



SIMCOE AREA

MULTI-MODAL TRANSPORTATION STRATEGY

Workshop #3

Needs Assessment



Ministry of Transportation

IBI Group

March 27, 2014

Opening Remarks and Introductions



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Study Overview and Update



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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

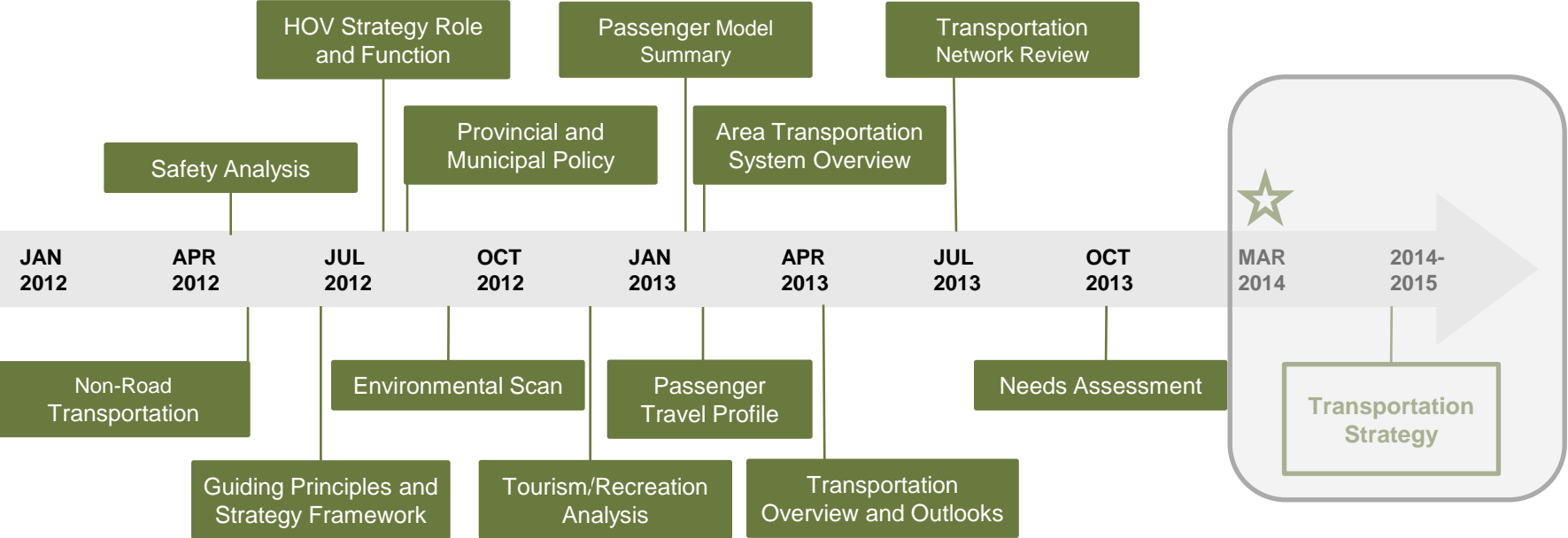


What Has Been Accomplished Since the Last Meeting?

