Workshop #3
Needs Assessment

Ministry of Transportation
IBI Group
March 27, 2014
Opening Remarks and Introductions
Study Overview and Update
History of the Study

• This study builds upon the 2002 MTO study “Simcoe Area Transportation Network Needs Assessment”, which identified a series of long-range transportation improvements to expand the provincial highway system to meet projected growth.
  – Some recommendations have already moved to the next stage of planning (e.g. Hwy 400 widening, Hwy 404 extension, provincial EA approval for Bradford Bypass in 2004).

• The land use planning context has since changed (2005 Greenbelt Plan, 2006 Growth Plan and 2012 Amendment in Simcoe, Provincial Policy Statement), necessitating a re-examination of the transportation system opportunities for Simcoe.

• Needs Assessment is the final technical report and builds upon previous studies.
Study Objectives

The key objectives of this study are to identify, assess, and propose possible solutions to:

• Support implementation of the *Growth Plan* and the County of Simcoe amendments, PPS and other provincial policies
• Identify future transportation infrastructure deficiencies and manage future demand
• Increase the modal share of alternative transportation options
• Better connect the population and employment areas within Simcoe and the surrounding regions
• Optimize the efficiency and capacity of the existing transportation network
• Ensure a coordinated and integrated approach to transportation and land use planning
What We Heard at the Last Meeting

• Need to prioritize access to services and opportunities
• Small optimizations can have a large impact
• Employment growth depends on an efficient transportation network
• Regional transit operating at capacity
• Local transit is used mainly by those who cannot afford an automobile
• Development charges alone cannot fund transportation infrastructure in smaller communities
• Municipal collaboration evident, but jurisdictional challenges remain
• Growth Plan growing pains in two-tier environment
• Better coordination of provincial infrastructure planning needed
• Active transportation and complete community initiatives underway
• There is a real need to reserve multi-use infrastructure corridors
What Has Been Accomplished Since the Last Meeting?

• At the last meeting, the study team presented a picture of transportation in the Simcoe Area in the year 2041 based on extensive data collection, three population and employment scenarios and robust modelling and forecasting.

• Based on this work, the study team completed three major reports:
  – Transportation and Land Use Overview and Outlooks: Discusses the existing network and travel characteristics, past and future land use trends, and future-year travel forecasts
  – Transportation Network Review: A technical analysis of current and future deficiencies on the highway, transit and active networks for a full range of travel conditions considering weekday and weekend conditions
  – Transportation Needs Assessment: Identify and assess potential projects to meet the transportation needs of the Simcoe Area

• Consultation throughout the study including: MTO (Planning & PHM), Partner Ministries, Municipal and Stakeholder groups (April & December 2012).
2041 Forecast: LOS Fall Weekend Day
Needs Assessment
Key Themes

1. The Growth Plan has changed land use planning
2. The Simcoe Area is growing
3. The Simcoe Area is a region with diverse contexts and needs
4. The existing system lacks resiliency
5. There are a lack of multi-modal alternatives and supporting land uses
6. The three pillars of sustainability must be balanced
Project Assessment Framework

• Transport Market Approach
  – ‘Trip Type’ and ‘Geographic Distribution’ of Origins and Destinations
  – Key transportation corridors
  – Impacts on passenger and freight travel
  – Intra-regional, cross-boundary, and through travel

• Modal Approach
  – Transit-based projects
  – Transportation Systems Management (TSM)
  – Road-based projects

• Selection Process
  – Project Identification (what projects should we consider?)
  – Project-level Screening (which projects should be carried forward?)
  – System-level Assessment (how can the projects work together as a system?)
  – Potential Systems Direction (what direction should be taken in the transportation system?)
Project-level Screening Process

- A long list of projects were identified through consultation activities, project team workshops and brainstorming sessions
  - Incorporated feedback and ideas from the first two Municipal Technical Team and Stakeholder Group meetings
- Projects that did not meet criteria (see next slide) were screened from further analysis
- Remaining projects were then bundled into scenarios for the system-level analysis
- 26 individual projects were identified and assessed
Assessment Criteria

- Transportation performance
- Implementability
- Travel markets
- Community/Social
- Economic
- Environmental
Transit Projects

• Category includes potential new transit solutions required to improve multi-modal travel choices

