

DOTD Traffic and Simulation

Jody Colvin
Traffic Division Administrator
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Agenda

- DOTD Traffic Simulation
- DOTD's Participation in Pooled Fund Study
- DOTD Traffic and SIMCAP

DOTD Traffic Simulation

➤ Macro

➤ Meso

➤ Micro

DOTD Traffic Simulation (2)

➤ Macro

- TransCad
- Calibration
 - MPO's responsibility
- Uses:
 - Growth rate
 - Some redistribution

DOTD Traffic Simulation (3)

➤ Meso

- New
 - DOTD is researching softwares
- Calibration
 - Extensive
 - DOTD is still researching
- Uses:
 - Redistribution
 - TMP
 - Other?

DOTD Traffic Simulation (4)

➤ Micro

- PTV Vissim
- Must have approval to use (not preferred method)
- Calibration
 - Extensive
 - DOTD policy
- Uses:
 - Traffic Analysis that HCM doesn't cover
 - Saturated Conditions
 - Other?

Transportation System Simulation Manual

- Delivering to users the concepts, guidelines, and procedures of simulation modeling.
- Providing a centralized, unbiased, authoritative source of theory, best practices, and lessons learned.

Transportation System Simulation Manual (2)

- The ultimate goal of TSSM is to address at a minimum the following:
 - the differing scales of modeling,
 - integration of models,
 - model inputs and data formats,
 - data summary and analysis,
 - data storage and model reuse,
 - calibration/validation of simulation,
 - alternative analysis,
 - post processing of model data and interpretation.

Transportation System Simulation Manual (3)

- How does DOTD Traffic plan to use this?
 - As Guidance in creating simulation policies
 - In the same manner we use the Simulation Tool Box Volume 3

DOTD and SIMCAP

- What can you do for DOTD?
 - Calibration procedures
 - Default settings
 - Formats
 - Uses for simulation
 - New software tools

Questions

Thank you!

I look forward to working with this group in the future.

Jody Colvin

Jody.Colvin@la.gov

225-242-4635



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What is SimCap?

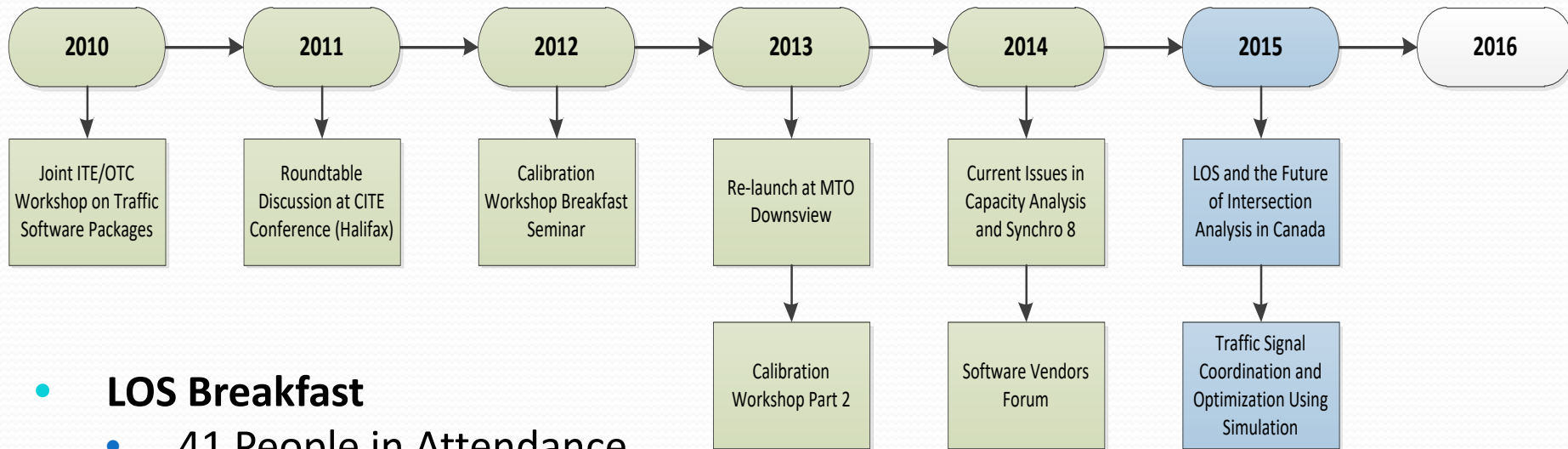
- **SimCap** was created to improve the practice and understanding of traffic **simulation** and **capacity** analysis
- Founded June 2006 in North Carolina Section as a User Group under the Traffic Engineering Council
- SimCap is active in other ITE Chapters; 20 additional user group affiliations and the TRB SimSub Committee
- *The SimCap Users Group is organized for all persons with any level of interest or experience in traffic simulation, capacity analysis, and related practice areas.*



