

SHRP 2: Project L02 Establishing Monitoring Programs for Mobility and Travel Time Reliability

Overview

The objective of this project was to develop system designs for programs to monitor travel time reliability and to prepare a guidebook that practitioners and others can use to design, build, operate, and maintain such systems. Generally, such travel time reliability monitoring systems are built on top of existing traffic monitoring systems. The focus of this project was on travel time reliability. The data from the monitoring systems developed in this project – from both public and private sources –included, wherever cost-effective, information on the seven sources of non-recurring congestion. This data was used to construct performance measures or to perform various types of analyses useful for operations management as well as performance measurement, planning, and programming.

The work on Project L02 began with a research phase. The primary results of Project L02 research were a guidebook and a final report. An additional contribution of the research showed that it may be possible to add the variability of travel time from one segment to another. Another contribution of the research was the development of a queuing point model, an application that analytically determines travel time reliability over a freeway segment.

Data Sets

- **San Diego Freeway Use Case 2: Study Route 2 Travel Times:** This dataset contains the 5-minute time-aggregated travel times for all days from January to part of September in 2009, for Study Route 2, starting just south of the I-5/I-805 diverge near La Jolla and Del Mar to the US Naval Base in National City, south of downtown San Diego, via southbound I-805, I-15, and I-5. The travel time values are for each lane and aggregated for all lanes, and are based on PeMS detector speeds along the route.
- **San Diego Freeway Use Case 2: Study Route 3 Travel Times:** This dataset contains the 5-minute time-aggregated travel times for all days from January to the first day of October 2009, for Study Route 3, starting just south of the I-5/I-805 diverge near La Jolla and Del Mar to the US Naval Base in National City, south of downtown San Diego, via southbound I-805, SR-163, and I-5. The travel time values are for each lane and aggregated for all lanes, and are based on PeMS detector speeds along the route.
- **San Diego Freeway Use Case 2: Study Route 1 Travel Times:** This dataset contains the 5-minute time-aggregated travel times for all days from January to part of September in 2009, for Study Route 1, starting just south of the I-5/I-805 diverge near La Jolla and Del Mar to the US Naval Base in National City, south of downtown San Diego, via southbound I-5. The travel time values are for each lane and aggregated for all lanes, and are based on PeMS detector speeds along the route.
- **Georgia DOT Atlanta Area Detector Station Data:** This dataset contains five-minute-aggregated traffic information (flow, truck flow, speed, and occupancy) from freeway detector stations in the Atlanta Metro area from 9/9/2011 to 9/26/2011.

- **GDOT Station Configs:** This dataset contains the stations and their coordinates for the associated five-minute-aggregated traffic information (flow, truck flow, speed, and occupancy) from freeway detector stations in the Atlanta Metro area from 9/9/2011 thru 9/26/2011.
- **I-66 Westbound 5-minute Travel Times:** Five-minute travel times calculated on a 26 mile stretch of westbound I-66 for March through April of 2009. Detailed explanation is provided in L02 Guidebook, p. C3-18.
- **I-66 Westbound Hourly Travel Times:** Hourly travel times calculated on a 26 mile stretch of westbound I-66 for March through April of 2009. Detailed explanation is provided in L02 Guidebook, p. C3-18.
- **San Diego Freeway Use Case 1: I-8 Westbound Travel Times:** This dataset contains non-holiday weekdays of 5-minute-aggregated travel times derived from PeMS detector data on Westbound I-8 in San Diego, from Lake Murray Boulevard in La Mesa, to the interchange with I-5, from November 2008 through February 2009.
- **Northern Virginia (NOVA) Detector Station Config Data:** This dataset contains coordinates of the stations used in the five-minute detector station data set (see related). These stations were located on I-66 and I-395 in the Northern Virginia (NOVA) metro area, in 2009, and 2011-2012.
- **New York City One-Monument GPS Data:** GPS tracks from probe vehicles in New York City area were collected by a subcontractor over a six-year period. The dataset shown here is filtered to the study route (Brooklyn near Prospect Park, along Flatbush Ave, I-278, Van Wyck Expwy to JFK Airport). The time stamp, lat longs, speed, and other GPS measurements are shown for each collected point. Each trip has its own id.
- **New York City Hourly Speeds: All Week:** GPS tracks from probe vehicles in New York City area were collected by a subcontractor over a six-year period. This table shows the speeds on each analyzed link in every hour. The hour of the day (0 to 23), lat longs and speed are shown for each collected point.
- **New York City Hourly Speeds: Weekend:** GPS tracks from probe vehicles in New York City area were collected by a subcontractor over a six-year period. This table shows the speeds on each analyzed link in every hour. The hour of the day (0 to 23), lat longs and speed are shown for each collected point.
- **New York City Synthetic Travel Times: Method 1:** GPS tracks from probe vehicles in New York City area were collected by a subcontractor over a six-year period. This table shows, for four two-hour time bins, the synthetic travel times based on sampled GPS travel times on the link segments along the route, according to one of three methods, as explained in Appendix C of the L02 Guidebook.
- **New York City Synthetic Travel Times: Method 2:** GPS tracks from probe vehicles in New York City area were collected by a subcontractor over a six-year period. This table shows, for four two-hour time bins, the synthetic travel times based on sampled GPS travel times on the link segments along the route, according to one of three methods, as explained in Appendix C of the L02 Project Handbook.
- **New York City Synthetic Travel Times: Method 3:** GPS tracks from probe vehicles in New York City area were collected by a subcontractor over a six-year period. This table shows, for four two-hour time bins, the synthetic travel times based on sampled GPS travel times on the link segments along the route, according to one of three methods, as explained in Appendix C of the L02 Guidebook.

