

City of London

A New Mobility Transportation Master Plan for London

2030 Transportation Master Plan: SmartMoves

Final Report: Volume 1 - Executive Summary

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City of London

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2030 Transportation Master Plan: SmartMoves
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Executive Summary

1. Introduction: The New Mobility TMP

This London 2030 Transportation Master Plan (TMP) study began in the fall of 2009 with the mandate of updating the 2004 TMP. Following the 2004 study, the London Transit Commission (LTC) completed a Transit Ridership Growth Strategy in 2006 which recommended implementation of a Bus Rapid Transit (BRT) strategy to achieve the mode share targets of the 2004 TMP. The City of London (the City) also completed their first Bicycle Master Plan in 2007, which contained a number of recommendations to enhance cycling facilities throughout the City.

The primary scope of this TMP update was to build upon the recommendations from these recent studies, incorporate the most recent strategic planning objectives of City Council and assess the viability of implementing a rapid transit system for the City.

The City of London Strategic Plan identified a vision as a “City of Opportunity”. The plan identified five strategic outcomes to guide future planning and contribute to a continuation of the high quality of life in London, the results are:

- A Vibrant and Diverse Community
- A Green and Growing City
- A Sustainable Infrastructure
- A Caring Community
- A Strong Economy

Many of these objectives have links to transportation infrastructure and services. The recommendations within this TMP are primarily designed to provide Sustainable Transportation Infrastructure; support a Green and Growing City; and in doing so, support a Strong Economy.

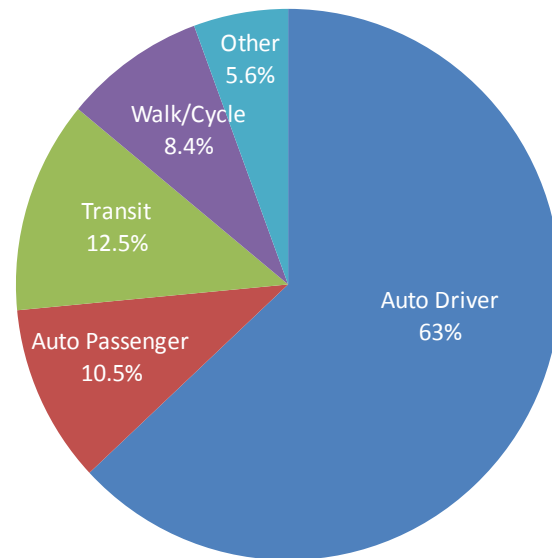
The London 2030 TMP is a long-term Transportation Strategy for the City that will help guide the City’s transportation and land use decisions through to 2030 and beyond. The TMP is focused on improving mobility for residents of the City by providing viable choices through all modes of travel.

On a typical weekday, City of London residents make an average of 620,000 person trips.

The study included the completion of a comprehensive household travel survey. The survey established a baseline of current travel patterns and public attitudes towards transportation in the City.

The survey confirmed that the private automobile dominates as the existing mode of choice for daily travel, accounting for 73.5% of travel in the weekday a.m. and p.m. peak periods.

However, the survey also revealed that public transit is carrying a larger share of daily and peak period trips than initially believed. The current 12.5% mode share has exceeded the 10% target established in the 2004 TMP. Use of active transportation modes (cycling / walking) has also improved from the 2004 TMP. The survey found that almost 9% of daily trips are made by active modes, compared to 7.5% in 2004. Other modes such as taxi, school bus and motorcycle make up the remaining 6%.



2009 PM Peak Period Mode Shares

These findings demonstrate that the residents of the City of London are embracing more sustainable forms of transportation. More importantly, these findings suggest that a plan featuring the right mix of land use and transportation policies combined with strategic infrastructure investments could significantly increase the share of non-auto trip making and support a viable rapid transit system in the city.

The key goal of the London 2030 TMP is to provide more attractive travel choices for those who live, work and play in London. To achieve that goal, significant improvements in transit service will be required as well as greater support for walking, cycling and carpooling. If more attractive travel choices are available, Londoners will be more likely to change their travel patterns, resulting in an overall reduced dependency upon the automobile. Over time, this shift in behaviour can reduce the need for costly and disruptive road widening projects while maintaining overall good transportation levels of service and providing overall environmental benefits. To guide the development of this TMP, weekday peak period modal share targets were established to provide an overall framework for this “new mobility” TMP.

Smart Moves Mode Share Targets

Mode	Today	2030 Target
Transit	12.5%	20% City-wide
Active Transportation (walking/cycling)	9%	15% City-wide
Auto (driver & passenger)	73.5%	60% City-wide
Other Modes	5%	5%



The London 2030 TMP study is guided by a Council supported vision that is transit focused. Transit works best where there is sufficient land use density to generate ridership to support the system. Historically, the City of London has been growing at a rate of about 1% per year. Much of this growth has been occurring in the urban fringe areas, with only 22% of future growth planned to be accommodated through intensification of existing built up neighbourhoods.

In the context of the pattern of historical growth, achieving this transit focused vision requires that the City first consider changes to the way that future growth is managed. This critical first step sets the framework for the rest of the TMP, which in turn establishes the transportation policies and infrastructure to support a new vision for mobility.

Accordingly, there are five “Smart Moves” that form the basis for this new TMP, each playing a role in supporting the achievement of the plan and Council’s strategic objectives. Each of these initiatives support a strong and healthy downtown, which will remain the city’s primary economic engine and pre-eminent Centre in the emerging urban structure. These five “Smart Moves” are:

- Rethinking Growth to Support the TMP
- Taking Transit to the Next Level
- Actively Managing Transportation Demand
- Greater Investment in Cycling and Walking Infrastructure
- More Strategic Program of Road Network Improvements

A summary of these five bold initiatives is outlined in the following sections, and these key actions form the basis for the New Mobility Transportation Master Plan. The Executive Summary concludes with a brief discussion on the TMP Implementation Plan and provides recommendations on furthering the Collaborative Approach to City Building.

The Final TMP Technical Summary Report (Volume 2), outlining and describing the study recommendations is structured into four chapters:

1. Introduction;
2. City Building for the New Mobility;
3. The New Mobility TMP; and
4. Implementing the New Mobility Plan.

Due to the large size of the TMP study documentation, the final report is divided into the following three Volumes: Volume 1 - Executive Summary, Volume 2 - Final Report, and Volume 3 - Appendices.

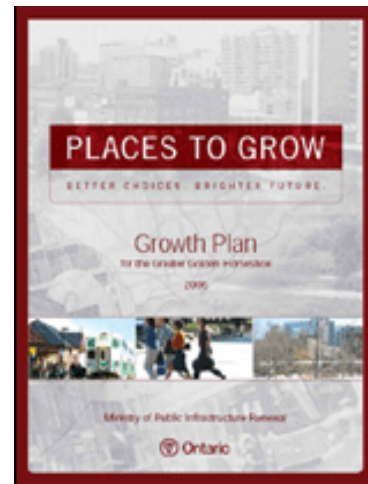
2. Rethinking Growth to Support the TMP

A key goal of the Transportation Master Plan is to provide convenient alternatives to enhance mobility for all users and all modes of travel. The success of this TMP will depend on assisting such behaviour changes by fostering an urban structure and form that encourages increased use of transit, walking and cycling. The City must also be prepared to help people find attractive choices to automobile use.

London must steadily encourage the emergence of a more transit, pedestrian and bike-friendly urban form. This means that new growth, and other major City initiatives, must be encouraged and directed towards those locations which can best contribute to this mobility-driven urban structure.

Many cities in Ontario, and around the world, are recognizing that traditional patterns of urban development are not sustainable in terms of their municipal operating costs, personal movement expenses and climate change implications. In 2006 the Ontario Government introduced comprehensive legislation in its Places to Grow Act to direct the pattern of urban development in the Greater Golden Horseshoe area in southern Ontario centred on the Toronto-region.

