

ITS America Hall of Fame Awards – Local Government Award

Agency

Illinois Tollway

Project title

Illinois Tollway TIMS2GO Mobile Incident Response Tool

Project description

When there's an incident on the Illinois Tollway, seconds matter. So, to enable traffic and incident managers to quickly verify incident details and make informed decisions, the Illinois Tollway developed its TIMS2GO Mobile Incident Response Tool. TIMS2GO is unique mobile-friendly web application that puts all the Tollway's 2,300-some ITS assets – CCTV cameras, vehicle detection systems, lane control signs within an active traffic management system, among other technologies – into the palms of the hands of its traffic and incident managers, allowing them to manage incidents anytime from anywhere using any smartphone, tablet or laptop.

TIMS2GO provides instant access to livestreaming video, incident details and response status updates. It allows traffic managers to share information with Illinois State Police patrolling the Tollway system, as well as other emergency responders. TIMS2GO also provides traffic data trends, ITS equipment inventory information and real-time event statistics to help traffic managers make better-informed decisions.

Illinois Tollway traffic and incident managers are trained from the start to manage incidents from the Traffic Operations Center at agency headquarters in Downers Grove. The TOC relies on the Traffic and Information Management System (TIMS) advanced traffic management system to gather, process and disseminate information from ITS technologies throughout the 294-mile Tollway system in Northern Illinois to the public, media and emergency responders via computer-aided dispatch, roadway message signs and internet services such as Waze.

Though the TOC operates 24/7/365, it's not always possible for traffic and incident managers to be on site. So, in 2019, the Tollway began exploring ways to access information available at the TOC from remote locations. The germ of the idea for the mobile incident response application was born: Wouldn't it be great to have all the power of TIMS in the palm of their hands? As the launch date approached, COVID-19 hit. The team accelerated efforts to get the application up and running to meet what had quickly escalated from a want to a need. After a soft launch in April 2020, TIMS2GO was live, fully operational and in the hands of Tollway traffic and incident managers by November 2020.

Since launched, TIMS2GO has been used on average 115 times a month to manage incidents. That has helped reduce the average confirmation time by nearly 12 percent from 5.1 minutes in 2019 to 4.5 minutes in 2023. This quicker response makes a big difference when there's a crash, fire, wrong-way driver or medical emergency. It also can reduce secondary crashes, which are often more severe than the initial incident, by clearing incidents faster and restoring traffic to free-flow conditions.

TIMS2GO reduces incident response times by improving communications. Traffic and incident managers working offsite don't have to rely on traffic operations technicians and telecommunicators to verbally describe what's happening on scene by phone or two-way radio and everyone can focus on their unique responsibilities. It's a fast-paced, high-pressure environment, with an average of more than 650 incidents a day.

TIMS2GO is a scalable solution that can be readily implemented by other transportation agencies to improve responses to roadway incidents and emergencies. It also can be used to track roadway maintenance vehicles using automatic vehicle location tracking and better communicate with the traffic operations staff, roadway maintenance personnel and emergency responders.

Built with assistance from ITS experts from TranSmart Technologies and Parsons, TIMS2GO used the systems engineering process common to ITS projects to ensure Illinois Tollway specifications and needs were met. Despite being designed specifically for the Tollway, other transportation agencies that operate a traffic operations center and use active traffic management system software can create a similar computer program that meets their own needs. The Tollway app relies on off-the-shelf software such as the Wowza video streaming platform and automated vehicle location tracking software collected by TIMS.

Roadway Maintenance staff collaborated with the software developers to create a series of mock-ups and simulated views of the application. Key elements in the design were to:

- Limit keystrokes, ensure legibility, viewability and usability of information optimized for tablets with similar utility on smart phones
- Streaming video access, including over cellular service
- Map and list-based selections
- Support Apple, Android and Microsoft tablets and phone
- Support multiple browsers including MS Edge, Google Chrome and Apple Safari

For management and maintenance staff, additional design elements included:

- Month-to-date and year-to-date comparative trend information for all traffic events
- ITS asset status and inventory information access

Given the deployment success, the Tollway is exploring the use of dedicated public safety bandwidth in preparation for system expansion to a larger user base. Regional agencies and police departments have requested access to the system. Plans are also underway to add National Weather Service alerts to TIMS2GO. Expanded asset management features for ITS maintenance staff are being developed, as well, including voice-activated navigation and selection and proximity alerts to nearby users as new events are discovered and reported in the system are being evaluated and designed.