Transportation is a key part of London’s social, economic, and environmental vitality, and plays a significant role in the quality of life of residents. There is longstanding recognition that investments to improve mobility in London would have a positive impact on the livability and economic development of the city. For nearly a decade, the City, the London Transit Commission, and many community partners have planned and advocated for RT to form the backbone for an emerging multi-modal transportation network.

4.1 A Vision for Rapid Transit

One thing is clear: Londoners are craving new ways to get around. London cannot meet its growing transportation needs by widening roads alone. Rather, practical and attractive alternatives to the car need to be in place to make it easy and convenient to get around the city. RT provides a viable and cost-efficient choice to meet mobility needs.

RT will be an environmentally sustainable way to move people faster and more efficiently. It will help create new jobs and draw new residents to the city. It will also connect key destinations, stimulate economic growth and provide a new, affordable travel option for residents and visitors.

The vision for RT is intertwined with The London Plan, the City’s newly approved Official Plan. The London Plan recognizes the inextricable links between land use and mobility, and between transportation design, land use intensity and form of development. How streets are planned will dictate the quality of neighbourhoods, the ability to facilitate positive infill and intensification along RT corridors, and the success in promoting and supporting a viable transit system. The vision for RT is unified with the integrated mobility goals of The London Plan, as summarized below:

- RT will enable London to design corridors to provide a variety of safe, convenient, attractive, viable and accessible mobility options for all Londoners. RT will form the backbone of an integrated multi-modal system that will include automobiles, local buses, inter-city travel modes, potential future High Speed Rail, cyclists, pedestrians and goods movement;
- RT will run frequently and reliably, to get people where they’re going faster. Riders will enjoy a fast, reliable and comfortable service that will carry more people on larger vehicles in dedicated lanes. This will enable London to reshape its roadways and public spaces; and,
- RT will be leveraged to strategically promote and stimulate intensification while ensuring development is conducive to the efficient operation and attractiveness of public transit. RT will help shape vibrant, liveable communities where people can live, work and play, promoting a positive city image. Directing growth into four Transit Villages, the Downtown and along RT corridors, will create liveable, connected, mixed-use communities that are integrated with transportation infrastructure. This focus on growing up – rather than out – will protect agricultural lands and make efficient use of existing infrastructure.

While the vision may seem ambitious, it can be achieved. The vision is similar to those of many other successful RT systems that have been implemented across North America that typically involve:

- Reprioritizing the use of space along the right-of-way to reflect the number of people who travel on each mode of transportation – moving people not vehicles;
- Supporting a variety of development sizes and forms along corridors using a context-sensitive approach. Developments can range from two to eight stories with nodes of higher density in strategic areas; and,
- Ensuring that there is a variety of building heights, forms and uses along the corridor that create new opportunities for local communities.

During the next study phase of the study process, potential negative effects will be identified and appropriate mitigation strategies developed to produce either no net negative effect or an overall positive effect on the environment as a result of the project. The environmental assessment process is an iterative planning and decision-making process that takes into account the natural, social, cultural, built and economic environments as well as the ability of alternatives to provide sustainable and fiscally responsible solutions.
4.2 Guiding Principles

The RT initiative was built on five guiding principles (Exhibit 4.1) that were adopted early in the study process and were used to drive every step of this Master Plan. The prioritization of these principles and the ability for each solution to achieve these objectives has been the basis for measurement throughout the study.

**Principle 1: Economic Development and City Building**

Positioning London to attract new talent, jobs and investment will help sustain economic prosperity for all residents and businesses. The system will connect and invigorate major institutions, support the city-building efforts underway in the downtown and enhance London’s ability to attract new residents and investments. The BRT network will help realize the vision of the growth management strategy that focuses on promoting infill and intensification in strategic areas.

**Principle 2: Transportation Capacity and Mobility**

Improving travel options for all residents will be an important step in mitigating and preventing congestion in London. Dedicated lanes for the BRT network will make the option more reliable, improve travel times and enhance the user experience. This can be a catalyst for shifting mode choice away from personal automobiles to other modes. Integrating with active transportation modes, with a focus on enhancing the street-level experience for pedestrians, and connecting to regional transportation hubs will position RT as a keystone of London’s emerging multi-modal transportation network.

**Principle 3: Community Building and Revitalization**

Rapid Transit needs to do more than just move people; it needs to create a sense of place and civic pride in the communities it connects. The system needs to improve accessibility for all residents across the city, not just those living in close proximity to a station. Most importantly, RT needs to help revitalize the city by attracting new growth and supporting compact and complete developments in strategic areas. Increasing density must be done strategically in order to create a vibrant, safe and inviting experience for pedestrians at street level.

**Principle 4: Ease of Implementation and Operational Viability**

Rapid Transit will travel along busy roadways and through existing vibrant communities that will need to continue to function through the construction period. During construction there will potentially be localized, short-term impacts to traffic and access along the corridors. Therefore, it is important to minimize disruptions and impacts during the implementation to support residents and local businesses. Once implemented, it is important to be able to adapt operationally and maintain infrastructure adaptability for future initiatives. Success of Rapid Transit also requires the system to be financially sustainable in the short and long-term.

**Principle 5: Fiscal Responsibility and Affordability**

Fiscal responsibility will be achieved by considering the return on RT corridor investments in terms of ridership, transit user time savings and other transportation and environmental benefits. Affordability means balancing the financial resources required over the life of the project to maintain a healthy financial position.

Exhibit 4.1: Objectives of Rapid Transit
4.3 Transit and Transportation Strategies

This document and The London Plan establish a multi-disciplinary framework for implementing RT in London. The framework is intended to support transit-oriented developments along the RT corridors and create a vibrant street-level experience for pedestrians. The fact that this framework has been developed in an integrated manner is a testament to the City’s recognition of the indivisible link between land use and mobility.

The following transit and transportation strategies build on the City Building Policies for Mobility in The London Plan to help achieve the Rapid Transit Vision through the Guiding Principles described above. These strategies may be implemented through the RT project, or developed into parallel initiatives by the City before, during and after implementation of RT. Initiatives targeted to the public and businesses will play an important role leading up to and during implementation of RT to build support for the project. Initiatives should also continue as the RT service is in operation, to maximize mobility and initiate the transformation of the RT corridors.

Planning and urban design strategies in support of the Vision and Guiding Principles are provided in Section 8.

**Principle 1: Economic Development and City Building**

1. Provide effective regional connections to enhance the mobility network.

Providing an effective transfer between RT and regional services at the airport, rail, and bus stations will maintain and improve connections within the province, across Canada and to the world. The RT corridors all connect through a station in the heart of London’s downtown near the rail and bus stations. A connecting local route from the RT corridor to the airport may be provided at the Fanshawe College terminal, and the extension of RT to provide a more direct connection is possible in future.

2. Design to attract and stimulate intensification, urban regeneration and economic development.

RT will be designed to contribute to London’s image as an innovative, forward-thinking, sustainable city. Incorporating very high quality design features into RT boulevards for the pedestrian realm and urban design will demonstrate the City’s commitment to urban regeneration. Providing fixed infrastructure for RT will support growth management policies.

**Principle 2: Transportation Capacity and Mobility**

3. Increase transit ridership by creating a viable alternative to the personal automobile and attracting riders who have a choice of modes. This includes:

   - Reducing travel times and distances for transit relative to auto;
   - Increasing transit reliability and efficiency;
   - Offering a high quality transit ride;
   - Making the transit service easy, accessible and safe to use; and,
   - Servicing major activity generators with appropriate transit frequency and connections to the Transit Villages and the Downtown.

"Building our city to accommodate attractive mobility choices is environmentally sustainable and helps us to be more resilient to changes in energy costs that may come in the future"

*Quote from: “The London Plan” p. 73.*
6. Balance person-carrying capacity with access and movement of goods and services.

Providing separate transit lanes through the conversion of mixed traffic lanes to reserved transit lanes minimizes the impact to surrounding communities and land uses, and allows a streetscape that is pedestrian-supportive. Road widening will be required in some locations to maintain the movement of through traffic. Streets which will be used for RT will move a high volume of all transportation modes (pedestrian, cycle, transit and vehicular). Managing access to side streets and adjacent properties will support the efficient, safe and convenient movement of goods and services, including deliveries, waste management, taxis, and parking. Incorporating loading and parking access will support existing and future development.

7. Create a transit-focused multimodal RT Boulevard.

Integrating all forms of mobility (walking, cycling, transit, movement with mobility devices, and motorized vehicle movement) to the maximum extent possible will provide a variety of safe, convenient, attractive, viable, and accessible mobility choices for all Londoners.

Principle 3: Community Building and Revitalization

8. Support the urban place types of Downtown, RT corridor, and Transit Villages.

By connecting these exciting, vibrant and prominent places, RT will support the growth objectives of The London Plan. Providing high-quality RT stations that support Transit Oriented Development in the Downtown and Transit Villages will encourage appropriate forms of development. Designing the RT corridors with the Transportation Capacity and Mobility strategies noted above will provide a foundation for highly-urban land uses along the RT corridors and within the Primary Transit Area. This in turn will support RT ridership.

9. Provide RT stations based on reasonable pedestrian access distances.

All transit trips start and end with walking. Placing RT stations at a pedestrian scale to provide reasonable walkability will encourage transit ridership. The areas surrounding RT stations will have a high standard of design to support mobility choices. Station design will consider pedestrian traffic and connectivity with cyclists, taxis, and pick-up/drop-off areas.

Principle 4: Ease of Implementation and Operational Viability

10. Stakeholder Engagement and Support

Collaborative engagement with stakeholders will continue to be important for building support for RT and mitigating disruptions throughout the implementation phase. Stakeholder engagement initiatives include:

- Community Events and Engagement Team – To attend festivals and celebrations to provide information on the project, upcoming construction closures, alternative travel options, and to promote the need to support local businesses along the corridor. This would be a direct continuation of the extensive engagement and consultation undertaken to date as part of the Environmental Assessment study;

- Business Continuity and Engagement Liaison – To work directly with businesses and BIAs to handle matters such as door access, deliveries, parking, signage and wayfinding. They would work proactively to identify issues before they arise, and be the contact for businesses who are facing an unexpected incident. They can also organize events and materials to help businesses plan and prepare for construction, such as a Transportation Demand Management Guide (discussed below) for larger organizations worried about the impact on employee travel, or workshops on preparing a marketing plan to attract customers during construction; and,

- School Travel Planning Advisor – To work with schools along the corridor to help develop strategies and education materials to make sure students can travel safely near construction zones. This will be particularly important for schools that have boundaries that cross major RT corridors. It would also be a great opportunity to promote the rapid and local transit service to the current and future transit riders in elementary and secondary schools.