SimCap Goals

- Increase the knowledge base regarding Simulation & Capacity Analysis tools by all stakeholders
- Improve modeling consistency
- Change the way Simulation & Capacity Analysis are viewed by the non-user
- Emphasize importance and utilization of best practices accepted by peers local and abroad
- ***These goals provide key support to individual users***

SimCap Toronto History

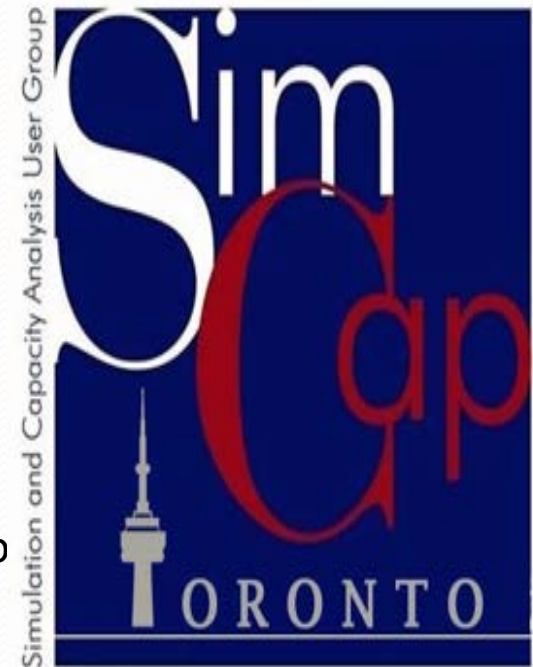


- **LOS Breakfast**
 - 41 People in Attendance
 - 50% Public Sector; 42% Private Firms; 8% Academic
- **Signal Coordination Presentations**
 - 67 People in Attendance
 - 31% Public Sector; 58% Private Firms; 11% Academic
 - How attendants travelled...
 - 43% Transit; 17% Active; 40% Auto (2/3 SOV; 1/3 HOV)



Who is SimCap Toronto?

- **SimCap Toronto** is an official ITE Toronto Technical Committee
- SimCap Toronto Committee Members:
 - **Matthew Davis**
 - **Nixon Chan**
 - **Ravi Bhim**
 - **Jason Dahl**
 - **Juan Perez**
 - **Rey Shen**
- How will SimCap Toronto achieve its objective?
 - Hosting events to facilitate discussion and advancement o
 - Bringing speakers to present on such topics
 - SimCap Toronto Simulation Best Practices Document