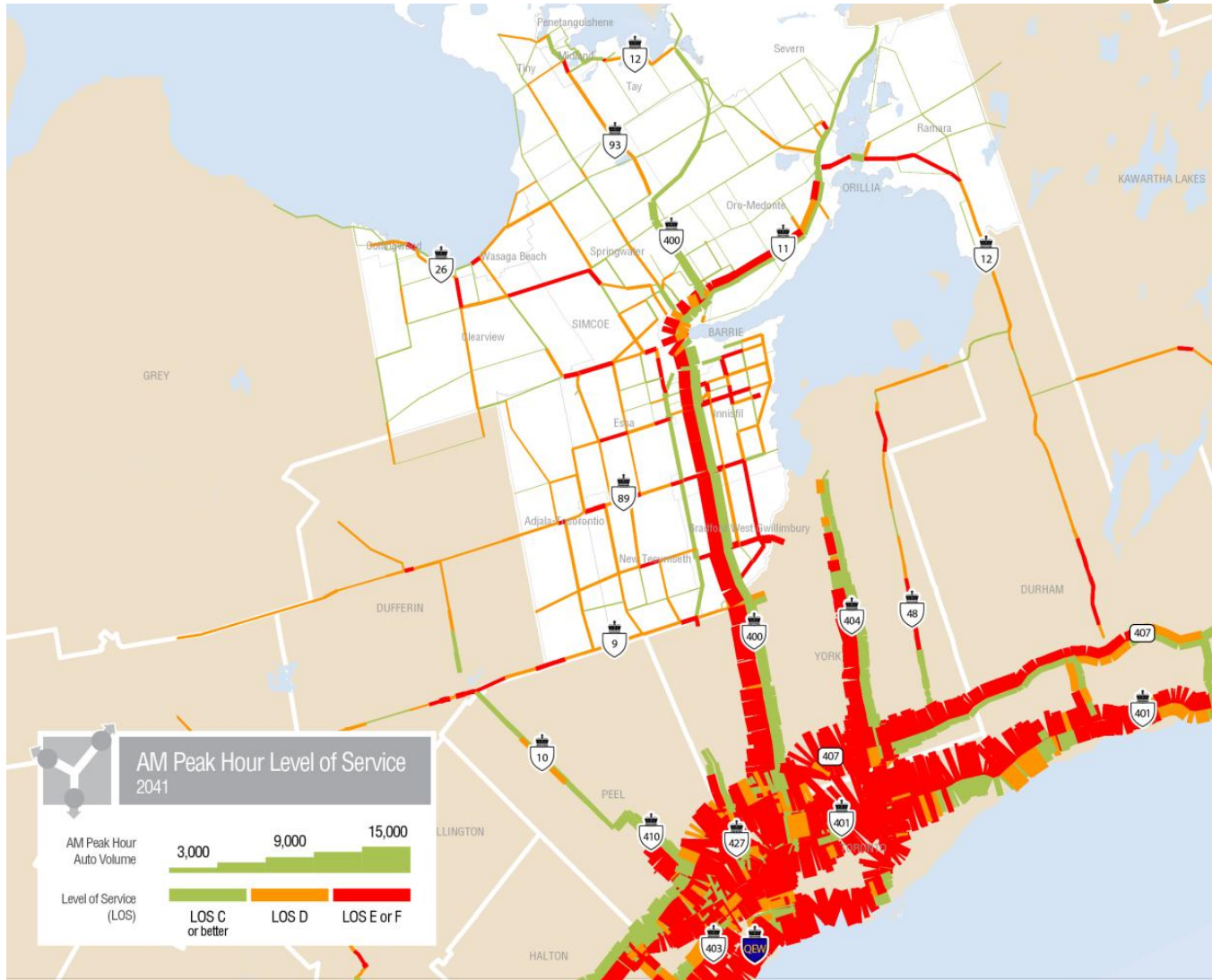
- At the last meeting, the study team presented a picture of transportation in the Simcoe Area in the year 2041 based on extensive data collection, three population and employment scenarios and robust modelling and forecasting.
- Based on this work, the study team completed three major reports:
 - **Transportation 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).



Study Reports



2041 Forecast: LOS Fall Weekday



Needs Assessment



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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

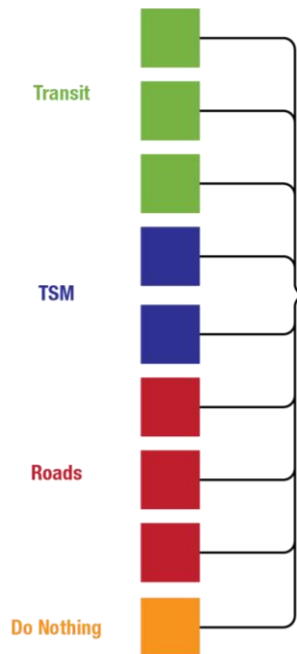
- Transport Market Approach
 - ‘Trip Type’ and ‘Geographic Distribution’ of Origins and Destinations
 - Key transportation corridors
 - Impacts on passenger **and** freight travel
 - Intra-regional, cross-boundary, and through travel
- Modal Approach
 - Transit-based projects
 - Transportation Systems 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

STEP 1: INITIAL LIST OF PROJECTS

What projects should we consider?