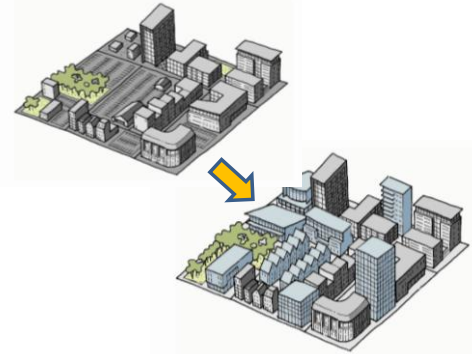
This legislation and policy direction sets an important precedent for London and other major Ontario cities not covered by the Act. The Act's primary focus is to set clear urban boundaries and targets for intensification within the existing urban area and new settlement areas. Its secondary purpose was to provide a sustainable distribution of people, jobs and destinations to support a more developed transit system.



While London must develop its own distinct growth management strategy, *Places to Grow* and other precedents for growth management suggest some effective strategies. These strategies can be summarised as follows:

- Place clear limitations on urban expansion;
- Direct as much new growth as possible to locations inside the existing built area of the city;
- Encourage growth to locations where its supports transit ridership, walking and biking;
- Locate key destinations in places where they can be served by transit; and
- Improve the quality of the built urban environment to establish attractive alternatives to city-edge living and working.

A Car-Oriented Downtown (top) versus a Compact, Pedestrian-Friendly Downtown (bottom)



These strategic directions have been used in the development of a series of land use scenarios for assessment during the TMP process. Three primary growth / transportation scenarios were assessed in order to determine the most effective integrated land use and transportation strategy to achieve this transit focused vision.

Scenario 1 representing a continuation of the status quo, was compared to Scenario 2 and 3 (along with two sub alternatives); each of which featured alternative growth allocation patterns and growth rates, along with higher transit mode share targets.

The technical analysis of Scenario 1, with its low 22% intensification rate and its focus of growth around the periphery of the city, has clearly shown that continuing this type of growth strategy does not support a transit focused vision. Based on the growth assessment findings, City Council directed the study team to finalize the TMP based on the following:

<p>Scenario 1</p> <p>Sustain Existing Service Levels</p> <ul style="list-style-type: none"> ▶ 1% annual growth ▶ 22% intensification ▶ 10% transit share
<p>Scenario 2</p> <p>More Balanced Approach</p> <ul style="list-style-type: none"> ▶ 1% Annual Growth ▶ 40% intensification ▶ 15% transit share
<p>Scenario 3</p> <p>Transit Focus</p> <ul style="list-style-type: none"> ▶ 2% annual growth ▶ 40% intensification ▶ 20% transit share

Assessment of Growth Scenarios – Key Findings

1. *The status quo (1% growth with 22% intensification) does not support rapid transit, does not support downtown growth, and is not sustainable in the longer term. A higher city subsidy for transit and higher transportation infrastructure costs per new resident could be expected.*
2. *With a growth rate of 1%, London can only support rapid transit (RT) if the City's growth strategy directs more people and jobs to locations along the proposed RT routes. If 40% of future growth can be located within existing built-up areas and directed to two key corridors, then London would have the ridership needed to support two RT routes: one north/south and one east/west.*
3. *Intensification (even with low growth rates) reduces growth related infrastructure costs and supports higher transit ridership making rapid transit viable. This in turn supports growth downtown.*
4. *Higher growth rates of up to 2% per year would support higher order transit, significantly reduce infrastructure costs per new resident, and would allow the city urban structure (particularly the downtown) to change faster.*

- A growth rate of 1% to be utilized as a conservative baseline;
- A growth rate for the City of 2% to be the corporate target to guide planning;
- Transportation goals, land use, development intensification and urban form be aligned; and
- A minimum 40% intensification target be adopted for the upcoming Official Plan review.



London City Hall

Based on Council direction, the TMP team considered both Scenarios 2 and 3 in developing this TMP. These scenarios feature a 40% intensification target, meaning that 40% of future growth will be directed into the current built up areas of the City to provide the land use density and mix of uses to support transit and non-auto modes of travel. Scenario 2 assumes the baseline 1% per year growth

rate (which would be considered conservative from a “BRT” ridership perspective). Scenario 3 assumes a higher 2% annual growth rate which would represent the corporate target to be pursued. If achieved, Scenario 3 might offer the possibility of expanding the Bus Rapid Transit (BRT) network or upgrading parts of the system to Light Rail Transit (LRT).

This unique TMP approach provides important flexibility in plan implementation. If the City achieves a higher growth rate, the additional infrastructure improvements and associated costs will have been identified and specifically linked to that additional growth. If the incremental growth is planned to be transit-oriented, it can increase the effectiveness of the initial BRT investments, boost BRT and overall transit system ridership, and minimize the cost of additional infrastructure improvements.

The ongoing ReThink London initiative is an important city building master plan that will take these growth management strategies and use them to establish the specific goals, priorities, and policies that will shape how the community grows in the future.



The growth management strategies will be based on an urban structure plan that will establish the overall intentions for the future form and function of the urban areas, and identify the specific locations where growth should be encouraged. An urban structure plan typically sets out the major growth points, or ‘nodes’ – where growth is to be encouraged. These are linked by a series of ‘corridors’, representing major streets that have potential for rapid transit development, and connect to other major elements of the city’s transportation infrastructure, such as airports, transit hubs and regional expressways.

The City Planning and Transportation Departments have been active partners in the preparation of this TMP. In its recent draft publication, *Building the Place to Be – City of London Urban Design Guidelines*, the City Planning Department prepared a ‘nodes and corridors’ urban structure plan for London. This plan, which reflects the emerging directions of the TMP, identifies north/south and east/west rapid transit corridors and identifies key nodes such as the downtown, key intersections and the major educational and hospital institutions, as well as the airport and regional transportation facilities. It also acknowledges that developing these nodes will require a focus on linking development to transit and walking/cycling infrastructure.

The Richmond/Wellington and Oxford/Dundas rapid transit corridors present design and development opportunities and challenges in their overall function and detailed implementation. Preliminary assessments of the corridors have

been made and examples of typical Transit Oriented Development (TOD), as illustrated below, have been prepared to demonstrate the viability of the corridors to accommodate significant growth, which will be confirmed through future detailed planning studies.



**Oxford West Corridor
(Farrah Road and Wonderland Road)**

**Wellington Corridor
(at Southdale Road)**



Rethinking Growth to Support the TMP

3. Taking Transit to the Next Level

At the heart of this “new mobility” TMP is a Bus Rapid Transit (BRT) network (see Exhibit ES-1). BRT is defined as bus-based transit service designed to provide faster, more efficient service than an ordinary bus line while resembling rail transit in service quality, look and feel.

A well designed BRT system attracts transit ridership, achieves better travel times than traditional transit routes, increases neighbourhood property values, attracts future residential and business development along its path, conserves energy and reduces greenhouse gases, and enhances the City’s image and the quality of life.



Hi -Tech BRT Vehicles – Coventry Sprint, UK

The proposed rapid transit network for London consists of a north/south line in the Richmond/Wellington corridor and an east/west line in the Oxford/Dundas corridor, both serving the downtown and broader central area as depicted on Exhibit ES-1. A bus-based rapid transit system can be supported with 1% annual growth (the recent historical trend), if 40% of the growth is directed to the downtown and along these transit corridors, as envisioned in land use Scenario 2, described in the previous section. With stronger overall growth or higher rates of intensification, the additional population and jobs in the BRT corridors may encourage ridership to justify parts of the network being upgraded from BRT to LRT. Rapid transit in the recommended corridors would build upon the existing strong ridership base and provide enhanced services to encourage new ridership.

Many other transit improvements will also be required to boost ridership and transit modal share. These include more frequent service on all main routes, re-structured routes to feed the BRT (and pre-BRT) services, and generally making the transit system easier to use for riders through broader use of technology, more fare options (including Smart Cards), and expanded use of real time information.



Viva - Real Time Arrival Information

Taking Transit to the Next Level

To achieve this new mobility TMP, a significant transformation is required in how Londoners travel. Changing travel behaviour takes time – it will not happen overnight! The City needs to start the process right-away. The best way to start is with early implementation of transit improvements that demonstrate noticeable benefits. With noticeable improvements residents and workers will be more likely to change their habits, particularly those who currently drive alone. Undoubtedly, the transit improvement with the most potential to change travel behaviour is the proposed BRT network, so efforts should be focused to have a functional network in place as quickly as possible. Recognizing that a number of road widenings will be needed to provide exclusive transit lanes, a target date of 2020 (while optimistic) is appropriate for having both corridors in place with close to 100% levels of transit priority.



