THE USE OF ARCHIVED TRAVEL SPEED DATA IN MODEL CALIBRATION AND VALIDATION

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The ability of regional planning models to provide reasonable forecasts of transportation projects is fundamentally dependent on their ability to generate accurate congested highway travel times. Historically, use of speed data was limited in modeling, and only a handful of Metropolitan Planning Organizations (MPOs) collected travel time data for use in calibrating or validating their models. The data collected were often quite limited in terms of model links or origin-destination pairs sampled, and typically the sample sizes were too small to provide statistically significant results.

The availability of new sources of travel time data provides an opportunity to make more detailed assessments of congested travel speeds produced by travel models than have been previously possible. Congested travel times vary by time of day, day of the week, and seasons of the year, and are directly influenced by incidents of various types, weather, and the presence and operation of work zones, among other factors. This variability greatly complicates the assessment of model data, but also opens the door to addressing many unanswered questions about the performance and reliability of regional transportation systems.

In this paper, we report on some exploratory comparisons between travel model output and commercially available travel time data that can assist in the model calibration and validation process. The paper mainly uses HERE Traffic data that was collected for various MPO regions. We also used INRIX data that were provided for a particular MPO, and we performed a supplementary analysis of point-to-point travel times using data licensed from Google.

With the new availability of speed data, there is reason to believe that modelers will be able to produce regional models that do a better job of matching both observed counts and speeds.