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

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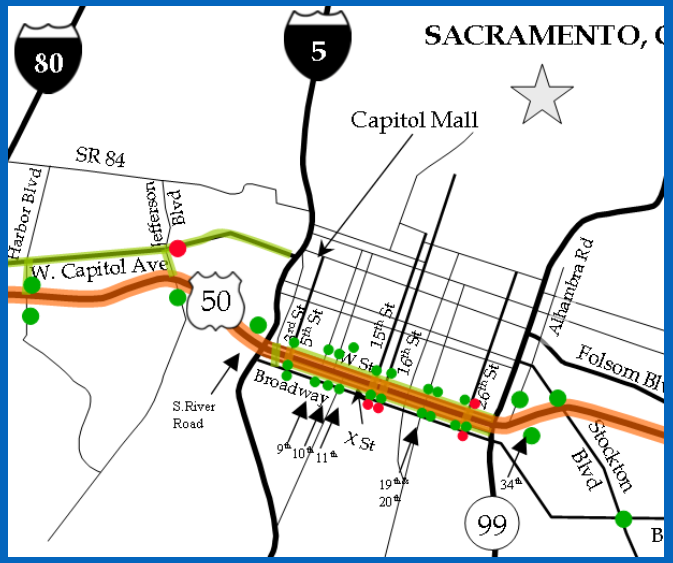
The Team

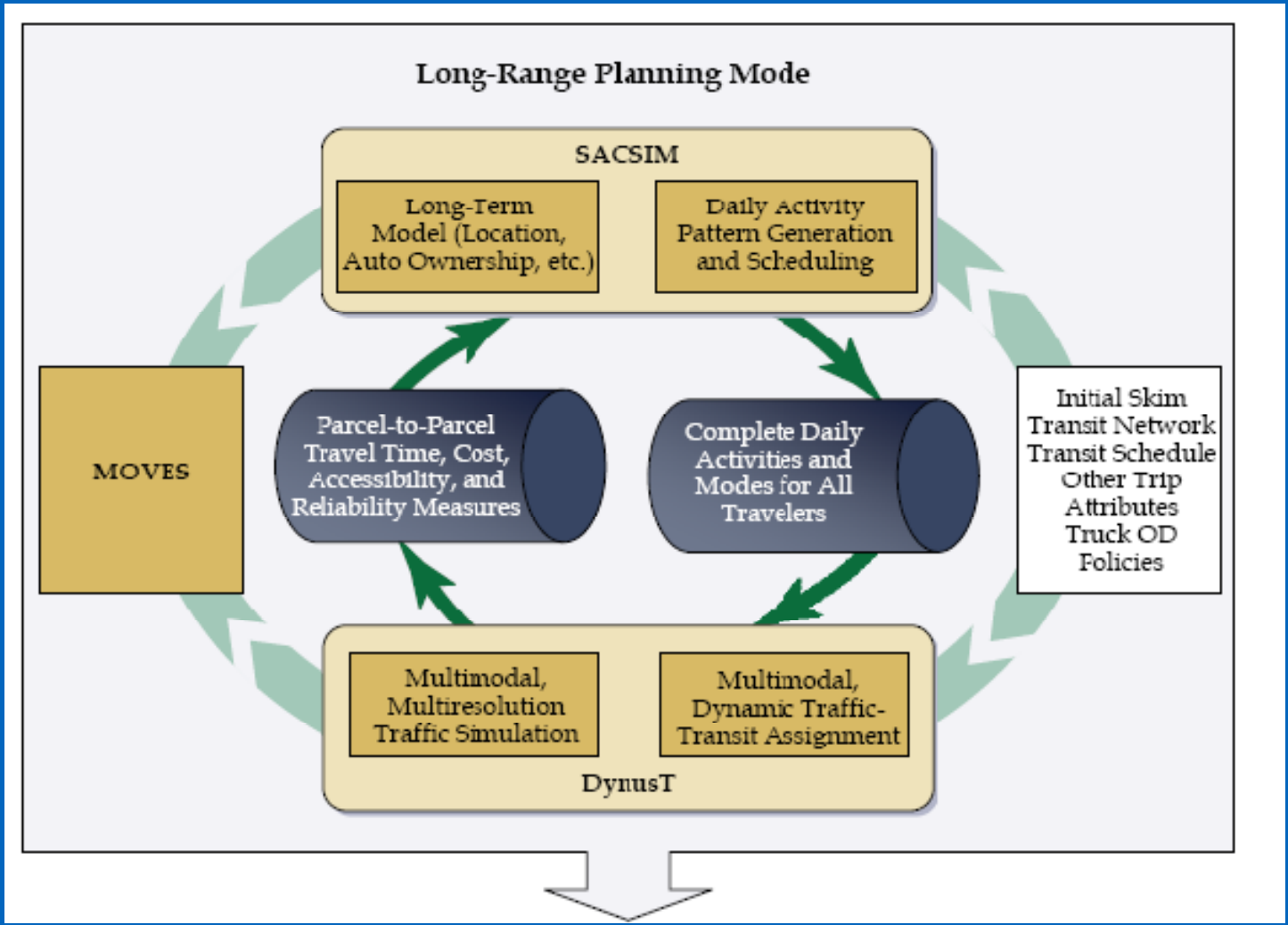
- Cambridge Systematics, Inc.
- Sacramento Area Council of Governments
- University of Arizona
- University of Illinois, Chicago
- Sonoma Technology, Inc.
- Fehr and Peers