Objective:

Develop an exhaustive list of potential and reasonable transportation projects under the transit, TSM, and roads categories for consideration in the MMTS

STEP 2: PROJECT-LEVEL SCREENING

Objective:

Initial assessment of proposed projects based on high-level analysis to provide a short-list of measures for network-level assessment

Assessment Criteria

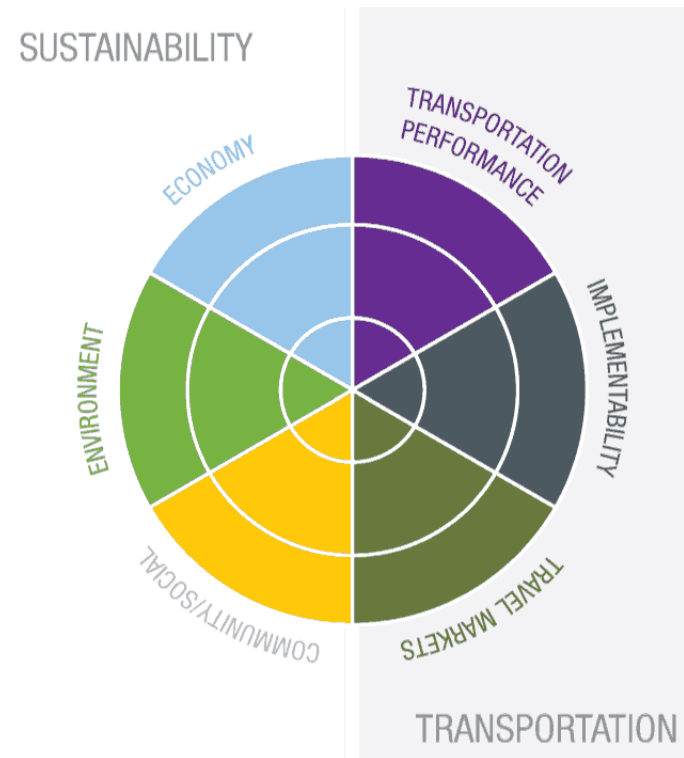
- **Implementability**
(Consistency with policy and existing priorities, process challenges, ease of implementation, political will)
- **Project Performance**
(ridership; travel time savings; qualitative measures)
- **Economic**
(supports economic objectives, potential economic benefits)
- **Environmental**
(environmental risks and constraints)
- **Community/Social**
(land use impacts, accessibility, connectivity)
- **Travel Markets**
(identifying travel markets served by project)

