SE Florida Model Structure

- **Coordinated Travel – Regional Activity-based Modeling Platform Family of ABMs (CT-RAMP)**
- **Main features:**
  - Explicit intra-household interactions
  - Continuous temporal dimension (half-hour time periods)
  - Micro-area spatial dimension (12,000 MAZs)
  - Integration of location, time-of-day, and mode choice models
  - Java-based package for AB model implementation
  - Data visualization tool
Development Strategy

- Transfer SANDAG Activity-Based Model
- Develop SE Florida inputs
  - Micro-zones
  - Socio-economic and employment data
  - Transit access points and networks
  - Other inputs (parking costs, transit fares, ...)
- Develop calibration targets
- Examine performance of transferred model
- Re-estimate select model components
- Implement auxiliary models (trucks, external trips, etc.)
- Calibrate and validate
Development Strategy

Release Planning start with a backlog

Sprint 1 SANDAG Implementation
- Model input prep
- Distributed VOT
- CT-Ramp implementation
- Refine requirements just enough to do release planning

Sprint 2 Calibration
- Model comparison
- Revise functionality
- Calibrate
- Implement

Sprint 3 Calibration
- Model structure
- Model inputs
- Calibrate
- Implement

Sprint 4 Calibration and Validation
- Re-estimate location models
- Refine calibration

Release

SERPM 7.0

Agile development

Model Implementation

Main(DOTSD4HQMODEL2.d4b.dot.state.fl.us)

Cube
- Network Build
- Non-ABM Models
- Skimming
- CT-RAMP
- Assignment

SERPM Tour Based Model
- Driver Launcher
- HH Manager
- Matrix Manager 64
- Matrix Manager 32

Node1(DOTSD4HQMODEL1.d4b.dot.state.fl.us)
- Node Launcher
Input Data

<table>
<thead>
<tr>
<th>Data Needs</th>
<th>Sources</th>
<th>Status</th>
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<tbody>
<tr>
<td>Micro-Zone delineation</td>
<td>Census blocks, parcels</td>
<td>Complete</td>
</tr>
<tr>
<td>Housing Units at MAZ level</td>
<td>Census</td>
<td>Complete</td>
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<tr>
<td>Household and population socio-economic attributes</td>
<td>Census, American Community Survey</td>
<td>Complete</td>
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<tr>
<td>Employment by ~16 sectors</td>
<td>InfoUSA, ES-202, PUMS</td>
<td>Complete</td>
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<tr>
<td>School and University enrollment</td>
<td>Florida DOE, Choice Programs</td>
<td>Complete</td>
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<tr>
<td>Transit access points</td>
<td>Transit operators GIS data</td>
<td>Complete</td>
</tr>
<tr>
<td>Transit operation attributes</td>
<td>SERPM 6.7, Transit agencies</td>
<td>Complete</td>
</tr>
<tr>
<td>Highway operation attributes</td>
<td>SERPM 6.7</td>
<td>Complete</td>
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<tr>
<td>Regional automobile inventory</td>
<td>Department of Motor Vehicles</td>
<td>Complete</td>
</tr>
<tr>
<td>Parking supply and costs</td>
<td>SERPM 6.7, FDOT Inventory, City of Miami, City of Miami Beach</td>
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<td>Transponder ownership</td>
<td>Florida Turnpike Enterprise</td>
<td>SUNPASS account info avail.</td>
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<tr>
<td>Calibration targets</td>
<td>NHTS, SEVRTCS, ACS, LEHD</td>
<td>Complete except mode choice</td>
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<tr>
<td>Traffic counts/ Transit boardings</td>
<td>FDOT, MPOs, Transit agencies</td>
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Calibration

- Successful transfer: most models require little calibration
- Most effort spent in examining what the model understands or doesn’t understand
  - adjust certain model parameters (like access distances) instead of constants
  - reasonableness checks on calibration targets
  - finding and fixing bugs – typically caused by data inconsistencies
  - refining input data
Ancillary Models

- Adapted from SERPM 6.5 and/or newly developed:
  - External trips (EE/EI/IE)
  - Airport ground access trips
  - Truck trips
  - Visitor trips (under development)
- Implemented in Cube script and integrated with ABM inputs and outputs

Work Ahead

- More detailed model calibration
- Non-mandatory location model re-estimation
- Validation to traffic counts and transit boardings
- Future year test
- Finalize implementation
- Refine/customize ABMViz
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  - The Corradino Group
  - BCC Engineering

Questions

Rosella Picado
Parsons Brinckerhoff
picado@pbworld.com
(206) 382-5227

Shi-Chiang Li
Florida Department of Transportation, District 4
Shi-Chiang.Li@dot.state.florida.us
(954) 777-4655