shift
MOVING LONDON FORWARD

Our Rapid Transit Initiative

STRATEGIC PRIORITIES AND POLICY COMMITTEE
MAY 5, 2016

London
CANADA

Shift Rapid Transit Initiative

- Largest infrastructure project in the city's history.
- Rapid Transit initiative will transform London's public transit service – serving as the backbone for a redefined route structure.
- Major investment that will alter how Londoners travel and how the city will grow.

Shift Rapid Transit Recommendation

- Full Bus Rapid Transit provides the greatest value as it meets ridership needs, provides significant benefits from an economic growth, social, environmental and city building perspective.
- Best solution from a financial return on investment perspective.
- Full Bus Rapid Transit will modernize transit and make it a more attractive, reliable and convenient mode of travel.
- Protect and design for a future transition to LRT technology once growth and ridership needs require change.

The right solution at the right time.

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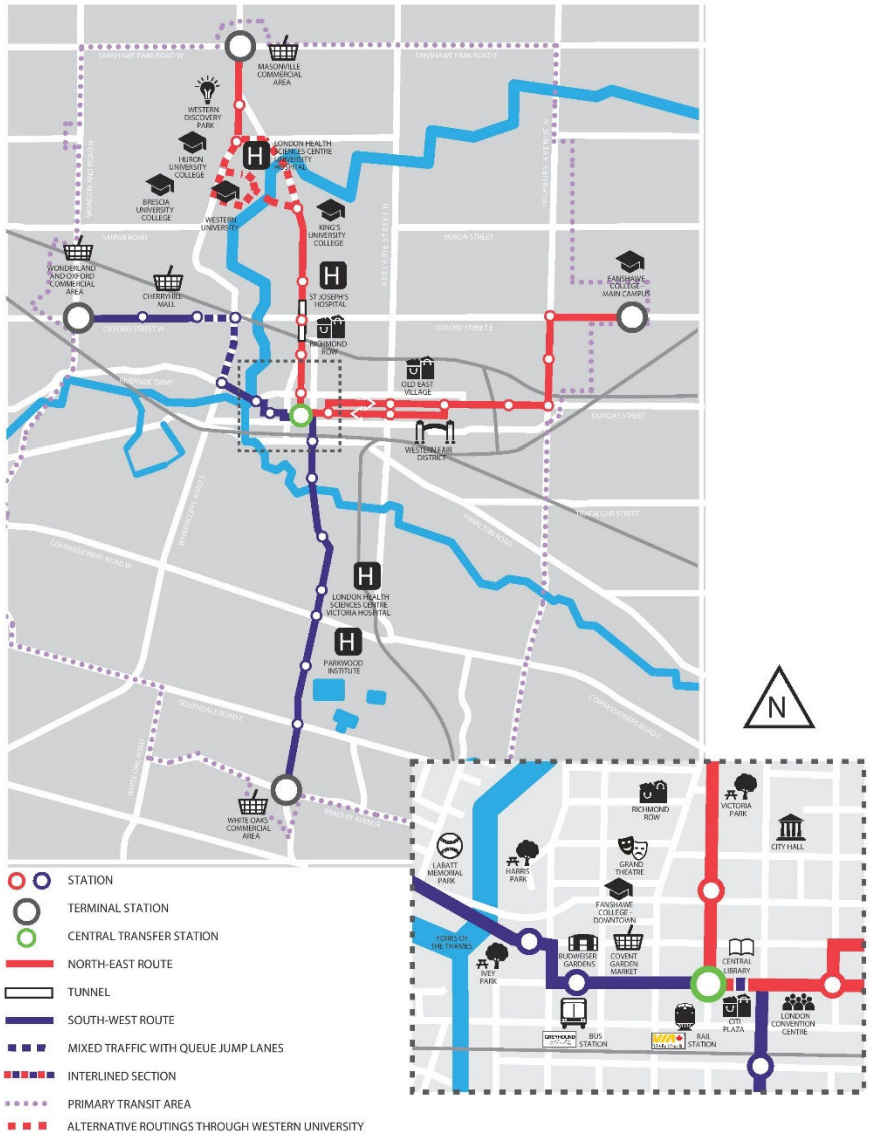
What is Full Bus Rapid Transit?

