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Transportation Systems and Decisions Sciences
Bowman Research and Consulting
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Services offered

Contact Bowman if you have a need for any of the following services:

Planning studies for activity-based model development

Bowman conducts planning and design studies for agencies considering the implementation or improvement of activity-based forecasting models. Such a study can help you clarify your requirements, identify good ways of satisfying them, and understand what it will take to do so. Bowman has conducted studies for the Southern California Association of Governments (SCAG), the Tampa Bay region of Florida, and the Danish Road Directorate (Vejdirektoratet). The following reports from those studies are available on Bowman's website:

- Tampa Bay region (2008): Activity-based model design and workplan
- SCAG (2009): Strategy for Activity-Based Travel Demand Model Development with Travel Survey
- Danish Road Directorate (Vejdirektoratet) (2014): Requirements and designs for incorporating bicycling into the Copenhagen DaySim Activity-based model.

DaySim activity-based model system implementation

Bowman conducts development projects to implement activity-based models on the DaySim software platform for the client's geographical region. He will serve as prime contractor, working in partnership with your technical model developers and any subcontractors as needed. Or he can serve as a subcontractor to a larger consulting firm. In either case, he usually provides the model design services, implements customization and new features in the DaySim software, and estimates models. In some cases he also manages the project, processes the input data for model development, and technically guides the other aspects of the project. In all cases, he coordinates the DaySim software implementation with RSG, Inc, which shares copyright of the DaySim software with him and houses the DaySim code repository encompassing all DaySim implementations.

Development of innovative activity-based model features

One of Bowman's specialties is researching new model needs that you may have as his activity-based model client, and then designing model solutions and incorporating them into DaySim. This is usually done in conjunction with RSG's Mark Bradley and software engineers. Examples of DaySim functionality that Bowman has incorporated in this way include:

- park and ride mode with lot capacity constraints and fill levels that vary by time of day. (Sacramento)
- partially joint half tours (e.g., when a parent drops off a child at school on the way to work.) (Seattle and Copenhagen)
- transit and bicycle mode combinations, including bike-park-ride-walk, bike-park-ride-bike, and bike-on-board (Copenhagen)

Enhancements currently under consideration include:

- automated base year calibration and future year pivoting within DaySim using base year trip matrices
- incorporation of shared mobility services (car share or bike share)
- incorporation of autonomous vehicles

Instruction in activity-based models

Bowman can provide instruction in all aspects of activity-based models. This can take the form of one or more presentations and/or discussions with an executive, a technician, or a group. The content can be customized to meet your needs, including such topics as needs and benefits, data and staff requirements, how to go about a model development project, technical workings of the AB model, or model development methods.

Coaching for model estimation

As a model estimation coach, Bowman guides and reviews the discrete choice model estimation of clients who want to do their own model development but also want to benefit from his technical knowledge and skills in econometric discrete choice modeling. These services can be provided as part of a major model development contract, or under a retainer or on-call contract. Past clients include Denver Regional Council of Governments, Puget Sound Regional Council and Danish Road Directorate.

Model technical evaluation and forecast evaluation

Bowman can study, understand and critique the detailed technical workings of a travel demand model and, optionally, estimate the uncertainty and bias in the model's forecasts. The purpose of such evaluations might be to identify needed model improvements or to satisfy the requirements of investors. Bowman performed this type of analysis for potential investors in a major Asian city's elevated rail public transport system.

Research partnerships

Bowman serves as a prime or subcontractor on sponsored research projects related to activity-based models and/or non-motorized transportation. As a subcontractor he can take a major role, or he can bring his technical expertise to bear in an advisory capacity.