



# SHRP 2 C10

## Partnership to Develop an Integrated, Advanced Travel Demand Model and a Fine-Grained, Time-Sensitive Network

*presented to*

### Panel on Activity-Based Models

*presented by*

Thomas Rossi

Cambridge Systematics, Inc.

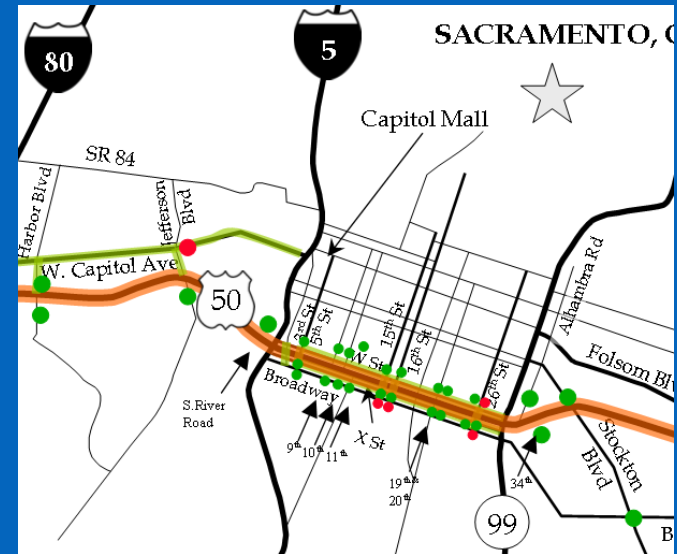
May 26, 2010

FLORIDA  
MODEL  
TASK  
FORCE



# The Team

- Cambridge Systematics, Inc.
- Sacramento Area Council of Governments
- University of Arizona
- University of Illinois, Chicago
- Sonoma Technology, Inc.
- Fehr and Peers



