

ACTIVITY-BASED DISAGGREGATE TRAVEL DEMAND MODEL SYSTEM
WITH ACTIVITY SCHEDULES

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Draft 1, submitted February, 1996

Draft 2, submitted January, 1997

Draft 3, submitted January, 1999

ABSTRACT

We propose an integrated activity-based discrete choice model system of an individual's activity and travel schedule, for forecasting urban passenger travel demand. A prototype demonstrates the system concept using a 1991 Boston travel survey and transportation system level of service data.

The model system represents a person's choice of activities and associated travel as an activity pattern overarching a set of tours. A tour is defined as the travel from home to one or more activity locations and back home again. The activity pattern consists of important decisions that provide overall structure for the day's activities and travel. In the prototype the activity pattern includes (a) the primary—most important—activity of the day, with one alternative being to remain at home for all the day's activities; (b) the type of tour for the primary activity, including the number, purpose and sequence of activity stops; and (c) the number and purpose of secondary—additional—tours. Tour models include the choice of time of day, destination and mode of travel, and are conditioned by the choice of activity pattern. The choice of activity pattern is influenced by the expected maximum utility derived from the available tour alternatives.