11. Mitigate construction impacts with City-wide Travel Demand Management plans.

TDM strategies can reduce delays, identify alternative travel options, and help build support for and interest in the new travel choices that will be available after construction. Network Construction Mitigation Plans are common in the US. Recent examples in Ontario include the Confederation Line LRT (Ottawa), Eglinton Crosstown LRT Project (Toronto), Waterloo ION LRT (Waterloo Region), and the Queen Street Hill closure (Hamilton).
12. Mitigate construction impacts with localized and station area Travel Demand Management plans.

Developing localized TDM Plans will be an important component in addressing the changing demands placed on RT routes and intersecting roads during construction, in particular at major intersections and RT stations. TDM plans should address the needs of all modes (pedestrian, cycle, transit and vehicular), as well as managing access to side streets and adjacent properties.

TDM Plans identify the impacts at various stages of construction and define the travel reduction needed to maintain efficient travel. For areas that require significant reductions, strategies can be developed that help meet the reductions and keep users informed in advance, during and after the works, to avoid the worst disruption and help them understand how to carry out their travel effectively.

13. Communications and Real-Time Information

Effectively informing the public of planned and unplanned events will be important for managing travel demand during construction, and building confidence in RT in London. Strategies include:

- Website and Social Media – An up-to-date website and social media can be effective at getting key messages out to the public. Ensuring these channels have the most current and relevant information will be important to build the public’s trust in the information provided;

- Mobile Application – A traveler information app and website can provide real-time information for commuters who have to travel along or near an area under construction. These apps can be populated with information on planned construction events, real-time incidents, transit data feeds, and alternative routes and modes, and help travelers plan their trip in real-time. They can also be used to push TDM messaging as needed; and,

- Social Marketing – RT will have a transformational impact on how Londoners can get around. The City should work with residents and workers to help them adjust to the expanding mobility options available to them through social marketing campaigns which will help build support and ridership for the system. These campaigns should incorporate the growth envisioned through The London Plan to help residents understand that this is an integrated project that’s about more than just mobility.

Principle 5: Fiscal Responsibility and Affordability

Many of the strategies described above include elements of fiscal responsibility and affordability. Transit and transportation strategies in support of RT will maximize the return on RT corridor investments in terms of ridership, transit user time savings and other transportation and environmental benefits.

14. Quick Start Implementation

The proposed Quick Start service could be implemented on the North corridor utilizing buses in mixed traffic, with transit signal priority, localized intersection improvements, and rapid transit station spacing and service headways. The Quick Start service would be designed to minimize throw-away costs, build transit ridership, and demonstrate the benefits of rapid transit investment on a smaller scale. The Quick Start concept will be developed in the next study phase.
Part II
RAPID TRANSIT MASTER PLAN

Section 5
Preferred Alternative
5.1 Rapid Transit Corridors and Technology

As noted in Section 3.14, the preferred network alternative is Bus Rapid Transit (BRT) on four corridors: North, East, South and West. This solution provides approximately 22.5 km of dedicated median transit lanes and 1.5 km of transit operating in mixed traffic to minimize property requirements and road and bridge widenings. The network features 35 RT stations, traffic signal priority measures for transit, local intersection improvements, improvements to the public realm, and improved facilities for pedestrians and cyclists. The BRT network with proposed stations is illustrated in Exhibit 5.1.

The preferred RT technology is articulated (18 m or 60 ft) buses. Diesel or diesel-electric hybrid buses may be used on opening day, and the City is considering fully electric buses in the future. Conceptual design plates are provided in Appendix J. These drawings present one workable design concept for the implementation of the BRT network. The route and station locations are subject to additional design review and refinement in the next study phase. As discussed in Section 9.3, the study will continue into pre-planning for the Transit Project Assessment Process (TPAP) to develop a preliminary engineering design, conduct public and stakeholder consultation, identify impacts, and propose mitigation measures.

Various design decisions will be assessed to identify mitigation measures to optimize the design and minimize negative impacts to implement the BRT Network, including but not limited to:

- RT station location, platform location and size, and other design features;
- bridge requirements including construction staging concepts;
- provision and design cycle facilities along RT corridors and intersections;
- provision and design of pedestrian facilities along RT corridors and intersections;
- refinement of intersection lane configurations, turn lane storage and taper lengths and other geometry;
- identification of utility impacts and mitigation strategies;
- identification of property impacts and mitigation strategies to reduce or avoid impacts; and,
- solutions to reduce or avoid parking and access impacts.

Note that the conceptual design plates are provided in Appendix J use property lines from GIS Parcel information retrieved in March 2017. Property information will be refined during the next study phase.

The Full BRT Network proposes major capital investments, including:

- Reconstructing or widening bridge over Medway Creek at Western Road; and,
- Reconstructing or widening bridge over CPR rail corridor at Highbury Avenue.

The BRT corridors are described in Exhibit 5.2 (North + East) and Exhibit 5.3 (South + West). Station locations and design are described in Section 5.2.
Exhibit 5.1: Preferred BRT Network
5.0 PREFERRED ALTERNATIVE

Exhibit 5.2: North + East Bus Rapid Transit Corridor

<table>
<thead>
<tr>
<th>Corridor Segment</th>
<th>Description of Preferred Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fanshawe Park Road and Richmond Street</td>
<td>North Terminal. Potential off-street station at Masonville Place mall or other terminus options will be developed and evaluated.</td>
</tr>
<tr>
<td>Richmond Street (Fanshawe Park Road to Western Road)</td>
<td>Widen to maintain 4 lanes of general traffic, 2 separated median lanes for bus rapid transit and 2 bike lanes/multi-use trails.</td>
</tr>
<tr>
<td>Richmond Street and Western Road intersection</td>
<td>The configuration of this intersection may be realigned; options will be developed and evaluated.</td>
</tr>
<tr>
<td>Western Road (Richmond Street to Lambton Road)</td>
<td>Widen to maintain 4 lanes of general traffic, 2 separated median lanes for bus rapid transit, and 2 bike lanes/multi-use trails.</td>
</tr>
<tr>
<td>Western University campus via Lambton Road</td>
<td>Localized road and intersection widening may be considered to accommodate articulated buses and stations. Corridor and station design will be developed in consultation with Western University.</td>
</tr>
<tr>
<td>University Drive bridge</td>
<td>Structure impacts are not anticipated.</td>
</tr>
<tr>
<td>Richmond Street (University Drive to Central Avenue)</td>
<td>South of University Drive to Clarence Street will provide one-lane converted to transit-only in each direction. Widen to maintain 4 lanes of general traffic, or maintaining the existing cross-section with 2 lanes of general traffic, will be developed and evaluated. Widen at signalized intersections is anticipated to provide dedicated left turn lanes and stations.</td>
</tr>
<tr>
<td>Clarence Street (Richmond Street / Central Avenue to Angel Street)</td>
<td>Between Richmond Street at Central Avenue and Angel Street, Clarence Street will become dedicated 2 lanes for rapid transit.</td>
</tr>
<tr>
<td>Clarence Street (Angel Street to Dufferin Avenue)</td>
<td>South of Angel Street to Dufferin Avenue will be widened; existing on-street parking will be removed to allow for one lane of southbound general traffic.</td>
</tr>
<tr>
<td>Clarence Street (Dufferin Avenue to Queens Avenue)</td>
<td>South of Dufferin Street to Queens Avenue will be widened to accommodate 2 lanes of general traffic and 2 median lanes for bus rapid transit.</td>
</tr>
<tr>
<td>Clarence Street (Queens Avenue to King Street)</td>
<td>South of Queens Avenue to King Street will not be widened. The existing northbound general traffic lane and on-street parking on the east side of the street will be maintained. The existing southbound general traffic lane and on-street parking on the west side of the street will be reallocated to a transit only lane (southbound).</td>
</tr>
<tr>
<td>King Street (Wellington Street to Ontario Street)</td>
<td>East of Wellington Street to Dundas Street (via Ontario Street) will generally not be widened; existing one-way street will accommodate both eastbound and westbound transit, with one eastbound lane for general traffic. Eastbound bike lane added from Wellington Street to Dundas Street. Widen at signalized intersections is anticipated to provide dedicated left turn lanes and stations. Central Transit Hub is located at or near King Street and Wellington Street to provide on-street transfers.</td>
</tr>
<tr>
<td>Dundas Street (Ontario Street to Highbury Avenue)</td>
<td>East of Ontario Street will generally not be widened. One lane per direction will be provided for general traffic, with 2 median lanes for bus rapid transit and an eastbound bike lane from Ontario Street to Egerton Street. Widen at signalized intersections is anticipated to provide dedicated left turn lanes and stations.</td>
</tr>
<tr>
<td>Highbury Avenue (Dundas Street to Oxford Street East)</td>
<td>North of Dundas Street will be widened to maintain 4 lanes of general traffic and 2 median lanes for bus rapid transit.</td>
</tr>
<tr>
<td>Highbury Avenue bridge over CPR corridor</td>
<td>Structure requirements will be determined in the next study phase.</td>
</tr>
<tr>
<td>Oxford Street East</td>
<td>East of Highbury Avenue will be widened to maintain 4 lanes of general traffic, 2 median lanes for bus rapid transit and a bike lane/multi-use path within the ROW.</td>
</tr>
<tr>
<td>Second Street and Oxford Street East</td>
<td>East Terminal. Potential off-street station at Fanshawe College or other terminus options. Station design will be developed in consultation with Fanshawe College.</td>
</tr>
</tbody>
</table>
### Exhibit 5.3: South + West Bus Rapid Transit Corridor