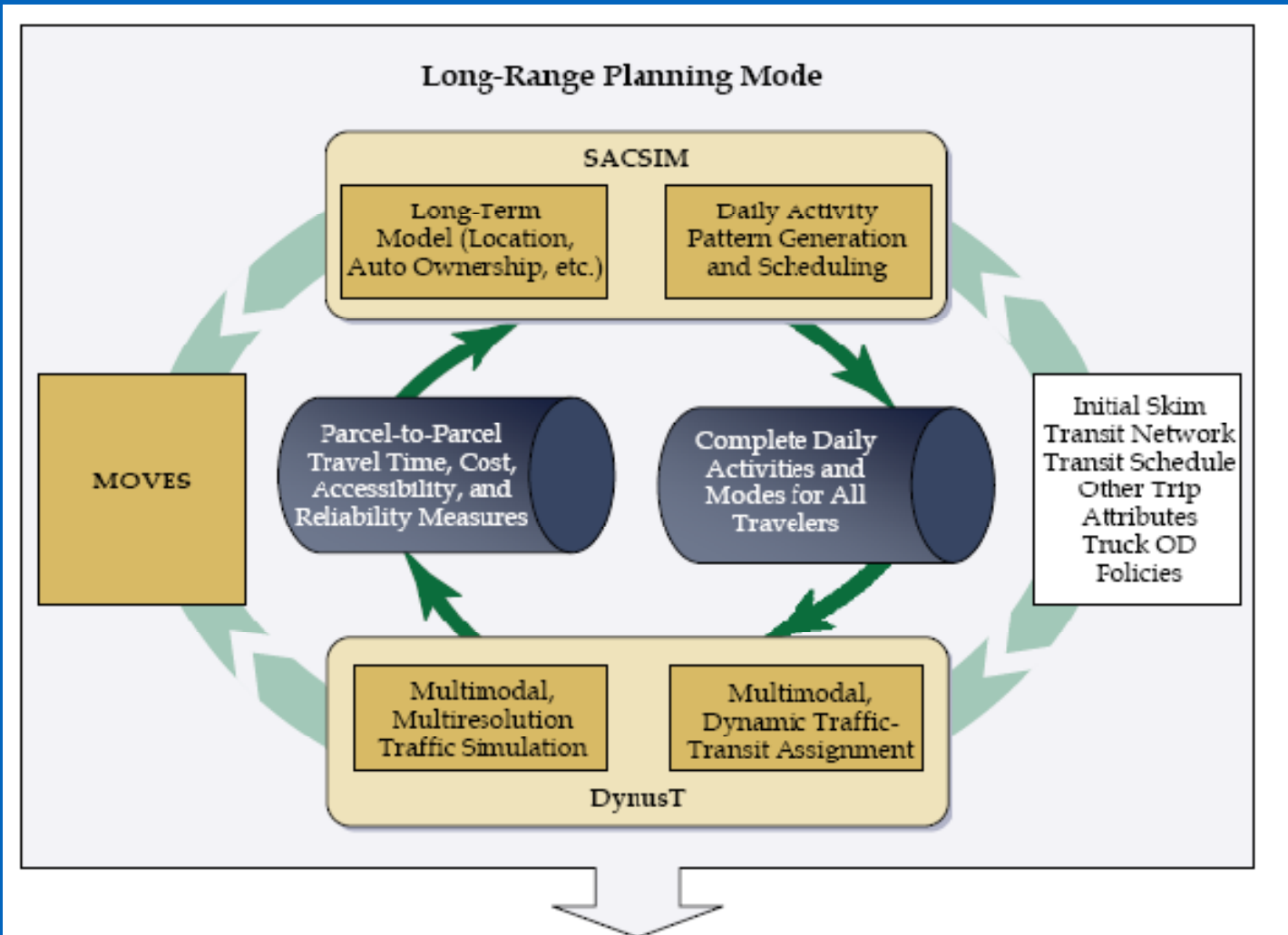


## Our Approach

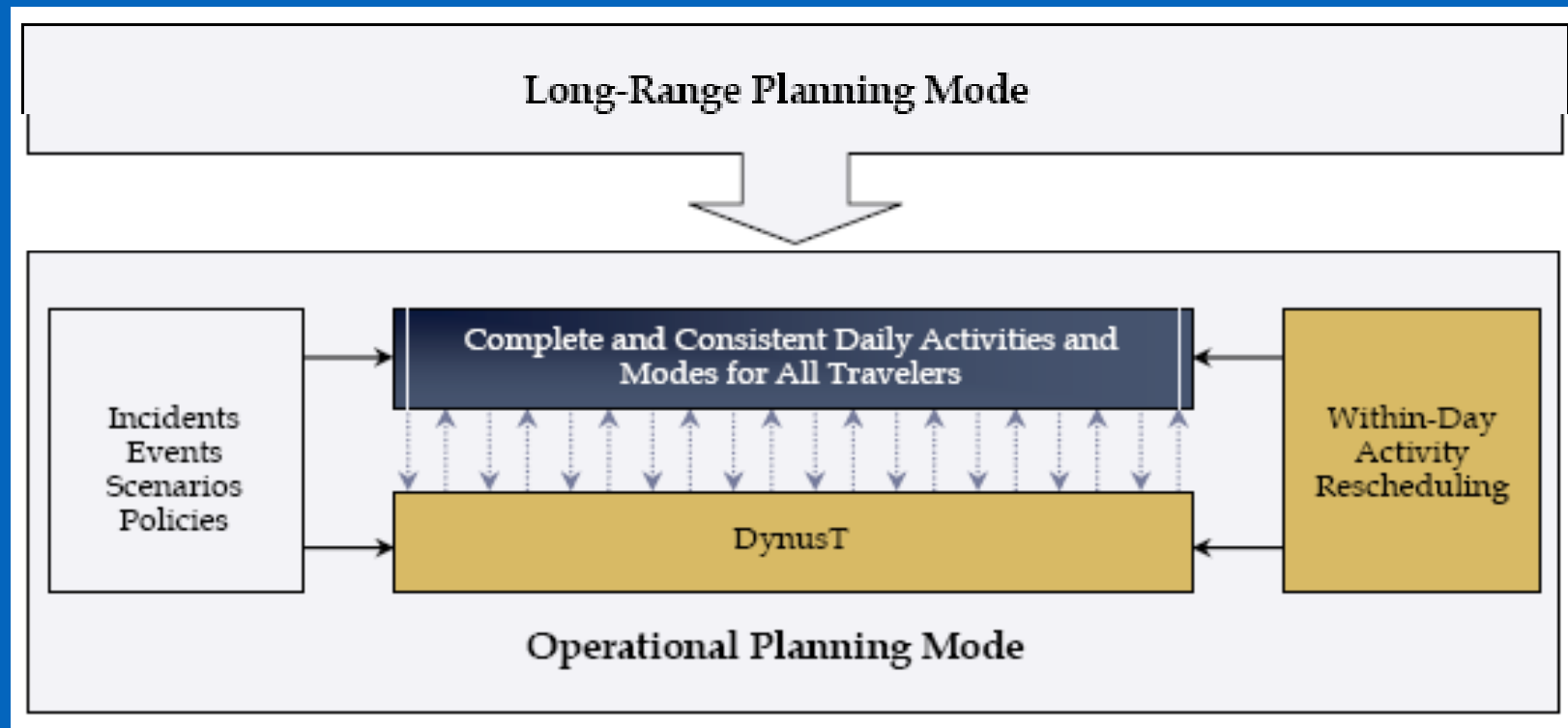
- Integrate an activity based model (SACSIM) with a traffic microsimulation model, DynusT
- Link individual person records with vehicle and transit trips in the microsimulation
- SACSIM is parcel based
- Simulate transit tours
- Incorporate model enhancements (e.g. reliability)
- Direct interface between DynusT and MOVES
- Use software development professionals for the programming of the integrated model