- 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

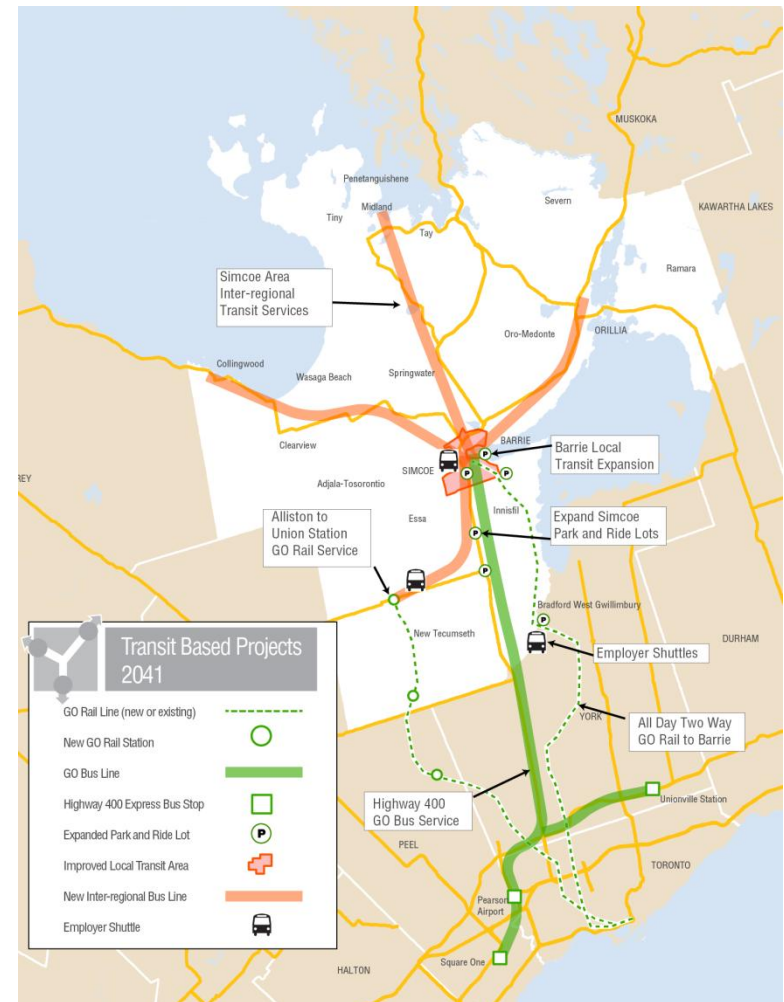


More bars =
better performance



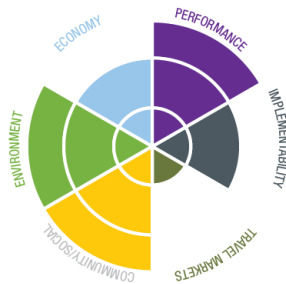
Transit Projects

- 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

ALL-DAY, TWO-WAY GO RAIL TO BARRIE



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

HIGHWAY 400 BUS RAPID TRANSIT



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

GO RAIL SERVICE TO ALLISTON



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)

EXPANDED PARK AND RIDE LOTS



Description

Expanded park and ride lots with improved amenities at GO rail stations and carpool lots along the Highway 400 corridor

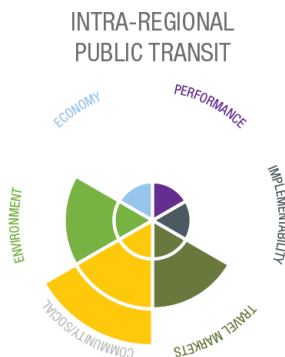
Assessment

- Supports GO Rail and Hwy 400 BRT
- Cost effective solution, easy to implement
- Smaller impact overall

Carried Forward



Transit Project Assessment (cont'd)



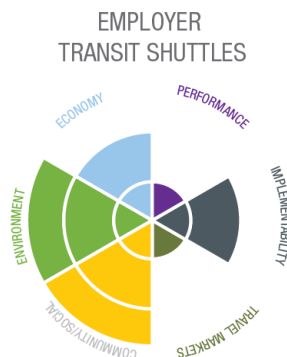
Description

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



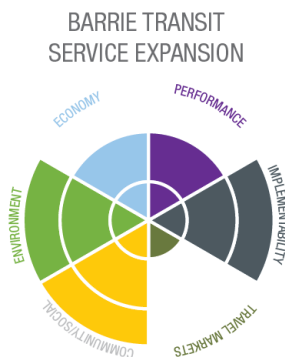
Description

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

HOV/TRANSIT LANES ON HIGHWAY 400



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

PASSING LANES ON HIGHWAY 12



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

INTERCHANGE IMPROVEMENTS



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

INCIDENT MANAGEMENT STRATEGIES



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)

ACTIVITY-SPECIFIC SHUTTLES



Description

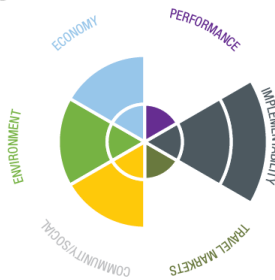
New transit services that connect to major tourist/recreational destinations