• Assumes existence of all Metrolinx Big Move projects

• 6 of 7 new projects carried forward to system analysis

• Challenging land use and travel pattern environment
Transit Project Assessment

Description
15 min peak service to Toronto, with daily 30 min two-direction service
Assessment
- 1,500 new AM peak riders to Toronto
- 400 new reverse AM peak riders
- Strong environmental, social ratings
- Medium implementability (double tracking required), economic impact
Carried Forward

Description
Extension of future Bolton Line to Alliston with a stop in Tottenham. Peak service only.
Assessment
- <100 AM peak riders
- Challenge of using CP mainline
- Small travel market to downtown Toronto from Alliston
- Ridership too small to justify service, resulting benefits are small
Screened Out (Consider bus alternative)

Description
Two Hwy 400 routes, serving Square One via Pearson Airport, and Unionville GO via Highway 407. Buses will pick up riders at Highway 400 PnR lots.
Assessment
- Provides service in key suburb-suburb travel market
- 600 peak riders (conservatively)
- Strong social benefit by providing new travel choices
Carried Forward

Description
Expanded park and ride lots with improved amenities at GO rail stations and carpool lots along the Highway 400 corridor
Assessment
- Supports GO Rail and Hwy 400 BRT
- Cost effective solution, easy to implement
- Smaller impact overall
Carried Forward
Transit Project Assessment (cont’d)

Description
New bus connections between primary settlement areas within Simcoe

Assessment
- Potential ridership is low
- Would require strong integration and marketing
- Provides new travel choices
- Supports Growth Plan policies
Carried Forward

Description
Direct connections between GO Rail stations, transit hubs and major employers in the Simcoe Area to address the “last mile” transit challenge.

Assessment
- Serves suburb-suburb travel market that currently has a 0% transit share
- Would need to identify an operator (private vs. public)
- Would be a groundbreaking service
Carried Forward

Description
Increases in both coverage area and service levels for Barrie Transit to support intensification and development as a regional centre.

Assessment
- Transit mode share within Barrie could double from 3% to 6%
- Need further analysis to determine impact on overall subsidy and fares
- Strong environmental and social benefits
- Improved equity and accessibility
Carried Forward
TSM Projects

- Projects that make more efficient use of the existing transportation network
- 8 of 10 of the identified projects were carried forward to the system-level analysis
TSM Project Assessment

Description
Widen Highway 400 to add HOV lanes. Lanes could be operated as HOV2+, HOV3+ or more flexible managed lanes

Assessment
- HOV2+ not effective outside weekday peak periods
- HOV3+/managed lanes more potential
- Consistent with MTO HOV plan, strong implementability

Carried Forward

Description
Add additional passing lanes in strategic locations along Hwy 12 to improve LOS

Assessment
- Can address poor LOS without costly full highway widenings
- LOS challenges due to strong two-direction travel, few passing chances
- Quick-win type solution, easy to implement with no major obstacles

Carried Forward

Description
Improvements ranging from minor operational improvements and approach widenings to new grade separations and interchanges

Assessment
- Can directly address specific hotspots
- Easily implemented (with high capital costs)
- New interchanges may be needed to service future growth in Innisfil and South Barrie
- New rail/road grade separations may be required along mainline rail corridors (Alliston)

Carried Forward

Description
Various technological solutions used to improve response times to accidents and other incidents on the highway system

Assessment
- Of particular importance in Simcoe due to severe winter weather
- Worsened by poor redundancy on Hwy 400
- MTO has in-house expertise to extend current systems to Simcoe

Carried Forward
TSM Project Assessment (cont’d)

Description
New transit services that connect to major tourist/recreational destinations

Assessment
- Potential of reducing auto shares in very-specific trip markets
- Private sector operator could be required
- Could contribute to success of some key tourist destinations

Carried Forward

Description
TDM strategy used to encourage carpooling by matching up drivers and passengers

Assessment
- Encourages more efficient use of highways and can make more efficient use of carpool lots and HOV lane networks
- Easiest solution is to expand Smart Commute program into the Simcoe Area
- Could be expanded to recreation trips

Carried Forward

Description
New rail (intermodal) yards to encourage economic development and reduce truck traffic on provincial and county facilities

Assessment
- Most goods movement in Simcoe is better served by trucks
- Rail competitive for long (>800km) trips
- Location of yards largely a rail operator decision
- Simcoe not a likely location for new yards

Screened Out

Description
Trucks travel in dedicated lanes, reduce car-truck conflicts, improve travel times, safety and the reliability of goods movement