EmX Bus Rapid Transit System – Eugene, Oregon

One of the major features of a bus based rapid transit system is its flexibility to allow for phased implementation. While road widenings are being planned, designed and constructed, service improvements and treatments such as signal priority measures and queue-jump lanes can be put in place to speed up service and build ridership. Operating the designated lanes as High Occupancy Vehicle (HOV) lanes, or allowing other “green vehicles” to use the lanes during peak periods may also be an excellent way to maximize the effectiveness of the investment in dedicated lanes while building ridership and BRT service frequency over time.

In this regard, a new semi-express service (similar to Waterloo Region’s I-Express) is recommended to be put in place in both corridors within two years and that this service should be steadily upgraded year by year.



Region of Waterloo – I-Express

Taking Transit to the Next Level

A preliminary analysis of both corridors has identified 25 intersections where queue-jump lanes could be quickly implemented. This will involve some refocusing of capital and operating plans, both at London Transit and the City.

Taking Transit to the Next Level

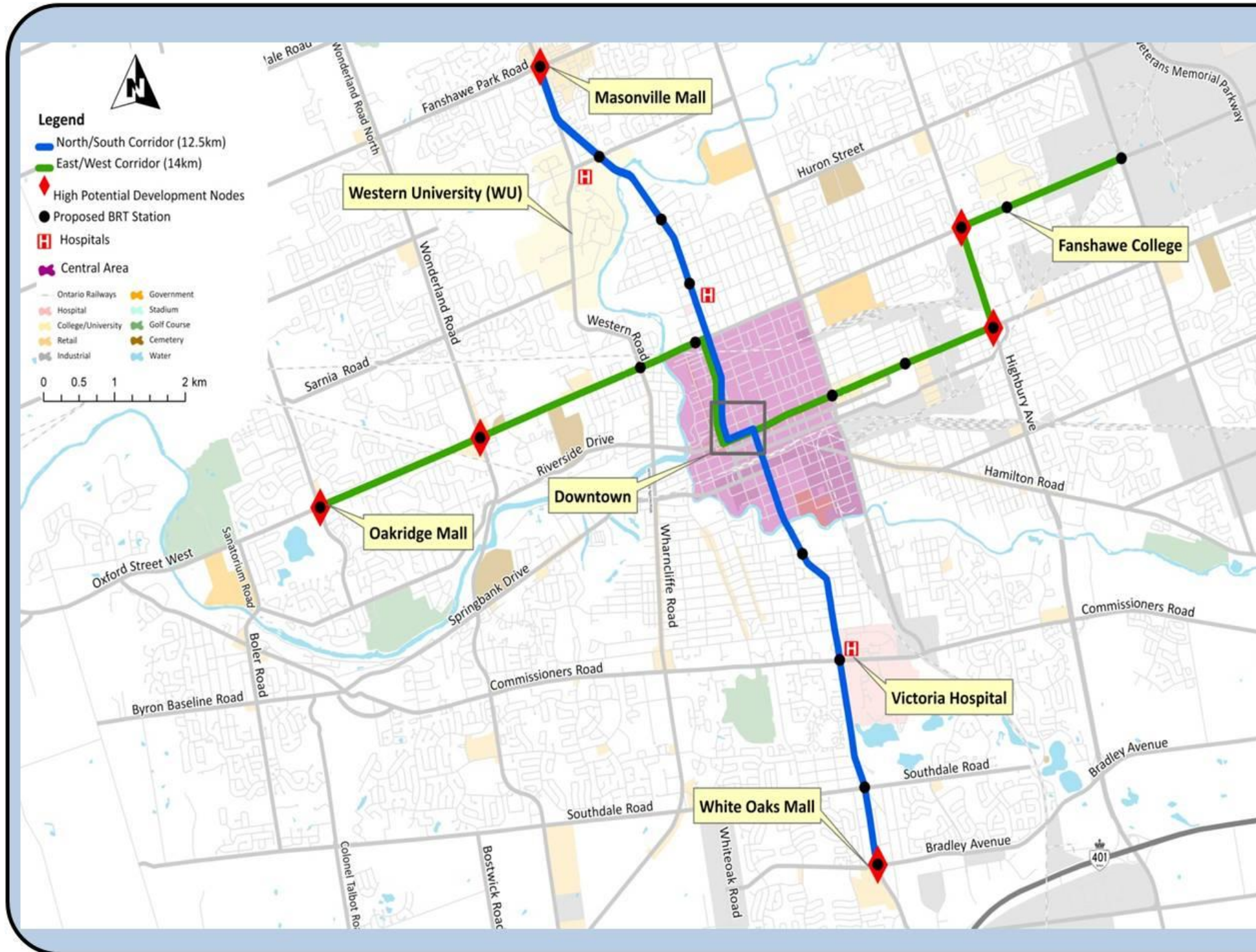


Viva Fare Payment Kiosk

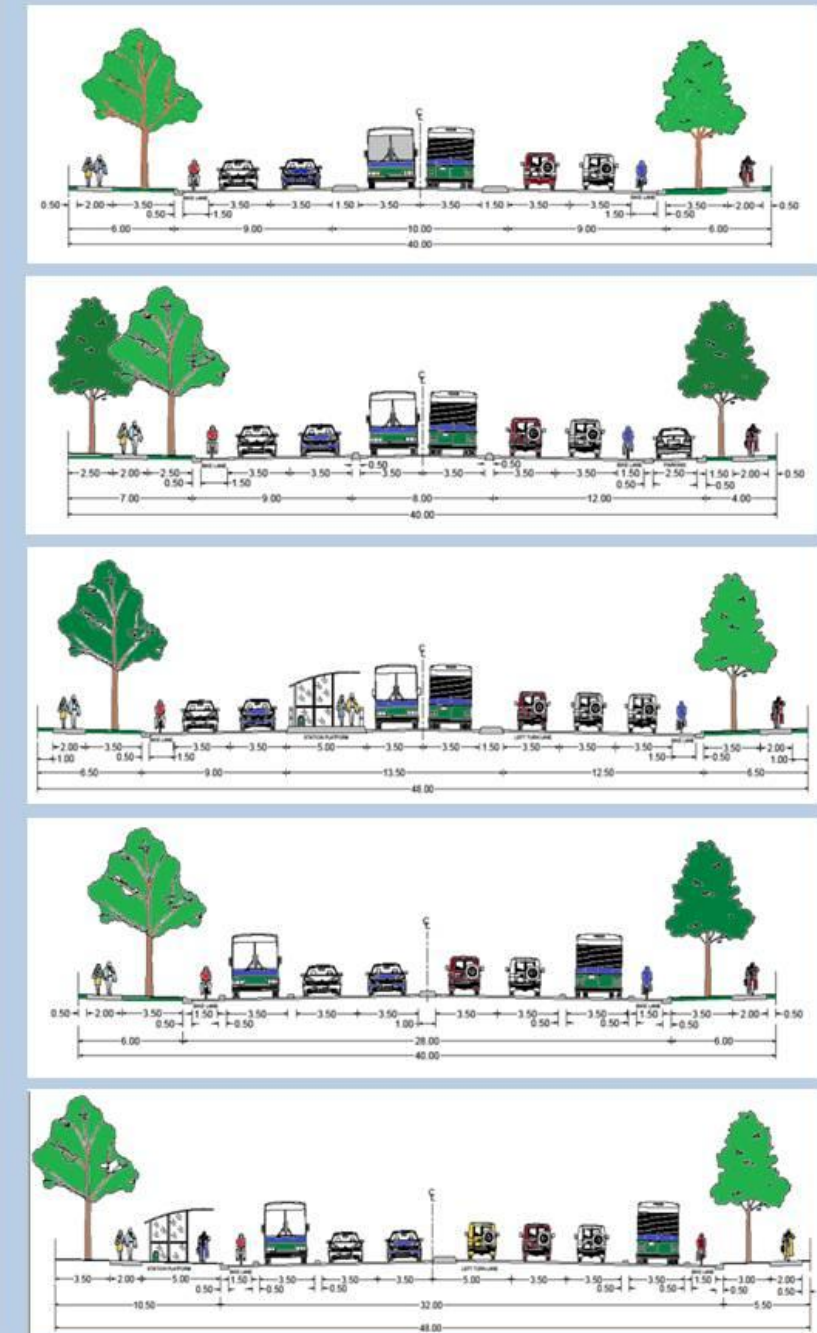


Transit Priority Signal

Exhibit ES-1. Recommended Bus Rapid Transit (BRT) Network



Potential BRT Configurations



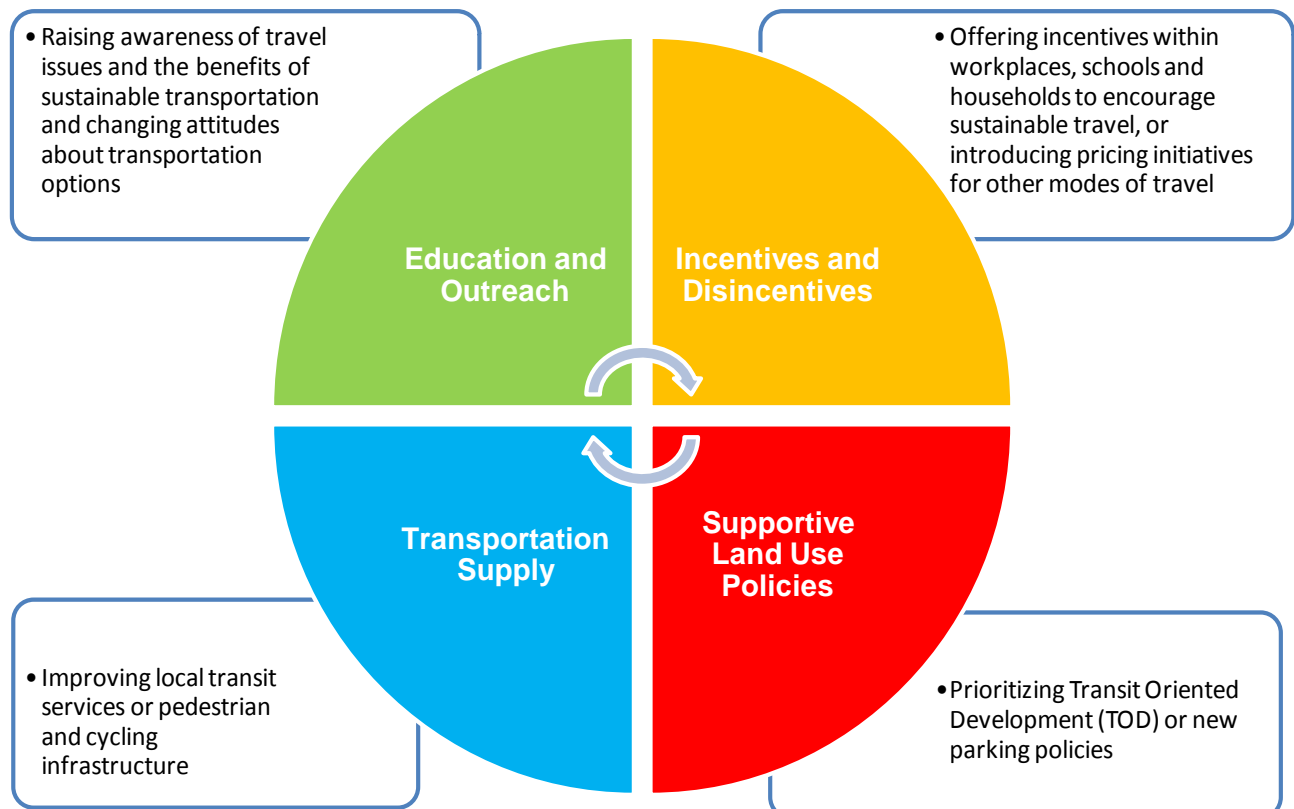
Taking Transit to the Next Level

4. Actively Managing Transportation Demand

As the City of London continues to grow and the importance of balancing economic, social and environmental needs is increasingly recognized, a more sustainable approach to accommodate growth and mobility should be encouraged. Many jurisdictions in Canada and across the world are moving away from traditional means of addressing transportation needs (e.g. investing in new roadway infrastructure) and are instead looking to ways to reduce and manage vehicular transportation demand.

Transportation Demand Management (TDM) incorporates a range of interconnected policies, programs and mobility services that influence whether, why, when, where and how people travel.

TDM can include the following:



Actively Managing Transportation Demand

Strengthening TDM efforts is another important part in the process of transforming travel in London. The following five broad directions are proposed as a focus for City efforts:

- Strengthen policy support
- Promote sustainable travel for all time periods
- Target commuter travel
- Target school travel
- Increase investment in Active Transportation infrastructure

Within these areas, twenty one specific initiatives are proposed for further development and implementation in the short term (Refer to Chapter 3, Section 2 of the Final Report).