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

RIDEMATCHING PROGRAMS



Description

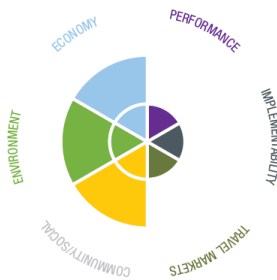
TDM strategy used to encourage carpooling by matching up drivers and passengers

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

FREIGHT YARDS



Description

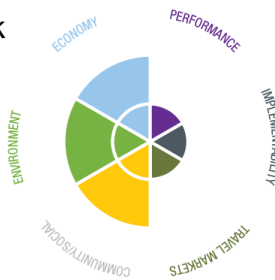
New rail (intermodal) yards to encourage economic development and reduce truck traffic on provincial and county facilities

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

TRUCK LANES ON HIGHWAY 400



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)

TRUCK CLIMBING LANES ON PROVINCIAL HIGHWAYS



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 targetting hot spots

Carried Forward

ENCOURAGE ACTIVE MODES



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

BRADFORD BYPASS



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

HIGHWAY 400 EXPANSION (10-LANES)



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

HIGHWAY 89 WIDENING



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

HIGHWAY 26 WIDENING



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)



HIGHWAY 9
WIDENING

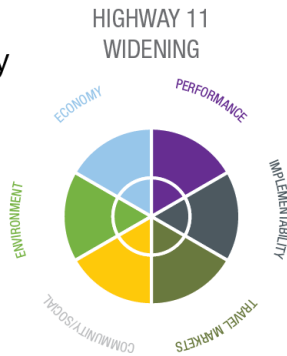
Description

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



HIGHWAY 11
WIDENING

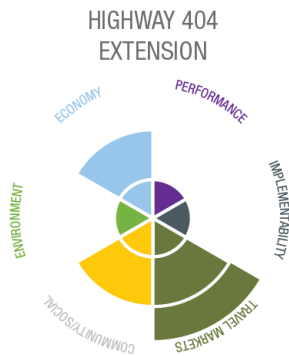
Description

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



HIGHWAY 404
EXTENSION

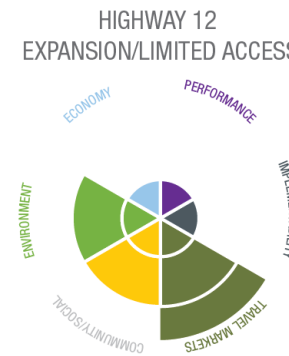
Description

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



HIGHWAY 12
EXPANSION/LIMITED ACCESS

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)

HIGHWAY 427 EXTENSION



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

HIGHWAY 93 WIDENING



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)