Assessment
- Truck traffic on Highway 400 does not warrant truck lanes due to truck volumes
- Could create a multipurpose dedicated lane (i.e. HOV in peak periods, trucks off-peak)
- Potential safety benefits poorly understood

Screened Out (Consider flexible managed lanes)
TSM Project Assessment (cont’d)

Description
Truck climbing lanes can improve throughput on facilities with high truck (and RV) volumes and steep grades

Assessment
- Natural place to put truck climbing lanes is along Highway 400 at locations where the grade exceeds threshold
- Easy to implement as a localized solution
- Can provide strong operational benefits by targeting hot spots

Carried Forward

Description
Policy measures that support #CycleON objectives to increase cycling in Simcoe

Assessment
- Benefits include improving the livability of communities, safety and health
- Policy recommendations and actions to promote active modes are needed
- Could include safer interchanges, grade separated crossings across major roads, or bike parking at park and ride lots

Carried Forward
Road-based Projects

- Road network improvements and new road construction
- New capacity required in both E-W and N-S direction
- Address redundancy in highway network
- 11 of 12 projects were carried forward to the system-level analysis
Road Project Assessment

**Description**
Four-lane controlled-access highway that will provide an E-W connection between Hwy 400 and Hwy 404 south of 9th Line

**Assessment**
- Heavily used in 2041, 3,700 a.m. peak hour peak direction vehicles
- EA approved corridor
- Not part of current Growth Plan
- Environmental concerns and opposition likely

**Carried Forward**

**Description**
Widening of Highway 400 to 10 lanes north to the Highway 11 interchange

**Assessment**
- Significant improvement in forecasted Level of Service (mostly LOS C)
- 30% increase in throughput
- Lower cost than new facility
- Widening constraints through Barrie
- May require core-collector system

**Carried Forward**

**Description**
Widening from 2 to 4 lanes from Yonge Street to Shelburne (Dufferin County)

**Assessment**
- Improvement in forecasted LOS
- Benefits commuters and trucks to the Alliston Honda Plant
- Difficult implementation through Alliston, bypass may be considered
- Reduces congestion on County roads

**Carried Forward**

**Description**
Expansion to four lanes for the full length between Barrie and Collingwood

**Assessment**
- Forecasted to be highly congested on weekdays and weekends without widening
- Will strongly benefit tourism industry
- Improvements also needed through congested parts of Barrie

**Carried Forward**
Road Project Assessment (cont’d)

**Description**
Widening from 2 to 4 lanes from Highway 400 to Orangeville (Dufferin County)

**Assessment**
- Addresses recurring delays in particular due to slow moving trucks
- Widening addresses all capacity and performance issues
- Western end of corridor crosses the Niagara escarpment, environmental challenges need to be addressed

**Carried Forward**

**Description**
Extension of controlled access Highway 404 from Ravenshoe Rd to Highway 12 (in York Region)

**Assessment**
- Forecasted to carry 3,000 vehicles in the a.m. peak hour near the Bradford Bypass, 900 at Highway 12
- Little congestion relief on Highway 400
- Extension runs through the Greenbelt, limiting development opportunities

**Carried Forward**

**Description**
Widening of Highway 11 from 4 to 6 lanes controlled access from Highway 400 to Washago

**Assessment**
- Significant improvement in forecasted Level of Service (mostly LOS C)
- Difficult implementation challenges through “Gasoline Alley”
- Benefits primarily freight and tourism

**Carried Forward**

**Description**
Expansion Highway 12 from Highway 404 extension to Orillia as a four lane limited access highway

**Assessment**
- AM peak demand of 1,200 vehicles
- Encourage development on east side of Lake Simcoe
- Provides alternative N-S facility to Highway 400
- Far from major population centres

**Carried Forward**
Road Project Assessment (cont’d)

**Description**
Four-lane extension from Major Mackenzie Dr. to the Barrie Bypass with an E-W connection to the Bradford Bypass

**Assessment**
- Provides strong congestion relief on Highway 400 (to LOS D or better)
- AM peak hour 3,100 vehicles
- Strong environmental challenges
- Adds resiliency to highway network

**Carried Forward**

**Description**
A four-lane connection between the Highway 427 Extension and Highway 11

**Assessment**
- Diverts additional traffic to Highway 427 corridor, improving Highway 400
- Environmental and implementation issues with a corridor through the Minesing Swamp
- Completes the Simcoe highway network

