



# NIAGARA TO GTA CORRIDOR PLANNING AND EA STUDY – Phase 1

Meeting: Municipal Technical Advisory Group (MTAG) and Regulatory Agencies Advisory Group (RAAG)

Location: Casablanca Winery Inn, Reflections Room  
4 Windward Drive, Grimsby, Ontario L3M 4E8

Purpose: Modelling and Demand Forecasting Information Session      Date: Tuesday March 4, 2008

Chair: Glenn Pothier (GLPi) (facilitator)      Time: 1:30 P.M. – 4:00 P.M.

Present: **NGTA Project Team**

John Slobodzian, MTO	Glenn Pothier, GLPi (facilitator)
Terry Hilditch, MTO	Michael Chiu, MRC
Paul Hudspith, URS	Jack Thompson, MRC
Patrick Puccini, URS	

**MTAG Representatives**

Steve Robichaud	Region of Halton
Andrew Head	Region of Halton
Mary K. Cichocki-Beaudry	Region of Halton
Rick Hein	Dillon Consulting
Christine Lee-Morrison	City of Hamilton
Ohio Ajayi	City of Hamilton
Jill Stephen	City of Hamilton
Karl J. Huyge	Haldimand County
Lloyd Rollinson	Haldimand County
Barbara Mugabe	Haldimand County
Matt Grabau	Greater Buffalo-Niagara Regional Transportation Council
Steve Szopinski	Greater Buffalo-Niagara Regional Transportation Council
Phil Bergen	Region of Niagara
Rich Miller	Region of Niagara
George Nicholson	Region of Niagara
Karl Dren	City of Niagara Falls
Marzenna Carrick	City of Niagara Falls
Tom Eichenbaum	City of Burlington
Ryan Grodecki	City of Burlington
Vi Bui	Region of Waterloo
David Ferguson	City of Welland

**RAAG Representatives**

Solange Desautels	Ministry of Environment, Environmental Assessment Approvals Branch
Mike Kim	Ministry of Public Infrastructure Renewal, Ontario Growth Secretariat
Neil Hester	Niagara Escarpment Commission

<b><u>Items</u></b>	<b><u>Description</u></b>	<b><u>Action by:</u></b>
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1

**Introductions**

G. Pothier (GLPi), independent facilitator, provided a session overview and thanked the attendees for coming to the meeting.

G. Pothier noted that the presentation material had not been circulated in advance of this meeting due to the technical and informational nature of the material, and the need for an accompanying commentary.

Members of the Project Team, the MTAG and the RAAG introduced themselves.

J. Slobodzian briefly discussed the issue of future land use allocations. He noted the following:

- MTO recognizes that future land use allocations are currently being developed by municipalities and will not be available until 2009 or later.
- The schedule for completion of Phase 1 of the NGTA study is Fall 2009.
- While the Project Team cannot wait until 2009 to obtain the final future land use allocations from municipalities, the Project Team would like to consult with the municipalities to develop a realistic set of future land use assumptions for this study.

2

**Joint MTAG & RAAG Modelling and Demand Forecasting Information Session**

P. Puccini presented the following information to attendees:

- The process for identifying the existing and future transportation problems and opportunities in the Niagara to GTA Corridor;
- The basic principles of transportation modelling and

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forecasting; and,

- The transportation modelling and demand forecasting approach that is being used for this study. This approach utilizes the Greater Golden Horseshoe Model as well as a Strategic Demand Forecasting approach that is being developed by the Project Team.

*Summary of Questions and Issues Raised*

Questions and comments were taken during scheduled breaks in the presentation and after the presentation. The following outlines the comments and questions raised by attendees, as well as the Project Team’s response:

**Segment #1 (Slides 1 to 23)**

C – Interest regarding a link between NGTA and Guelph or Kitchener-Waterloo.

*R – Comment noted.*

C – As shown in Slide 21, land use is a key starting point in the modelling process. How will the Project Team address the lack of final future land use allocation information from municipalities?

