North Turnaround

**Shared Local / Rapid Transit Terminal Options**

1. Expand Existing Transit Terminal or,  
   *Relocate Transit Terminal to:*
   2. South of Hillview Boulevard, East Side;  
   3. Sunnyside Drive; or,  
   4. South of Hillview Boulevard, West Side

**Rapid Transit On-Street Option**

5. Maintain existing transit terminal for local services, and operate BRT services in an on-street loop

---

### Option 1:

**Benefits**

- Low cost  
- Most balanced walking distance to area developments  
- Best facilitates transfers from local to rapid transit services

**Challenges**

- Occupies highly-desirable developable area  
- Displaces 5-10 existing parking spaces  
- Close proximity to busy Fanshawe Park Road / Oxford Street intersection

### Option 2:

**Benefits**

- Reasonable walking distance to area developments  
- Best facilitates transfers from local to rapid transit services

**Challenges**

- High cost  
- Occupies highly-desirable developable area  
- Displaces 70-80 existing parking spaces (est.)  
- Restricts left-turn movements at intersection for general traffic

### Option 3:

**Benefits**

- Best facilitates transfers from local to rapid transit services

**Challenges**

- High cost  
- Poor walking distance to area developments  
- Displaces 5-10 existing parking spaces (est.)  
- Restricts left-turn movements at intersection for general traffic

### Option 4:

**Benefits**

- Acceptable walking distance to area developments  
- Best facilitates transfers from local to rapid transit services

**Challenges**

- High cost  
- Occupies highly-desirable developable area  
- Displaces 5-10 existing parking spaces (est.)  
- Restricts left-turn movements at intersection for general traffic

### Option 5:

**Benefits**

- Low cost  
- Least impact on developable property

**Challenges**

- Least convenient passenger transfers between local and rapid transit services  
- Significant out-of-way travel and additional travel time for rapid transit services
The proposed Rapid Transit route through Western University would connect Richmond Street with Western Road, supporting a reduction of car traffic on the Western University campus.
Existing Conditions:
- No right-turn lanes
- Left-turn lanes only at Grosvenor and University

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
Richmond Street: Traffic

A detailed traffic analysis was undertaken to measure and compare traffic and transit operations.

The analysis considered a large area to assess trip diversions to other corridors, and a more focused assessment of the specific operations of Richmond Street under the proposed design options.

**Future traffic flows will be affected by:**
- The widening of Western/Wharncliffe from Platt’s Lane to Oxford Street
- The closure of Western University’s campus to through traffic, notably the University Drive Bridge
- The changes to traffic lanes resulting from Rapid Transit

Each of these projects influences traffic patterns and flows. It is important to understand the cumulative effects and not just the impact of one project.

**Methodology:**
- Results based on traffic simulation model calibrated to existing traffic conditions
- Changes to 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

**Context:**
- One traffic lane on an arterial road can typically handle 800-950 cars per hour. The presence of right and left turn lanes can increase capacity by 20%.
- Current peak hour traffic on Richmond Street is up to 1375 cars over 2 lanes in peak direction (at University Drive)
- Results are based on current traffic volumes (everyone who is driving today continues to drive)
- Results for morning rush hour are of similar scale, peak is southbound in morning
Richmond Street: Traffic Impacts

Options 1 and 2: 2 general traffic lanes (1 north, 1 south) compared to current conditions in the afternoon rush hour

- Planned traffic restrictions through Western University shifts some traffic to Richmond North (+200 cars NB; +16%)
- Primarily localized traffic changes and non-RT related
- Northbound travel time by car increases by 1-1.5 minutes in PM rush hour
- Minor impacts to southbound direction

Assessment of Impacts:
- Improved Western Road and Adelaide Street accommodate broader 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 median BRT vs. curbside transit lanes are similar