Among these include developing a policy focus on “complete streets” and people (not just vehicle) movement, strengthening partnerships with the healthcare sector (members of which should be strong advocates of increased Active Transportation), intensifying the TDM program for City employees so as to set a strong example for other large employers, expanding the Active and Safe Routes to School (ASRTS) program to a city-wide scale, working with school boards to develop secondary school programs, and accelerating the implementation of on-street cycling routes and secure bicycle parking facilities.



Safe Routes to School – Walking School Bus, London

The supply and pricing of parking are also important policy tools at the City's disposal, which can influence modal choice decisions and therefore aid in the transformation process. The City is currently working on short and long-term parking strategies for the downtown and these should include pricing structures that support transit. Later, with intensification of development in the transit corridors and at specific nodes, similar parking supply and pricing strategies should be considered for these areas.

Another important parking initiative should be the implementation of park-and-ride facilities at the extremities of the proposed BRT lines. In other jurisdictions, this has proven to be an effective way of boosting transit ridership and reducing automobile travel, particularly for longer distance and downtown-oriented trips.



Structured parking may eventually replace surface lots in the downtown



Pay and Display Parking Kiosk, London

Actively Managing Transportation Demand

5. Greater Investment in Cycling and Walking Infrastructure

Active Transportation is closely linked with TDM and includes any form of human-powered transportation but, in the context of this TMP, the focus is on walking and cycling. Active Transportation has substantial benefits in the following areas:

- Improved personal health and quality of life;
- Reduced travel costs;
- Availability to a broad range of individuals;
- Reliability of travel time;
- Vibrancy and security of communities; and
- Minimal environmental impacts.

More Active Transportation infrastructure will be needed to support growth in intensification areas and improve access to transit, particularly the proposed new BRT services. Specific initiatives include completing gaps in the sidewalk network, providing a more continuous and extensive network of on-street bike routes, and providing secure bike parking facilities at all key public destinations and employment concentrations.

London has a vast network of trails and off-street bike paths focused on the Thames Valley Parkway (TVP) system. This network is a key contributor to the higher quality of life enjoyed by city residents. However, London's current bike lane network is relatively under-developed and discontinuous.