*R – The Project Team cannot wait until future land use allocations are finalized by municipalities in 2009 but would like to consult with the municipalities to develop a future land use allocation for interim use for the travel demand forecasting component of the study.*

Q – What is the difference between the techniques for truck freight and other freight? (Slide 3)

*R – Future truck freight movements will be modelled using the GGH model. In addition, a strategic demand forecasting approach, which relies on consultation with transportation service providers, business and commercial stakeholders, existing data sources and other relevant studies will be used to forecast future truck freight movements. This approach will also be used to forecast other types of freight movements (air, rail and marine).*

Q - How does the Area of Influence impact the study area? (Slide 4)

*R – The Area of Influence encompasses the NGTA Preliminary Study Area, and includes southwestern Ontario and the northeastern United States. A significant portion of future trips occurring within the Preliminary Study Area will be external trips that originate from or be destined to a location outside of the Preliminary Study Area, i.e. within the*

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	<p><i>Area of Influence.</i></p> <p>Q – How does the Project Team forecast commercial vehicle trips?</p> <p><i>R – Future commercial vehicle trips are being forecasted as part of the GGH model using a three-step approach that includes trip generation, trip distribution and trip assignment. In addition, a growth model approach will be used for the strategic demand forecasting approach, using data from MTO’s Commercial Vehicle Survey, other municipal goods movement studies, and information obtained from consultation with Transportation Service Providers and Business and Commercial Stakeholders.</i></p> <p>Q – What year is the base data</p> <p><i>R – 2006.</i></p> <p>Q – How is the Project Team accounting for the effects of tourism?</p> <p><i>R – The Project Team includes tourism experts that will provide the transportation modelling experts with an appreciation of future tourism trends and outlooks.</i></p> <p><b>Segment #2 (Slides 25 to 33)</b></p> <p>Q – Is there a factor, which considers students living within different zones during different times of the year?</p> <p><i>R – There is not a specific factor to account for students, but ‘ground’ counts are used to calibrate the flow of trips crossing screenlines.</i></p> <p>Q – Does the most recent GGH model use the 2006 zones from the Transportation Tomorrow Survey?</p> <p><i>R – Yes.</i></p> <p>Q – How are international borders incorporated into the modelling?</p> <p><i>R – International borders are treated as gateways to the modelling area. Travel volumes are available at all of these gateways from the border agencies.</i></p> <p><b>Segment #3 (Slides 35 to 45)</b></p> <p>Q – Will the Project Team consider “active” modes of transportation?</p> <p><i>R – Yes, the model does forecast these trips. While this</i></p>	

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	<p><i>study is focused on long distance inter-regional transportation movements, it is recognized that the use of 'active' transportation may reduce local congestion issues, which may help to alleviate existing provincial facilities, e.g. the QEW through St. Catharines.</i></p> <p>Q – How does assigning trips by mode to the transportation network relate to the 2700 zones in the GGH model?</p> <p><i>R – The existing transportation network illustrated on Slide 42 corresponds to the Preliminary Study Area, which represents a portion of the GGH Model study area. As such, a portion of the 2700 zones comprising the GGH Model study area would correspond to the Preliminary Study Area. Trips will be assigned to all 2700 zones, but 'gateways' will be used to account for trips that are external to the Preliminary Study Area.</i></p> <p>Q – How does the Team know if the numbers from the massive model are correct?</p> <p><i>R – One of the objectives of the Strategic Demand Forecasting approach is to provide a basis of comparison with the results of the GGH Model.</i></p> <p>Q – Could sub-area analysis be used?</p> <p><i>R – Sub-area analysis will not be used for this study, but zonal aggregation could be used to understand certain factors e.g. interregional transit markets.</i></p> <p>Q – Are VIA and GO the only transit markets being studied?</p> <p><i>R – Through consultation with the Transportation Service Providers stakeholder group, the Project Team is consulting numerous transit agencies, including municipal and private transit service providers.</i></p> <p><b>Segment # 4 (Slides 47 to 53)</b></p> <p>Q – Did the origin-destination (O-D) survey only include passenger vehicles?</p> <p><i>R – Yes, the MTO Commercial Vehicle Survey will be used to understand existing commercial vehicle movements.</i></p> <p>Q – Is the date of the Origin-Destination (O-D) survey (i.e., July 2007) indicative seeing as the dollar was high?</p> <p><i>R – This will be accounted for using sensitivity analysis as part of the Strategic Demand Forecasting approach.</i></p> <p>Q – The future passport requirements may affect travel, is</p>	