<table>
<thead>
<tr>
<th>Corridor Segment</th>
<th>Description of Preferred Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wellington Road south of Bradley Avenue</td>
<td>South Terminal. Potential off-street station at White Oaks Mall or other terminus options to be developed and evaluated. Opportunities for “park and ride” facility, with or without transit connections to local routes, will be developed and evaluated, potentially at or near intersection of Exeter Road.</td>
</tr>
<tr>
<td>Wellington Road/Wellington Street</td>
<td>Widening to maintain 4 lanes of general traffic and 2 separated median lanes for bus rapid transit from Bradley Avenue to Horton Street. A northbound bike lane / multi-use path will be included in the ROW from Bradley Avenue to Commissioners Road East. Property requirements are anticipated to widen the right-of-way in this section. Wellington Road becomes Wellington Street at the Thames River.</td>
</tr>
<tr>
<td>Wellington (Clark’s) Bridge over Thames River</td>
<td>Structure requirements will be determined in the next study phase.</td>
</tr>
<tr>
<td>CN Rail underpass</td>
<td>Transit will operate in mixed traffic from Horton Street to King Street to minimize impacts to this underpass.</td>
</tr>
<tr>
<td>Wellington Street (King Street to Queens Avenue) Transit Couplet: Northbound</td>
<td>North of King Street to Queens Avenue will likely be widened on the east side with on-street parking removed to accommodate a transit only northbound lane and 4 lanes of general traffic. The existing median with trees will be removed. Parking on the west side of the street will be provided where possible. Widening at signalized intersections may be required to provide dedicated turn lanes and stations.</td>
</tr>
<tr>
<td>Queens Avenue (Wellington Street to Ridout Street) Transit Couplet: Westbound</td>
<td>East of Wellington Street to Ridout Street will not be widened; existing on-street parking on the north side will be converted to a transit only westbound lane, and 2 lanes of one-way general traffic will be maintained (westbound only). Parking on the south side of the street will be provided where possible. Widening at signalized intersections may be required to provide dedicated turn lanes and stations.</td>
</tr>
<tr>
<td>Ridout Street (Queens Avenue to King Street) Transit Couplet: Southbound</td>
<td>South of Queens Avenue to King Street will not be widened; existing on-street parking on the west side of the street will be reallocated to a transit only southbound lane, and 2 lanes of one-way general traffic will be maintained (southbound only). Parking on the east side of the street between Queens Avenue and Dundas Street will be provided where possible. Widening at signalized intersections may be required to provide dedicated turn lanes and stations.</td>
</tr>
<tr>
<td>King Street – Ridout Street to Wellington Street Transit Couplet: Eastbound</td>
<td>East of Ridout Street to Wellington Street will not be widened; existing on-street parking on the south side of the street will be reallocated to a transit only eastbound lane, and 2 lanes of one-way general traffic will be maintained (eastbound only). Parking on the north side of the street will be provided where possible. Widening at signalized intersections may be required to provide dedicated turn lanes and stations.</td>
</tr>
<tr>
<td>Queens Avenue (Ridout Street to Riverside Drive)</td>
<td>East of Ridout Street to the Queens Avenue Bridge, existing street parking will be reallocated to 2 curb-running transit lanes, 2 one-way general traffic lanes will be maintained (westbound only). The intersection of Queens Avenue and Ridout Street may be reconfigured; options will be developed and evaluated.</td>
</tr>
<tr>
<td>Queens Avenue Bridge over Thames River</td>
<td>The Queens Avenue Bridge will be converted to 4 lanes; existing bike lanes and sidewalks will be reallocated to 2 curb running transit only lanes, 2 existing one-way general traffic lanes will be maintained (westbound only), and a sidewalk on the north side only. Structure requirements will be determined in the next study phase.</td>
</tr>
<tr>
<td>Riverside Drive (Queens Avenue to Wharncliffe Road)</td>
<td>West of the bridge to Wharncliffe Road will be widened to maintain 4 lanes of general traffic (two-way), and provide 2 transit only lanes. The existing bike lanes on each side of the road will be removed and alternative cycling options will be developed and evaluated. The westbound transit lane will be curb running, and the eastbound transit lane will be centre running (median).</td>
</tr>
<tr>
<td>Wharncliffe Road (Riverside Drive to Oxford Street West)</td>
<td>North of Riverside Drive will not be widened; transit will operate in mixed traffic on Wharncliffe Road. Intersection improvements will be constructed at Wharncliffe Road and Riverside Drive, and Wharncliffe Road at Oxford Street West. Widening at signalized intersections may be required to provide dedicated turn lanes and stations.</td>
</tr>
<tr>
<td>Oxford Street West (Wharncliffe Road to Platts Lane)</td>
<td>Oxford Street West between Wharncliffe Road and Platts Lane will be widened at both intersections to allow for intersection improvements and a transit queue jump lane. The street will maintain 4 lanes of general traffic. Transit running eastbound will operate in mixed traffic, while westbound buses will operate in a transit only lane.</td>
</tr>
<tr>
<td>Oxford Street West (Platts Lane to Wonderland Road)</td>
<td>Between Platts Lane and Wonderland Road will be widened to maintain 4 lanes of general traffic and 2 median lanes for bus rapid transit.</td>
</tr>
<tr>
<td>Wonderland Road and Oxford Street West</td>
<td>West Terminal. Potential off-street terminal station locations to be developed and evaluated.</td>
</tr>
</tbody>
</table>
5.2 Rapid Transit Stations

The BRT network with proposed stations is illustrated in Exhibit 5.1 and detailed in Exhibit 5.4. There are 35 proposed stations with an average spacing between proposed stations for all corridors of approximately 740m. The RT station location, platform location and size, are subject to design review and refinement in the next study phase.
### Exhibit 5.4: Proposed Rapid Transit Stations for BRT Network

**North Corridor, From North To South**

<table>
<thead>
<tr>
<th>Station</th>
<th>Distance B/W Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masonville Place (Terminal)</td>
<td>650 m</td>
</tr>
<tr>
<td>Western Rd at Richmond St</td>
<td>650 m</td>
</tr>
<tr>
<td>Western Rd at Windermere Rd</td>
<td>500 m</td>
</tr>
<tr>
<td>Western Rd at Elgin Rd</td>
<td>550 m</td>
</tr>
<tr>
<td>WU Campus Centre****</td>
<td>1500 m</td>
</tr>
<tr>
<td>Richmond St at University Dr</td>
<td>1200 m</td>
</tr>
<tr>
<td>Richmond St at Grosvenor St</td>
<td>500 m</td>
</tr>
<tr>
<td>Richmond St at Oxford St</td>
<td>700 m</td>
</tr>
<tr>
<td>Clarence St at Central Ave</td>
<td>500 m</td>
</tr>
<tr>
<td>Clarence St and Queens Ave</td>
<td>450 m</td>
</tr>
<tr>
<td>Central Transit Hub**</td>
<td></td>
</tr>
<tr>
<td><strong>Average (North Corridor)</strong></td>
<td><strong>720 m</strong></td>
</tr>
</tbody>
</table>

**East Corridor, From West To East**

<table>
<thead>
<tr>
<th>Station</th>
<th>Distance B/W Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Transit Hub**</td>
<td>500 m</td>
</tr>
<tr>
<td>King St to Colborne St</td>
<td>700 m</td>
</tr>
<tr>
<td>King St at Adelaide St</td>
<td>1000 m</td>
</tr>
<tr>
<td>Ontario St at Dundas St</td>
<td>1000 m</td>
</tr>
<tr>
<td>Dundas St at McCormick Blvd</td>
<td>1000 m</td>
</tr>
<tr>
<td>Dundas St at Highbury Ave</td>
<td>950 m</td>
</tr>
<tr>
<td>Highbury Ave at LPH access</td>
<td>400 m</td>
</tr>
<tr>
<td>Highbury Ave at Oxford St</td>
<td>800 m</td>
</tr>
<tr>
<td>Fanshawe College (Terminal)</td>
<td></td>
</tr>
<tr>
<td><strong>Average (East Corridor)</strong></td>
<td><strong>750 m</strong></td>
</tr>
</tbody>
</table>

**South Corridor, From North To South**

<table>
<thead>
<tr>
<th>Station</th>
<th>Distance B/W Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Transit Hub**</td>
<td>450 m</td>
</tr>
<tr>
<td>Wellington St at Horton St</td>
<td>550 m</td>
</tr>
<tr>
<td>Wellington St at South St</td>
<td>850 m</td>
</tr>
<tr>
<td>Wellington Rd at Bond St</td>
<td>900 m</td>
</tr>
<tr>
<td>Wellington Rd at Baseline Rd</td>
<td>400 m</td>
</tr>
<tr>
<td>Wellington Rd at Commissioners Rd</td>
<td></td>
</tr>
<tr>
<td>Wellington Rd at Wilkins St</td>
<td>800 m</td>
</tr>
<tr>
<td>Wellington Rd at Southdale Rd</td>
<td>900 m</td>
</tr>
<tr>
<td>Wellington Rd at Montgomery Gate</td>
<td></td>
</tr>
<tr>
<td>White Oaks (Terminal)</td>
<td></td>
</tr>
<tr>
<td><strong>Average (South Corridor)</strong></td>
<td><strong>705 m</strong></td>
</tr>
</tbody>
</table>

**West Corridor, From West To East**

<table>
<thead>
<tr>
<th>Station</th>
<th>Distance B/W Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wonderland Rd and Oxford St (Terminal)</td>
<td>1000 m</td>
</tr>
<tr>
<td>Oxford St at Beaverbrook Ave</td>
<td>450 m</td>
</tr>
<tr>
<td>Oxford St at Cherryhill Blvd</td>
<td>1000 m</td>
</tr>
<tr>
<td>Oxford St at Wharncliffe Road</td>
<td>1000 m</td>
</tr>
<tr>
<td>Wharncliffe Rd at Riverside Dr</td>
<td>1100 m (900 m)</td>
</tr>
<tr>
<td>EB: King St at Talbot St (WB: Queens Ave at Talbot St)</td>
<td>550 m (400 m)</td>
</tr>
<tr>
<td>EB: no stop (WB: Queens Ave at Clarence Ave)</td>
<td>EB no stop (500 m)</td>
</tr>
<tr>
<td>Central Transit Hub**</td>
<td></td>
</tr>
<tr>
<td><strong>Average (West Corridor)</strong></td>
<td><strong>780 m</strong></td>
</tr>
</tbody>
</table>

**All Corridors**

| **AVERAGE (ALL CORRIDORS)** | **740 m** |

**Notes:**
- **The Central Transit Hub is proposed to be located at or near King Street and Wellington Street to provide on-street transfers.**
- **RT station on Western University Campus to be determined in consultation with Western University.**
5.0 PREFERRED ALTERNATIVE

5.2.1 Station Platform Configuration

The RT station configurations are illustrated on the conceptual design plates (Appendix J) and are subject to design review and refinement in the next study phase.

