

Document Summary

SHRP 2 C04: Improving Our Understanding of How Highway Congestion and Pricing Affect Travel Demand

Parsons Brinckerhoff

Completed 2011

Summary of the Work

The SHRP 2 C04 project - Improving our Understanding of How Highway Congestion and Pricing Affect Travel Demand - was carried out to "review and advance the state of the practice in modeling the effects of highway congestion and highway pricing on travelers decisions, including the choice of facility, choice of route, choice of mode and choice of departure." The project final report thoroughly describes a recommended a state-of-the-art theoretical and mathematical modeling framework that can incorporate a range of possible travel time measures to support both Value of Time (VOT) and Value of Reliability (VOR). A great deal of the research effort was directed to the statistical estimation of travel models that can be more sensitive to pricing, congestion and reliability, using the best available travel data, including both revealed and stated preference surveys, as well as experimental data. Important findings describe how income, auto occupancy, carpooling and travel distance affect the willingness to pay for travel time savings and improvements in highway reliability. The report emphasizes the value of using dynamic traffic assignment (DTA) in order to obtain more accurate reliability measures used in conjunction with planning level travel demand models, but also identifies practical analytical methods. The report contains a lengthy discussion on the features and properties of the different models estimated. In summary, the report presents useful information related to the future of modeling and how reliability measures may be effectively incorporated into existing and newer more advanced travel demand models.

Related Work

Sources of data that were not available to the SHRP 2 L04 project will be available online through synergistic activities undertaken as part of the SHRP 2 L04 project - Incorporating Reliability Performance Measures in Operations and Planning Modeling Tools.

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