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	<p>this accounted for?</p> <p><i>R – Yes, these types of issues are being accounted for as part of the analysis of future tourism trends and outlooks.</i></p> <p><b>Segment # 5 (Slides 55 to 59)</b></p> <p>Q – How will Metrolinx findings be incorporated into the NGTA Study?</p> <p><i>R – This study will coordinate with all relevant planning studies, such as the Metrolinx study. Further to this, the Metrolinx study is also using the GGH Model, and as such, the basis of their findings are anticipated to be consistent with this study.</i></p> <p>Q – If Municipalities break zones up further will GGH model accommodate this?</p> <p><i>R – The model process is flexible. This issue can be addressed through further consultation with the municipalities.</i></p> <p>Q – The City of Burlington requested more information with regard to the three-stage model being used to forecast future commercial vehicle trips as part of the Strategic Demand Forecasting approach.</p> <p><i>R – This information will be obtained from the GGH Model team and provided to the City of Burlington as soon as possible.</i></p> <p><i>(Note: a document, which provides this information, is appended to these minutes).</i></p> <p>Q – Has the Project Team met with the Ontario Trucking Association (OTA)?</p> <p><i>R – Yes.</i></p> <p>Q – Can the information gathered from the consultation with Transportation Service Providers be shared with the MTAG/RAAG?</p> <p><i>R – Yes, we are currently completing the minutes, interviews and the documentation. The results will be available on the NGTA website in the coming weeks.</i></p> <p>Q – Municipal staff requested further information with regard to the population and employment densities assumed in the GGH Model.</p> <p><i>R – This information can be discussed with municipalities as</i></p>	<p>Project Team</p> <p>Project Team</p> <p>Project Team</p>

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	<i>part of future consultation.</i>	
	Q – Did the Project Team speak with Greycoach and Trentway –Wager /Coach Canada?	
	<i>R – The Project Team has consulted with the Ontario Motor Coach Association and intends on consulting with individual service providers.</i>	
	Q – When and how will the Problems and Opportunities report be available?	
	<i>R – The Project Team plans to consult with the MTAG/RAAG on the findings of this report as part of the second round of public consultation and prior to the second round of Public Information Centres.</i>	Project Team
3.	<b><u>Closing Remarks</u></b>	
	G. Pothier (GLPi) and the Project Team thanked attendees for their participation at the meeting.	
	<b><i>Meeting adjourned at 4 p.m.</i></b>	

The following provides an overview of the approach that is being employed to forecast future commercial vehicle trips as part of the Greater Golden Horseshoe Model project:

### **1. Commercial Vehicle Model Overview**

- “Quick Response” 3-stage model that generates, distributes and assigns commercial vehicle trips by truck type for the 12.5 hour daytime period and distributes trips to the a.m. and p.m. peak periods using time of day factors from available traffic count data.

### **2. Phase I Commercial Vehicle Model**

- Phase I – 3 stage “Quick Response” model includes:
  - Representation of inter-city and intra-urban truck flows
  - Representation of external gateway trips entering/exiting GGH
  - Region of Peel Commercial Travel Survey trip generation rates
  - Calibration of trip generation and trip distribution parameters to 2001 cordon count data and Region of Peel travel survey

### **3. Phase II Commercial Vehicle Model**

- Phase II – Model Development Ongoing:
  - Special generators of truck flows in the GGH
  - Peak period truck trip distribution
  - Ongoing development of a multi-class equilibrium assignment of both passenger vehicles and commercial vehicles

### **4. CV Model Development – Traffic Zones and Road Network**

- Traffic zone coverage same as GGHM Passenger Model – 3170 zones
  - Upwards of 1250 zones have CV productions and / or attractions
- 2001 road network coverage – GGHM (Arterials and Freeways)
  - Nodes: 21,150 and Links: 65,430
- External gateways include:
  - Peace Bridge – QEW
  - Queenston Lewiston – Hwy 405
  - Highway 24 – South of Brant County
  - Hwy 403 – East of Hwy 401 Junction
  - Highway 401 – West of Waterloo
  - Highway 7&8 – New Hamburg
  - Highway 9 – West of Wellington County
  - Highway 6 – North of Wellington County
  - Highway 10 – North of Dufferin County
  - Highway 27 – Collingwood
  - Highway 400 – Port Severn
  - Highway 11 – Washago
  - Highway 35 – Minden
  - Highway 20 – Bancroft

