

SHRP 2: Project L38B Pilot Testing of SHRP 2 Reliability Data and Analytical Products: Minnesota Pilot Site

Overview

The Minnesota pilot site has undertaken an effort to test data and analytical tools developed through the Strategic Highway Research Program (SHRP) 2 Reliability focus area. The purpose of these tools is to facilitate the improvement of travel time reliability on highways by reducing the frequency and effects of events that cause travel times to fluctuate in an unpredictable manner. The SHRP 2 reliability data and analytical tools evaluated by the Minnesota team are intended to address travel time variability in one of three ways:

1. Establish monitoring systems to identify sources of unreliable travel times (Project L02)
2. Identify potential solutions to cost-effectively improve reliability (Project L07)
3. Incorporate consideration of travel time reliability into transportation agencies' planning and programming framework (Project L05)

The Project L02 data and analytical tools were pilot tested by collecting vast amounts of traffic and nonrecurring conditions data and compiling it in a travel time reliability monitoring system (TTRMS) for purposes of conducting reliability evaluations. The L07 benefit-cost tool was evaluated in a number of facets, including usability, performance, and sensitivity testing. Guidance from Project L05 to incorporate reliability into the planning and programming process was introduced to a wide audience of stakeholders through an extensive outreach effort of meetings, workshops, and web conferences.

The Minnesota site used the travel time reliability monitoring guide from Project L02, the analysis tool for forecasting reliability and estimating impacts from Project L07, as well as the guide on reliability performance measures from the Project L05 product. The Minnesota site focused on two freeway facilities: I-94 from downtown Minneapolis to downtown St. Paul and I-35W from downtown Minneapolis south to Burnsville. Both facilities already had an extensive loop detector network that collects and stores traffic count and speed data on the instrumented system. Corridor, route, and segment travel times were computed from this data for use on DMS and for traveler information. The pilot testing demonstrated that the reliability analysis tools have the potential for modeling reliability impacts but required some modifications before they were ready for use by agencies.

Project L38B was intended to evaluate a suite of projects to determine their readiness for implementation. Those projects had a logical structure consisting of data collection, analysis, and project prioritization.

Data Sets

- **I-94 WB at Park Avenue Flow:** This file contains volume data for a segments of I-94 in Minneapolis, MN. The data are presented for each 5-minute interval. The data were used for demand testing of Project L05 as part of Project L38B.
- **Project L07 Combined Database:** This sample file contains a combination of weather, event, incident, and roadway data used in the testing of Project L07 as part of Project L38B.
- **TH 100 NB Sample Database:** This sample file contains a combination of weather, event, incident, and roadway data used in the testing of Project L02 as part of Project L38B.
- The exact extent of the TH 100 NB study segment is from 77th Street (S375) to 57th Avenue (S1614), a distance of approximately 14.6 miles.
- **I-94 2012 Speed and Volume Data (Part 1):** These files contain speed and volume data for three (3) segments of I-94 in Minneapolis, MN. The data are presented for each 5-minute interval. The data were used for demand testing of Project L07 as part of Project L38B.
- **I-94 2012 Speed and Volume Data (Part 2):** These files contain speed and volume data for three (3) segments of I-94 in Minneapolis, MN. The data are presented for each 5-minute interval. The data were used for demand testing of Project L07 as part of Project L38B.
- **I-94 2012 Speed and Volume Data (Part 3):** These files contain speed and volume data for three (3) segments of I-94 in Minneapolis, MN. The data are presented for each 5-minute interval. The data were used for demand testing of Project L07 as part of Project L38B.
- **Project L07 Test Results – TH 280:** This spreadsheet contains the results of the testing of the Project L07 tool on the TH 280 study corridor, as part of Project L38B (Minnesota Pilot Site).
- **Project L07 Test Results – I-394:** This spreadsheet contains the results of the testing of the Project L07 tool on the I-394 study corridor, as part of Project L38B (Minnesota Pilot Site).
- **Project L07 Test Results – I-35:** Caltrans District 12 data for I-5 Northbound through Orange County on weekdays.