Characteristics

- ✓ **Faster,** more reliable and frequent service
- ✓ **Integrated** with local transit
- ✓ **Connects** major employers, downtown and institutions
- ✓ **22** km of BRT along a semi-exclusive right of way
- ✓ **1.6** km of BRT mixed traffic
- ✓ Corridors are **adaptable** to new technologies over time



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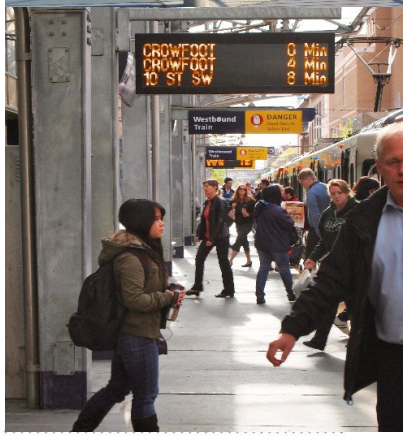
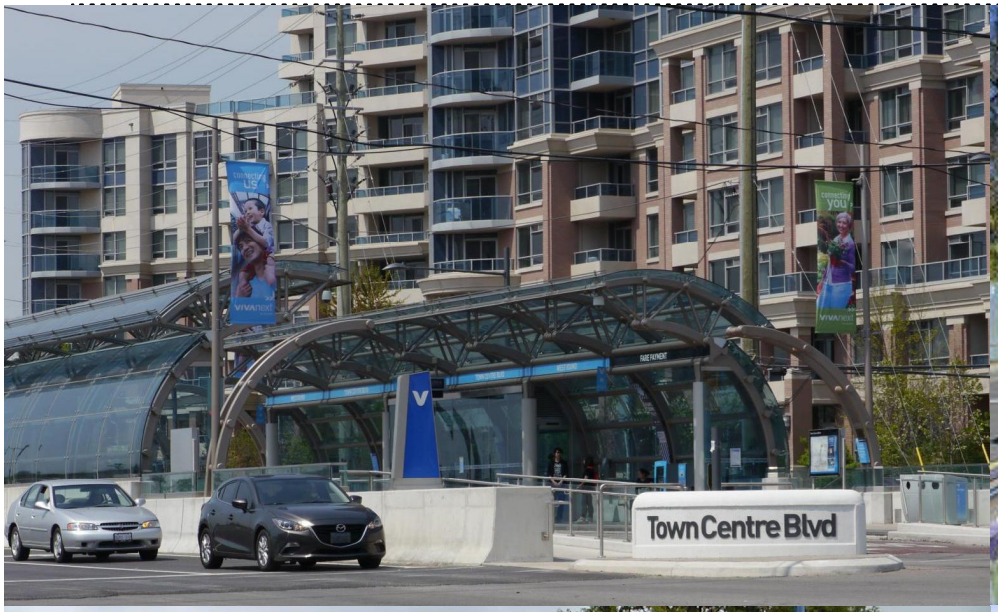
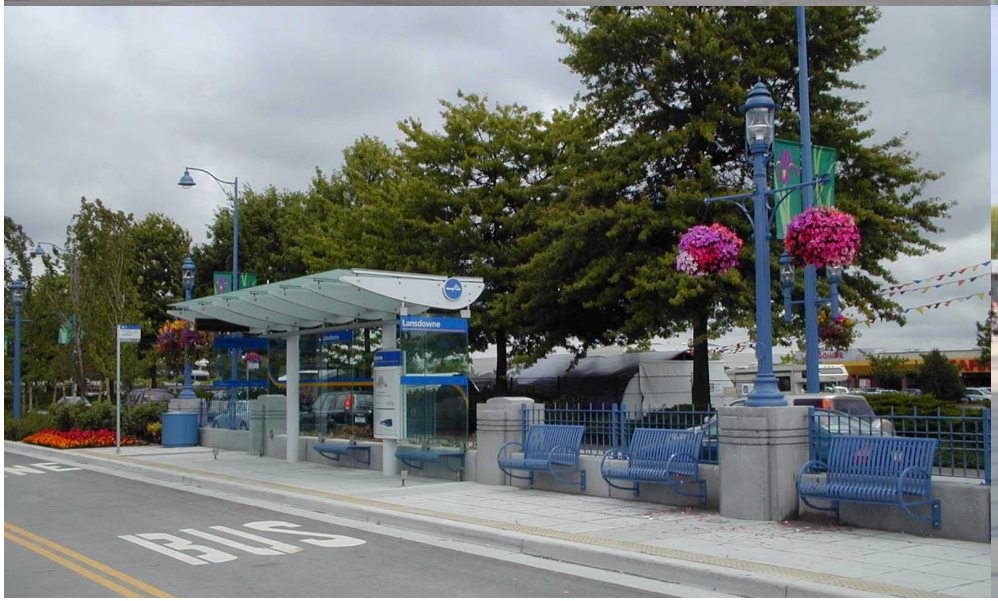
Full Bus Rapid Transit Initiative