# Integrated Modeling Approach



# Integrated Modeling Approach (continued)





# Issues in Model Design and Implementation

- Incorporation of reliability
- Distributed values of time
- Use of tours in traffic simulation
- Treatment of transit
- Travel time resolution and feedback process



# Treatment of Transit (Bus and Light Rail)

- **Transit passengers**

- Identified in SACSIM (origins, destinations, departure times)
- Routed in DynusT

- **Transit vehicles**

- Simulated directly in DynusT based on timetable information
- Assigned to their specific paths

- **Integration**

- Passengers assigned to board specific vehicles identified in the timetable
- Multi-path assignment



# Open Source Software

- SACSIM source code is already released as open source
- DynusT has also been released as open source
- All new software will be property of NAS
- Therefore, entire source code for the new integrated model will be publicly available
- Users will access the modeling software using web browser





# Outreach



- **SHRP C10 Project Portal - [www.shrp2c10.org](http://www.shrp2c10.org)**
  - Project status reports
  - Software for download
  - Input and output data files
  - Technical reports (when approved)
  - Community forums
- **Complete documentation and user's manual**
- **Presentations at conferences and meetings**

# C10 Web Portal

HOME NEWS FORUM DOWNLOADS RESOURCES WIKI CONTACTS ABOUT Login or Sign up

## SHRP2

STRATEGIC HIGHWAY RESEARCH PROGRAM

### SHRP 2 Project C10

Partnership to Develop an Integrated, Advanced Travel Demand Model

#### Welcome to the SHRP 2 C10 Community

Welcome to the project website for project C10 of the second Strategic Highway Research Program (SHRP 2). This site is an information and communication hub for the project, serving C10 project participants, the project panel, and interested observers from the transportation community. As the project progresses, the site will deliver project updates, technical reports, and interim and final versions of open-source software.

We invite you to participate in the project by reviewing these materials as they become available and by participating in the project forums. We also welcome your feedback on the structure and content of this site.

WHAT'S NEW:

#### Recent News

- [The SHRP 2 Project C10 Website is now live!](#)  
11/23/2009 9:00:00 AM
- [SHRP 2 C10 Project Kickoff Meeting](#)  
11/3/2009 10:00:00 AM

#### Partners

- [Cambridge Systematics](#)
- [Fehr & Peers Associates](#)
- [Sacramento Area Council of Governments](#)
- [Sonoma Technology](#)
- [University of Arizona](#)
- [University of Illinois at Chicago](#)

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## Activity Based Modeling for Florida

- Decide what model features are important for Florida
  - Based on the planning analysis needs of Florida planning agencies
  - Based on resource constraints for model development and application
- Then design the model to meet those needs and constraints
- Be comfortable that your existing models will be usable for a few more years
- Involve Florida planners/modelers in the model development process to the greatest extent possible
- Pay attention to the greater validation needs of advanced models



# Developing Multiple Activity Based Models for Areas Throughout Florida

- **Nothing on this scale has been done yet!**
- **What is not very risky: Transfer of model structures from other areas**
- **Validity not yet demonstrated for transfer of parameters**
  - **Research into this would be useful**
  - **Need to determine what is common across areas, what is not**
  - **Transfer models estimated elsewhere using some data from application context**
- **Non-resident model components are more important in Florida than in many areas**