

Traffic Information & Prediction System (TIPS)

Portable, Automated, Real-Time

TIPS is a portable, automated, real-time smart work zone system for displaying travel time information to motorists in advance of and through freeway work zones. The system collects real-time traffic flow data using roadside non-contact sensors, calculates travel time between different points on the freeway, and displays the travel time information on several portable changeable message signs at pre-determined locations along the freeway.

Major Components of TIPS:

- Microwave radar sensors
- Radios/modems (or cellular routers, if necessary)
- Software with intelligent traffic algorithm and model
- Mobile solar-powered trailers
- Changeable message signs

**TIPS:**

- ◆ Allows remote control of the system from anywhere
- ◆ Allows manual override of the messages displayed on the signs
- ◆ Provides real-time information on the internet
- ◆ Integrates with cameras and brings live pictures of the highway to the internet



- ◆ Integrates sensors and changeable message signs with intelligent software that calculates the most current travel times at 30-sec intervals
- ◆ Uses 12 VDC power supply from solar power and batteries
- ◆ Archives data with date and time stamp

Evaluation in Ohio

About 88% of the actual times recorded for each sign, and for all the signs combined, were within a range of ± 4 min of the predicted time. It is concluded that the real time TIPS represents a definite improvement over any static non-real-time display system. It provides, in general and most of the time, useful and relatively accurate travel time predictions to the motoring public.

(Source: Helmut T. Zwahlen and Andrew Russ, "Evaluation of the Accuracy of a Real-time Travel Time Prediction System in a Freeway Construction Work Zone", Transportation Research Record 1803, Transportation Research Board, 2002)

Evaluation in Wisconsin

The message signs are influencing drivers to change their routes. This study suggests that a 10% alternative route selection rate during peak periods is achievable when accurate, up-to-the-minute, information about delay through a work zone is provided and there is an attractive set of alternative routes. By policy, the signs did not explicitly encourage drivers to use alternative routes. Psychometric studies would suggest that a higher alternative route selection rate could have been achieved had drivers been encouraged to do so.

(Source: Alan J. Horowitz, Ian Weisser and Thomas Notbohm, "Diversion from a Rural Work Zone owing to a Traffic-Responsive Variable Message Signage System", paper presented at the 2003 Annual Meeting of the Transportation Research Board in January 2003, Washington, D.C.)

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