BARRIE BYPASS



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

WIDEN SELECT COUNTY ROADS



Description

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

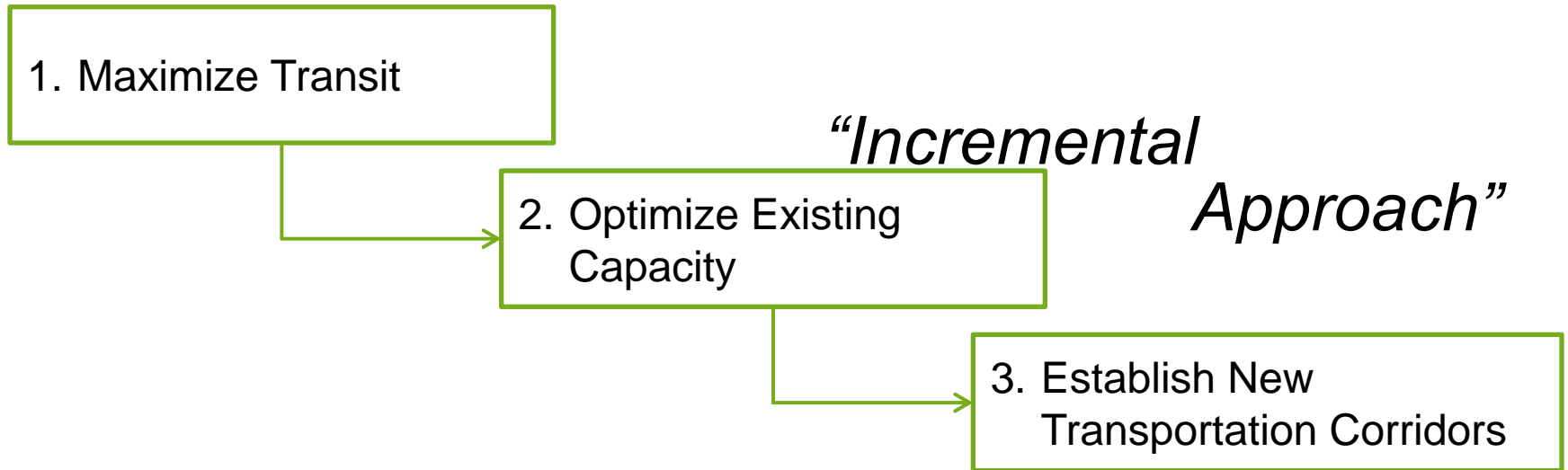
Assessment

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

Carried Forward



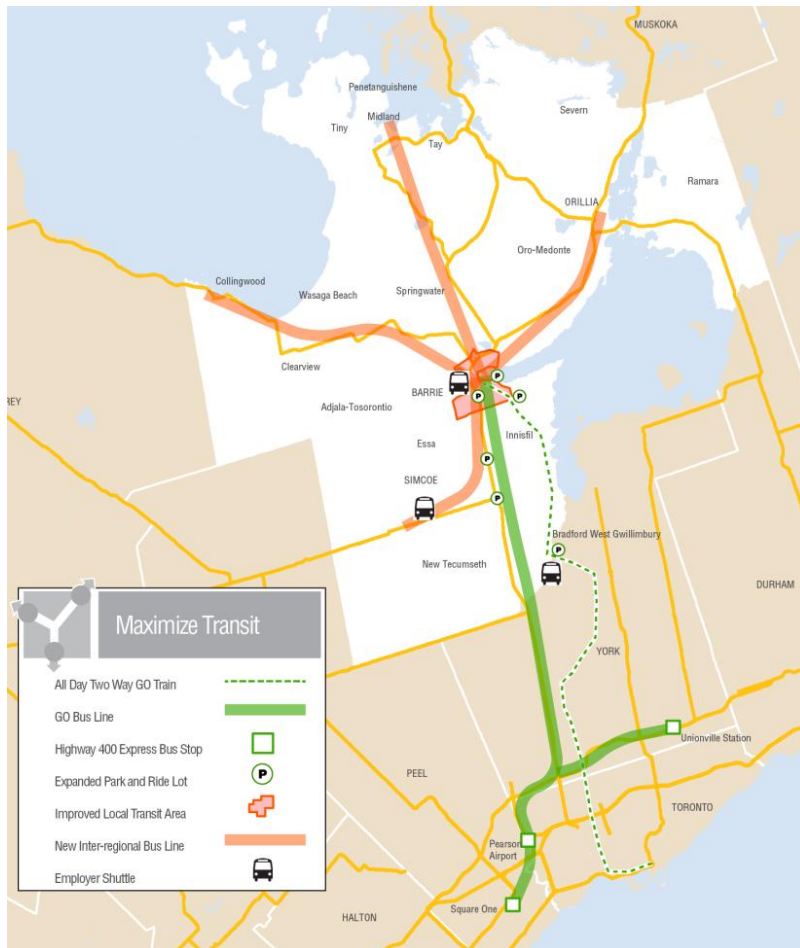
System-level Analysis



