Development of Activity-Based Travel-Demand Models for Florida:

An Assessment of Feasibility and Transferability using the National Household Travel Survey (NHTS) Data

presented to
Model Advancement Committee

presented by
Siva Srinivasan (UF) & Abdul Pinjari (USF)

Tuesday, November 30, 2010

Fundamental Questions

- Can the 2009 NHTS data support the development of DaySim-type ABMs for the different areas in Florida?

- How can the DaySim structure be modified/ enhanced/ simplified to meet the needs / data limitations in specific regions?

- Can the entire DaySim model structure be transferred from one region to another?
  
  - Which specific model components of DaySim can be transferred from one region to another?

- Can the model parameters be transferred from one region to another?
Objectives

- Assemble, process, and analyze the Florida add-on data of the 2009 National Household Travel Survey (NHTS) to:
  - Create tour-based travel datasets to support the estimation of the components of the DaySim framework for different regions in Florida.
  - Undertake comparative analysis of activity-travel (tour) patterns across different regions in Florida.
  - Examine the feasibility of estimating the DaySim model components for different regions in Florida.

Objectives

- Estimate DaySim models for up to two selected regions in Florida, using the NHTS data supplemented with the land-use and transportation system characteristics data from the two regions.

- Conduct an analysis of the transferability of the DaySim model components and parameters between the two regions (and potentially across other regions) in Florida.

- Develop feasible activity-based travel demand modeling frameworks for different regions in Florida.
Detailed Tasks & Time Line

- **Task 1:** Hold kick-off meeting, form technical advisory panel, and review literature (October 1, 2010 – December 31, 2010)

- **Task 2:** Assemble, process, and analyze the Florida add-on data from the 2009 NHTS (November 1, 2010 – May 15, 2011)

- **Task 3:** Identify up to two regions in Florida for the development of DaySim models (April 15, 2011 – May 31, 2011)

- **Task 4:** Assemble land-use and transportation system characteristics data needed to estimate DaySim models for the selected regions (May 15, 2011 – July 31, 2011)

- **Task 5:** Estimate the DaySim models for the two selected regions in Florida (June 1, 2011 – November 30, 2011)

- **Task 6:** Conduct an assessment of the transferability of the estimated models between the two selected regions (and potentially across other regions) in Florida (November 1, 2011 – March 15, 2012)

- **Task 7:** Develop feasible activity-based modeling frameworks for different regions in Florida (February 1, 2012 – May 31, 2011)

- **Task 8:** Document all research activities in a final research report (June 1, 2012 – June 30, 2012)
Deliverables

- **Tour-based NHTS dataset for Florida (Due September 30, 2012)**

- **Technical Memorandum 1 (Due May 15, 2011)**
  - Will document the similarities and differences in the activity-travel patterns across the different regions in Florida (from the research activity performed in Task 2).

- **Technical Memorandum 2 (Due November 30, 2011)**
  - Will contain the activity-based model parameters estimated for the estimable components of the DaySim model framework (identified in Task 5) for two regions in Florida.

- **Technical Memorandum 3 (Due March 15, 2012)**
  - Will report the results of the transferability research conducted in Task 6.

- **Technical Memorandum 4 (Due May 31, 2012).**
  - Will provide the results of Task 7, the ABM frameworks developed for different regions in Florida. This deliverable will be provided.

- **Final Report (Draft Due June 30, 2012; Final Due September 30, 2012)**
  - Summary of all work – updated versions of all Technical Memorandums + tour-based NHTS datasets for Florida