A typical RT station has two platforms: a separate platform for each direction to maximize station capacity and make efficient use of space. Providing a signalized crossing across the roadway provides protected pedestrian access.

There are three basic platform configuration options: on approach to an intersection (near-side, Exhibit 5.5), between two intersections (mid-block, Exhibit 5.6), or on leaving an intersection (far-side, Exhibit 5.7).

Different platform configurations may be appropriate depending on site specific conditions and constraints. In general, far-side platform placement at signalized intersections provides the most space-efficient design for median-running Bus Rapid Transit. This configuration places the platform opposite the dedicated left-turn lane.

For each proposed RT station, the placement of the station platforms was reviewed during the development the conceptual design, with a similar review for both median-running and curb-running corridors. The configuration of each station considered the following elements, not listed in order of priority:

- Connection to major trip generator
- Universal accessibility
- Ease of use for transit users
- Existing and future adjacent land use
- Intersection operations, including turn lanes and turning movements
- Right-of-way constraints
- Safety

Platforms can be located along the sidewalk where BRT is running in the curb lane and the right-of-way is narrow.

The conceptual platform configurations for each RT station are shown in the Conceptual Design Plates (Appendix J).

5.2.2 Station Ridership Forecasts

The passenger boardings and alightings at each station were developed through the travel demand model (Appendix B). The forecasted 2034 PM Peak Hour boardings and alightings, and resulting passenger load, is provided for one direction of travel for each corridor (Exhibit 5.8 and Exhibit 5.9).

The ridership forecasts will be considered in the next stage of design development to provide appropriate passenger amenities at stations with higher ridership.
### Exhibit 5.8:
North + East: 2034 PM Passenger Boardings and Alightings by Station: From North to East

<table>
<thead>
<tr>
<th>North + East Corridor from North to East (2034 PM Peak Hour)</th>
<th>Boarding (On)</th>
<th>Alighting (Off)</th>
<th>Passenger Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masonville Place (Terminal)</td>
<td>200</td>
<td>N/A</td>
<td>200</td>
</tr>
<tr>
<td>Western Road at Richmond</td>
<td>50</td>
<td>10</td>
<td>240</td>
</tr>
<tr>
<td>Western Road at Windermere</td>
<td>80</td>
<td>10</td>
<td>310</td>
</tr>
<tr>
<td>Western Road at Elgin</td>
<td>450</td>
<td>10</td>
<td>750</td>
</tr>
<tr>
<td>WU Campus Centre****</td>
<td>690</td>
<td>30</td>
<td>1410</td>
</tr>
<tr>
<td>Richmond Street at University Drive</td>
<td>70</td>
<td>30</td>
<td>1450</td>
</tr>
<tr>
<td>Richmond Street at Grosvenor Street</td>
<td>90</td>
<td>110</td>
<td>1430</td>
</tr>
<tr>
<td>Richmond Street at Oxford Street</td>
<td>60</td>
<td>150</td>
<td>1340</td>
</tr>
<tr>
<td>Clarence Street at Central Avenue</td>
<td>50</td>
<td>110</td>
<td>1280</td>
</tr>
<tr>
<td>Clarence Street at Queens Avenue</td>
<td>60</td>
<td>320</td>
<td>1020</td>
</tr>
<tr>
<td>Central Transit Hub**</td>
<td>150</td>
<td>530</td>
<td>640</td>
</tr>
<tr>
<td>King Street at Colborne St</td>
<td>30</td>
<td>120</td>
<td>550</td>
</tr>
<tr>
<td>King Street at Adelaide Street</td>
<td>40</td>
<td>170</td>
<td>420</td>
</tr>
<tr>
<td>King Street at Ontario Street</td>
<td>10</td>
<td>20</td>
<td>410</td>
</tr>
<tr>
<td>Dundas Street at McCormick Blvd</td>
<td>30</td>
<td>40</td>
<td>400</td>
</tr>
<tr>
<td>Dundas Street at Highbury Avenue</td>
<td>30</td>
<td>220</td>
<td>210</td>
</tr>
<tr>
<td>Highbury Ave at LPH access</td>
<td>10</td>
<td>60</td>
<td>160</td>
</tr>
<tr>
<td>Highbury Ave at Oxford Street</td>
<td>30</td>
<td>80</td>
<td>110</td>
</tr>
<tr>
<td>Fanshawe College (Terminal)</td>
<td>N/A</td>
<td>110</td>
<td>0</td>
</tr>
</tbody>
</table>

**Notes:**
- **The Central Transit Hub is proposed to be located at or near King Street and Wellington Street to provide on-street transfers.**

### Exhibit 5.9:
South + West: 2034 PM Passenger Boardings and Alightings by Station: From West to South

<table>
<thead>
<tr>
<th>South + West Corridor from West to South (2034 PM Peak Hour)</th>
<th>Boarding (On)</th>
<th>Alighting (Off)</th>
<th>Passenger Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxford Street at Wonderland (Terminal)</td>
<td>70</td>
<td>N/A</td>
<td>70</td>
</tr>
<tr>
<td>Oxford Street at Beaverbrook</td>
<td>10</td>
<td>0</td>
<td>80</td>
</tr>
<tr>
<td>Oxford Street at Cherryhill</td>
<td>30</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Oxford Street at Wharncliffe</td>
<td>50</td>
<td>10</td>
<td>140</td>
</tr>
<tr>
<td>Wharncliffe at Riverside</td>
<td>20</td>
<td>10</td>
<td>150</td>
</tr>
<tr>
<td>King Street at Talbot (EB)</td>
<td>50</td>
<td>20</td>
<td>180</td>
</tr>
<tr>
<td>Central Transit Hub**</td>
<td>140</td>
<td>50</td>
<td>270</td>
</tr>
<tr>
<td>Wellington Street at Horton</td>
<td>410</td>
<td>30</td>
<td>650</td>
</tr>
<tr>
<td>Wellington Street at South</td>
<td>40</td>
<td>60</td>
<td>630</td>
</tr>
<tr>
<td>Wellington Road at Bond</td>
<td>10</td>
<td>70</td>
<td>570</td>
</tr>
<tr>
<td>Wellington Road at Base Line</td>
<td>10</td>
<td>40</td>
<td>540</td>
</tr>
<tr>
<td>Wellington Road at Commissioners</td>
<td>20</td>
<td>50</td>
<td>510</td>
</tr>
<tr>
<td>Wellington Road at Wilkins</td>
<td>10</td>
<td>90</td>
<td>430</td>
</tr>
<tr>
<td>Wellington Road at Southdale</td>
<td>10</td>
<td>150</td>
<td>290</td>
</tr>
<tr>
<td>Wellington Road at White Oaks Mall (Terminal)</td>
<td>N/A</td>
<td>290</td>
<td>0</td>
</tr>
</tbody>
</table>

**Notes:**
- **The Central Transit Hub is proposed to be located at or near King Street and Wellington Street to provide on-street transfers.**

- **** RT station on Western University Campus to be determined in consultation with Western University.
5.2.3 Station Features

The following assumptions were applied in the development of the conceptual design plates (Appendix J):

- Platforms are typically 40m long and 3.5m wide, accommodating simultaneous loading/unloading of two articulated buses;
- Ramps are provided in addition to the 40m platform to match existing road surface for a flush and barrier free connection to the pedestrian crosswalk; and,
- Shelter amenities will be provided on the platform.

Stations will have protected pedestrian connections and allow cyclists to access the station and park near or on the platform to promote cycling as a "last mile" connection mode, described further in Section 6. Exhibit 5.10 provides a conceptual plan of a typical 40m station platform.

As the design process continues, the platform features and shelter size will be refined and revised as appropriate. Platform configurations from other RT services are illustrated in Exhibit 5.11 for reference. Shelter characteristics from other RT services are illustrated in Exhibit 5.12 for reference.
### Exhibit 5.11: Other Rapid Transit Platform Characteristics

<table>
<thead>
<tr>
<th>Platform Type</th>
<th>Location</th>
<th>Size</th>
<th>Ramps</th>
</tr>
</thead>
<tbody>
<tr>
<td>London RT</td>
<td>YORK REGION, ON, CANADA</td>
<td>(4.5m x 55m) + 15m Ramp</td>
<td></td>
</tr>
<tr>
<td>Mississauga BRT STATION GATE STOP</td>
<td>MISSISSAUGA, ON, CANADA</td>
<td>(4.0m x 26m) + 2m Ramp</td>
<td></td>
</tr>
<tr>
<td>Mississauga BRT CITY CENTRE VIEW STOP</td>
<td>MISSISSAUGA, ON, CANADA</td>
<td>(4.0m x 51m) + 2m Ramp</td>
<td></td>
</tr>
<tr>
<td>ZUM - Brampton BRT</td>
<td>BRAMPTON, ON, CANADA</td>
<td>STANDARD CONFIGURATION (2.5m x 20m)</td>
<td></td>
</tr>
<tr>
<td>Hamilton BRT</td>
<td>WALSINGTON, ON, CANADA</td>
<td>STANDARD CONFIGURATION (2.5m x 20m)</td>
<td></td>
</tr>
</tbody>
</table>

#### LEGEND
- Landscape / Planter
- Platform Paving
- Shelter
- Platform Edge Tile
- Sidewalk
- Outline of Canopy Above
- Enclosed Shelter
- Semi-Enclosed Shelter
- Semi-Enclosed Canopy Above
Exhibit 5.12: Shelter Characteristics from other Rapid Transit services

<table>
<thead>
<tr>
<th>Location</th>
<th>Shelter Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vivianext, York Region, ON, Canada</td>
<td>Canopy: Enclosed Shelter with Doors; CCTV; Oven; Electric Heater; Light Fixtures; Speaking; VMS; Electric Heater with Occupancy Sensor; Light Fixtures; Bench; CCTV; Speaker; VMS; 1 TVM; 2 Prestos; 1 Presto Add Value; Emergency Communication Panel</td>
</tr>
<tr>
<td>Mississauga BRT, Mississauga, ON, Canada</td>
<td>Canopy: Side Panels, CCTV; Oven; Emergency Call Button; Light Fixtures; Bench; CCTV; Speaker; VMS; Electric Cabinet</td>
</tr>
<tr>
<td>ZUM - Brampton BRT, Brampton, ON, Canada</td>
<td>Shelter: Side Panels; CCTV; Oven; Electric Heater; Light Fixtures; Bench; Lighting; CCTV; Speaker; VMS; Electric Cabinet</td>
</tr>
<tr>
<td>Hamilton BRT, Hamilton, ON, Canada</td>
<td>Shelter: Side Panels; CCTV; Oven; Electric Heater; Light Fixtures; Bench; Lighting; CCTV; Speaker; VMS; Electric Cabinet</td>
</tr>
<tr>
<td>St. Clair West Streetcar, Toronto, ON, Canada</td>
<td>Canopy: Side Panels; CCTV; Oven; Electric Heater; Light Fixtures; Bench; Recycling Bin</td>
</tr>
</tbody>
</table>
5.3 Maintenance and Storage Facility

The London Transit Commission currently operates two maintenance and storage facilities for buses: 450 Highbury Avenue and 3508 Wonderland Road. The facility at 450 Highbury Avenue is 23,045 m² (248,060 sq ft) and occupies 7.1 ha (17.5 acres). Originally constructed to accommodate manufacturing and warehouse activities in 1949, the site was purchased by the City in 1971 for conversion into a bus garage. Subsequent modifications and enlargements have been completed by LTC on four occasions. The facility has capacity for 180 standard (12m, 40ft) buses, and is currently approaching capacity.

