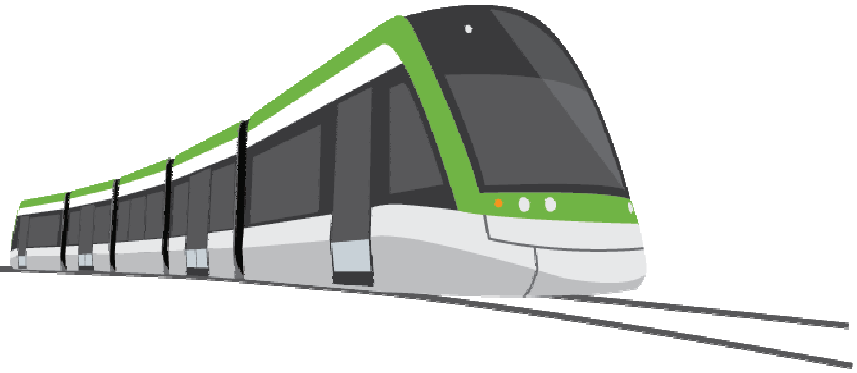
HAMILTON LRT LIGHT RAIL TRANSIT



Traffic Modeling Update

General Issues Committee
August 8, 2016

METROLINX
An agency of the Government of Ontario

Hamilton

Hamilton's LRT Project

METROLINX
An agency of the Government of Ontario

Hamilton

Overview

- This is an update on the approach taken to model traffic impacts associated with LRT and a summary of preliminary findings.
- Additional information will be forthcoming when the modeling exercise is complete.
- The LRT project is using a standard approach to traffic modeling.
- Traffic volumes on Hamilton roads will naturally increase over time due to projected population and employment growth.

METROLINX
An agency of the Government of Ontario

Hamilton

Overview

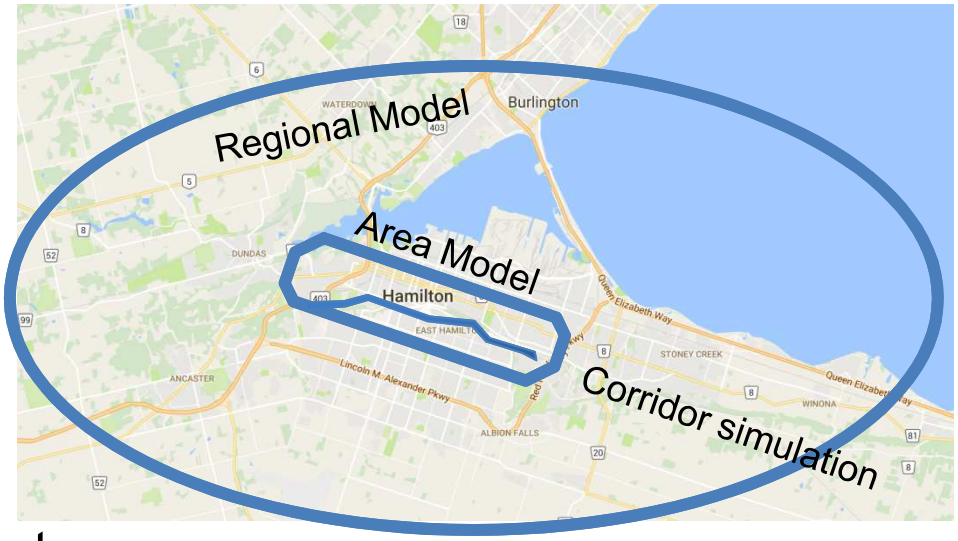
- LRT will change traffic patterns, the flow of traffic, and the level of service at intersections. The results of those impacts will require mitigation strategies.
- With proper mitigation strategies, traffic will continue to flow when LRT is in service.
- The change in alignment of the LRT from primarily “side running” (2011) to primarily “centre running” (2016) produces similar impacts.

Previous LRT Traffic Modeling ~ 2011

- As part of the previous Environmental Assessment (EA) a robust traffic model was developed.
- The previous model identified impacts to adjacent, parallel and some peripheral corridors. It suggested some intersection improvements in the west end.
- Overall, the previous LRT alignment was accommodated by the existing network without significant impacts.
- However, a general reduction in level of service for traffic throughout the system was recognized.

