

Guidelines for Incorporating Reliability Performance Measures into 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. Included are application guidelines for incorporating reliability into micro- and meso-simulation models that identify key steps for integrating demand and network models. The product includes first generation software that can potentially be integrated with many simulation packages. A preprocessor generates scenarios involving factors contributing to unreliable travel time such as incidents, weather, and work zones. A post-processor portrays the variability in travel-time and reliability performance metrics from origins to destinations and for segments and links.

The Benefits

The guidelines are 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?

For more information, contact John Halkias at FHWA, john.halkias@dot.gov; or Gummada Murthy at AASHTO, gmurthy@aaashto.org. Updates on current implementation efforts can be found at www.fhwa.dot.gov/GoSHRP2 or <http://SHRP2.transportation.org>.

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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