The facility at 3508 Wonderland Road is 12,700 m² (136,500 sq ft) and occupies 4.1 ha (10.2 acres). The facility was purpose built for LTC, opening in 2011. The facility has capacity for 100 standard buses, and is currently operating at about 50% capacity. The facility can be expanded to accommodate 110 standard buses.

Current ridership forecasts to 2034 indicate the preferred Full BRT solution will require approximately 28 articulated (18m, 60ft) buses to operate including spare vehicles. It is anticipated that the ultimate capacity of Highbury and Wonderland can accommodate the 28 articulated buses proposed for the RT.

5.4 Intelligent Transportation Systems Strategy

The implementation of Bus Rapid Transit requires operational support from Intelligent Transportation Systems (ITS). The ITS architecture for Canada provides a unified framework to guide the coordinated deployment of ITS programs within the public and private sectors, as described in Exhibit 5.13.

This framework is a basis for the description of the physical components and the data flows within and between systems that are part of an overall ITS architecture. The physical components include travellers, vehicles, roadside devices, and control centres. In the ITS strategy, the ITS architecture framework is used as a basis to develop the RT system concept and technology interfaces. More information on this architecture can be found at the ITS Canada website (https://www.itscanada.ca/about/architecture/).

In the next study phase, existing and future planned ITS infrastructure for Travellers, Centres, Vehicles and the Field will be examined, including:
- Transit and traffic management technologies such as Computer Aided Dispatch and Automatic Vehicle Location (CAD/AVL) System, Automatic Passenger Counters (APC), Automated Stop Announcement (ASA) and Display System, Farebox Collection System, Transit Signal Priority (TSP) and Transit Traveller Information System, and,
- User needs including safety and security, a fast and efficient RT system, and improved methods for transit information dissemination.

Many ITS systems would require upgrades to the traffic control systems currently in use in London. A detailed ITS strategy addressing these issues on a system-wide basis will be developed as part of subsequent study phases.
Exhibit 5.13: ITS Architecture for Canada

The diagram illustrates the ITS Architecture for Canada, focusing on the relationships between Travellers, Centres, Vehicles, Field, and their respective communications and operations.

- **Travellers** include Remote Traveller Support and Personal Information Access.
- **Centres** feature Traffic Management, Emergency Management, Toll Administration, Commercial Vehicle Administration, and Maintenance & Construction Management.
- **Vehicles** encompass a range of vehicles and equipment, such as Transit, Commercial, Intermodal Freight, and Maintenance & Construction.
- **Field** activities include Roadway, Security Monitoring, Toll Collection, Parking Management, Commercial Vehicle Check, and Intermodal Terminal.
- **Wide Area Wireless (Mobile) Communications** link these elements.

This architecture aids in managing and optimizing transit systems for better efficiency and passenger service.
**5.5 Supporting Project**

The following individual project recommended in this RTMP was initiated as a Schedule B Class EA, following the MCEA process. This project was identified to reconstruct four sewers to accommodate the potential Richmond Street transit tunnel. However, as documented in Section 3, the tunnel is not part of the preferred BRT network. As such, the sewers can remain in place for the implementation of the BRT network.

*Richmond Street Municipal Underground Utilities Realignment Study:* Reconstruction of four sewers to the east and west of Richmond Street to accommodate the potential transit tunnel under the CPR rail corridor. The schedule selection was based on the potential for property acquisition and a new outlet to the Thames River as design solutions. However, during the planning process, alternatives were investigated to include sewer realignments that could be accommodated within the existing road allowances and utilizing existing infrastructure and outlets. This analysis resulted in preferred solutions that met this criteria and are recommended to proceed to detailed design. It is noted that the preferred solutions do not require a new outlet to the Thames River or property acquisition. Based on the recommended solutions, this project is pre-approved as a Schedule A+ project as outlined in the Municipal Engineer’s Association (MEA) Municipal Class Environmental Assessment. A formal Public Notice of Completion will be issued to ensure an open and transparent shift to a Schedule A+ project.

Appendix M provides the technical analysis completed to demonstrate the design solution for the potential future transit tunnel. Appendix A contains details on the consultation undertaken for the Richmond Street Municipal Underground Utilities Realignment Study.

**5.6 Protecting for Light Rail**

City Council endorsed as a strategic direction the future conversion to LRT technology subject to further review and confirmation through a new business case in the following motion passed May 26, 2016:

> “a Rapid Transit conversion to Light Rail Transit technology BE ENDORSED as a strategic direction subject to a review of transit technologies undertaken as part of future updates to the Transportation Master Plan and confirmation through a new business case”

It is noted that this conversion means beyond the 2034 horizon year of this RTMP. In the next study phase, elements that constrain the future conversion to light rail transit will be identified.

**5.7 Options for Future Expansion**

The Full BRT network could be expanded in the future with further study. Expansion options include:

- With the provision of High Speed Rail service, the City may wish to examine extending or realigning the RT route using Clarence Street south of King Street with a new tunnel under the CN Rail corridor.
- Depending on growth and development around the airport lands, the City may wish to examine extending RT service in dedicated lanes along Oxford Street East from Fanshawe College to the London International Airport.
Part II
RAPID TRANSIT MASTER PLAN

Section 6
Multi-Modal Transportation Plan
6.0 MULTI-MODAL TRANSPORTATION PLAN

Individuals are more likely to walk and cycle if they see the environment as being convenient, safe and pleasant with direct routes that minimize travel times. Creating an environment that is walkable and cycleable will be key to ensuring travellers can access stations and their destinations in an efficient manner. This section outlines the transportation-related strategies related to active modes to support RT and future traffic conditions with the preferred RT solution in place. Design strategies for the streetscape are provided in Section 7.

6.1 Pedestrian Strategy

Planning around RT stations must put pedestrians first. Walking will be a part of every transit trip, making safe and easy access to stations a critical aspect of success for the system. The sidewalk is the basic unit of mobility within the transportation system and therefore must be connected, useable and safe if transit riders are expected to use it. Providing a complete pedestrian network will maximize the walk-in catchment area.

6.1.1 Qualities of a Good Pedestrian Network

Network Connectivity
The connectivity of the pedestrian network refers to the density of pedestrian facilities and their directness. A highly connected network has many short pedestrian links that intersect with many other pedestrian links. As connectivity increases, travel distances decrease and route options increase, thereby enabling more direct travel to destinations. In London, it will be important to provide a strong, pedestrian network around RT stations – both on major and local roads. The primary focus should be in the 400m to 500m radius, which is generally accepted as the distance transit riders would be willing to walk to access transit. A secondary focus in the order of 800m radius should also be considered, as some transit riders will walk farther to access rapid transit. The pedestrian network will be primarily along streets, as per The London Plan. Intersections with channelized right turn lanes and long pedestrian crossing distances are undesirable.

Pleasant and Active Realm
A quality street environment is created when a right-of-way is allocated to create comfortable and enjoyable public spaces for all users. Creating an inviting environment involves more than just providing a place to walk; it involves creating a mix of land uses of moderate to high density, with extensive pedestrian amenities. The policies in The London Plan strive to spur this type of development along the RT corridors, and Transit Villages, and continue to support this in the Downtown. Included in these policies is the designation of a Primary Transit Area, bounded by Fanshawe Park Road to the north, Wonderland Road to the west, Southdale Road (west of White Oak Road) and Bradley Avenue (east of White Oak Road) to the south, and Highbury Avenue to the east.

Accessibility
Pedestrian facilities, like all roadways, need to be designed to serve all users. This includes individuals with varied levels of visual and mobility needs, children, older adults, parents with strollers, and individuals using mobility devices. Ensuring the pedestrian network leading to all stations is accessible will maximize system usage by visitors and residents. This requires coordinating the placement of curbs, planters, furniture, and building forecourt / frontage zones to maximize the amount of clear space for pedestrian travel, in compliance with all relevant accessibility legislation.

Personal Security Issues
A major barrier to creating walkable communities is the concern for safety and security, particularly at night and during the early hours. People who perceive security concerns will either avoid travelling after dark or through certain areas, or not travel at all. Three general principles apply to increasing the feeling of security at RT stations and vicinity:

- Pedestrians should be able to see their immediate surroundings and areas ahead;
- Pedestrians should be visible while travelling or waiting at stations to other pedestrians and travellers; and,
- Pedestrians should have multiple route options to enable them to avoid areas where they feel unsafe.

The perception of security can typically be dealt with through the design process by considering Crime Prevention Through Environmental Design (CPTED) guidelines.

6.1.2 Corridor Pedestrian Review

Based on the qualities discussed above, the pedestrian network around the RT network was examined based on the following five criteria:

- Network Connectivity – are there continuous sidewalks or trails along both side of the corridor? Do neighbourhoods within 800 metres of stations have sidewalks on at least one side of the road?
- Accessibility – are sidewalks an appropriate size? Are there narrow areas that could cause pinch points?
6.1 Strategies for Improving the Pedestrian Network

The following strategies can be used to improve the pedestrian network within the public realm along the RT corridors and in proximity to RT stations:

- Intersection Improvements – are there channelized turn lanes or large crossing distances that can be unattractive to pedestrians? Are there crossings at each side?
- Destination Access – do major destinations within close proximity to stations have direct pedestrian access?
- Crossing Spacing – are pedestrians able to cross the corridors at station locations? Are crossings spaced at short, frequent intervals?