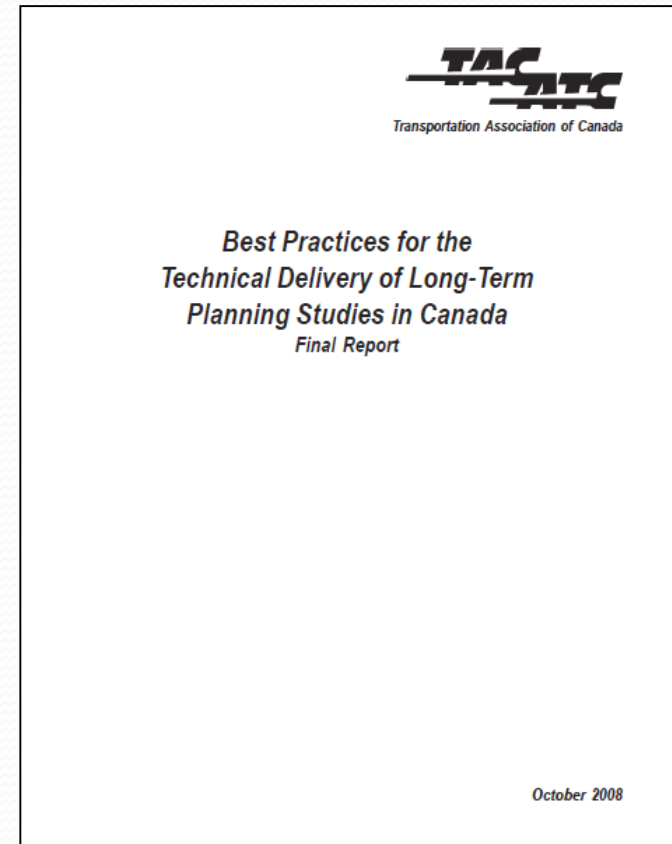




- SimCapTO is developing a Simulation Best Practices document to help public agencies standardize the models submitted for transportation analysis.
- This document will be developed with input from the transportation community across the GTA and Canada.
- The document will also cover alternative performance measures to accompany the alternative analysis methods presented.

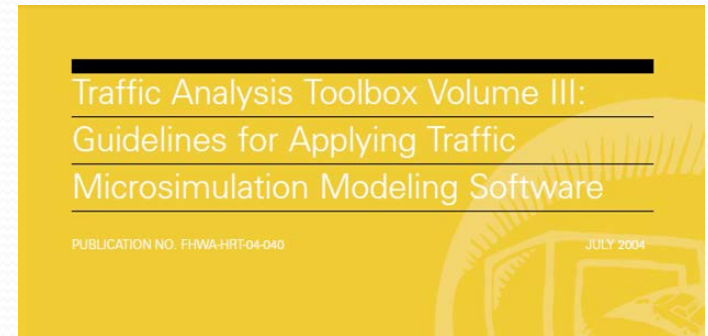
Current Simulation Guidance

- Limited guidance in GTA/Ontario/Canada
- Most current Canadian documentation is contained in other guidance (TIS and emission reporting guidelines)
- Current literature review identifies **one** document which provides an overview of microsimulation in Canada



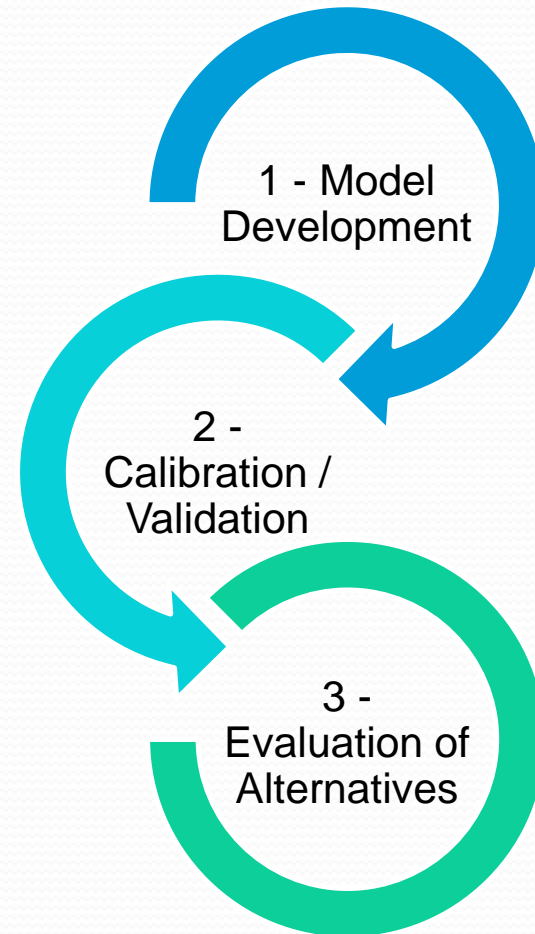
Current Simulation Guidance (2)

