Next-Generation TIM: Integrating Technology, Data, and Training
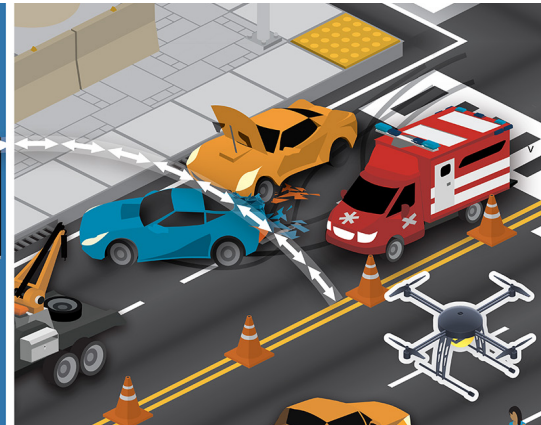
New methods for improving Traffic Incident Management (TIM) programs increase traveler and responder safety and improve trip reliability and commerce movement.

Traffic Incident

Traffic Operation Center

Traffic Incident Response

According to the U.S. Department of Transportation National Highway Traffic Safety Administration, more than 6 million crashes occur every year in the United States. Each crash places responders, motorists, and those nearby at high risk of secondary crashes. Crashes, along with a broader set of roadway incidents, severely congest roadways, straining travel reliability and commerce. Incident response also strains local response workforces, taking time from other pressing community needs.

New technology, data, and training mechanisms are now available to improve safety and travel reliability for roadway incidents. State, local, and Tribal entities, even those without a formal TIM program or a traffic management center, can implement new TIM methods to save more lives, time, and money.

THE NEXT GENERATION OF TIM

NextGen TIM expands the geographic coverage and information timeliness for incident detection, particularly on local roads. Traditionally, transportation agencies have identified incidents (e.g., crash, roadway debris, or stalled vehicle) through field sensor technologies, safety service patrols, or public safety agencies. Through crowdsourced, vehicle probe, connected vehicle, and computer-aided dispatch (CAD) data, agencies can detect and respond to more incidents, more quickly.

NextGen TIM reduces scene clearance time. Unmanned Aerial Systems (UAS) technology improves situational awareness, helping agencies better manage incident scenes and shorten crash investigations. UAS technology also reduces traffic risk exposure for crash investigators

and other responders. Additionally, new data and analysis techniques will help agencies target training, intelligent transportation systems (ITS) infrastructure, safety service patrol routes, and other aspects of TIM to reduce the overall incident clearance time.

NextGen TIM improves responder and traveler decision-making. Trained responders make better decisions that foster safe, quick incident clearance strategies. New virtual platforms for the National TIM Responder Training Program make this critical training accessible to every responder community when and where they are ready to learn. Moreover, agencies can use new TIM strategies such as back-of-queue warning or navigation-app notification of active responders to help travelers slow down, move over, or choose a different route.

Source: Kimley-Horn

BENEFITS

By using NextGen TIM methods, State and local agencies realize key benefits for public, commercial, and governmental stakeholders.

- **Advance Safety.** NextGen TIM advances safety through education and emergency services to help keep responders and citizens safe across interstate, arterial, and multimodal travel.

- **Increase Travel Reliability.** Technology, data, and training combine to help agencies reduce incident clearance times and divert traffic away from the incident, improving trip reliability for commercial drivers and the public.

- **Improve Operations.** Agencies can advance TIM transparency and efficient resource use through broader TIM workforce development and performance-based TIM program enhancements.

STATE OF THE PRACTICE

NextGen TIM technologies, data, and training have helped State and local agencies achieve meaningful and measurable results:

- [Purdue University](#) reported that TIM technology and training helped the Tippecanoe County (Indiana) Sheriff's Office reduce the time needed to measure a severe traffic crash scene by 60 percent. In one instance [reported by Indiana Public Media](#), they completely processed an 800-foot scene in just 22 minutes using **unmanned aerial system mapping technology**.

- In a 2018 interview, the Oro Valley (Arizona) Police Department credited TIM responder training and tracking officers' time through a **CAD system** with a 32-percent decrease in roadway and incident clearance time.

- The Houston (Texas) Fire Department reported during a 2018 TIM Symposium that, after receiving **TIM training**, it saw a 40-percent reduction in scene time and 25-percent reduction in fire apparatus struck at incident scenes.

Source: Ronald Moore, ResQue-1, LLC

- The Iowa Department of Transportation (DOT) is detecting incidents more quickly with the help of a **free crowdsourced navigation app** that provides initial incident notification in 20 to 35 percent of instances per month. More details from the Iowa DOT are available from the FHWA Adventures in Crowdsourcing webinar on [Social Media for Improved Operations](#).

- The Kansas and Missouri DOTs installed equipment in metro area safety service patrol vehicles that enables **navigation-app notifications** when roadside services are being performed nearby. One vehicle alerted nearly 10,000 motorists while responding to 1,000 incidents. More information on the program is available from FHWA's Adventures in Crowdsourcing webinar on [Incident Management Tools](#).

RESOURCES

EDC-sponsored workshops, peer exchanges, webinars, and technical assistance are available to help agencies identify and implement the right suite of NextGen TIM technologies, data, and training for their region.

[FHWA EDC-6 Next-Generation TIM](#)

[FHWA Traffic Incident Management Resource Site](#)

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