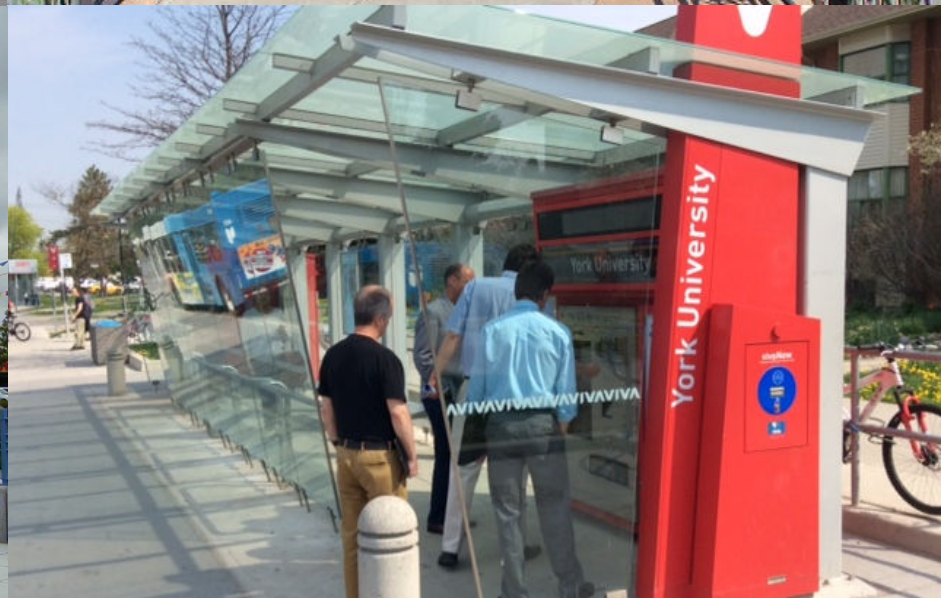
- Enhanced **frequent service** along the rapid transit corridors with fewer stations which are located at major trip generators
- **Dedicated** lanes for rapid transit, physically separated from other traffic where feasible
- Programmed traffic signals to **prioritize** the movement of rapid transit vehicles
- **Enhanced stations**, larger, more prominent waiting areas, shelters, seating, bike racks, ticket machines, real time information.
- Corridors will be **redesigned** to enhance pedestrian experience



Full Bus Rapid Transit Initiative - Stations







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BUS ONLY
BUS ONLY

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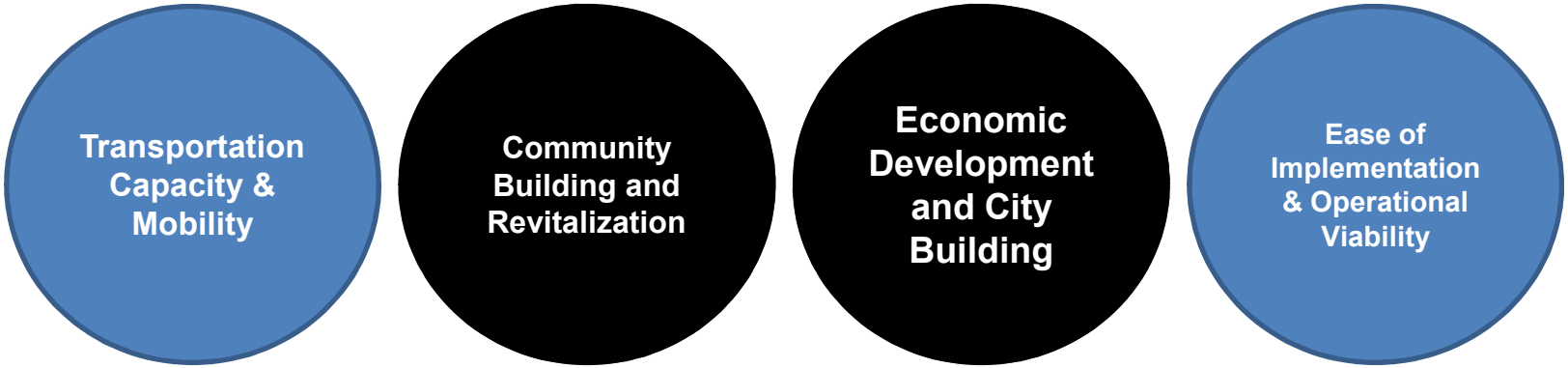
Enhanced Rapid Transit Vehicles

- A range of BRT vehicle options are available. Electric buses are becoming viable option. Pilots in Winnipeg and Montreal.
- London Transit Commission is participating in Canadian Urban Transit Research and Innovation Consortium (CUTRIC). Investment is part of the province's Climate Change Strategy, Pan-Ontario Electric Bus Demonstration Trial, a large-scale demonstration trial of zero-emission buses by seven transit agencies.

Enhanced Rapid Transit Vehicles

Guiding Principles for Preferred Rapid Transit System




THELONDONPLAN
EXCITING. EXCEPTIONAL. CONNECTED.
#LDNPLAN
London
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#1 Growing inward and upward

- **45% Intensification**

- **Reduces capital costs of growth – use existing infrastructure**
- **Reduces long-term operating costs of growth**
- **Conserves agricultural lands**
- **Creates walkable communities**
- **Fosters a healthy city**
- **Lowers air emissions**
- **Reduces energy consumption**
- **Revitalizes urban neighbourhoods and business areas**

