

Nashua Regional Planning Commission

TRAVEL DEMAND FORECASTING MODEL

Overview of Travel Demand Forecasting Process

- Model is based on simulating **Transportation Analysis Zones (TAZs)**, not individual households. A TAZ may contain from 50 to 500 households, and/or a single large employer or groups of smaller employers. 14 Communities are represented by 2,371 TAZs. Hudson has 220 TAZs.
- The highway network is the **Federal Aid System** – Collectors or higher. Some local roads are needed for network connectivity.

Overview of Travel Demand Forecasting Process **(continued)**

- Household trips are estimated based on household size and autos available. Trip types forecast are Home Based Work (**HBW**), Home Based Other (**HBO**), and Non-Home Based (**NHB**).
- Employer trips are estimated based on number of and type of employees.
- **Trip Distribution** is the process of calculating where trips begin and end.
- **Mode Choice** is the process of converting person trips to vehicle trips.
- **Trip Assignment** identifies travel routes and the resulting roadway segment volumes.

What is TransCAD

- Developer: Caliper Corporation in Newton Massachusetts.
- Currently Caliper (TransCAD) has highest market share of any travel demand forecasting package.
- Customers include, New York City, Los Angeles, Denver, Dallas and many other big cities.
- The Boston, MA travel model is TransCAD based, and this model covers all of Massachusetts, all of Rhode Island, and most of Southern New Hampshire.
- Caliper started in 1985.
- Customized software for transportation planning:
 - TransCAD – travel demand forecasting.
 - Mapitude – geographic data analysis.
 - TransModeler – Micro-Simulation of transportation systems.

Typical Model Applications

- Support Long Range Transportation Plan and Transportation Improvement Program.
- Support Air Quality and Environmental Justice Analysis.
- Project Analysis – Corridor Analysis, Site and Impact Analysis.

Condition of Original Nashua RPC Model

- Trip Generation in Excel. Data manual exchanged between Excel and TransCAD
- Trip Distribution was done interactively.
- Conversion of trips from person trips to vehicle trips performed interactively.
- 24 hour weekday time period only was performed interactively.
- No user interface of model result reporting.

Newly Revised Model

- Everything coded in **TransCAD** GISDK script – This reduces user error and makes model more accessible to staff.
- Menu driven user interface.
- 4 weekday time-periods are model: (6AM-9AM, 9AM-3PM, 3PM-6PM, and 6AM-6PM)
- Improved reporting including intersection turning movements.

Future Model Improvements

- Truck Model
- Update Trip Generation Model
- Improve Calibration
- Fixed Route Transit
- Update Land Use Forecasts
- Additional Reporting

- Long –term: convert model to an Activity Based Model.



Questions