- Highway 7 – Marmora
- Highway 401 – Trenton

#### **5. CV Model Development – Data Sources**

- MTO Commercial Vehicle Survey
  - 1999-2002 province wide survey – captures longer distance & intercity travel
  - MTO Survey included 150 road side directional sites in Ontario with 37 survey sites being located in GGH
  - CV survey focus on truck activity characteristics
    - Trip routing (O-D)
    - Driver & Carrier
    - Commodity hauled
    - Vehicle Characteristics
  - 7 day – hourly vehicle classification counts
- National Roadside Survey of Canada
  - 1998 Canada wide survey – targeting domestic and cross-border truck activity
  - 148 sites were surveyed across Canada
- Region of Peel Commercial Travel Survey
  - Mail survey undertaken between October 2006 & May 2007
  - Sample size of 600 shippers and their respective drivers
  - Survey focus on:
    - Commodity hauled
    - Mode choice
    - Commercial vehicle trips
    - Fleet characteristics
- Greater Toronto Area Cordon Counts
  - 2001 cordon counts data in GTA are 12.5 hr. person and vehicle classification
    - Trucks are classified into light, medium and heavy vehicles

#### **6. CV Model Development – Socio-Economic Data**

- Statistics Canada employment and population information
  - 2001 industry classifications include:
    - Agricultural, Construction and Mining
    - Manufacturing, Transportation, Communications, Utilities and Wholesale Trade
    - Retail Trade
    - Offices and Services

#### **7. CV Model – Trip Generation**

- Trip Generation – determines number of trips made

- 24-hour trip rates by business classification and truck classification based on Peel Survey and reviewed in context with other CV models undertaken such as Phoenix Arizona
- Final 12.5 Hour Trip rates were developed for rural, suburban, urban and CBD areas
- Example of “Urban” CV trip rates by employment category is shown below:

<b>Urban Employment Category</b>	<b>Light Truck</b>	<b>Medium Truck</b>	<b>Heavy Truck</b>
Agriculture, Construction, Mining	0.014	0.007	0.010
Manufacturing, Transportation, Communications, Utilities and Wholesale Trade	0.035	0.031	0.038
Retail Trade	0.058	0.014	0.006
Office and Services	0.021	0.005	0.001
Total Households	0.039	0.015	0.005

- The trip generation rates were calibrated to available cordon counts resulting in the calibrated parameters that are different than the base Peel Survey generation rates that were used as a starting point.

#### **8. CV Model – Trip Distribution of Non Commercial Survey Trips**

- Trip Distribution – determines the origin-destination pattern of trips
  - Non Commercial Survey trip distribution is based on a gravity model formulation that considers the magnitude of trips at the originating and destination ends with consideration for travel time and a trip distribution parameter established from validation to cordon counts

#### **9. CV Model – Trip Assignment**

- Trip Assignment – assigns CV trips to the road network
  - All or nothing assignment to base road network
  - Time of day factors applied to obtain peak period and peak hour flows

#### **10. CV Model Validation**

- CV Model is validated to available cordon count and traffic data at screenlines
  - Globally the CV model validates well as total simulated truck flows across all screenlines are within 2% of observed counts
  - Specific screenlines require further investigation to improve the simulated to observed comparison

## 11. CV Model Application

- Future forecast model to be sensitive to:
  - Growth in value of commodities and trade (inter-provincial and international)
  - Growth in households and employment by industry classification
  - Improvements to GGH road network
  - Changes in passenger travel and congestion
  - Changes in network service characteristics that influence modal diversion for long distance goods movement
- Future trip table development
  - Fratar inter-city CVS trip table by growth in industrial classification
  - Apply CV trip generation rates to forecast population and employment to obtain urban CV trips
  - Forecast CVS inter-city trips are subtract from forecast urban trip ends calculated with trip generation in order to reduce double counting of CV trips
  - Urban CV trip table developed from trip distribution process
  - Inter-city CVS trip table added to urban CV trip table to obtain a total CV trip table
- Future trip assignment
  - Assign total CV trip table to road network using a multi-class user equilibrium traffic assignment (Note: Assignment module is being developed)