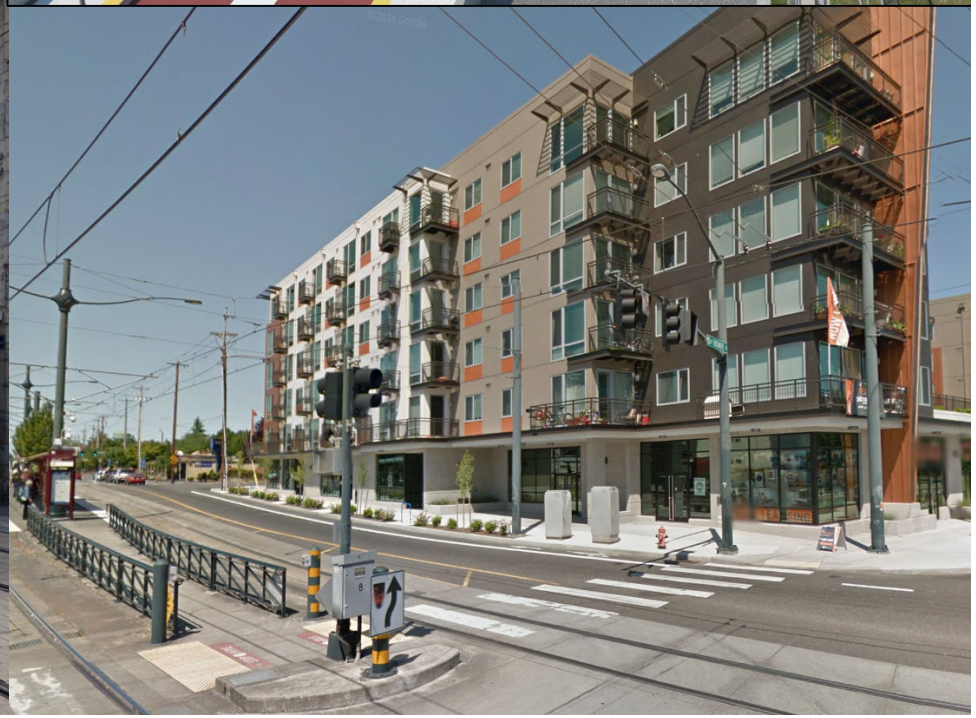
Rapid Transit = Powerful Tool

What our Rapid Transit Should Do For London

- Attract DISCRETIONARY riders
- Stimulate intensification along corridors and at stations
- Attract talent and investment in competitive world
- Assist in branding our city image (institutions/businesses)
- Interface seamlessly with future high speed rail
- Reduce GHG and conserve energy

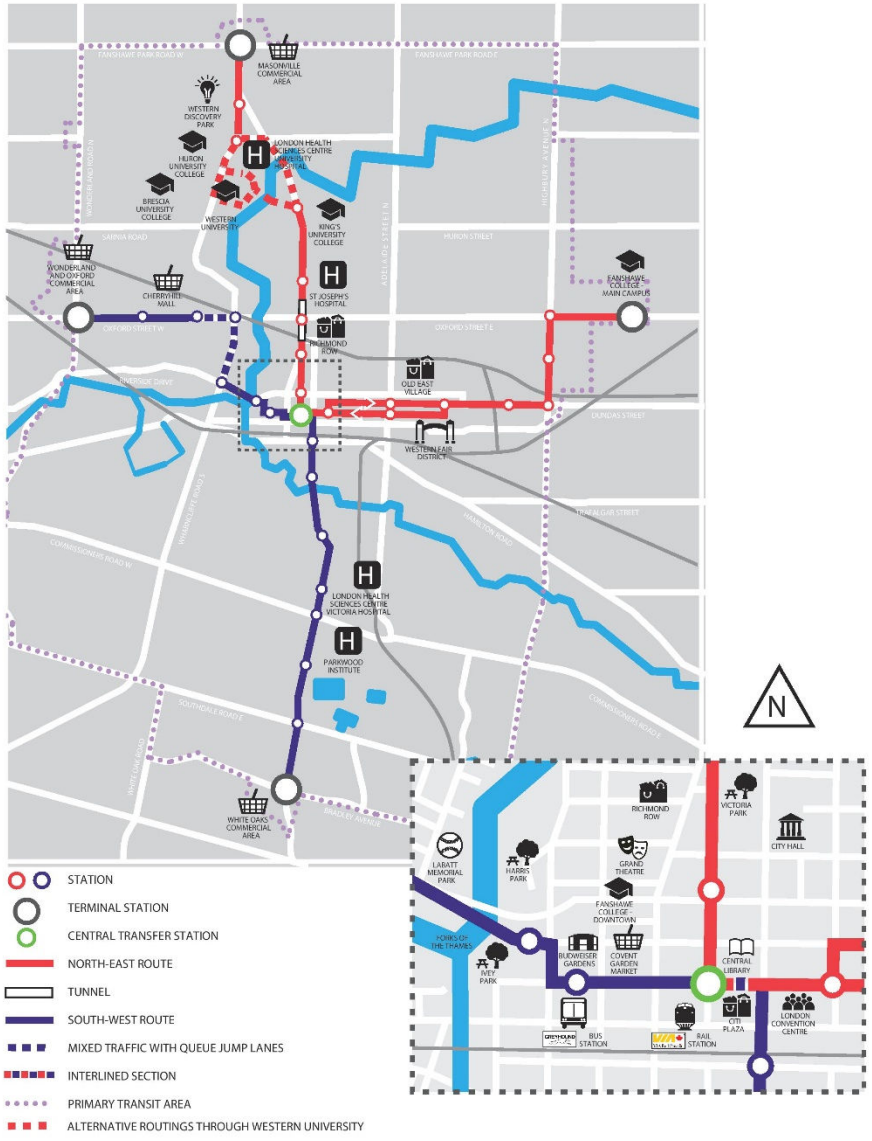
- Urban regeneration
  - Downtown
  - Main Streets regeneration
  - Community economic development
  - Small business support and creation
- Contribute to streets and quality of place
- Foster great urban neighbourhoods
- High quality development (TOD)