6.1.3 Strategies for Improving the Pedestrian Network

The following strategies can be used to improve the pedestrian network within the public realm along the RT corridors and in proximity to RT stations:

- Provide pedestrian facilities (e.g. sidewalk, shared active transportation paths) on both sides of major roadways and at least one side on lower volume local roads, and filling in any other gaps in the pedestrian network. Since stations for RT will be further apart than typical local route stops, pedestrians may walk longer distances along major roadways to access rapid transit;
- Provide safe pedestrian crossings at regular intervals, particularly at or near RT stations. Since local bus routes will connect to RT stations on their property; and,
- Improve pedestrian access?
- Destination Access – do major destinations within close proximity to stations have direct pedestrian access?
- Crossing Spacing – are pedestrians able to cross the corridors at station locations? Are crossings spaced at short, frequent intervals?

6.2 Cycling Strategy

Cycling and transit can create a powerful solution for station access. Integrating the cycling network and RT corridors can create a cost-effective extension of the catchment area for RT services, and provide a flexible travel option for first and last mile connections.

The City’s cycling master plan, London ON Bikes, provides a blueprint for the future of the cycling network, including key pathways and supportive programming. The recommended long-term implementation plan includes the addition of 306 km of separated, designated and shared cycling facilities, as illustrated in Exhibit 6.1.

London ON Bikes incorporates the preliminary preferred RT corridors and station locations. Under the plan, approximately two-thirds of RT stations will be connected by a cycling route. These connections include spine and neighbourhood routes that will radiate, terminate and run parallel to the RT corridors.

The following strategies will help support cycling as an extension of the RT system and as part of the emerging multi-modal transportation network:

- Provide local and RT vehicles that are fully accessible to bicycles all day, every day;
- At all interface points, provide safe, convenient and well-marked access between cycling routes to stations;
- Coordinate the detailed design and construction of RT corridors with London ON Bikes to include all identified cycling facilities within the study area or protect for future construction;
- Incorporate a sufficient mix of bicycle parking, including short-term and long-term options, at RT stations where space allows. Parking should be covered and located at the station. At stations that are constrained for space, parking should be provided nearby with directional signage and incorporate CPTED principles;
- Work with large trip generators, such as employment and institutional areas, to provide end of trip cycling facilities including secured long-term bike parking, covered short-term parking, and shower/change facilities. The City can show leadership by including these cycling amenities in its new developments;
- Proposed cycling routes that connect to RT stations should be prioritized for construction, when possible; and
- Where there is space within the existing right-of-way, consider providing cycling facilities along RT corridors where appropriate in the context of the overall cycling network, even if not identified in London ON Bikes.
6.3 Traffic Impacts

A detailed traffic analysis of the BRT network is provided in Appendix K. The focus of this analysis is to define changes to the transportation infrastructure, such as new signals required, changes to traffic operations, such as special signals and traffic impacts, and a queue analysis to inform lane configurations and turn lane lengths in future design phases.

The balance between providing attractive RT travel times and providing good access to adjacent land use is a key consideration to support growth along the RT routes. Overall, the hierarchy of users established through the RTMP is:

1. Pedestrians
2. Cyclists
3. Emergency vehicles
4. Rapid transit
5. Local transit
6. Local traffic
7. Through traffic

The implementation of RT in dedicated median lanes results in two sources of capacity reduction for general traffic: 1) the conversion of existing through lanes to transit-only lanes, and 2) the conversion of existing permissive left-turn phase to protected-only.

It is important to understand the future traffic impacts in order to develop appropriate mitigation measures and identify areas that may benefit from future studies to enhance operations. Mitigation...
measures include the provision of additional through or turn lanes at key intersections, and the provision of sufficient storage length for dedicated turn lanes to minimize the spill back of congestion to through lanes.

In summary, the traffic analysis methodology included:

- Intersection capacity analysis using the Highway Capacity Manual (HCM) methodology via Synchro 9.0 signal timing and analysis software package by Trafficware.
- Review of the existing traffic conditions to understand existing constraints and operational characteristics.
- Analysis of future BRT conditions to assess future intersection performance.

Two study horizons were analyzed in this report:

- **Existing Conditions** – A current conditions scenario using 2016 as a base year for roadway / intersection configurations, signal timing plans, and traffic volumes from the most recent turning movement counts available. Weekday morning (AM) and evening (PM) peak period turning movement counts, and signal timing at all signalized intersections, were provided by the City, and supplemental counts were undertaken as required.

- **Future BRT Conditions** – A future scenario in which the BRT is fully operational. The analysis is based on revised roadway / intersection configurations, modified signal timing plans, and traffic volumes with projected population growth rates applied.

Growth rates and factors were prepared for the two RT corridors to forecast the future conditions traffic volumes. The growth factors were initially generated by the macroscopic City of London travel demand model using TransCAD, between the 2009 base model year and the horizon year 2034. The growth factors take into account lane reductions, shift in travel mode to BRT, and background traffic growth. Left-turn and U-turn demand at signalized intersections were adjusted to account for the restriction of unsignalized intersections and driveways to right-in/right-out only in the BRT condition.

Transit vehicles will operate in dedicated transit lanes, moving through intersections at the same time as general through traffic. For example on Oxford Street West, east-west RT will use the same green time as east-west through traffic. This minimizes transit delay and maximizes green time for the major street general traffic.

### 6.3.1 Transit-only Signal Phase

The RT service will be implemented with minimal reduction in the total green time that is now available for general through traffic. For example on Oxford Street West, east-west RT will use the same green time as east-west through traffic. This minimizes transit delay and maximizes green time for the major street general traffic.

### Exhibit 6.2: Signalized Intersections requiring a Transit-only Signal Phase

<table>
<thead>
<tr>
<th>North + East Corridor</th>
<th>South + West Corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richmond St at Hillview Blvd/ Masonville Place</td>
<td>Oxford Street West at Wharncliffe Road</td>
</tr>
<tr>
<td>Western Road at Lambton Drive</td>
<td>Wharncliffe Road at Riverside Drive</td>
</tr>
<tr>
<td>Richmond Street at University Drive</td>
<td>Ridout Street at King Street</td>
</tr>
<tr>
<td>Richmond Street at Central Avenue</td>
<td>Clarence Street at King Street</td>
</tr>
<tr>
<td>Dundas Street at Ontario Street</td>
<td>Wellington Street at Queens Avenue</td>
</tr>
<tr>
<td>Dundas Street at Highbury Avenue</td>
<td>Wellington Road at White Oaks Mall</td>
</tr>
<tr>
<td>Highbury Avenue at Oxford Street East</td>
<td>Oxford Street East at Transit-Only Entrance to Fanshawe College</td>
</tr>
</tbody>
</table>

If transit signal priority measures are implemented, which is beyond the scope of this analysis, green time allocation for vehicular traffic may be reduced when the priority is called, with time reallocated to different phases.

The effect of transit signal priority on general traffic operations requires further study.

### 6.3.2 Proposed new signalized intersections

Proposed new signalized intersections are summarized in **Exhibit 6.3**. These signals are required to provide controlled access to RT station platforms, and to accommodate U-turns that are generated with the conversion of unsignalized intersections and driveways to right-in/right-out only.
6.0 MULTI-MODAL TRANSPORTATION PLAN

Exhibit 6.3: Proposed new signalized intersections

<table>
<thead>
<tr>
<th>North + East Corridor</th>
<th>South + West Corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarence Street at Angel Street (pedestrian signal)</td>
<td>Oxford Street West at Beaverbrook Avenue</td>
</tr>
<tr>
<td>Dundas Street at Dorinda Street</td>
<td>(RT Station)</td>
</tr>
<tr>
<td>Dundas Street at McCormick Blvd (RT Station)</td>
<td>Riverside Drive at Wilson Avenue</td>
</tr>
<tr>
<td>Dundas Street at Ashland Avenue</td>
<td>Wellington Road at South Street (RT Station)</td>
</tr>
<tr>
<td>Highbury Avenue at Canada Post / LPH Secondary Plan (RT</td>
<td>Wellington Road at Bond Street (RT Station)</td>
</tr>
<tr>
<td>Station)</td>
<td>Wellington Road at Whetter Avenue</td>
</tr>
<tr>
<td>Oxford Street East at Secondary School / LPH Secondary</td>
<td>Oxford Street West at Entrance to 530 Oxford</td>
</tr>
<tr>
<td>Secondary Plan (RT Station)</td>
<td>Street West</td>
</tr>
<tr>
<td>Oxford Street East at Ayreswood Avenue</td>
<td></td>
</tr>
<tr>
<td>Oxford Street East at Entrance to Fanshawe College</td>
<td></td>
</tr>
<tr>
<td>(RT Station)</td>
<td></td>
</tr>
</tbody>
</table>

6.3.3 Traffic Impact Results

Under a Business-as-Usual scenario, the volume of auto trips in 2035 will grow by more than 20% compared to 2009 volumes. Recognizing this, the overarching goal of the RTMP is to provide more attractive travel choices for Londoners, thus reducing their collective dependency on the automobile. Over the long term, this shift in behaviour can reduce the need for costly and disruptive road improvement projects, maintain good roadway level of service, and provide overall environmental benefits.

Recommended improvements identified in the Smart Moves TMP will accommodate much of the demand with only small impacts to travel time (-3% to 10%). Many of these improvements are more expensive over their lifecycle compared to transit, some are infeasible once the roadway is expanded to its limits, and most are inconsistent with the goals of developing a multimodal transportation network. Rapid Transit is efficient at carrying large volumes of passengers compared to private vehicles, thereby reducing the need for future roadway construction.

South + West Corridors

- **Oxford Street West:** In general, movements that are already considered critical in the existing conditions are anticipated to remain critical under the future BRT conditions. A high volume of U-turns are expected, particularly during PM peak period, when retail activities are higher. The addition of U-turn volumes, and the conversion to fully-protected phases would require more green-time to be re-allocated to the main street left-turn movements in the overall cycle length.

This is anticipated to cause minor capacity reductions for all other movements.

- **Wharncliffe Road and Riverside Drive:** Traffic operations are expected to be largely unchanged between scenarios due to BRT operating in mixed traffic, and no reduction in through lane capacity for general traffic. Some capacity reductions are anticipated at the Wharncliffe Road and Oxford Street and the Wharncliffe Road and Riverside Drive intersection, due to the assumed dedicated transit phase to accommodate the transit turning movement.