Tiered Modeling Approach

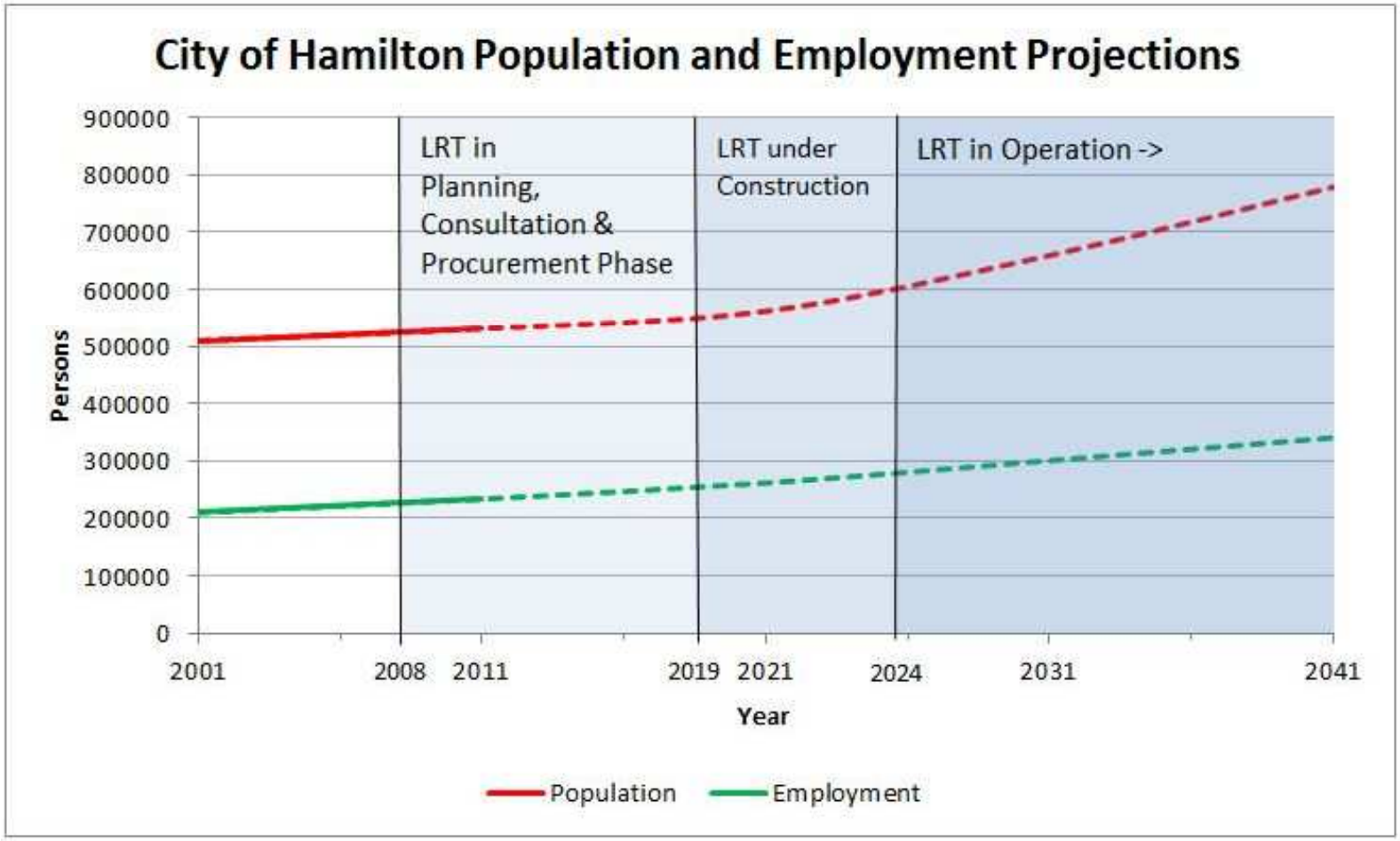
- **Regional Model**
  - Regional level
  - Ridership and traffic forecasting
  - Inputs to Area model
- **Area Model** We are here
  - Inputs from Regional Model
  - More detailed traffic patterns
  - Inputs to corridor model
- **Corridor Model**
  - Inputs from Area Model
  - LRT corridor simulation
  - Corridor operation details
  - LRT runtimes and visual output



METROLINX
An agency of the Government of Ontario

Hamilton

Population Trends



METROLINX
An agency of the Government of Ontario

Hamilton

Where will the traffic go when the LRT is introduced?