KEBAB
ginko



Shift Rapid Transit Corridors

- Key route modifications
  - ✓ Two way couplet on Richmond/Clarence is now two way RT on Clarence, tunnel portal on Clarence
  - ✓ Design details for Richmond north of Oxford TBD in next phase
  - ✓ Confirmation of Kensington Bridge as transit only and conversion of Queen Street to two way traffic



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Preferred Network Alternative: Western University

- Western University is a major generator of transit ridership
- Various alignments have been explored with Western University administration
- Three alignment options are retained for further evaluation as part of the EA process
- Western Administration is engaging stakeholders in the campus community.
- A preferred rapid transit alignment option has not been determined through the campus property.

Shift Engagement

Public Consultation

Numerous events and 3 PICs; 14,000 interactions

Endorsements and letters of support for rapid transit.

Shift Engagement

- Since November 2015, significant public consultation has occurred regarding the Hybrid Network alternative
- December 2015 PIC provided an opportunity for input on the preliminary preferred network
- Other activities have included:
  - Technical committees
  - Municipal advisory committees
  - First Nations
  - Major institutions (Western University and Fanshawe College)
  - Property owners
  - Business Improvement Associations (BIAs)
  - Community groups
  - Student councils/general public

Over 200 people attended the December 2015 Open House

Shift Engagement Outcomes

- Summary of feedback following December Open House:
  - ✓ Overwhelming support for rapid transit
  - ✓ Recognition that investments in transit are essential
  - ✓ General support for corridors selected
    - ➢ Suggestions for extensions to Argyle Mall and Southwest London
  - ✓ Varied support for the various technologies. Benefits and opportunities associated with both LRT and BRT.
  - ✓ Key issues were constructability, funding, operating costs, city building vision and potential future ridership.