- **Queens Avenue:** One lane is converted to westbound rapid transit between Wellington Street and Ridout Street, but significant traffic operations impacts are not anticipated. With the conversion to two-way rapid transit traffic on Queens Avenue west of Ridout Street, the intersection of Ridout Street and Queens Avenue requires signal timing modifications to accommodate eastbound counter-flow BRT movements.

- **King Street:** The southbound left turn movement from Ridout Street to King Street is anticipated to exceed critical thresholds during the AM peak period, due to high traffic volumes entering the downtown core from the west. Degraded performance is anticipated for movements crossing King Street, but eastbound movements on King Street itself remain within capacity limits.

- **Wellington Street (north of Thames River):** The northbound left turn movement from Wellington Street onto Queens Avenue is expected to exceed critical thresholds, both due to the introduction of a transit only phase and high traffic volumes entering Downtown London from the south. Between King Street and the Thames River, the overall traffic operations are anticipated to be similar to existing conditions. North-south through capacities will be slightly reduced due to the increase in minimum timing intervals for left-turn movements. Northbound and southbound left-turn movements at signalized intersections will generally operate over capacity with significant delays, due to the introduction of protected-only left-turn phases.

- **Wellington Road (south of Thames River):** The reduction from three to two lanes per direction for north-south traffic is anticipated to increase congestion. This is compounded by more green-time being allocated to fully-protected northbound and southbound left-turn movements.

- **Commissioners Road and Wellington Road intersection:** This intersection currently operates at capacity, with several critical movements due to high traffic volumes and split-phase operation in the east-west direction. There is very limited reserve capacity in the east-west direction that could be re-allocated to the north-south direction.

North + East Corridors

- **Richmond Street and Western Road, between Fanshawe Park Road and Western University:** This corridor is
expected to experience high levels of background traffic growth due to the planned widening of Western Road / Wharncliffe Road to the south. To accommodate growth in the north-south direction, a higher proportion of signal green-time must be allocated to these movements. However, the result of this action is decreased performance for cross street movements. This is most pronounced at the Richmond Street and Fanshawe Park Road intersection, which already experiences critical movements.

- **Richmond Street between University Drive and Central Avenue:** With the reduction to one through lane per direction, northbound and southbound through movements are affected at many intersections. The intersection of Richmond Street and University Avenue and the intersection of Richmond Street and Oxford Street are existing hotspots.

- **Clarence Street:** The reconfiguration of Clarence Street to be one-way southbound from Angel Street and Dufferin Avenue, two-way between Dufferin Avenue and Queens Avenue, and one-way northbound between Queens Avenue and King Street will alter travel patterns in this area.

- **King Street east of Wellington Street:** Intersections will perform adequately. Some reduced performance is anticipated for northbound and southbound movements at cross streets, particularly at King Street and Adelaide Street. However, this reduction in performance is limited to delay and queue length. The proposed reconfiguration results in more capacity available for the remaining movements.

- **Dundas Street between Ontario Street and Highbury Avenue:** The reduction to one lane per direction, restriction of left turns at several signalized intersections, and addition of U-turn volumes combine to reduce performance of the eastbound and westbound through movements. As green-time is re-allocated to lessen the impact of the main street capacity constraints, side street movements begin to see worsened performance. This is most pronounced at the Dundas Street and Egerton Street intersection.

- **Dundas Street and Highbury Avenue intersection:** Most movements see a reduction in performance, with the southbound through movement experiencing pronounced performance degradations. In addition, eastbound left turns and southbound left turns, which operate as protected / permissive phases during the existing conditions scenario, are worsened as they become fully protected.

- **Highbury Avenue:** North-south through movements generally experience good performance, however left turns have reduced capacity. In addition, traffic volume growth along Highbury Avenue results in less green-time available for movements from driveways.

- **Highbury Avenue and Oxford Street intersection:** Heavy vehicle volumes in all directions, especially during the PM peak period, contribute to most movements meeting critical thresholds even in existing conditions. Eastbound and westbound left-turn movements are particularly worsened in the future BRT condition scenario.

- **Oxford Street East, east of Highbury Avenue:** This section is not anticipated to experience significant impacts from the introduction of the BRT system. In general, side street movements can accommodate a reallocation of green-time to east-west movements along Oxford Street East, at the cost of higher delay to side street movements.

6.3.4 Changes to Unsignalized Intersections and Driveways

Along most of the RT corridors, dedicated lanes will be provided in the middle of the road to be used by transit. To provide safe and efficient transit operations, unsignalized intersections and driveways will become right-in/right-out only to reduce conflicts between transit and turning vehicles. This is a typical approach used for many BRT systems in North America. Exhibit 6.4 illustrates the typical changes to unsignalized intersections and driveways.

As the study proceeds to the next phase, an analysis of the changes to traffic patterns may be undertaken to understand the resulting demand for U-turns at signalized intersections. This analysis will inform the preliminary engineering design.

Exhibit 6.4 Changes to Unsignalized Intersections and Driveways
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London’s City Structure Plan lays out a land use framework for the city’s growth, and is composed of different Urban Place Types. The Place Type establishes the policies necessary to create the type of forms, uses and intensity envisioned for an area.

The Primary Transit Area defines the limits of the City’s focus on transit infrastructure investment and intensification of residential development (targeting 75% of all intensification within this area). This area is bound by Fanshawe Park Road to the north, Wonderland Road to the west, Southdale Road (west of White Oak Road) and Bradley Avenue (east of White Oak Road) to the south, and Highbury Avenue to the east. This area encompasses the three major Place Types that RT will serve: Downtown London, the Transit Villages, and the RT corridor. This section summarizes these areas, which RT will serve.

The London Plan details several policies that apply to the Primary Transit Area. A high standard of urban design will be applied to the review of new projects, and residential amenity will be protected. Development in this area should be designed to be transit-oriented and well serviced by cycling lanes and paths, sidewalks, urban public spaces, and public seating areas. The supply of public parking in the area will be managed to support transit and the active mobility networks. Civic infrastructure and mobility projects within the Primary Transit Area will be designed to enhance active mobility and transit usage.

For greater detail on the policies for the Primary Transit Area and the Place Types refer to The London Plan.

7.1 Downtown London

7.1.1 Vision

Downtown London is envisioned to be the City’s calling card to the world; a place that reverberates the moniker: exciting, exceptional and connected. Downtown will be the centre of the city’s emerging multi-modal transportation network as it will be the hub of intercity rail, high-speed rail, and RT. It will also offer a premier pedestrian experience and provide recreational and commuter cycling facilities. The area will be the hub of business, arts and culture, entertainment and shopping, which will attract workers, visitors and residents. Downtown will become an exceptional neighbourhood where residents can live, work and play and will provide housing, services and amenities that can serve a wide spectrum of lifestyles, including families, seniors and young adults.

7.1.2 Permitted Uses

A broad range of uses may be permitted Downtown, helping to expand the vibrant mix of facilities that already make the area home. This includes residential, retail, service, office, cultural, institutional, entertainment, recreational and other related uses. Educational facilities of all scales and types will also be encouraged. Residential developments will not have parking minimums.

Along commercial-oriented streetscapes, retail and walk-in service uses will be encouraged at street level to create a vibrant streetscape experience, while residential and office uses will be directed to upper floors.

7.1.3 Intensity and Form

The Downtown will permit the tallest building heights, and greatest densities. New buildings will be required to be at least 3 storeys (or 9 metres) and may not exceed 20 storeys. Bonus Zoning of up to 35 storeys may be permitted. Tall buildings are required to achieve a high level of design excellence.

All the planning and design that is undertaken Downtown is required to place a priority on the pedestrian experience and buildings will be designed to include unobtrusive architectural features to protect pedestrians from adverse weather.
7.2 Transit Villages

7.2.1 Vision
Four Rapid Transit Villages will anchor the end of each RT corridor, in roughly the four cardinal points of north (Fanshawe Park Road and Richmond Street), east (Oxford Street East and Highbury Avenue), south (Bradley Avenue and Wellington Road), and west (Oxford Street West and Wonderland Road). The Rapid Transit Villages will be directly connected to Downtown and the other Transit Villages by RT, and be tied together by an exceptionally designed pedestrian form that connects directly to transit stations.

The Transit Villages are envisioned to emerge as high-density, mixed-use urban neighbourhoods within existing built-up neighbourhoods. This will encourage a broad range of uses with a focus on retail, commercial services, office, entertainment and recreational services. New public spaces will help create meeting places for these complete communities.

7.2.2 Permitted Uses
A broad range of residential, retail, service, office, cultural, institutional, hospital, entertainment, recreation and other related uses may be permitted. Mixed-use buildings will be encouraged, with retail and service fronting the street at grade.

7.2.3 Intensity and Form
Transit Villages will concentrate the tallest buildings in their centres, which will then step down to surrounding Neighbourhood Place Types. The buildings and public realm will be designed to support pedestrians, cycling and transit through building orientation and location of entrances. The site layout will reinforce pedestrian safety and easy navigation. Creative and distinctive forms of building design will be encouraged. Structured and underground parking will be encouraged.

Larger developments with steep lots will require an internal grid-based road network to facilitate redevelopment over time. Buildings within the development village will be at least 2 storeys, or eight metres. Bonus Zoning may permit heights of up to 22 storeys.
7.0 URBAN PLACE TYPES

7.3 Rapid Transit Corridors

RT corridors will radiate from Downtown and connect to the four Transit Villages. The corridors have an overarching vision with specific Segment Type policies given the local context.

7.3.1 Rapid Transit Corridor

Vision

RT corridors are envisioned to be mixed-use, mid-rise communities that border the length of RT services. The land uses along the corridors will vary depending on the character, uses and intensity of the surrounding areas. Some will be primarily residential with small-scale, street-facing commercial uses while others may feature stand-alone commercial uses or mixed-use development.

The corridors will have easy access to Downtown and Transit Villages via RT, and will be fundamentally walkable and transit-oriented. Areas closer to RT stations may be more appropriate for greater density and height to support transit usage for a larger number of residents and workers.

Permitted Uses

These corridors will provide for a range of residential, retail, service, office, cultural, recreational and institutional uses. An emphasis will be placed on constructing small, mixed-use, mid-rise buildings that support a range of uses including retail and service fronting the street.

