TRAVEL BEHAVIOR INVENTORY: UPDATE

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<table>
<thead>
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<th>TBI: History</th>
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<td>1949</td>
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TBI Structure

Data Collection

Model Development
Data Collection

- Household Survey
- Special Market Surveys
  - Transit
  - Mall of America
- Non-Resident Survey
  - Airport
  - External Cordon O/D
- Supplemental Data

Model Development
TBI Structure

Data Collection
• Household Survey
• Special Market Surveys
  – Transit
  – Mall of America
• Non-Resident Survey
  – Airport
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• Supplemental Data

Model Development
• Design Plan
• Validation Plan
• Estimation / Software Development
• Calibration
• Validation
Transit On-Board

• October – November 2010

• 16,562 completed surveys
  – (Supplemented with 5,787 records from 2005)

• Expansion: Route, direction, time-of-day, geography
External O/D Survey

- 14 Locations
External O/D Survey

• For the last trip taken at the cordon:
  – Origin/Destination
  – Day of Week, Time of Day
  – Trip Purpose
  – Was there a return trip on the same road?
Airport Survey

• Intercept survey using iPad in June 2011
  – Covered all termini – 1,000+ responses

• Targeted at boarding gates

• Expanded using T-100, DB1B aviation databases
Airport Survey- Selected Results

Trip Purpose

- Business
- Convention/Conference
- Military
- Personal business
- School
- Vacation/Pleasure
- Visit friends or relatives
- Volunteer
- Work

Visitor vs. Resident
Airport Survey- Selected Results

Party Size by Mode of Arrival

LRT  Bus  Private Auto  Rental Car  Shuttle  Taxi

- 5+
- 4
- 3
- 2
- 1
Supplementary Data Collection

- Highway speed profile from TomTom
- Transit speeds from Metro Transit
- Traffic counts
Household Interview Survey

• 15 Months of Data Collection (2010-12)

Household Travel Date by Week
Household Interview Survey

- 15 Months of Data Collection (2010-12)

Monthly Data Collection by Region

- WI Collar
- MN Collar
- Dakota/Scott
- Ramsey/Anoka/Wash.
- Hennepin/Carver
- St. Paul
- Minneapolis
Household Interview Survey: Data Elements

- Household
- Person
- Activity / Trip
Household Interview Survey: Data Elements

• Specialized data collected
  – Work habits – telecommute/flexible work week
  – MnPass & transit pass ownership
Household Interview Survey: Data Elements

- 7-day GPS diary
  - Data from 250 households
  - Support validation / comparative analyses
Household Interview Survey

- 14,055 households returned travel diary
- Strict geocoding criteria ~ 80% passing
Household Interview Survey: Selected Results: Workers

- Other/Student/Non-response
- Disabled non-worker
- Unemployed, not looking
- Unemployed, looking
- Retired
- Homemaker
- Unpaid Worker
- Paid part-time worker
- Unpaid full-time worker

Bar chart showing the distribution of different worker categories with corresponding earnings ranges.
Household Interview Survey: Selected Results - Telecommuting

- Almost every day or 5 days per week
- Once a week or more
- Once a month or more
- A few times a year, or more
- Once a year
- Never

2,000
4,000
6,000
8,000
10,000
12,000
Household Interview Survey: Selected Results - Mode

- Minneapolis
- Dakota/Scott
- MN Collar
- WI Collar
- Hennepin/Carver
- St. Paul
- Anoka/Ramsey/Wash.
Household Interview Survey: Selected Results - Time of Day
MODEL DEVELOPMENT
Model Design

- Activity Based Modeling
  - Disaggregate: Model people
  - Tour-based: Model connections of trips, modes, activities
  - Time of day, price can be explicitly modeled
  - Market segmentation limited only by data
    - More potential performance measures
Model Design

Synthetic Population

Long Term Models

Joint Travel Models

Tour Models
Model Design

Intermediate Stop

Trip Based Models

Network Assignment
Regional Model Schedule

• Design, estimation and validation continuing through early 2013

• Testing mid 2013

• Release for general use- end of 2013
Travel Behavior Inventory

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http://www.metrocouncil.org/tbi/