All Trips Begin with a Walk



**Secure Bicycle Storage,
Western University**



Walking and Cycling Structure, London

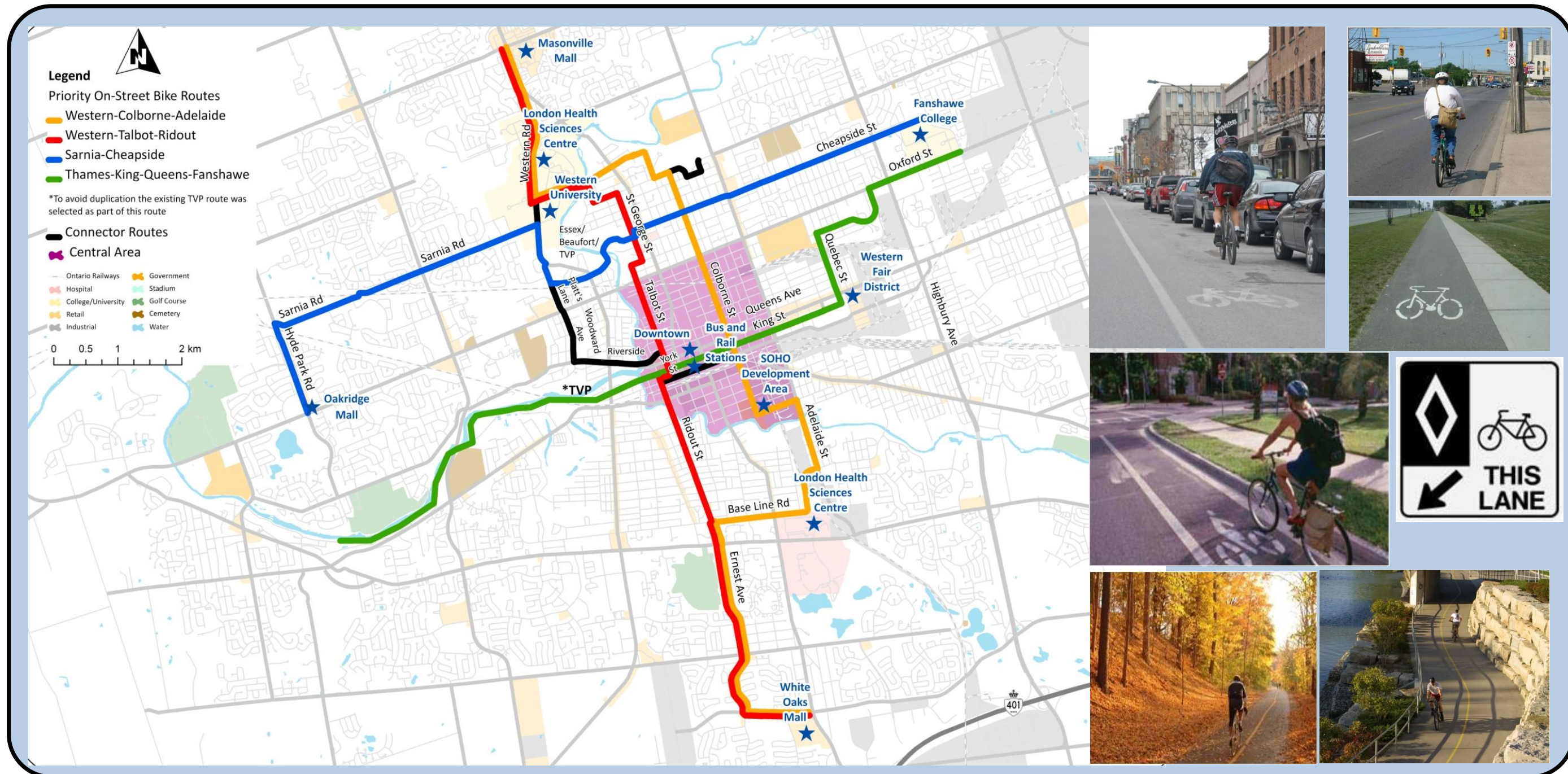
Of the twenty one identified TDM initiatives, the one considered most important to the transformation process is the upgrading of on-street cycling routes. In this regard, four priority on-street cycling routes have been identified (see Exhibit ES-2) for implementation within 3 years using bike lanes wherever possible.

Two of the “priority” routes are north/south and two are east/west with one tying into the Thames Valley Parkway path west of the downtown. All serve the broader central area, key city destinations, and the proposed intensification areas. To increase usage, the routes need a greater degree of recognition and thus they should be named, well maintained in all seasons, very well marked on the pavement, and well signed.



Richmond St and Central Ave Intersection, London

Exhibit ES-2. Priority On-Street Bike Routes



Greater Investment in Cycling and Walking Infrastructure

6. More Strategic Program of Road Network Improvements

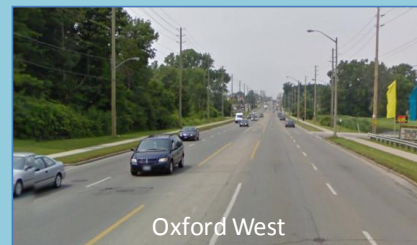
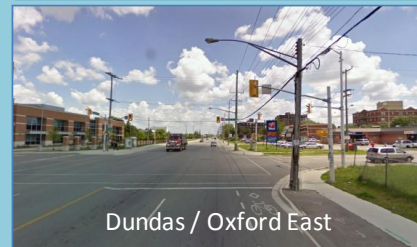
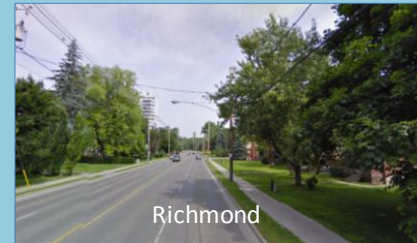
Despite the greater emphasis of this TMP on Transit, Active Transportation (AT), Transportation Demand Management (TDM) and Parking, many road improvements will still be required. The City’s approach to defining the need for road network improvements has become more strategic (and selective) than in past TMP efforts for London.

First of all, the more strategic approach reflects a reduced modal share for the automobile by 2030, consistent with the City’s expectation that transit and AT modal shares will increase significantly from current levels. Closely related to this is the need for an increased percentage of capital and operating funds for non-auto modes – transit and walking/cycling.

Secondly, roadway improvement needs have been based on a corridor level analysis, as opposed to the more traditional link by link analysis. This means, for example, that where two adjacent roadway links both show capacity deficiencies, only one improvement may be necessary to resolve the corridor deficiency.

The City’s approach explicitly recognizes that road improvements will be required for different purposes. In this regard, a number of widenings are required to support the BRT initiative. These are shown in green in Exhibit ES-3 and include Richmond Street north of the Thames River, Oxford Street West Richmond Street, most of Wellington Road, south of Horton Street, and parts of Dundas Street, Highbury Avenue and Oxford Street East. A listing of road widening projects to support the BRT corridors, along with capital cost estimates are provided in Table ES-1. These widening, which support the BRT initiative, should be top priorities.

BRT Corridors



More Strategic Program of Road Network Improvements

Table ES-1. Road Improvements for BRT Implementation – by Horizon

Road Name	Limits	Improvement	TMP Recommended Year	Project Length (m)	Grand Total (2012\$)
South Leg				5,500	\$88,200,000
Wellington Road	Bradley Avenue and Horton Street	4 to 6 lanes	2015	5,500	\$88,200,000
North Leg				2,300	\$49,200,000
Richmond Street	Fanshawe Park Road to Raymond Avenue	4 to 6 lanes	2016	2,300	\$49,200,000
East Leg				6,200	\$66,300,000
Highbury Avenue	Dundas Street to Oxford Street	4 to 6 lanes	2017	1,300	\$13,900,000
Dundas Street	Adelaide Street to Highbury Avenue	4 to 6 lanes	2019	2,500	\$26,700,000
Oxford Street	Highbury Avenue to Clarke Road	4 to 6 lanes	2020	2,400	\$25,700,000
West Leg				6,000	\$64,200,000
Oxford Street West	Hyde Park Road to Richmond Street	4 to 6 lanes	2018	6,000	\$64,200,000
Downtown				6,000	\$32,100,000
Richmond Street	Raymond Avenue to York Street	Optimization	2016	3,800	\$20,300,000
York Street	Richmond Street to Colborne Street	Optimization	2017	900	\$4,800,000
Colborne Street	York Street to Dundas Street	Optimization	2019	300	\$1,600,000
Dundas Street	Colborne Street to Adelaide Street	Optimization	2018	700	\$3,800,000
Wellington Street	Horton Street to York Street	Optimization	2020	300	\$1,600,000
Totals				26,000	\$300,000,000

More Strategic Program of Road Network Improvements

Roadway extensions and widenings to support baseline growth are also shown in Exhibit ES-3. The red lines represent future four-lane roadways and the blue lines note future six-lane roadways. The majority of these are in more suburban locations where transit is less able to compete with the automobile.

Other road improvements labelled “Optimization/Transit Priority” (shown in purple) reflect highly constrained urban rights-of-way where opportunities for widening are limited. Optimization of these corridors will be focused on

intersection improvements, turning lanes, and transit priority measures, such as HOV lanes and queue-jump lanes at intersections. Widening these corridors to 6 lanes is not recommended so as to avoid competing with investments made to support the BRT system.

A listing of major road improvement projects along with capital cost estimates and the recommended implementation horizon are summarized in Table ES-2.

Sensitivity analysis has also been undertaken to define what further road network improvements would be needed to support a higher rate of growth (2% annually vs. 1%). Careful monitoring and review through subsequent TMP updates will be required to determine if and when these additional road improvements would be required.

