Time of Day in FSUTMS

presented to
MTF

presented by
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May 26, 2010
Outline

- Scope
- Time of Day Subcommittee
- NHTS Data Analysis
- Development of CONFACs
- Next Steps
Time of Day Subcommittee

- Siva Srinivasan, Chair

- Members
  - Dan Beaty
  - Ken Kaltenbach
  - Santanu Roy
  - Dave Schmitt
  - Daniel Miller
  - Kazem Oryani
  - Yongqiang Wu
  - Steve Infanti
  - Robert Boggs
  - Milton Locklear
  - Linda Little
  - Shi-Chiang Li
  - Fawzi Bitar
Scope

Two phase project

- Phase 1 – Develop and implement factors from NHTS and count data
- Phase 2 – Econometric models for incorporating into FSUTMS

Three tasks in Phase 1

- Develop and implement constant Time of Day factors
  - Develop new CONFAC
  - 2009 NHTS data for TOD factors
- Identify data elements for econometric approach
- Develop empirical methods to calculate travel skims
NHTS Data Analysis

- 2009 NHTS Data Used
  - 15,884 Households
  - 30,992 Persons
  - 114,910 Person Trips

- All analysis done using mid point of trip

- Trips into 24 one-hour periods
NHTS Data Analysis

- Compare across sampling regions
- Compare across urban areas by population
- Compare across Orlando, Tampa, Jacksonville, SE Florida
- Compare across resort areas
- Compare by retirees and snowbird population
- ????
Sampling Region Segmentation

Legend

<table>
<thead>
<tr>
<th>Sampling Region</th>
<th>Proposed Sample Size</th>
<th>Actual Sample Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1,200</td>
<td>1,407</td>
</tr>
<tr>
<td>2</td>
<td>1,234</td>
<td>1,484</td>
</tr>
<tr>
<td>3</td>
<td>1,200</td>
<td>1,384</td>
</tr>
<tr>
<td>4</td>
<td>4,116</td>
<td>4,547</td>
</tr>
<tr>
<td>5</td>
<td>2,000</td>
<td>2,319</td>
</tr>
<tr>
<td>7</td>
<td>2,250</td>
<td>2,566</td>
</tr>
<tr>
<td>8</td>
<td>2,000</td>
<td>2,177</td>
</tr>
</tbody>
</table>

Counties
Comparison Across Urban Population

HBW by Urban Population Size

- Urban Population 50,000 to 199,999
- Urban Population 200,000 to 499,999
- Urban Population 500,000 to 999,999
- Urban Population 1,000,000 or more with heavy rail
- Urban Population 1,000,000 or more without heavy rail
Comparison Across Urban Population

HBSHOP by Urban Population Size

- Urban Population 50,000 to 199,999
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Development of CONFACs

- CONFAC is a factor used to convert peak hour capacity (as found in SPDCAP file) to daily capacity (as in loaded network).

- In the absence of data, values in the typical range of 0.08 to 0.12 have been assumed for regional CONFAC settings.

- 2008 traffic count data were used to develop CONFACs.

- Eleven different roadway classifications are available in the 2008 traffic count data. CONFACs were developed based on urban area population and roadway functional classifications.
Development of CONFACs

- For FSUTMS purposes, CONFAC values are needed for each facility type in order to be entered into the VFACTORS file.

- This will require either an equivalency table between facility types and functional classifications or conflating facility type data from FSUTMS networks to the 2008 traffic count database.
### CONFAC Values
**Urban Population – 50,000 to 199,999**

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Rural Minor Arterial</th>
<th>Rural Principal Arterial -- Interstate</th>
<th>Rural Principal Arterial -- Other</th>
<th>Urban Minor Arterial</th>
<th>Urban Other Principal Arterial</th>
<th>Urban Principal Arterial -- Interstate</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 AM to 9:00 AM</td>
<td>0.55</td>
<td>0.52</td>
<td>0.54</td>
<td>0.51</td>
<td>0.50</td>
<td>0.54</td>
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<tr>
<td>3:00 PM to 7:00 PM</td>
<td>0.28</td>
<td>0.27</td>
<td>0.28</td>
<td>0.27</td>
<td>0.27</td>
<td>0.27</td>
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<tr>
<td>9:00 AM to 3:00 PM</td>
<td>0.19</td>
<td>0.18</td>
<td>0.18</td>
<td>0.18</td>
<td>0.18</td>
<td>0.18</td>
</tr>
<tr>
<td>7:00 PM to 7:00 AM</td>
<td>0.24</td>
<td>0.17</td>
<td>0.23</td>
<td>0.21</td>
<td>0.20</td>
<td>0.17</td>
</tr>
</tbody>
</table>
Next Steps and Schedule

- Finish analysis of urban area segmentations for Time-of-Day factors from NHTS
- Finalize CONFAC Tables
- Develop Guidelines for:
  - Time of day into Transit modeling
  - Validation and calibration
- Finish Subtasks 2 and 3