- 1 centre left-turn lane

See over for comparison of these options.
## Comparison of Wellington Road Options:
### Base Line Road to Bradley Avenue

<table>
<thead>
<tr>
<th></th>
<th>RECOMMENDED</th>
<th>Option 2: 2 Curb BRT 4 general traffic lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Least Property Impacts</em></td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Requires frontage from 4 properties.</td>
<td></td>
<td>Requires frontage from 7 properties.</td>
</tr>
<tr>
<td><em>Least Tree Impacts</em></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Impacts less than 5 trees (estimated)</td>
<td></td>
<td>Impacts less than 5 trees (estimated)</td>
</tr>
<tr>
<td>Safer Left-turns</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Option 1 has fewer conflicts between left-turning and through vehicles, meaning safer left-turns.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More Reliable Rapid Transit</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Option 1 has more reliable rapid transit service with less interaction between buses and turning / stopping cars and trucks.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easier Mid-block Access</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Option 2 has easier access to unsignalized side streets and driveways from the centre two-way left-turn lane.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficient Winter Maintenance</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Option 1 has more efficient winter maintenance with transit lanes in the centre maintained first.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficient Local Transit Operations</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Option 1 has more efficient local transit.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distinguishes Wellington Road as a Gateway</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Centre BRT lanes provides more distinction to Wellington Road as a Major Gateway Street.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easier access for Emergency Vehicles</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Option 2 has easier access to properties from the centre two-way left-turn lane.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative Cost to Construct</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Project Team Assessment of Public Feedback</td>
<td></td>
<td>No clear preference.</td>
</tr>
</tbody>
</table>

*See over for details on each option.*
WELLINGTON CURVE
South of the Thames River to Base Line Rd.

Recommended Design:
Lengthen the curve by strategically widening to balance impacts on both sides

Feedback from stakeholders and the public:
• Minimize impacts to St. Andrew Memorial Church
• Questions about City’s process for addressing property impacts
• Differing opinions on which side should be widened
• The existing curve needs improvement

Why is this design being recommended over the others?
• Safer movement of all vehicles due to longer horizontal curves and protected left turns
• Fewer impacts to trees
• Most efficient option for winter maintenance and waste removal
• Reduces impact to Lutheran Church

All options for this focus area have significant property impacts. The City will continue to work with property owners throughout the process.
WELLINGTON CURVE
South of the Thames River to Base Line Rd.
Recommended Design

2 centre-running BRT lanes, 4 general traffic lanes
(2 northbound, 2 southbound)
Wellington Road at Commissioners Road, looking north
Wellington Curve Options:
South of the Thames River to Base Line Road

Existing Conditions:
- 4 general traffic lanes (2 north, 2 south)
- No right-turn lanes
- Left-turn lanes only at Base Line and Grand Ave

Option 1: Widen to the east
- 2 centre-running BRT lanes (1 north, 1 south)
- Raised median
- 4 general traffic lanes (2 north, 2 south)

RECOMMENDED: Option 2: Lengthen the curve
- 2 centre-running BRT lanes (1 north, 1 south)
- Raised median
- 4 general traffic lanes (2 north, 2 south)

Option 3: Widen to the west
- 2 centre-running BRT lanes (1 north, 1 south)
- Raised median
- 4 general traffic lanes (2 north, 2 south)

See over for comparison of these options.
## Comparison of Wellington Curve Options: South of the Thames River to Base Line Road

<table>
<thead>
<tr>
<th></th>
<th>Option 1: Widen to the east</th>
<th>RECOMMENDED Option 2: Lengthen the curve</th>
<th>Option 3: Widen to the west</th>
</tr>
</thead>
<tbody>
<tr>
<td>Least Property Impacts</td>
<td></td>
<td>Requires 41 full properties</td>
<td>Requires 35 full properties</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Requires 38 full properties</td>
<td></td>
</tr>
<tr>
<td>Least Tree Impacts</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Least Cultural/Built Heritage Impacts</td>
<td></td>
<td>Requires 35 full properties</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential for impacts to 1 heritage property</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optimized Horizontal Alignment</td>
<td></td>
<td>Option 2 has the longest horizonal curves, which will help all vehicles move through this area, including buses and trucks.</td>
<td></td>
</tr>
<tr>
<td>More Reliable Rapid Transit</td>
<td></td>
<td>All options support reliable rapid transit with less interaction between buses and turning / stopping cars and trucks.</td>
<td></td>
</tr>
<tr>
<td>Supports Appropriate Growth</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>All options support appropriate growth along the Rapid Transit corridor.</td>
<td></td>
</tr>
<tr>
<td>Least Grading Impacts or Retaining Walls</td>
<td></td>
<td>New retaining wall near to existing wall at Lutheran Church</td>
<td>Maintains existing retaining wall location at Lutheran Church</td>
</tr>
<tr>
<td>Relative Cost to Construct</td>
<td></td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Project Team Assessment of Public Feedback</td>
<td></td>
<td>No clear preference.</td>
<td></td>
</tr>
</tbody>
</table>
South Turnaround

**Recommended Design:**
Combined platforms for Rapid Transit and local transit on Wellington Road at White Oaks signalized intersection

**Feedback from stakeholders and the public:**
- Need to make transfers easy between local and Rapid Transit
- Concerns over pedestrian safety across parking lots

**Potential Park-and-Ride**
- City is working with MTO to develop a Park-and-Ride on Exeter Road.
- Considerations include: traffic, flood areas, available property and transit operations.