**Carried Forward**

**Description**
Widening from 2 to 4 lanes from the entire length of Highway 93

**Assessment**
- Smaller growth over current levels compared to other Simcoe corridors
- Projected demand does not warrant a full widening
- Reconsider in future for a longer horizon period (2051)

**Screened Out (Passing lanes, spot improvements sufficient)**

**Description**
Operational improvements on arterial and county roads throughout Simcoe, including CR88, CR90 and CR21

**Assessment**
- Most improvements already identified within the Simcoe County TMP
- Improves level of service, provides congestion reduction

**Carried Forward**
System-level Analysis

1. Maximize Transit
2. Optimize Existing Capacity
3. Establish New Transportation Corridors

“Incremental Approach”

- Screened projects assembled into three Scenarios
- “Transit-first” approach was used
- The merits of each component of the analysis were reviewed individually to determine whether they were sufficient to address the projected needs before proceeding to the next level of the analysis
- New highways were only considered after exhausting all reasonable transit improvements and optimization of the existing road capacity
Scenario 1: Maximizing Transit

Projects:

- Assumes existence of all Metrolinx Big Move projects and current transit services
- Extended GO train service between Barrie and Union Station
- Highway 400 bus service
- Expanded Park ‘n Ride lots
- Expansion of local Barrie transit
- New Intra-regional transit connections
- New employer transit shuttles

Performance (AM Peak period):

- 1,800 additional GO rail riders
- 300 inter-regional bus riders
- 440 intra-regional bus riders
- Increase in transit share of 1%
Scenario 1 Network Performance

Business-as-Usual

Maximize Transit

2041 Design Hour Volume
Level of Service: Business-as-Usual
LOS C or better
LOS D
LOS E or worse
Other Provincial Highway (Outside region of influence)

2041 Design Hour Volume
Level of Service: Scenario 1
LOS C or better
LOS D
LOS E or worse
Other Provincial Highway (Outside region of influence)
Scenario 2: Optimize Existing Capacity

Projects:
All Scenario 1 projects, plus:
- Transportation System Management (TSM) including incident management, HOV/transit lanes, and truck climbing lanes
- Provincial highway widening

Performance:
- Highway 400 improved to LOS D for most of its length
- Highways 89, 26, and 11 improved to LOS C or better
- Travel time by car from Barrie to Toronto decreased by 25 minutes
- Auto delay declined by 20%
Scenario 2 Network Performance

Business-as-Usual

Optimize Existing Capacity

2041 Design Hour Volume
Level of Service: Business-as-Usual

LOS C or better
LOS D
LOS E or worse
Other Provincial Highway
(Outside region of influence)

2041 Design Hour Volume
Level of Service: Scenario 2

LOS C or better
LOS D
LOS E or worse
Other Provincial Highway
(Outside region of influence)
Scenario 3A/3B: Establish New Transportation Corridors

Projects:
All Scenario 1 and 2 projects, plus:
- Bradford Bypass
- Scenario 3A: Extension of Highway 427 to Barrie
- Scenario 3B: Highway 404 extension and limited access Highway 12

Performance:
- Highway 400 improved to LOS C for most of its length
- Improved travel times to Peel, York Halton and Toronto
- Increased redundancy in the north-south corridor
- Western corridor performs best
Scenario 3A Network Performance

Business-as-Usual

New Corridors: Western Alignment

2041 Design Hour Volume
Level of Service: Business-as-Usual

2041 Design Hour Volume
Level of Service: Scenario 3a

Other Provincial Highway
(Outside region of influence)
Scenario 3B Network Performance

Business-as-Usual

New Corridors: Eastern Alignment

![Map showing network performance in SIMCOE area](image)
Where are we now?

- No one (single) set of improvements will adequately address the identified transportation needs of the Simcoe Area forecast to 2041.
- With the implementation of the full set of transit, TSM, and road improvements the transportation system will operate at an acceptable level of service (LOS ‘C’).
- This study was designed to identify planning issues and generate a suite of potential options.
- Further, more detailed, analysis (environmental assessment) of projects would be required in future.
Next Steps

• The ministry is finalizing the technical work related to the Simcoe Area Multimodal Transportation Strategy

• A stakeholder workshop is an important step to ensure stakeholder input is sought and considered in the completion of the Transportation Needs Assessment Report

• The ministry will consider all input on the technical findings in future efforts and work related to the Simcoe Area