



Deriving Reliability Performance Measures from Travel Models

Linking performance measurement and reliability planning

Transportation agencies rely on their planning and traffic simulation models to assist with project and scenario planning. Agencies also are increasingly concerned both with improving travel-time reliability and producing performance measures to track their progress. By enhancing traffic simulation and planning models, they can better produce performance measures that would show the relationship between certain projects and strategies and how they could affect travel-time reliability.

The Solution

Developed through the second Strategic Highway Research Project (SHRP2), the objectives of this project were to (1) develop the capability of producing measures of reliability performance as outputs in traffic simulation and planning models, and (2) determine how travel demand forecasting models can use reliability measures to produce revised estimates of travel patterns. The project will result in application guidelines for incorporating reliability into micro- and meso-simulation models and will identify key steps for integrating demand and network models. The product will also include first generation software that can potentially be integrated with many simulation packages. A preprocessor will generate scenarios involving factors contributing to unreliable travel time such as incidents, weather, and work zones. A post-processor will portray the variability in travel-time and reliability performance metrics from origins to destinations and for segments and links.

The Benefits

The research would be useful for evaluating the effects of scenarios, strategies, projects, or practices on non-recurring congestion.

Guidance on incorporating reliability into operations and planning models; enhancements to simulation models

FOCUS AREA: Reliability (L04)

These application guidelines and software can be integrated into existing models to reflect the sources of unreliable travel times.

How can you learn more?

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About SHRP2 Implementation

The second Strategic Highway Research Program is a national partnership of key transportation organizations: the Federal Highway Administration, the American Association of State Highway and Transportation Officials, and the Transportation Research Board. Together, these partners conduct research and deploy products that will help the transportation community enhance the productivity, boost the efficiency, increase the safety, and improve the reliability of the Nation's highway system.

Strategic Highway Research Program

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