**Why is this design being recommended over the others?**
- Best facilitates transfers from local to Rapid Transit service
- Simple operation for up to 6 local routes and BRT service to turn around using Holiday Avenue and existing signalized access
- Consistent with Transit Village in The London Plan
- Can provide driver facility at this end-of-route
RECOMMENDED DESIGNS FOR WEST CORRIDOR
OXFORD STREET WEST
Platt’s Lane to Wharncliffe Road

Recommended Design:
2 centre-running BRT lanes, 4 general traffic lanes

Feedback from stakeholders and the public:
• Minimize impacts to trees and properties, including heritage properties
• Questions about today’s high traffic volumes and neighbourhood infiltration
• Questions about left turn operation

Why is this design being recommended over the others?
• Offers the most reliable BRT service
• Most efficient option for winter maintenance and waste removal
• Curbside has similar impacts to property, utilities and trees, and similar cost, but less reliable transit service
• All options have similar impacts to listed and designated heritage properties
OXFORD STREET WEST
Platt’s Lane to Wharncliffe Road
Recommended Design

2 centre-running BRT lanes, 4 general traffic lanes
(2 eastbound, 2 westbound)
Oxford Street West Options: Platt’s Lane to Wharncliffe Road

Existing Conditions:
- 4 general traffic lanes (2 east, 2 west)
- Left-turn lane at Summit Avenue and Fernley Avenue

Option 1: Mixed Use
- 4 general traffic lanes (2 east, 2 west)
- Raised median
- Transit operates in general traffic lanes

RECOMMENDED: Option 2: Centre
- 2 centre-running BRT lanes (1 east, 1 west) from Platt’s Lane to Gower Street
- 4 general traffic lanes (2 east, 2 west)
- Raised median

Option 3: Curb BRT
- 2 curb-side BRT lanes (1 east, 1 west) from Summit Avenue to Rathnally Street
- 4 general traffic lanes (2 east, 2 west)
- Raised median
## Comparison of Oxford Street West Options: Platt’s Lane to Wharncliffe Road

<table>
<thead>
<tr>
<th></th>
<th>Option 1: Mixed Use of 4 general traffic lanes</th>
<th>RECOMMENDED Option 2: 2 Centre BRT 4 general traffic lanes</th>
<th>Option 3: 2 Curb BRT 4 general traffic lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Least Property Impacts</strong></td>
<td>✅</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Requires 6 full properties.</td>
<td>Requires 10 full properties.</td>
<td>Requires 10 full properties.</td>
<td></td>
</tr>
<tr>
<td><strong>Least Tree Impacts</strong></td>
<td>✅</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impacts 5 to 15 trees (estimated)</td>
<td>Impacts 20 to 30 trees (estimated)</td>
<td>Impacts 20 to 30 trees (estimated)</td>
<td></td>
</tr>
<tr>
<td><strong>Least Cultural/Built Heritage Impacts</strong></td>
<td>✅</td>
<td>✅</td>
<td>✅</td>
</tr>
<tr>
<td>All options impact 7 listed properties and 1 designated property.</td>
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</tr>
<tr>
<td><strong>Efficient Waste Removal</strong></td>
<td>✅</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option 2 has more efficient waste removal with transit in the centre and waste removal at the curb.</td>
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</tr>
<tr>
<td><strong>Relative Cost to Construct</strong></td>
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<td><strong>$</strong></td>
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</tr>
<tr>
<td><strong>Project Team Assessment of Public Feedback</strong></td>
<td>✅</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
West Turnaround

**Recommended Design:**
Combined Rapid Transit and local transit stop on Capulet Lane with on-street Rapid Transit platforms at Wonderland

**Feedback from stakeholders and the public:**
- Concerns over noise and air quality from buses
- Need to make transfers easy between local and Rapid Transit

**Why is this design being recommended over the others?**
- Additional Rapid Transit stop shortens the walking distance to existing high density residential area
- Easy transfers from local to Rapid Transit service
- Simple operation for both Oxford Express and BRT service to turn using Capulet Walk & Capulet Lane
- Consistent with Transit Village in The London Plan
- Can provide driver facility at this end-of-route
RECOMMENDED DESIGNS
FOR EAST CORRIDOR AND COUPLET
Dundas Street

Dundas Street is a critical link in the City’s proposed Rapid Transit Network, connecting downtown London and Old East Village with employment lands to the east and Fanshawe College.

The project team considered options for both centre-running and curbside BRT in the East Corridor.

An assessment of the benefits and drawbacks of each option indicated that the curbside BRT option would result in significant conflicts with the underground hydro facilities, resulting in considerable costs and delays. This option was thus eliminated from further consideration.

The project is therefore proceeding with a centre-running BRT configuration on Dundas Street.
East Turnaround

**Recommended Design:**
Expand the existing transit terminal

**Feedback from stakeholders and the public:**
- Pedestrian safety is important
- Design needs to accommodate campus development
- Transit service to airport should remain and be improved

**Why is this design being recommended over the others?**
- Easy transfers from local to Rapid Transit service
- Reduces pedestrian crossings of Oxford Street West
- Local transit service to the airport can be maintained and expanded in future

Note: Access to Ayreswood Avenue will be restricted to right-in/right-out movements.
This design is being developed in consultation with Fanshawe College.