Another strategic aspect of the road improvement program relates to supporting the concept of “complete streets”. A complete street is one that is designed to accommodate the mobility needs of all ages, abilities and modes of travel. Safe and comfortable access for pedestrians, bicycles, transit users, and the mobility challenged are not design after-thoughts, but are integral to the planning of the street from the start.

In practise, the “complete street” concept typically involves apportioning the road right-of-way to better serve all users (including pedestrians and cyclists) and may include providing wider boulevards, enhanced sidewalks, bicycle lanes, street furniture and amenities, and other enhancements designed to make the street less auto oriented.

Studies have shown that implementing these types of improvements can enhance safety for non-auto users, reduce vehicle speeds, and can maximize the person-carrying capability of the roadway (i.e. people movement rather than vehicle movement). This concept should be the accepted policy approach to pursuing all roadway improvements within the City.



Portland Multi-Use Downtown Corridor

More Strategic Program of Road Network Improvements

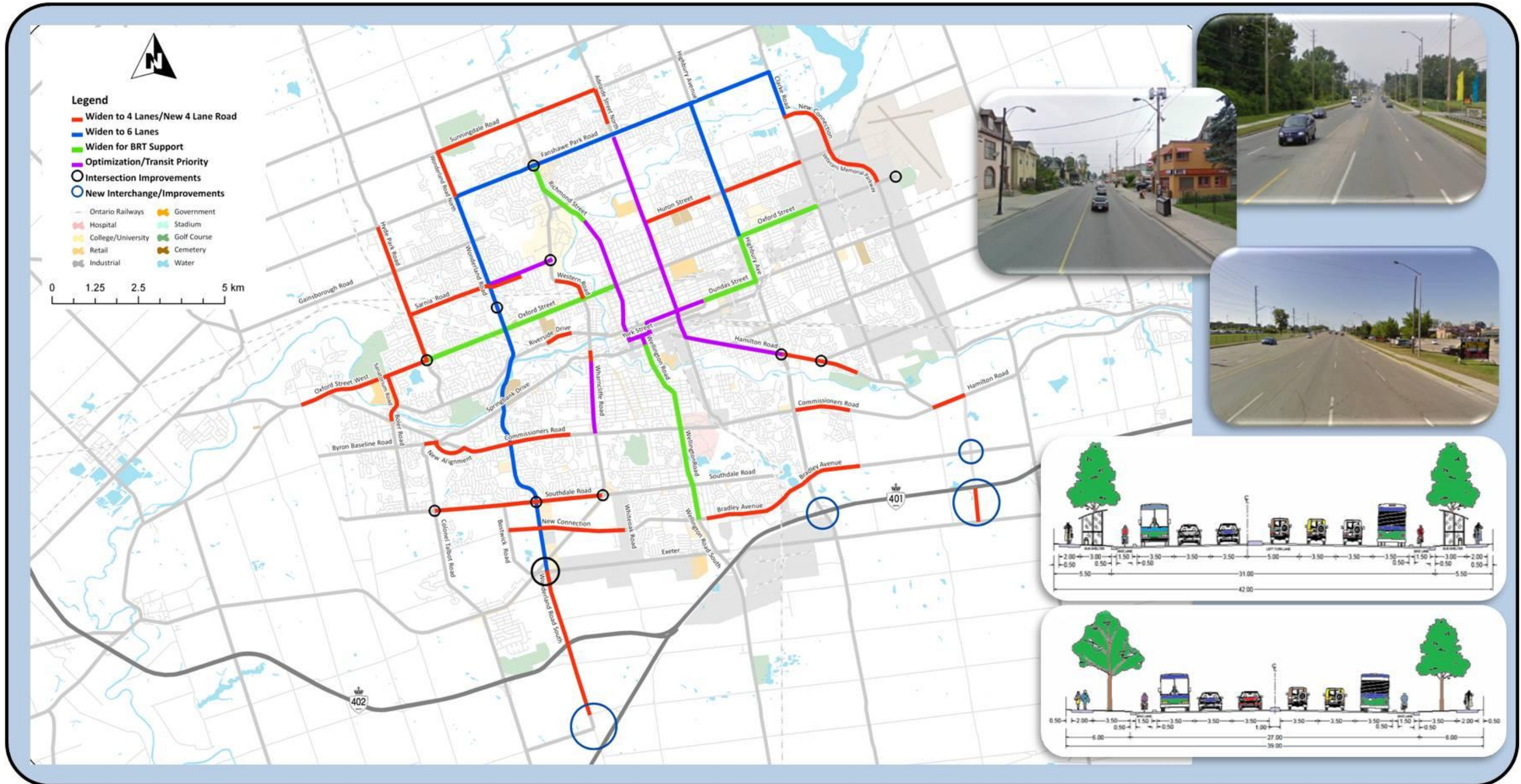
More Strategic Program of Road Network Improvements



St. George Street, Toronto



Exhibit ES-3. 2030 Baseline Road Network Improvements



More Strategic Program of Road Network Improvements

Table ES-2. Major Road Improvements – by Horizon

Road Name	Limits	Improvement	TMP Recommended Year	Project Length (m)	Grand Total (2012\$)
Oxford Street West	Hyde Park Road to Sanatorium Road	2 to 4 through lanes with centre turn lane	0-5	1,230	\$10,600,000
Commissioners Road	Wonderland Road to Viscount Road	2 to 4 through lanes with centre turn lane	0-5	1,400	\$12,600,000
Southdale Road	Wonderland Road to Wharncliffe Road	2 to 4 through lanes	0-5	1,150	\$11,500,000
Wonderland Road Interchange	Highway 401	Interchange	0-5	n/a	^a \$25,000,000
Fanshawe Park Road	Adelaide Street to Highbury Avenue	2 to 4 through lanes with centre turn lane	0-5	2,000	\$15,900,000
Sarnia Road	Wonderland Road to Sleightholme Avenue	3 to 4 through lanes	0-5	850	\$8,100,000
Western Road	Platts Lane to Oxford Street	2 to 4 through lanes, including widening rail underpass	0-5	950	\$17,000,000
VMP Extension and Interchange	Highway 401 to Wilton Grove Road	4 through lanes and interchange	0-5	1,000	^b \$25,000,000
Highbury Avenue Interchange	Highway 401	Interchange	0-5	n/a	^c \$30,000,000
Hyde Park Road	CPR to Fanshawe Park Road	2 to 4 through lanes	0-5	2,200	\$13,800,000
Hyde Park Road	Oxford Street to CPR	2 to 4 through lanes	0-10	2,000	\$22,200,000
	Oxford to CPR	2 to 4 through lanes	0-5	2,000	\$20,400,000
	Oxford Intersection	2 to 4 through lanes	5-10	n/a	\$1,800,000
Sunningdale Road	Wonderland Road to Adelaide Street	2 to 4 through lanes	0-10	5,200	\$47,100,000
	Stage 1 - Phase 1 - Wonderland/Sunningdale Intersection	2 to 4 through lanes	0-5	300	\$2,200,000
	Stage 1 - Phase 2 - Richmond/Sunningdale Intersection	2 to 4 through lanes	0-5	300	\$3,300,000
	Stage 2 - Phase 1 - Adelaide to Bluebell	2 to 4 through lanes	5-10	1,100	\$14,900,000
	Stage 2 - Phase 2 - Bluebell to Richmond	2 to 4 through lanes	5-10	1,150	\$7,300,000
	Stage 2 - Phase 3 - Richmond to Wonderland	2 to 4 through lanes	5-10	2,350	\$19,400,000
Bradley Avenue Extension	Jalna Boulevard to Bostwick Road	4 through lanes	0-15	3,800	\$35,400,000
	Phase 2 - Jalna to Wharncliffe	4 through lanes	5-10	1,800	\$10,300,000
	Phase 1 - Wharncliffe to Wonderland	4 through lanes	0-5	1,025	\$13,000,000
	Phase 3 - Wonderland to Bostwick	4 through lanes	10-15	975	\$12,100,000
Huron Street	Adelaide Street to Vesta Road	2 to 4 through lanes	5-10	1,800	\$12,900,000
Bradley Avenue	Dearness Drive to Jackson Road	2 to 4 through lanes	5-10	4,800	\$43,100,000
	Phase 1 - Dearness to Pond Mills	2 to 4 through lanes	5-10	2,500	\$22,800,000
	Phase 2 - Pond Mills to Jackson	2 to 4 through lanes	5-10	2,300	\$20,300,000
Sarnia Road	Wonderland Road to Hyde Park Road	2 to 4 through lanes	5-10	2,350	\$6,600,000
	Phase 1 - Aldersbrook to Wonderland	2 to 4 through lanes	5-10	1,000	\$2,000,000
	Phase 2 - Hyde Park to Oakcrossing Gate	2 to 4 through lanes	5-10	1,350	\$4,600,000
Boler Road / Sanatorium Road	Commissioners Road to Oxford Street West	2 to 4 through lanes	5-10	1,450	\$17,200,000
	Phase 1 - Oxford to Riverside	2 to 4 through lanes	5-10	900	\$6,000,000
	Phase 2 - Riverside to Commissioners	2 to 4 through lanes	5-10	550	\$11,200,000
Adelaide Street North	Grenfell Drive to Sunningdale Road	2 to 4 through lanes	5-10	1,000	\$8,100,000
Wharncliffe Road	Becher Street to Springbank Drive	2 to 4 through lanes	5-10	300	\$20,000,000
Riverside Drive	Woodward Avenue to Beaverbrook Avenue	2 to 4 through lanes	5-10	800	\$4,300,000
Old Victoria Road	Old Victoria Intersection	Intersection	5-10	n/a	\$4,700,000
Wonderland Road	Fanshawe Park Road to Riverside Drive	4 to 6 through lanes	5-20	5,400	\$42,000,000
	Phase 1 - Riverside to Oxford	4 to 6 through lanes	5-10	1,000	\$13,800,000

