Treasure Coast Regional Planning Model ABM Development (TC RPM4)

presented to
Model Task Force

presented by
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TRCPM Model Structure

- **Coordinated Travel** – Regional Activity-based Modeling Platform Family of ABMs (CT-RAMP)
- Concepts and structure similar to SERPM7
- Main features:
  - Explicit intra-household interactions
  - Continuous temporal dimension (one-hour time periods)
  - Subdivided TAZs but no micro-zones (989 internal TAZs)
  - Integration of location, time-of-day, and mode choice models
  - Java-based package for AB model implementation
  - Designed to run on a desktop computer
Differences from SERPM7

- No micro-zones
- Simplified transit and mode choice structure
- No transponder model
- Temporal resolution of one hour instead of 30 minutes
- No explicit representation of joint travel
- No parking cost elements
**TC RPM4 Development Strategy**

- Transfer SERPM7 Activity-Based Model
- Develop TCRPM inputs
  - Sub-divided TAZs in transit service areas (no Micro-zones)
  - Socio-economic and employment data
  - Transit access points and networks
  - Other inputs (transit fares, ...)
- Develop calibration targets from NHTS
- Transfer all models, no re-estimation
- Implement auxiliary models (trucks, external trips, etc.)
- Calibrate and validate

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**Model Implementation**

![Model Implementation Diagram]
Input Data

<table>
<thead>
<tr>
<th>Data Needs</th>
<th>Sources</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAZ delineation</td>
<td>Census blocks, MPO</td>
<td>Complete</td>
</tr>
<tr>
<td>Household and population, socio-economic attributes</td>
<td>Census, American Community Survey</td>
<td>Complete</td>
</tr>
<tr>
<td>Employment by ~ 16 sectors</td>
<td>InfoUSA, ES-202, PUMS</td>
<td>20% Complete</td>
</tr>
<tr>
<td>School and University enrollment</td>
<td>Florida DOE, MPO Staff</td>
<td>10% Complete</td>
</tr>
<tr>
<td>Transit access points</td>
<td>Transit operators GIS data</td>
<td>20% Complete</td>
</tr>
<tr>
<td>Transit operation attributes</td>
<td>Transit agencies</td>
<td>20% Complete</td>
</tr>
<tr>
<td>Highway attributes</td>
<td>GTCRPM</td>
<td>80% Complete</td>
</tr>
<tr>
<td>Calibration targets</td>
<td>NHTS, ACS, LEHD</td>
<td>Beginning soon</td>
</tr>
<tr>
<td>Traffic counts / Transit boardings</td>
<td>FDOT, MPOs, Transit agencies</td>
<td>50% Complete</td>
</tr>
</tbody>
</table>

Ancillary Models

- Adapted from GTCRPM and/or newly developed:
  - External trips (EE/EI/IE)
  - Truck trips
  - Visitor trips (from SERPM7)
- Implemented in Cube script and integrated with ABM inputs and outputs
Upcoming Work

- Complete household data
- Complete employment data
- Complete highway network and code transit network
- Develop ABM targets
- Model calibration and testing
- Final implementation

Acknowledgments

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Questions

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