- FHWA Traffic Analysis Toolbox Vol III
- U.S. Transportation Agencies (Wisconsin, Oregon, etc)
- Transport for London
- Highways England – Design Manual for Roads & Bridges – Traffic Appraisal of Road Schemes
- Some combination of these
- None with Canadian context



Simulation Best Practices

- Proposed Outline
 - Model Development
 - Calibration/Validation
 - Results
 - Case Studies



Target Use & Purpose

Case Studies

- Models in popular packages
 - Vissim
 - Aimsun
 - Paramics
 - Synchro/SimTraffic

Typical Projects

- Signal Timing Coordination
 - including Transit Signal Priority
- Dynamic Traffic Assignment
- Pedestrian Impacts
- Construction Staging/Phasing
- Transportation Master Plan and Demand Management

Points to Ponder

What guidelines are used where you work?

Should guidance be provided on a municipal, regional, provincial, or national level?

Are there unique Canadian aspects of simulation analysis?

Are transport agencies in Canada willing to provide additional budget for increased simulation model accuracy and reliability?

Would national guidelines supplant local preferences?

Should Canada adopt existing guidance from other countries such as US & the UK?



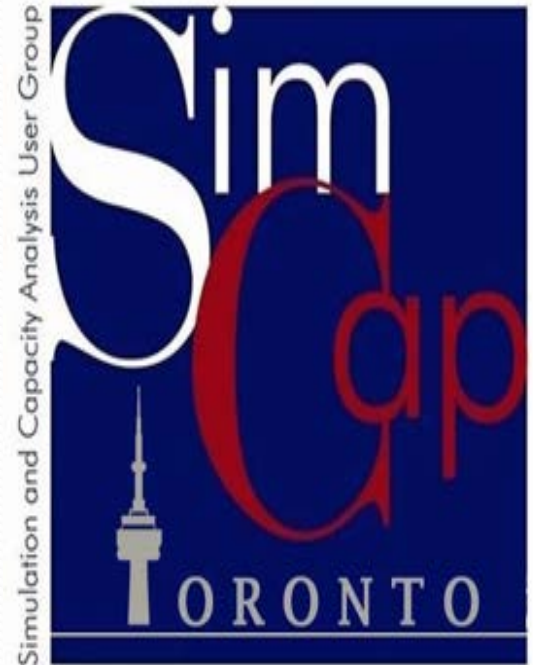
Wrapping Up...

- **Challenges**

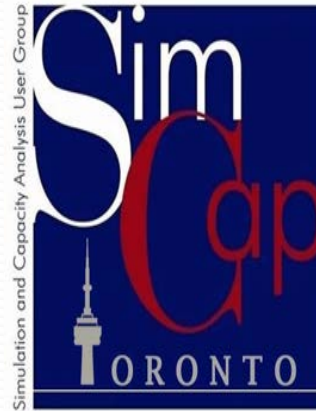
- *Maintaining a Committee given busy schedules*
- *Developing products for use by group members*
- *Promoting an open sharing environment*
- *Inclusion of non-ITE members*
- *Geography*

- **Opportunities**

- *Successful launch in Toronto will spawn other chapters*
- *Development of national guidelines (similar to FHWA)*
- *More input into international guidelines through ITE*
- *ITE Traffic Engineering Council representation*
- *Improved budgets to accommodate “best practices” modeling*



Thank you!



Matthew Davis, P.Eng, PE, PTOE, FITE
City of Toronto

Program Manager, Transportation Planning Policy & Modeling Unit

matthew.davis@toronto.ca

