RFP 140: Activity-Based Model
Component Estimation and Calibration

Pre-proposal Information Session
July 16, 2015
10:00 a.m. CDT
Online Only

Craig Heither, CMAP
About this session

• Please mute your phones

• Following the session
  – This presentation, questions and answers will be posted online early next week
Today’s Agenda

• CMAP’s Advanced Modeling Program
• Scope of Work
• Project Schedule
• Selection Process
• Questions and Answers
CMAP’s Advanced Modeling Program

Strategic Plan for Advanced Model Development

– 10-year implementation strategy
– Model development driven by CMAP planning and policy priorities
CMAP’s Advanced Modeling Program

Two development paths:

Freight movements

Meso Freight Model

People’s travel behavior

Activity-Based Model
Phase 1 ABM Development at CMAP

• Phase 1: Highway Pricing Model
  – Development of model sensitive to highway pricing scenarios based on each traveler’s individual value of time
  – Completed June 2011
Phase 2 ABM Development at CMAP

• Phase 2: Transit Modernization Model
  – Improve model sensitivity to a range of non-traditional transit attributes
  – Completed June 2013
Phase 3 ABM Development at CMAP

• Phase 3: ABM-DTA Integration
  – Integrate ABM with a dynamic traffic assignment model that includes feedback of congested vehicle trajectories to ABM and subsequent rescheduling of activities
  – Anticipated completion August 2015
CMAIP’s Current ABM Needs

Incremental ABM development:

– Allowed for rapid development of prototype models to begin to address policy questions
– Budget and scope did not allow for the complete design (estimation-calibration-validation) of a regional ABM

CMAIP desires an improved tool for performing project- and program-level evaluations
Scope of Work

• **Task 1**: Re-estimate and calibrate ABM submodels

• **Task 2**: Validate base year ABM outputs against observed data

• **Task 3**: Detail survey data collection needs to inform ABM
Task 1: Re-estimate/calibrate ABM submodels

Deliverables:

– Revised model code/input parameters
– Documentation of the data resources and procedures used to complete the estimation and calibration, and results summary
Task 1: continued

In CT-RAMP, estimated models are coded in Utility Expression Calculators (UECs)

Stop destination choice model example:

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<th>C</th>
<th>D</th>
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Notes on Task 1

Consultants may choose to work with either the Transit Modernization (Phase 2) or ABM-DTA Integration (Phase 3) version of the ABM.
Task 2: Validate base year ABM outputs

Deliverable:

– Documentation of validation activities completed following Task 1, and results summary
Task 3: Detail survey needs related to ABM

Deliverable:

– Document detailing survey research needs and data requirements to inform the ABM
The Project Schedule

<table>
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<tr>
<th>Date Range</th>
<th>Event Description</th>
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<tr>
<td>August 7, 2015:</td>
<td>Proposals due</td>
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<td>August 10 – September 8, 2015:</td>
<td>Staff review (Interviews if necessary)</td>
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<td>September 9, 2015:</td>
<td>CMAP Board approval</td>
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<td>Late September/early October, 2015:</td>
<td>Contract begins</td>
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<td>June 30, 2016:</td>
<td>Contract ends</td>
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The Selection Process

• In-house selection committee:
  – Understanding of scope
  – Understanding of CMAP’s objectives
  – Familiarity with problem and Chicago region
  – Professional Capacity
  – Cost to CMAP
Questions?
Q: Has CMAP determined an overall budget for the project?

A: Yes. Please, however, prepare your bid based on the cost it will take to accomplish the scope in the allotted time frame.
Information Session Questions and Answers

Q: Which sub-models of the ABM need review?

A: Priority should be given to re-estimating models related to longer-term choices.
Q: Will the consultant have access to CMAP’s modeling cluster during the project?

A: Yes. Coordinating and scheduling use of the cluster is prioritized by CMAP, which must balance work on this project with other agency modeling responsibilities.
Q: Have any of the ABM models been estimated using local data?

A: Yes. Those relating directly to choices involving highway pricing and transit modernization were estimated using CMAP’s 2007-08 Travel Tracker Survey.
Q: What is the status of the Phase 3 ABM-DTA integration project?

A: The current work is not expected to be complete until late August, so CMAP cannot provide code or documentation in time for responses to this RFP. CMAP recommends that you prepare your proposal based on Phase 2 (Transit Modernization Model) documentation and code, and then offer your thoughts and perspectives on using an integrated ABM-DTA application.
Pre-Bid Participants

Joel Friedman, RSG
Ben Stabler, RSG
Anurag Komanduri, Cambridge Systematics
Terri Cook, RSG