Changes in traffic vs. today
- Increase
- Decrease

- Approximately 260 cars choose routes other than Richmond Street due to capacity reductions
- Traffic diverts to Adelaide Street and Western Road
- Improved Western Road attracts majority of traffic diverted from Richmond Street (+250 cars)
- Blackfriars Bridge open to eastbound traffic
- Minor diversion of local traffic to parallel streets (30-75 cars) on St. George, Waterloo and Colborne Street (today’s volume is 100-300 cars)
- Local streets do not see increases in “non-Neighbourhood” traffic
- Northbound travel time by car increases by 1-1.5 minutes in PM rush hour
- Minor impacts to southbound direction

Changes in traffic vs. today:

<table>
<thead>
<tr>
<th>Increase</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor diversion of local traffic to parallel streets (30-75 cars) on St. George, Waterloo and Colborne Street (today’s volume is 100-300 cars)</td>
<td>Local streets do not see increases in “non-Neighbourhood” traffic</td>
</tr>
<tr>
<td>Improved Western Road attracts majority of traffic diverted from Richmond Street (+250 cars)</td>
<td>Northbound travel time by car increases by 1-1.5 minutes in PM rush hour</td>
</tr>
<tr>
<td>Blackfriars Bridge open to eastbound traffic</td>
<td>Minor impacts to southbound direction</td>
</tr>
</tbody>
</table>
Richmond Street: Traffic Impacts

Options 3 and 4: 4 general traffic lanes (2 north, 2 south) compared to current conditions in the afternoon rush hour

Assessment of Impacts:
- Improved Western Road and Adelaide Street accommodate broader traffic diversions
- Richmond Street provides similar traffic capacity as today, therefore minimal changes in traffic patterns are observed due to rapid transit
- Travel time by car on Richmond Street increases by 0.5 - 1 minutes in peak hour with minimal impacts outside of rush hour
- Traffic impacts for median BRT vs. curbside transit lanes are similar
- Compared to Option 1 and 2, peak traffic volumes on Richmond Street differ by 250 cars (about one-third to one-half of a full lane)
# Richmond Street: Comparison

**Oxford Street to University Drive**

*Placement of Transit Lanes Must Match Richmond South of Oxford*

<table>
<thead>
<tr>
<th></th>
<th>Option 1: 2 Centre BRT 2 general traffic lanes</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></td>
<td></td>
<td></td>
</tr>
<tr>
<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>
<td>Requires frontage from 18 properties, and 7 full properties</td>
</tr>
<tr>
<td><strong>Least Tree Impacts</strong></td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Impacts 90-100 trees (estimated)</td>
<td>Impacts 70-80 trees (estimated)</td>
<td></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>Potential for impacts 3 heritage properties</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>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Options 1 and 3 have fewer conflicts between left-turning and through vehicles, meaning safer left-turns.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>More Reliable Rapid Transit</strong></td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<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>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Easier Mid-block Access</strong></td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<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>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Efficient Winter Maintenance</strong></td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<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>
<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>Options 1 and 3 have more efficient local transit</td>
<td></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>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>
<td></td>
</tr>
</tbody>
</table>
Richmond Street
Oxford Street to University Drive

Your Thoughts?

Property Impacts

Tree Impacts

Cultural and Built Heritage Impacts

Traffic and Transit Impacts

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

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
# Richmond Street: Comparison
Central Avenue to Oxford Street

Placement of Transit Lanes Must Match Richmond North of Oxford

<table>
<thead>
<tr>
<th></th>
<th>Option 1: 2 Centre BRT 2 general traffic lanes</th>
<th>Option 2: 2 Curb BRT 2 general traffic lanes</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>
Richmond Street
Central Avenue to Oxford Street
Your Thoughts?