- **New York City Trip Trajectories:** GPS tracks from probe vehicles in New York City area were collected by a subcontractor over a six-year period. This table shows the GPS tracks organized by individual trips. The speed on each analyzed link of each trip is shown. Link name, begin and end lat longs, the point on the link and the time (hh:mm:ss 0:00:00 to 23:59:59) of the GPS measurement are shown.
- **San Diego Station Configs:** This dataset contains the stations and their coordinates for the associated five-minute-aggregated traffic information (flow, truck flow, speed, and occupancy) from freeway detector stations in the San Diego Metro area from 11/1/2008 to 12/31/2009.
- **Tahoe 5-min Bluetooth Travel Time Data:** This dataset contains several multi-day spans of 5-minute-aggregated Bluetooth reader travel time data in Northern California on I-5 and US-50, in 2011.
- **Tahoe 5-min FasTrak Travel Time Data:** This dataset contains several multi-day spans of five-minute-aggregated FasTrak toll tag travel time data in Northern California on I-80, in 2011.
- **Tahoe Bluetooth RC Locations:** This dataset contains the coordinates and other information about the route_carraigeway ids of the stations used in the five-minute and hourly Tahoe Bluetooth travel time data set (see related). These stations were located in Northern California on I-5 and US-50, and data was collected in 2011.
- **Tahoe Bluetooth Reader Locations:** This dataset contains the mapping of stations ids to rc_codes used in the five-minute and hourly Tahoe Bluetooth travel time data set (see related). These stations were located in Northern California on I-5 and US-50, and data was collected in 2011.
- **Tahoe Bluetooth Route Configs:** This dataset contains the route id to origin-destination station mappings used in the five-minute and hourly Tahoe Bluetooth travel time data set (see related). These stations were located in Northern California on I-5 and US-50, and data was collected in 2011.
- **Tahoe Fastrak RC Locations:** This dataset contains the coordinates and other information about the route_carraigeway ids of the stations used in the five-minute and hourly Tahoe fastrak travel time data set (see related). These stations were located on I-80 between Sacramento and Lake Tahoe, and data was collected on selected dates in 2011.
- **Tahoe Fastrak Reader Locations:** This dataset contains the mapping of stations ids to rc_codes used in the five-minute and hourly Tahoe fastrak travel time data set (see related). These stations were located on I-80 between Sacramento and Lake Tahoe, and data was collected on selected dates in 2011.
- **Tahoe Fastrak Route Configs:** This dataset contains the route id to origin-destination station mappings used in the five-minute and hourly Tahoe fastrak travel time data set (see related). These stations were located on I-80 between Sacramento and Lake Tahoe, and data was collected on selected dates in 2011.
- **Tahoe Hourly Bluetooth Travel Time Data:** This dataset contains several multi-day spans of hourly-aggregated Bluetooth reader travel time data in Northern California on I-5 and US-50, in 2011.
- **Tahoe Hourly FasTrak Travel Time Data:** This dataset contains several multi-day spans of hourly-aggregated FasTrak toll tag travel time data in Northern California on I-80, in 2011.