A Brief Synthesis of the State of the Practice in Statewide Travel Forecasting

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Definition of a Statewide Travel Forecasting Model

- Passenger
  - Multimodal or Automobile Only
- Freight
  - Multimodal or Truck Only
  - An Afterthought?
  - NCHRP Project 8-43
- Integrating Passenger and Freight Forecasts
- Relationship to Urban Forecasts
Freight Styles

- OD Table Factoring and Assignment
  - Prevalent method
  - Some data limitations
  - Lacks policy sensitivity
- Guidebook on Statewide Travel Forecasting
  - Florida—Calibrated to OD’s
- Economic Activity Modeling
  - Oregon

Observation #1

- The designs of statewide freight models have tended to rely on the philosophies and methods of passenger models.
Successes of Freight Models

- Meet (some) agency needs
- Overcome serious data deficiencies
- Provide support for a multimodal highway framework
- Some can be implemented within existing software

Opportunities of Freight Models I

- Multiclass equilibrium traffic assignment
- Traffic dynamics (along with passenger)
- Closer match to current freight logistics practices (shipper viewpoint)
- Closer match to carrier practices and constraints
- Improvements in commodity and vehicular data
Opportunities of Freight Models I

- Better understanding of *shipper* and *carrier* decision processes
  - Modes
  - Markets
  - Routes
  - Times
- Need for statistically valid, innovative methods of plugging holes in data

Observation #2ab

- We need to look back more than a few years to see what has been done before.
- Newer traffic assignment methods and computers have allowed us to focus on getting the behavior correct without worrying too much about how we are going to address the computation.
Passenger Models

- Economic activity location
- Usually stand-alone (except Oregon, new Ohio); the economic-activity aspects of the Oregon model forces the tight integration
- Demand microsimulation (Ohio)
- Better recognition of tours

Observation #3

- Statewide passenger models are still heavily dependent on the methods of urban travel forecasting
Opportunities of Statewide Passenger Models

- Better traffic dynamics
- Better recognition of multiday trips or other unique aspects of long distance travel
- Better spatial precision in networks, data and parameters (maybe urban-scale like Oregon?)
- Better use of existing data sources

Observation #4

- It is still important to match the intensity of model development to the objectives of the planning process.
Questions I

- Does microscopic traffic simulation offer any clear advantages over macroscopic methods?
- Do we have enough data to properly calibrate the more elaborate models?
- Does the principle of parsimony still apply?
- Are we adhering to the principles of statistical significance when calibrating?

Questions II

- Have we truly exhausted the usefulness of the gravity model?
- Can OD table estimation really substitute for good demand relationships?
- Breaking paradigms? Or following fads?
- Have we reached a plateau with commercial software? Is the next level a long reach?
Questions III

- Are urban models adequate for meeting the critical transportation issues of the 21st Century?
- Are we still well away from a true intermodal/intercity passenger mode choice model?
- Is there any way around the private-carrier data issue?