

# Real Time Traveler Information

21<sup>ST</sup> CENTURY OPERATIONS USING 21<sup>ST</sup> CENTURY TECHNOLOGIES

## TRAVELER INFORMATION CHALLENGES

Transportation system operations in the 21<sup>st</sup> century require efficient management to reduce congestion, delay, and air pollution. Providing real-time information to travelers allows them to reschedule or re-route trips away from traffic incidents, construction zones, road closures, and transit service changes, thereby improving travel time reliability, safety, and the quality of life. The ideal traveler information system lets travelers access consistent, real-time information pre-trip and en-route through a variety of methods and devices across the nation.

## WHY WE ARE CONCERNED

In many locations, real-time traveler information systems are underutilized. The exchange of traveler information data between the public and private sectors is beneficial and can be made easier by using open exchange standards.



Infrastructure-based traveler information equipment can be used more effectively to convey real-time conditions. There are benefits to the operation of surface transportation systems when transportation agencies develop a traveler information system in their city, region, or State.

## WHAT WE'VE LEARNED

Applications of traveler information systems have demonstrated clear benefits. In San Antonio, Texas deployment of dynamic message signs combined with an incident management program, resulted in a 2.8 percent decrease in crashes. In Glasgow, Scotland a survey found 40 percent of respondents changed route as recommended by dynamic message signs.

Interagency cooperation to provide multimodal traveler information can help promote public transportation and reduce congestion. Making real-time data collected by the public sector available to information service providers allows traveler information to be personalized, thus increasing the value of this information for travelers.

Public demand and use of telephone services for traveler information increases when systems use 5-1-1, the 3-digit telephone number designated for traveler information. Systems that have converted existing telephone numbers to 5-1-1 have experienced a 300 to 500 percent increase in call volume.

For example, although market penetration was low, 45 percent of San Francisco travelers who received information from the Travel Advisory Telephone System changed their travel plans, and 81 percent of travelers receiving specific route information from the TravInfo<sup>®</sup> Internet site changed their travel behavior. This compares to 25 percent of travelers altering their plans based on television or radio broadcasts.

A simulation study in the Washington, DC metropolitan area found that individuals using traveler information services could improve their on-time reliability and reduce the risk of running late. Individuals using traveler information improved their on-time reliability by 5 to 16 percentage points when compared to travelers not using the service.

## FUTURE DIRECTIONS

The Federal Highway Administration (FHWA) has defined priority areas for attention and near-term action. These priority areas include congestion mitigation and safety. Traveler information is a very important element in many programs aimed at mitigating congestion and improving safety—a real application of FHWA's vision of "21<sup>st</sup> Century Operations



using 21<sup>st</sup> Century Technologies." Current, or real-time, traveler information about work zones, traffic incidents, and other causes of congestion allows travelers to make more informed decisions about their travel route or mode. Similarly, if travelers encounter delays while en-route, traveler infor-

mation can let them gauge the delay and decide whether to call colleagues or family members to let them know of the expected late arrival.



In the near-term, FHWA expects that travelers will receive the most current information available through a variety of techniques. Dynamic message signs and highway advisory radios will provide information that is meaningful to travelers at the location where they view or hear it. Real-time traveler information about highway and public transportation conditions will be widely available through 5-1-1. Web sites will present real-time traveler information that represents regional, multimodal travel conditions in ways that users can easily understand.

The FHWA envisions that future traveler information systems will provide users with time-based information about the transportation network such as travel times or delay times. Conditions will be known about all major routes and transit facilities so users can make the best choices about their available alternatives. Traveler information will be available 24/7 through various methods including personal digital assistants and telematics-equipped vehicles. Traveler information services will be capable of providing users with predictions of the transportation conditions they might expect ahead on their trips or even for future trips. Information and data will be easily exchanged among jurisdictions, agencies, and companies using accepted standards so travelers can get the best information based on comprehensive, areawide conditions.

To achieve this vision, the FHWA is taking the following actions:

- Sharing guidelines and lessons learned from the deployment of 5-1-1 traveler information telephone services to encourage more State and regional transportation agencies to develop and implement 5-1-1 services (to see the States currently deploying 5-1-1 systems, visit: [www.fhwa.dot.gov/trafficinfo/511state.gif](http://www.fhwa.dot.gov/trafficinfo/511state.gif))
- Developing data exchange standards in cooperation with standards development organizations to allow agencies and firms to easily share information
- Encouraging State and local transportation agencies to provide time-based travel information to travelers through various methods including dynamic message signs, Web sites, and 5-1-1 services



- Conducting research into predicting travel conditions as events occur that impact the transportation network to allow traveler information services to offer information about future conditions
- Encouraging transportation agencies to gather information from all major routes so systems can be operated based on the performance of the entire transportation network and thereby develop real-time databases to provide better regional traveler information
- Conducting research with vehicle manufacturers and telecommunications firms to provide enhanced traveler information services through mobile devices