Intensity and Form

Along the RT corridors, the minimum height of development will be 2 storeys (or 8 meters), with an opportunity of up to 12 storeys with bonuses. Within 100 meters of RT stations, or at the intersection with civic boulevards or urban thoroughfares, the permitted maximum is 12 storeys, with the possibility of 16 storeys with Density Bonus.

7.3.2 Rapid Transit Corridor Segment Types

There are three specific segment-types designated for RT corridors that give context-specific goals. These are discussed in further detail below.

Main Street

These areas have been traditionally developed for pedestrian-oriented shopping or commercial uses. These areas have a pedestrian-scale and a range of existing amenities, services, housing types and public spaces. This covers the Old East Village, Richmond Row and SoHo.

The goal for these areas is to provide linear and street-oriented forms and uses, meaning buildings will be close to the street. A broad use of ranges will be permitted in order to provide local shopping and commercial options so that residents can walk to meet their daily needs. Buildings will be a minimum of 2 storeys (or 8 metres) to a maximum of 12 storeys. Opportunities for Bonus Zoning may be permitted up to 16 storeys.

Preservation

The corridors’ path through Old North Richmond Street is designated as a preservation area. The area contains a large number of heritage designated properties, mature landscapes and active streetscapes that should be respected.

The Old Richmond North Street segment currently serves as a gateway from the north into Downtown London. To preserve the character and sense of place that is associated with this distinct area, the retention of existing buildings will be encouraged. Only small-scale redevelopment and new buildings of a similar scale to those existing within the streetscape will be permitted.

Transitional

These areas cover parts of the RT corridors that are not Main Street or Preservation. This is primarily the areas of Dundas Street from First Street to Veterans Memorial Parkway, Wellington Road from Southdale Road East to Bradley Avenue, and Wharncliffe Road South from Commissioners Road to Southdale Road.

The goal for these areas is to move towards more intense forms and uses, in areas where the current development patterns can continue to exist, as long as they support the long-term vision of the corridors. Development scale will reflect the overall RT corridors intensity. Larger-scale retail and service uses may also be permitted along the corridor, subject to additional policies related to future redevelopment of the sites.
8.0 PLANNING AND URBAN DESIGN FRAMEWORK

The overall vision for the London BRT is to foster Rapid and Effective Transportation, Environmental Resilience and Connected Urban Communities. The City has reinforced these three goals by entrenching them in the policies contained in the City’s recently approved Official Plan, called The London Plan. One example of the initiative is the inclusion of two new Urban Place Types: Transit Villages and Rapid Transit Corridors. These Urban Place Types are subject to specific policies to help guide their growth to ensure they are supporting the City’s vision as they develop with the implementation of the RT. By supporting these three initiatives, the RT Corridors and Transit Villages will aid in reaching The London Plan’s ultimate vision: London 2035: Exciting, Exceptional, Connected.

8.1 Urban Design Principles

8.1.1 RT Corridors

The London Plan defines all RT corridors as RT boulevards, which are characterized by:

- Priority on through movement and connection to/of transit vehicles;
- Moves high volumes of traffic (pedestrian, cycle and vehicular);
- Very high-quality pedestrian realm; and,
- Very high standard of urban design.

With the implementation of these principles, RT boulevards will provide the opportunity for safe and effective transit, as well as for high quality urban design and an enhanced street experience for all users. The RT boulevards should operate as Complete Streets, which are multi-modal corridors that cater to users of all ages, abilities and travel modes. Complete Streets are defined by the following principles:

- Balanced Multi-Modal Transportation
- Environmental Resilience
- Lively Sense of Place
- Safe for All Users

These characteristics are further detailed in Exhibit 8.1.

8.1.2 Transit Villages & Stations

The London Plan has identified four Transit Villages, which permit higher densities, and a mix of uses to encourage vibrant urban neighbourhoods that connect to Downtown and each other through the RT network.

Transit Villages are predominantly situated at the termination points of the RT lines. There are four Transit Villages demarcated in The London Plan: Masonville, Fanshawe College, White Oaks and Wonderland. These areas are already built up, but have the potential for further mixed-use intensification in the form of residential, office, commercial, retail, institutional, and...
Infill redevelopment. Transit Villages should be exceptionally designed and provide a network of high quality public spaces.

**Transit Oriented Development**

As illustrated in Exhibit 8.2, Transit Villages should employ Transit Oriented Development principles to ensure that the spaces serve as community hubs and offer mixed-use development and high quality open spaces that encourage transit use and active transportation. As outlined in The London Plan, Transit Villages will be:

> "Exceptionally designed, high-density mixed-use urban neighbourhoods connected by rapid transit to the Downtown and each other. They will be occupied by extensive retail and commercial services and will allow for substantial office spaces, resulting in complete communities. Adding to their interest and vitality, Transit Villages will offer entertainment and recreational services as well as public parkettes, plazas and sitting areas. All of this will be tied together with an exceptionally designed, pedestrian-oriented form of development that connects to the centrally located transit station."

Transit Villages are expected to provide the following as they are developed:

- Multi-Modal Transportation Hub
- Strong Sense of Culture, Heritage and Community
- High Quality Public Realm and Placemaking
- Transit Oriented Development and Economically Prosperity
- Environmental Resilience
- Integrated Smart Technologies

By balancing these initiatives, the Transit Villages will transform these areas into vibrant places. Exhibit 8.3 presents a conceptual illustration of the look and feel of a Transit Village, and the types of elements that may be employed.

Transit Village design should respond to the existing conditions and projected uses for the areas. Following the initiatives set forward in the London Plan and Urban Design best practices, Transit Villages can be developed into lively neighbourhoods and activity nodes at the termination points of the BRT lines.

The RT Stations both within and outside of Transit Villages should be focal points, but also integrated into the surrounding streetscape and neighbourhood. The placement of RT Stations should be determined based on both operational and urban design considerations. RT Stations can provide an opportunity to develop a strong sense of place and branding across the RT network through the use of unique station form and a cohesive material palette.
8.0 PLANNING AND URBAN DESIGN FRAMEWORK

Exhibit 8.3: Conceptual Rendering of a Typical Transit Village

- Transit Oriented Development
- Animated Street-Wall with Parking at the Rear or Underground Parking
- Opportunities for BRT Smart Technology
- Wayfinding Techniques
- Animated Street Front
- Opportunities for Public Art
- Bicycle Parking
- BRT Priority
- Pedestrian Clearway and Pedestrian Priority at Crossings
- Co-ordinated Street Furnishings
- Context Appropriate Street Trees (including hydro-form species where necessary)
- Cycle Track with Buffer from Roadway and Pedestrian Zone
- High Quality Public Realm with a Unique Co-ordinated Sustainable Material Palette

Source: IBI Group
8.2 Streetscape Strategy

The streetscape condition should not only uphold Complete Streets and Transit Oriented Development principles and best practices, but also respond to the present and future surrounding land uses and available ROW. Through responding to the surrounding land use context, the streetscape can cater to the specific needs of the community. The corridors have been divided into five streetscape typologies, described below. The locations of these typologies are illustrated in Exhibit 8.4 and summarized in Exhibit 8.5, with ideal elements listed in Exhibit 8.6. Proposed streetscape geometry with cross-sections are illustrated in Appendix L.

Streetscape typologies were developed for RT boulevards for the following Place Types:

- Downtown
- Transit Village
- Rapid Transit Corridor
- Institutional (Note: this typology will be developed in consultation with Western University at a later date)

As The London Plan explains, not all segments of the RT boulevards "will be the same in character, use and intensity." Due to the specific contexts along the RT boulevards, these areas contain differing active transportation facilities such as cycle tracks and a multi-use path that respond to a more detailed contextual analysis along the corridors. The following conditions are employed for the typical streetscape cross-sections:

- Standard Condition
- Standard Condition with Multi-Use Path
- Standard Condition with Cycle Tracks

Exhibit 8.4: Streetscape Typology Sections
### Exhibit 8.5: Streetscape Typology Characteristics

<table>
<thead>
<tr>
<th>Place Type</th>
<th>Land Use Context</th>
<th>Right of Way</th>
<th>User Priority</th>
<th>Place-Making Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown</td>
<td>Downtown Mixed Use/ Commercial</td>
<td>Minimal and Non-Flexible</td>
<td>Transit and Pedestrian</td>
<td>Lively Public Realm and Destination</td>
</tr>
<tr>
<td>Transit Village</td>
<td>Future Development</td>
<td>Flexible</td>
<td>Multi-Modal Transportation</td>
<td>Vibrant Community Hub</td>
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<tr>
<td>Rapid Transit Corridor</td>
<td>Intensification</td>
<td>Varies</td>
<td>Multi-Modal Transportation</td>
<td>Vibrant Corridor</td>
</tr>
<tr>
<td>Institutional</td>
<td>Geometry of this cross section is to be developed in consultation with Western University</td>
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</tbody>
</table>

### Exhibit 8.6: Streetscape Typology Ideal Elements

<table>
<thead>
<tr>
<th>Place Type</th>
<th>Condition</th>
<th>Sidewalk</th>
<th>Multi-Use Path</th>
<th>Cycle Track</th>
<th>Planting/ Furnishing Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown</td>
<td>N/A</td>
<td>√</td>
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<td></td>
</tr>
<tr>
<td>Transit Village</td>
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<td>√</td>
<td></td>
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<tr>
<td>Rapid Transit Corridor</td>
<td>Standard</td>
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<td>Standard with Multi-Use Path</td>
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<tr>
<td></td>
<td>Standard with Cycle Tracks</td>
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<tr>
<td>Institutional</td>
<td>N/A</td>
<td>Geometry of this cross section is to be developed in consultation with Western University</td>
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### 8.3 Elements of Continuity

In order to maintain a cohesive identity for all RT boulevards, certain elements should be consistent throughout all the corridors regardless of the typology employed. These elements include the following:

- Transit shelters
- Continuity strip (material and size)
- Lighting (roadway, pedestrian, and bollards)
- Materials (unit pavers, concrete finishes, etc.)
- Planting palette
- Crosswalk treatment
- Streetscape furnishing family (except for BIA initiatives)
- Pavement markings
- Signage

The use of these continuous elements will create a sense of unity throughout the RT boulevards, helping to establish a strong BRT identity. The branding of the BRT service and the RT boulevards is important as it will help the community establish a sense of familiarity with the system and encourage ridership.

Refer to The London Plan, Urban Design Guidelines and Secondary Plans for more information on streetscape recommendations.