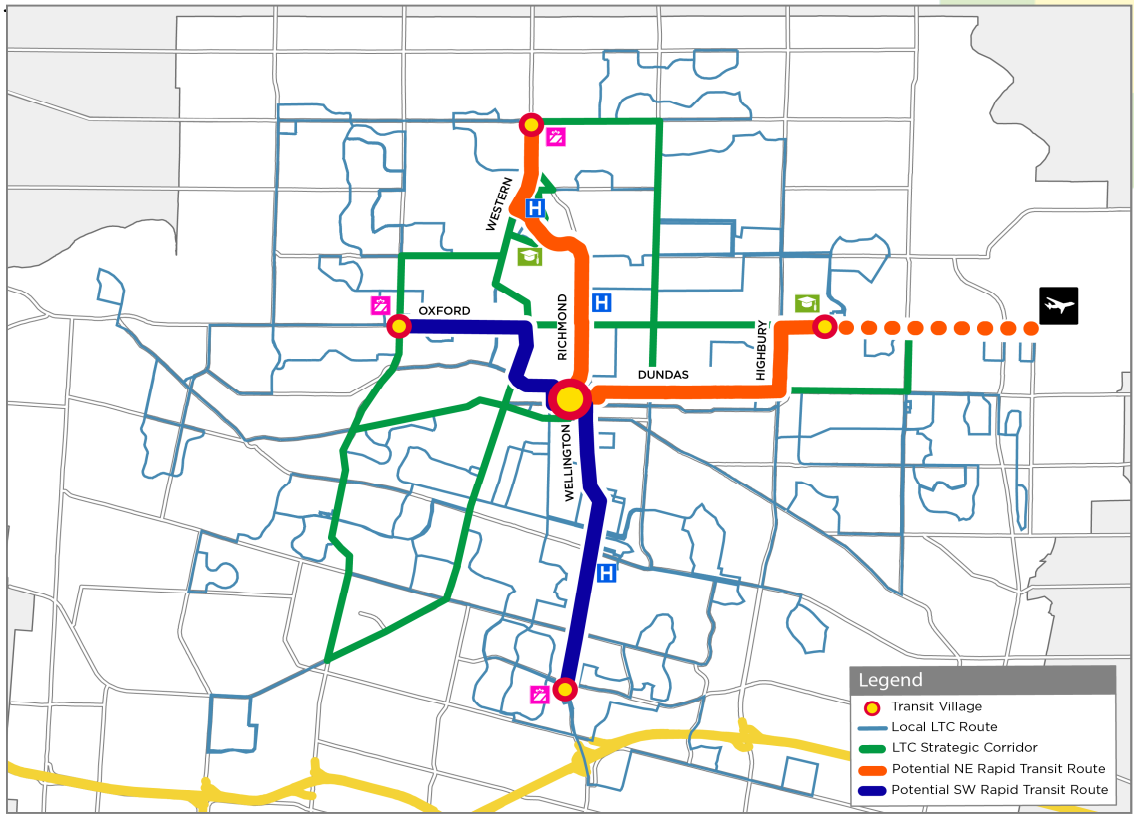
Shift Rapid Transit Integration

LTC is undertaking a route structure review to assess the overall system structure and to provide a high level implementation plan:

- modify the planned local bus network to connect to the rapid transit corridors to support transit ridership growth
- enhance service levels on routes connecting to rapid transit corridors
- eliminate/modify routes that duplicate rapid transit corridors
- modify routes to better connect to rapid transit and other destinations

Shift Rapid Transit Integration

LTC assessment will include the final recommended route structures including travel frequencies during peak and nonpeak operating hours as well as a high level implementation plan associated with establishing the desired transit network.

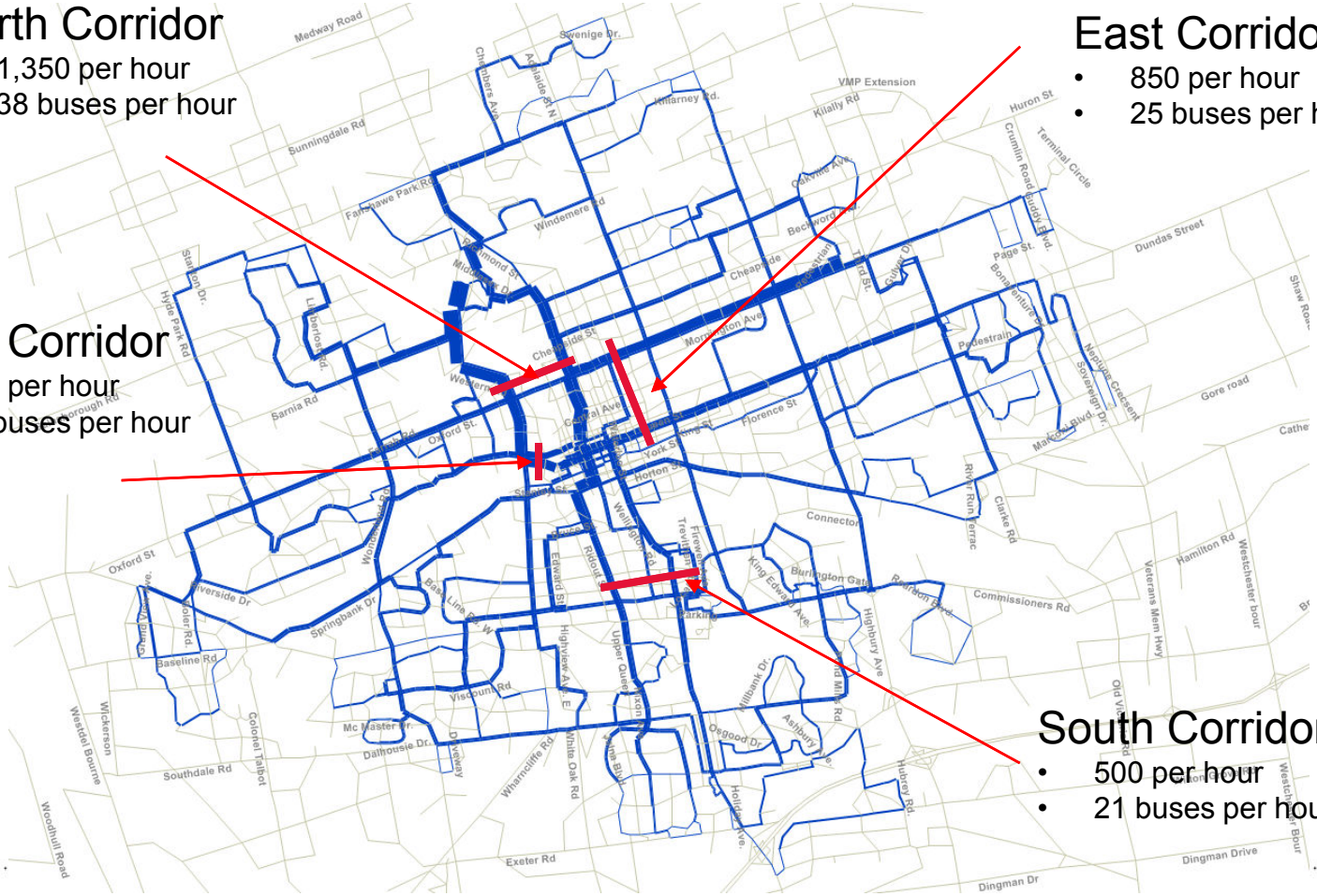


Existing Ridership (Peak Hour)