Property Impacts

Tree Impacts

Cultural and Built Heritage Impacts

Traffic and Transit Impacts

Operation Impacts and Benefits
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

Option 1: Centre BRT
- 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
### Wellington Road: Comparison
Base Line Road to Bradley Avenue

<table>
<thead>
<tr>
<th></th>
<th>Option 1: 2 Centre BRT 4 general traffic lanes</th>
<th>Option 2: 2 Curb BRT 4 general traffic lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Least Property Impacts</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td></td>
<td>Requires frontage from 4 properties.</td>
<td>Requires frontage from 7 properties.</td>
</tr>
<tr>
<td>Least Tree Impacts</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td></td>
<td>Impacts less than 5 trees (estimated)</td>
<td>Impacts less than 5 trees (estimated)</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>Distinguishes Wellington Road as a Gateway</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Centre BRT lanes provides more distinction to Wellington Road as a Major Gateway Street.</td>
<td></td>
</tr>
<tr>
<td>Easier access for Emergency Vehicles</td>
<td></td>
<td>☑</td>
</tr>
<tr>
<td></td>
<td>Option 2 has easier access to properties from the centre two-way left-turn lane.</td>
<td></td>
</tr>
</tbody>
</table>
# Wellington Road
## Base Line Road to Bradley Avenue

**Your thoughts?**

<table>
<thead>
<tr>
<th>Property Impacts</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Tree Impacts</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Traffic and Transit Impacts</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Operation Impacts and Benefits</th>
</tr>
</thead>
</table>

[Image: Wellington Road Logo]
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)

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)
<table>
<thead>
<tr>
<th></th>
<th>Option 1: Widen to the east</th>
<th>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></td>
<td>✓</td>
</tr>
<tr>
<td>Requires 41 full properties</td>
<td></td>
<td>Requires 38 full properties</td>
<td>Requires 35 full properties</td>
</tr>
<tr>
<td>Least Tree Impacts</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Impacts to 70-80 trees (estimated)</td>
<td></td>
<td>Impacts to 60-70 trees (estimated)</td>
<td></td>
</tr>
<tr>
<td>Least Cultural/Built Heritage Impacts</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Potential for impacts to 1 heritage property</td>
<td>No impacts identified</td>
<td>No impacts identified</td>
<td></td>
</tr>
<tr>
<td>Optimized Horizontal Alignment</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Option 2 has the longest horizontal curves, which will help all vehicles move through this area, including buses and trucks.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More Reliable Rapid Transit</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>All options support reliable rapid transit with less interaction between buses and turning / stopping cars and trucks.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supports Appropriate Growth</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>All options support appropriate growth along the Rapid Transit corridor.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Least Grading Impacts or Retaining Walls</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>New retaining wall near to existing wall at Lutheran Church</td>
<td>Maintains existing retaining wall location at Lutheran Church</td>
<td>Requires new tall retaining wall at Lutheran Church</td>
<td></td>
</tr>
</tbody>
</table>
Wellington Curve
South of the Thames River to Base Line Road

Your thoughts?

Property Impacts

Tree Impacts

Cultural and Built Heritage Impacts

Traffic and Transit Impacts

Operation Impacts and Benefits
Local Transit Terminal Options:
1. Line in at north driveway, out at new signal
2. Circle North at new signal
3. Circle Middle at existing signal
4. Circle South at existing signal

Rapid Transit – On-street
- All Local Transit options work with on-street BRT platforms
- BRT platform location will be determined based on local terminal location
- BRT will turn around using Holiday Avenue

Potential Park-and-Ride near Exeter Road
- Locations for a parking lot to connect drivers to the Bus Rapid Transit network are being reviewed
- Considerations include: traffic, flood areas, available property and transit operations
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
- Fanshawe College

The corridor exhibits some notable challenges, including:

- Property constraints / narrow right-of-way
- Parking and access
- Subsurface utilities (high-voltage hydro facilities)

The project team considered options for both Centre-running and Curb-running BRT in the corridor.

An assessment of the benefits and drawbacks of each option indicated that the curb-running 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.
### Dundas Street
Ontario St. to Highbury Ave.

**Your Thoughts?**

<table>
<thead>
<tr>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Property Impacts</strong></td>
</tr>
<tr>
<td><strong>Tree Impacts</strong></td>
</tr>
<tr>
<td><strong>Cultural and Built Heritage Impacts</strong></td>
</tr>
<tr>
<td><strong>Traffic and Transit Impacts</strong></td>
</tr>
<tr>
<td><strong>Operation Impacts and Benefits</strong></td>
</tr>
</tbody>
</table>