More Strategic Program of Road Network Improvements

Road Name	Limits	Improvement	TMP Recommended Year	Project Length (m)	Grand Total (2012\$)
	Phase 2 - Oxford to Sarnia	4 to 6 through lanes	5-10	1,600	\$12,300,000
	Phase 3 - Sarnia to Fanshawe	4 to 6 through lanes	20	2,800	\$15,900,000
Veterans Memorial Parkway	Huron Street to Clarke Road	New 2 through lanes then 4 through lanes	5-20	1,850	\$18,700,000
	Phase 1 - Huron to Clarke	2 through lanes	5-10	1,850	\$11,500,000
	Phase 2 - Huron to Clarke	2 to 4 through lanes	15-20	1,850	\$7,200,000
Wonderland Road	Riverside Drive to Exeter Road	4 to 6 through lanes	5-20	6,700	\$41,100,000
	Phase 1 - Riverside to Springbank	4 to 6 through lanes	5-10	1,500	\$20,200,000
	Phase 2 - Springbank to Southdale	4 to 6 through lanes	10-15	3,100	\$12,600,000
	Phase 3 - Southdale to Exeter	4 to 6 through lanes	15-20	2,100	\$8,300,000
Veterans Memorial Parkway	Oxford Street to Huron Street	2 to 4 through lanes	10-15	1,800	\$9,100,000
Oxford Street West	Sanatorium Road to Westdel Bourne Road	2 to 4 through lanes	10-15	2,650	\$14,100,000
	Phase 1 - Sanatorium to Commissioners	2 to 4 through lanes	10-15	1,650	\$8,800,000
	Phase 2 - Commissioners to Westdel Bourne	2 to 4 through lanes	10-15	1,000	\$5,300,000
Fanshawe Park Road	Wonderland Road to Adelaide Street	4 to 6 through lanes	10-15	4,875	\$24,600,000
	Phase 1 - Adelaide to Richmond	4 to 6 through lanes	10-15	2,400	\$10,800,000
	Phase 2 - Richmond to Wonderland	4 to 6 through lanes	10-15	2,475	\$13,800,000
Commissioners Road East	Highbury Avenue to Jackson Road	2 to 4 through lanes	10-15	1,500	\$7,500,000
Wonderland Road North	Sunningdale Road to Fanshawe Park Road	2 to 4 through lanes	10-15	1,300	\$10,700,000
Fanshawe Park Road	Adelaide Street to Highbury Avenue	4 to 6 through lanes	10-15	2,300	\$10,700,000
Hamilton Road	Old Victoria to Veterans Memorial Parkway	2 to 4 through lanes with centre turn lane	10-15	925	\$4,700,000
Huron Street	Highbury Avenue to Clarke Road	2 to 4 through lanes	10-15	2,400	\$16,100,000
Wharnclyffe Road	Horton Street to Commissioners Road	Optimization	10-15	2,200	\$7,300,000
Adelaide Street	Fanshawe Park Road to Hamilton Road	Optimization	10-15	6,300	\$20,800,000
Wonderland Road	Exeter Road to Highway 401	2 to 4 through lanes	10-20	4,900	\$39,400,000
	Phase 1 - Exeter to Hwy 402	2 to 4 through lanes	10-15	2,000	\$19,000,000
	Phase 2 - Hwy 402 to Hwy 401	2 to 4 through lanes	15-20	2,900	\$20,400,000
Fanshawe Park Road East	Clarke Road to Highbury Avenue	2 to 6 through lanes with centre turn lane	15-20	2,500	\$22,400,000
Clarke Road	VMP Extension to Fanshawe Park Road	2 to 6 through lanes	15-20	1,375	\$30,400,000
Southdale Road West	Colonel Talbot Road to Pine Valley Boulevard	2 to 4 through lanes with centre turn lane	15-20	2,800	\$23,400,000
	Phase 1 - Colonel Talbot to Farnham	2 to 4 through lanes with centre turn lane	15-20	2,200	\$18,400,000
	Phase 2 - Farnham to Pine Valley	2 to 4 through lanes with centre turn lane	15-20	600	\$5,000,000
Hamilton Road	Highbury Avenue to River Run Terrace	2 to 4 through lanes	15-20	2,300	\$13,200,000
Commissioners Road West	Wonderland Road to Cranbrook Road	2 to 4 through lanes with centre turn lane	15-20	1,000	\$8,400,000
Commissioners Road West	Cranbrook Road to Springbank Drive	4 through lanes with centre turn lane	15-20	1,100	\$7,700,000
Byron Baseline Road	Commissioners Road West to Colonel Talbot Road	3 to 4 through lanes with centre turn lane	15-20	500	\$3,800,000
Hamilton Road	Adelaide Street to Highbury Avenue	Optimization	15-20	2,800	\$9,300,000
Highbury Avenue	Fanshawe Park Road to Oxford Street	4 to 6 through lanes	15-20	4,100	\$24,500,000
Veterans Memorial Parkway Interchange	Bradley Avenue	Interchange	20	n/a	\$26,000,000
Totals				97,855	\$827,000,000

* Likely contribution from Ontario Government: (a) Wonderland Road Interchange: \$15,000,000; (b) VMP Extension and Interchange: \$10,000,000; (c) Highbury Avenue Interchange: \$23,000,000

7. TMP Implementation

Capital costs associated with the baseline 2030 TMP are summarized in the table below:

Capital Cost Estimates	
Municipal Road Widening	\$827 M
Intersections and other Minor Improvements	\$60 M
Municipal Transit.....	\$378 M
Active Transportation	\$20 M
Parking.....	\$ 24 M
Total Transportation Capital (2012\$)	\$1,309 M

These capital costs are gross and are not reduced to show the inclusion from development charges and expected contributions from both the Federal and Provincial governments for BRT related costs. The cost estimate includes \$60 M in additional improvements set aside for intersection improvements and minor road widenings (as detailed further in Chapter 3, Section 3 of the Final Report). Thus, the total transportation capital cost associated with the new mobility TMP is over \$1.3 B. Furthermore, sufficient City funding should be set aside for keeping all transportation assets in a state of good repair.

Of the \$378 M municipal transit capital, about \$340 M is estimated to be BRT related and therefore should be eligible for contributions of up to one-third (1/3) of the capital costs from both senior levels of government. However, both Federal and Provincial governments are currently under significant budget pressures and therefore it will be necessary to develop a compelling business case to secure their support.

Annual Operating and Maintenance Costs	
Roads	\$35.7 M
Transit	\$14.3 M
AT, TDM & Parking	\$7.3 M
Total (2012\$)	\$57.3 M

Projected 2030 Annual Operating and Maintenance (O&M) costs (in 2012 dollars) associated with the baseline TMP are estimated at just over \$57 million

per year, as summarized in the table below. The transit operating costs are net of fares collected from riders, based on current rates of recovery.