North Corridor
- 1,350 per hour
- 38 buses per hour

East Corridor
- 850 per hour
- 25 buses per hour

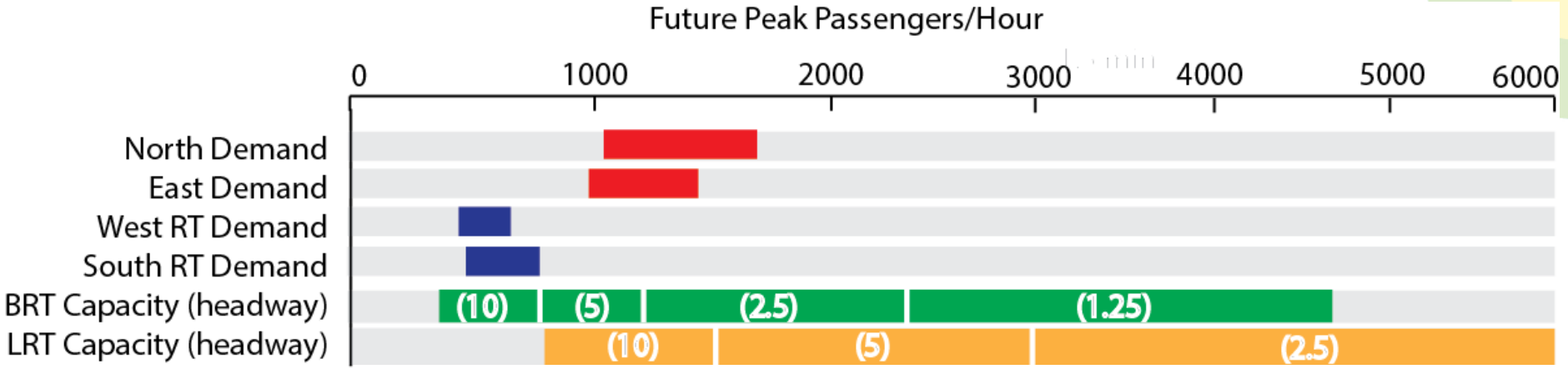
West Corridor
- 500 per hour
- 18 buses per hour



South Corridor
- 500 per hour
- 21 buses per hour

Projected Overall System Ridership Growth

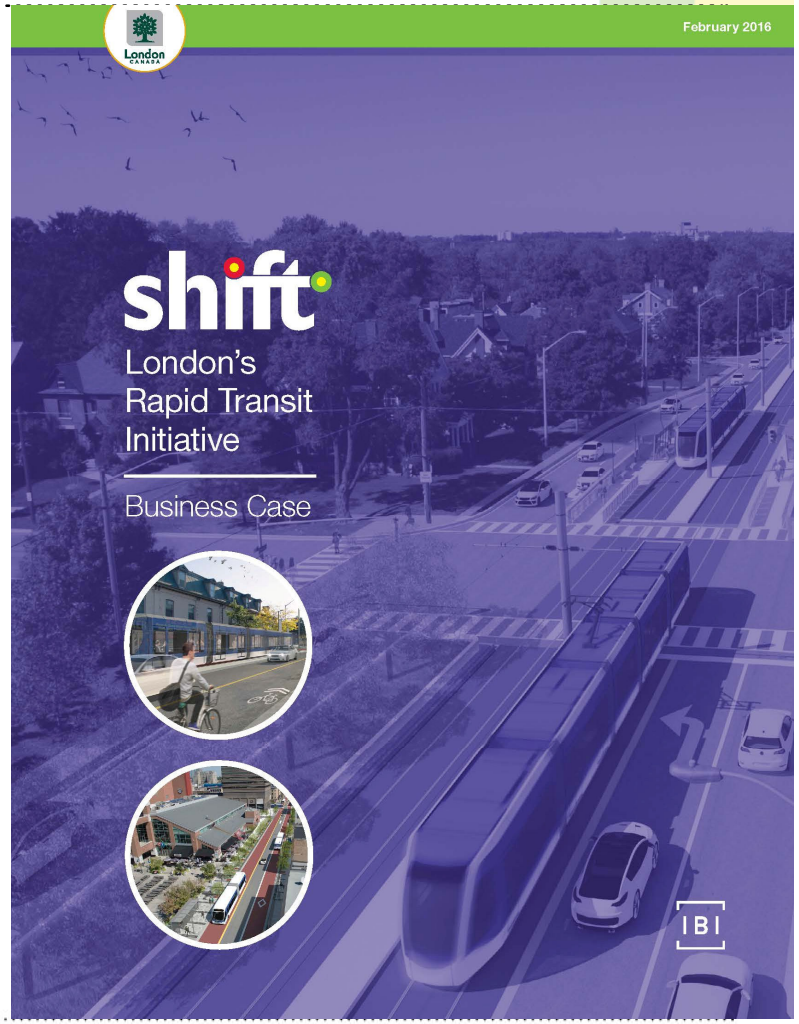
Rapid Transit Future Projected Ridership - 2035



- Future ridership on rapid transit will vary depending on base LTC service levels.
- Full BRT provides a scalable solution where capacity can be matched to demand.
- BRT also permits higher frequencies in the off-peak periods and lower demand corridors.