- 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%

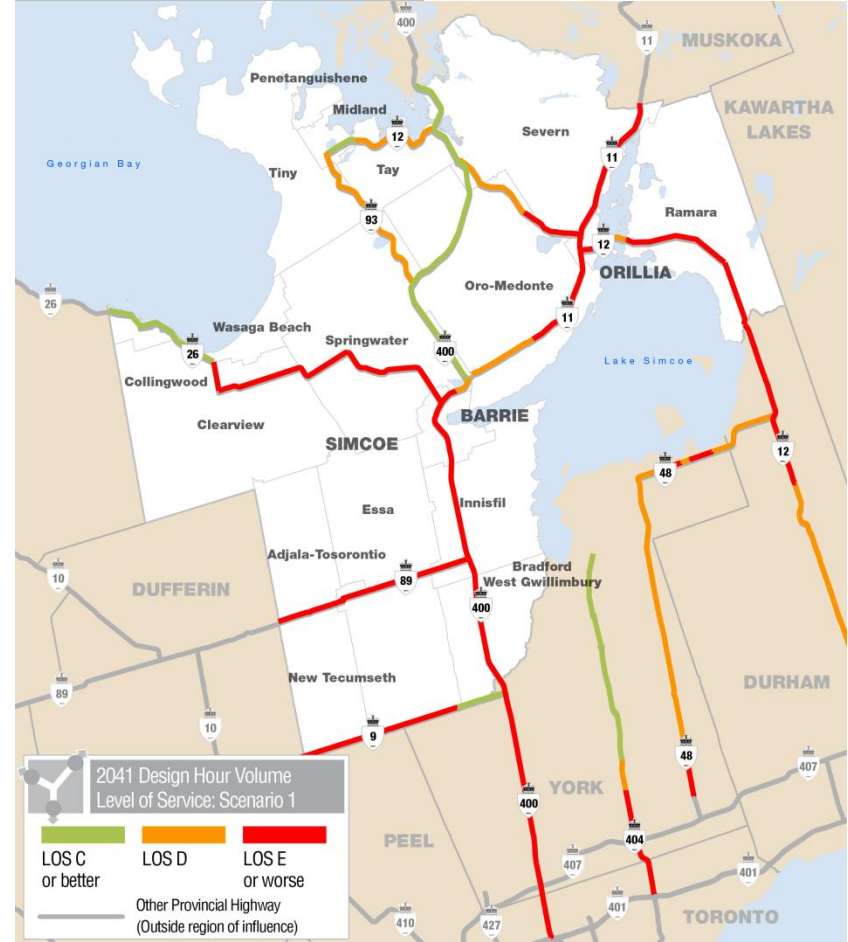


Scenario 1 Network Performance

Business-as-Usual



Maximize Transit



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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



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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