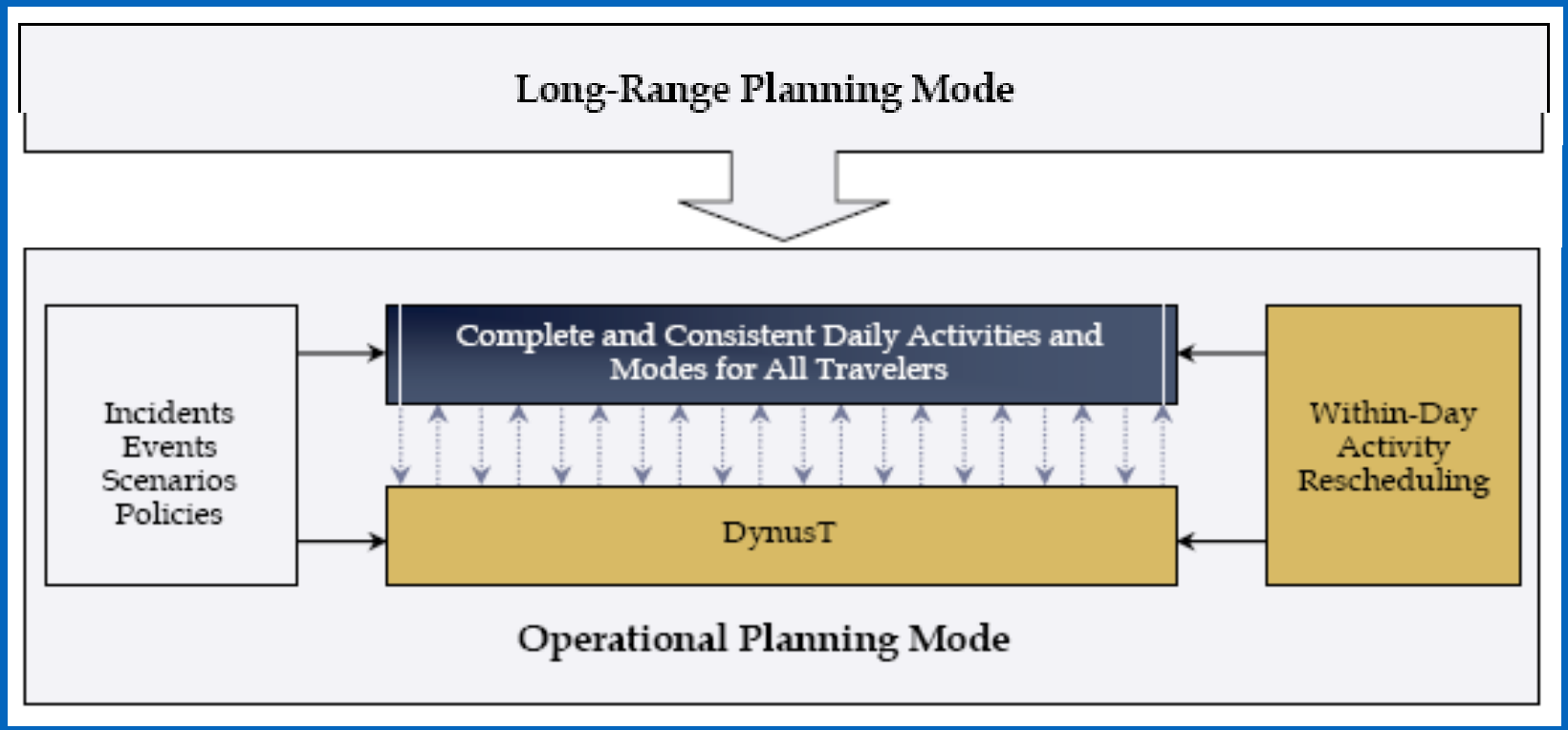
Our Approach

- 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**

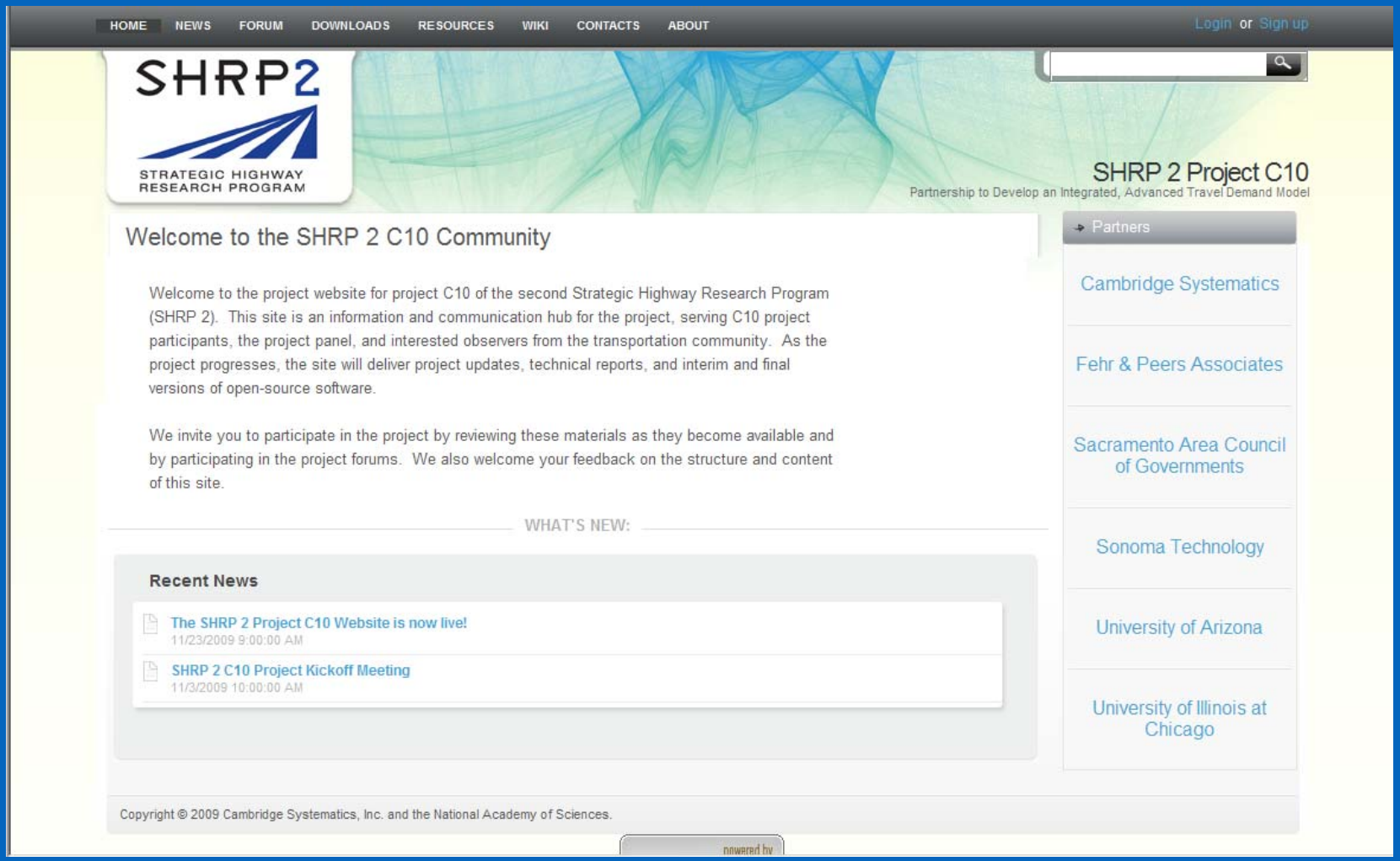
Open Source Software

- 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**
  - **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



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