Business Case Overview

- Transit investments funded by Province and Federal government require a Business Case
- Demonstrated need for project based evidence-based decision making and objective comparison of proposals for funding
- Aligns with new *Infrastructure for Jobs and Prosperity Act*
- Shift Business Case compares the four different rapid transit alternatives
- Incorporates new data and assumptions since November 2015 Council Report



Business Case Overview: Financial

- Gross capital costs range from $270 million for Base BRT to $1.15 billion for Full LRT
- Operating costs range from approximately $11.1 to $13.8 million per year at full implementation

DESCRIPTION	BASE BRT	FULL BRT	HYBRID	FULL LRT
FINANCIAL CASE (In Millions 2016$)				
Total Capital Costs (2016$)	270	500	880	1,150
Total Capital Costs (NPV 2016$)	249.8	440.2	781.5	1022.7
Total Operation Costs (NPV 2016$)	264.2	234.9	215.6	224.0
Total Costs (NPV 2016$)	514.1	675.1	997.1	1246.7
Total Additional Revenue (NPV 2016$)	45.6	73.1	83.1	85.6
Net Revenue-Costs (NPV 2016$)	-468.5	-602.0	-914.0	-1161.0

Business Case Overview: Economic Benefits

- Direct economic benefits from investments in rapid transit are realized by time savings for transit users and other external benefits
- Implementing Full BRT would yield the highest Benefit to Cost Ratio (BCR)

ECONOMIC CASE (NPV in Millions 2016$)				
DESCRIPTION	**BASE BRT**	**FULL BRT**	**HYBRID**	**FULL LRT**
Internal Benefits				
Transit User Time Savings	520.3	787.9	787.9	787.9
External Benefits				
Unperceived Automobile Costs Savings	13.5	21.7	24.6	25.4
Network Wide Road User Savings	41.1	65.9	75.0	77.2
Safety Savings	6.7	10.8	12.3	12.7
GHG Emissions	12.8	20.5	23.3	24.0
Air Quality	0.4	0.7	0.8	0.8
Health (Walking)	23.8	38.2	43.4	44.7
Sub-total	98.3	157.8	179.4	184.8
Total Benefits (Internal+External)	618.6	945.7	967.3	972.7
B/C Ratio (External and Internal Benefits)	1.3	1.6	1.1	0.8

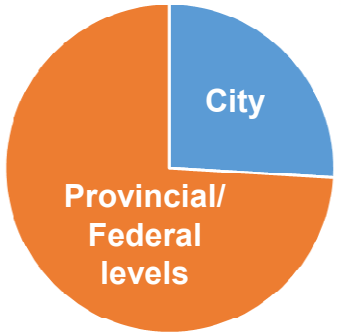
Business Case Overview: Economic Benefits

- Wider economic benefits occur due to job creation and land value uplift
- Short term GDP gains are proportional to capital costs, but not all of these benefits would occur in London
- Full BRT has the highest BCR when wider benefits are included

DESCRIPTION	BASE BRT	FULL BRT	HYBRID	FULL LRT
Wider Economic Benefits (NPV in Millions 2016$)				
Short Term GDP Gains	150.7	272.9	482.6	626.0
Long Term GDP Gains	9.9	8.8	8.0	8.3
Land Value Uplift	80.0	90.0	110.0	115.0
Sub-total	240.6	371.7	600.6	749.3
Total B/C Ratio	1.8	2.2	1.7	1.5

Government Relations Update

Required Capital Funding:	$500 million
City allocation:	$129.6 million
Investment required:	$370.4 million



- ✓ The City of London has engaged widely in bringing attention to the transformational impacts Rapid Transit will have in London and Southwest Ontario
- ✓ The response from provincial and federal officials has been overwhelmingly positive
- ✓ Provincial and Federal partners have communicated that they are eagerly awaiting London's Rapid Transit business case.

Shift Rapid Transit
Next Steps

- Submit Shift Rapid Transit Business Case to Provincial and Federal Governments
- Continue to develop concept designs for preferred corridors as part of on-going Environmental Assessment
- Finalize Rapid Transit Master Plan.
- Refine transit service plans as part of the on-going LTC route structure review in order to confirm annual operating cost implications
- Continue to work with residents and stakeholders to assess local alignment alternatives and their impacts and benefits