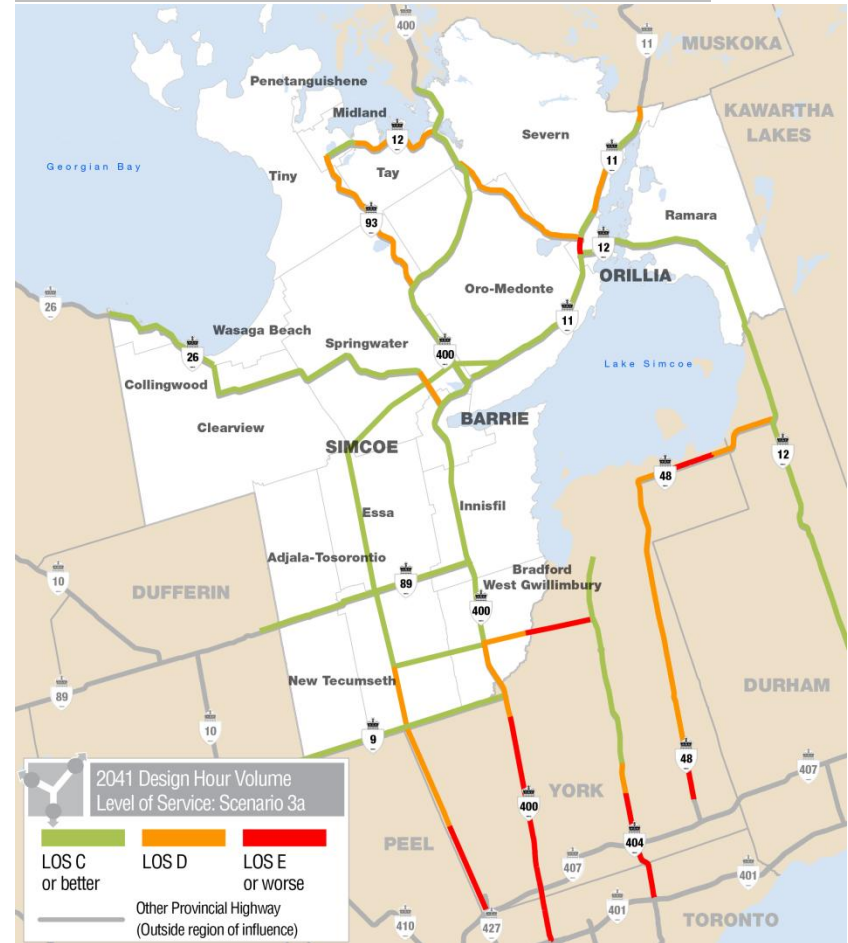


Scenario 3A Network Performance

Business-as-Usual



New Corridors: Western Alignment



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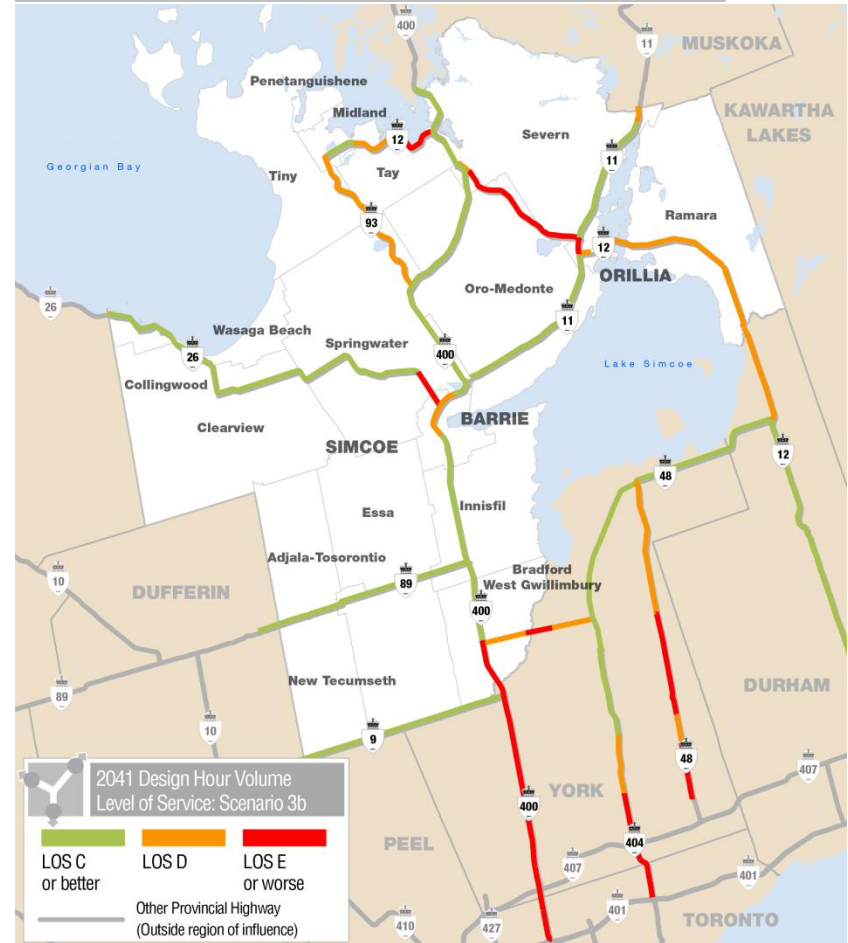
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Scenario 3B Network Performance

Business-as-Usual



New Corridors: Eastern Alignment



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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