The Official Plan is one of the basic mechanisms for implementing the recommendations of the TMP. The Official Plan contains City Council's objectives and policies to guide the short-term and long-term physical development of all lands within the boundary of the City. It provides direction for the allocation of land use, provision of municipal services and facilities, and preparation of regulatory by-laws to control the development and use of land.

To address the set of City-wide land use and transportation issues discussed above, policies with respect to the following matters should be incorporated into the new Official Plan:

- Introduction of a nodes and corridors urban structure plan that identifies the specific nodes and corridors, the downtown and other destinations, with general policies with respect to the ambitions for each such corridor and location;
- Growth management principles that establish the overall policy basis for specific intensification targets such as the encouragement of transit-supportive development, the efficient use of urban space, the allocation of growth between the urbanized area and the fringe areas, and the concentration of development around nodes and corridors;
- Establishment of specific intensification targets for urbanized areas, the Central Area and specific nodes and corridors, and major destinations;
- Review of the transportation needs for TMP updates on a five year basis in conjunction with the results of a new comprehensive transportation survey and monitoring program;
- The definition of the upper limit of Level of Service E, where the demand equals the available road capacity, applied on a corridor basis as the justification basis and for roadway capacity improvements;
- Classification of individual major roads and corridors with respect to their transportation function and urban design character;
- Establishment of new rights-of-way widths for Rapid Transit corridors (40 m between intersections and 48 m at signalized intersections), and Major Arterials (39 m between intersections and 42 m at signalized intersections);
- Recognition that the design of a road will set the quality of pedestrian environment and residential amenity and will have a major impact on whether an urban form of infill and intensification, as desired at important nodes and corridors, is viable;

- Recognition that each node and corridor has a distinct character and that secondary planning policies may be necessary to provide detailed guidance;
- Establishment of a positive policy framework for transit supportive development in terms of the density, scale, function and design of such development; and
- Establishment of a positive policy framework for the creation of pedestrian and bicycle friendly urban design and development policies.

Specific policies have been proposed under the headings of Growth Management, Integrated Transportation Planning, Public Transit, Transit Oriented Development, Complete Streets, Supporting Active Transportation, Transportation Demand Management and Parking. These should be considered for refinement during the preparation of the new Official Plan.

The success of this TMP will depend upon achieving a major transformation in how Londoners travel. Since changing travel behaviour will take considerable time, it will be necessary to monitor key travel indicators on a continuous basis to ensure that adequate progress is being made or, if it is not, to take appropriate actions to get back on track.

A transportation monitoring program has therefore been developed to assist the City in this regard. This will allow the City to expand on its annual progress report to Council. One of the key indicators to be measured is travel modal share and, as noted previously, targets have been set for Transit, Active Transportation and Auto modes as part of this TMP. The recommended program includes conduct of household travel surveys (similar to the 2009/10 survey conducted as part of this TMP), counts of person travel by all modes across pre-defined screenlines and cordons, travel time surveys by mode for pre-defined typical trips, and attitude surveys of transit riders. Reports on the monitoring program will serve as key inputs to future TMP updates and the data will allow the City's transportation model to be recalibrated on a regular basis.

Finally, there is considerable work to be done over the next couple of years to move forward in a proactive manner on the BRT initiative, to approach senior levels of government as prospective funding partners and address their requirements, and to transform the existing attitudes and perceptions regarding transportation in London. To kick-start TMP implementation, an Immediate Action Plan for Council has been developed – comprised of the 12 points listed in Table ES-3 below.

Table ES-3. Immediate Action Plan for Council

Action Plan Item	Timing	Rationale
1. Cement TMP Foundations	2012 – 2013	A revised Growth Strategy, a Centres and Corridors Urban Structure Plan, a Downtown Master Plan, and a New Official Plan are all cornerstones for the TMP. All four initiatives are well underway but need to be completed expeditiously.
2. Develop Proposal for Provincial and Federal Funding of BRT	2012 – 2013	A compelling business case will need to be developed to secure funding commitments, so that the net cost to Londoners is affordable.
3. Pursue Revisions to Development Charges Act	2012	The ability to secure additional development charges for transit, Active Transportation and TDM initiatives will also help to minimize costs to London taxpayers.
4. Initiate EA Studies for BRT Corridors	2013 – 2014	Securing environmental approvals for the BRT network is the next step in the implementation process. Through EA studies route alignments, station locations, terminal requirements, roadway configurations and property needs will be finalized. Transit vehicle requirements will also be determined and cost estimates refined.
5. Initiate Corridor Land Use Planning Studies	2013 – 2014	In coordination with the EA studies, corridor land use planning studies will identify specific opportunities and constraints for intensification and develop guidelines for Transit-Oriented Development (TOD).
6. Refine and Implement Short-term Transit Improvement Plan	2012 – 2014	A short-term transit plan for the BRT corridors is needed so that service improvements can be realized quickly in order to start building ridership and increasing transit modal share.
7. Undertake Transit Route Restructuring Study	2014	The future BRT network will become the backbone of the London Transit network. A route restructuring study will be needed to ensure that the effectiveness of the BRT network is maximized from a total London Transit system perspective.
8. Implement On-Street Priority Cycling Routes	2013 – 2014	To bring London's on-street cycling routes up to par with its off-street trail network, four continuous on-street cycling routes have been identified for early implementation.
9. Finalize a Downtown Parking Strategy	2014	Short and long-term parking strategies for the Downtown should incorporate pricing structures to support transit, and make it easier for more people to come downtown.
10. Identify Opportunities for Park-and-Ride Facilities	2014	Park-and-Ride facilities at the extremities of the BRT lines will boost BRT ridership and reduce auto usage. Due to the need for property acquisition or negotiation of shared parking use with others such as shopping mall owners additional time will be required. A Park-and-Ride plan in the near term will ensure that such facilities can be put in place as quickly as possible.
11. Finalize and Implement a Short-term TDM Plan	2012 – 2014	Various initiatives have been recommended for short-term implementation. These need to be detailed in the context of existing programs and consolidated into a cohesive program.
12. Develop a Communications Plan to Build Community Support	2013	A level of momentum has been created through the TMP process, but this needs to be continued and expanded to ensure TMP success.

TMP Implementation

8. A Collaborative Approach to City Building

Engaging and consulting the public and key stakeholders has been a critical part of the TMP work. During the course of the TMP study, four sets of meetings have been held. In each case, the initial workshops were held with the User Vision Group and the Sustainable Transportation Roundtable Group and those were followed up with full public workshops. Overall, participants at those meetings were very supportive of the TMP work and the team's willingness to listen to and address comments and concerns. At the final meetings held in May 2012, there was strong support for the draft TMP presented.



TMP Workshop 2011

Another positive aspect of the TMP effort has been the inter-disciplinary approach taken by the City with the ongoing coordinated involvement of City Planning and LTC under the leadership of the Engineering Department. This has ensured that all technical perspectives have been considered and that all ongoing City and LTC initiatives have both contributed to the TMP and been informed by the work of the TMP.

A commitment to investing in the provision of enhanced transit services in the community is a critical component of establishing the credibility of the plan, and demonstrating the commitment of the City towards implementation.

As the TMP moves forward to the implementation stage, this collaborative process needs to be continued. It will be particularly important for the City and LTC to build awareness and further support for the “New Mobility” TMP and to brand the BRT initiative. As the TMP implementation process unfolds, the City

should exploit all opportunities to convey the TMP new mobility themes. One such opportunity would be the recently launched ReThink London process.

Marketing the vision to build community support should facilitate the environmental and funding approval processes and demonstrate a strong local commitment to critical funding partners – the senior levels of government.

A level of momentum has been created through the TMP process, and strong public support has been expressed through the consultation program for this project. This needs to be continued and expanded to ensure the TMP success, and to maintain support for the major initiatives recommend in the TMP – they represent the vision for transportation in London for the next 20 years.

Visualizing the Transformation



A Collaborative Approach to City Building

A transportation system is a city's largest public asset, both from an infrastructure and public space perspective. If the system is designed to move people and goods effectively, it creates economic opportunity and fosters a sense of community.

ReThink London