- Significant reduction on King Street westbound.
- New traffic on King Street eastbound where the new lane is introduced.
- Decreases on some perpendicular routes because of restrictions on crossing the LRT alignment.
- Increases on some perpendicular routes as traffic consolidates at crossing points.
- Increases on parallel routes as traffic is diverted.
- The challenges are at intersections.

Level of Service (LOS) Difference Highlights

AM Peak Hour

First iteration, without mitigation measures

Intersection LOS declines to 2031 are greater with LRT	2011	2031 without LRT	2031 with LRT
Barton at Frederick	A	C	E
Burlington at Kenilworth	B	E	F
Cannon at Barons	A	B	F
Dundurn at York	D	C	E
Hunter at John at GO Station	B	C	E
Hunter at Wellington	A	C	F
King at Bay	C	B	F
King at Gage	B	D	F
King at Locke, King at Sherman	B	C	F
King at Queen, King at Victoria	C	D	F
King at Wentworth	B	C	E
Main at Kenilworth	C	C	E
Main at Longwood, Main at Ottawa	C	C	F
Main at Victoria	C	E	F
Ottawa at Beach	A	E	F

Level of Service (LOS) Difference Highlights

AM Peak Hour

First iteration, without mitigation measures

Intersection LOS declines to 2031 are equal with or without LRT	2011	2031 without LRT	2031 with LRT
Barton at MacNab	B	F	F
Barton at Victoria	C	F	F
Barton at Woodward	B	E	E
Burlington at Ottawa	B	F	F
Burlington at Wentworth	C	E	E
Cannon at Gage	C	E	E
Centennial at Arrowsmith	B	E	E
Depew at Industrial	B	E	E
Dundurn at Aberdeen	D	F	F
Dundurn at Charlton	C	F	F
King at Parkdale	C	F	F
Main at Bay	C	F	F
Main at Emerson	C	E	E
Main at James	D	F	F
Main at John	C	F	F
Main at Sherman	B	F	F

Level of Service (LOS) Difference Highlights

AM Peak Hour

First iteration, without mitigation measures

Intersection LOS declines to 2031 are greater without LRT, 2011 to 2031	2011	2031 without LRT	2031 with LRT
Dundurn at Chatham	A	F	A
James at King	C	E	D
King (South) at Hughson	C	C	A
King at Dundurn	C	E	C
King at Emerald	B	C	A
King at Ferguson	B	C	A
King at Main East	D	E	A
King at Paradise	C	E	A
King at Walnut	B	E	A
Main at Dundurn	C	F	E
Main at Queenston	D	F	C
Queen at Bold	B	E	D
Sherman at Delaware	A	E	C
Stinson at Wentworth	C	E	D
York at Locke	C	E	D
York at Park	C	F	D

Next Steps

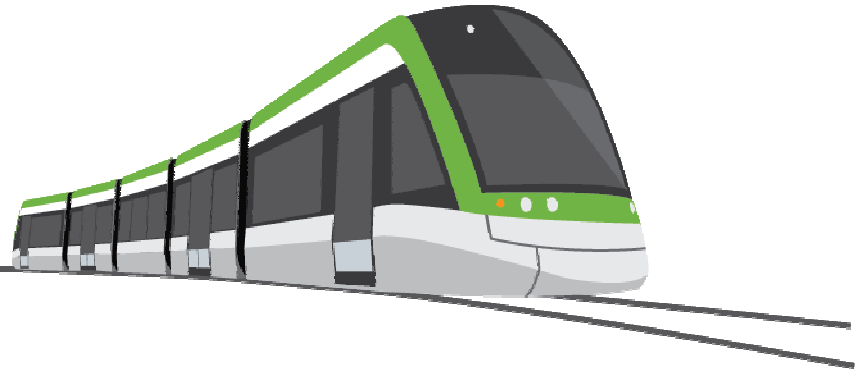
- Develop potential traffic solutions through modeling work:
  - Signal timing and phasing optimization
  - Lane configuration alterations
  - Turn restrictions
  - LRT signal priority adjustments
- Complete micro-simulation runs
- Finalize adjustments
- Identify any capital works requirements
- Report back to Council

METROLINX
An agency of the Government of Ontario

Hamilton

HAMILTON

LRT LIGHT RAIL TRANSIT



METROLINX

An agency of the Government of Ontario

Hamilton