

Next-Generation Traffic Incident Management



Local Programs



Training



Data



Technology

Header Photos Source: Enforcement Engineering, Inc

INNOVATIVE APPROACHES TO IMPROVING TIM ON ALL ROADWAYS

An estimated 6 million police-reported crashes, 32 million motorist assists, and 174,000 vehicle fires occur every year in the United States.¹ Millions of other unrecorded incidents occur every year as well. Each incident places responders and motorists at a high risk of secondary crashes. These roadway incidents also cause congestion that negatively impacts the economy and the public's quality of life. Traffic incident management (TIM), which includes methods for planning and coordinating response among multiple agencies, has become the state of the practice for effectively reducing the dangers created by incidents and mitigating their impacts.

Next-Generation TIM

The Federal Highway Administration (FHWA) Everyday Counts 6 (EDC-6) Next-Generation TIM (NextGen TIM) innovation focuses on working with State, local, and Tribal partners to improve TIM on all roadways by integrating proven, yet underutilized, technology, data, and training strategies. These entities are poised to take TIM to the next level using innovative TIM approaches that will continue to improve safety and travel reliability and save lives, time, and money.



Source: Oregon Department of Transportation

Local Program

While TIM efforts have traditionally focused on high-speed roadways, TIM concepts apply to all roads. Most roadway incidents occur on local roads and are responded to by local agencies. NextGen TIM seeks to apply TIM at the local level by encouraging the application of low-cost TIM solutions like stakeholder meetings, development of policies and procedures, and participation in TIM training.

Training

TIM training is a crosscutting and foundational TIM element. Training for first responders promotes a shared understanding of the requirements for safe, quick clearance at traffic incident scenes; prompt, reliable, and open communications; and motorist and responder safeguards.

NextGen TIM continues to promote training through both new content and innovative delivery approaches, such as online and virtual training, that allow remote participation. In addition, NextGen TIM strives to institutionalize training through policies and other mechanisms. Institutionalizing TIM training means the training will continue even after TIM training champions move on.

Data

Like training, TIM data is viewed as a foundational piece for successful TIM programs. NextGen TIM focuses on advancing the collection, analysis, and use of incident data to understand the effectiveness of current TIM strategies. Time is a critical element in reducing exposure and congestion, which makes roadway clearance and incident clearance time key metrics. Secondary crashes and responder struck-by incidents are critical safety measures. With better data and analytics, agencies can quantify program performance, demonstrate program effectiveness, and improve TIM planning and resource management.



Next-Generation Traffic Incident Management

TIM data can come from public safety computer-aided dispatch (CAD) system time stamps, law enforcement traffic crash reports, safety service patrol logs, transportation management centers (TMCs), or other sources. Crowdsourced data, which originates from roadway users, is a relatively new data source that can bolster TIM data, particularly with respect to the detection of incidents and identification of when roadways return to normal after clearance.

Providing stakeholders with information about response time, roadway clearance time, and overall scene clearance time can improve their focus and attention to achieving TIM objectives. Monthly, quarterly and annual reports can feed into performance reviews within organizations that help managers assess the effectiveness of policies and strategies. Real-time data dashboards are also providing an effective way to analyze and present data to promote organizational goals.

Technology

Public safety agencies such as law enforcement use CAD systems to catalog and coordinate activities, which creates a rich source of real-time incident data. Timely sharing of this valuable information between public safety and transportation agencies improves coordination of resources to clear roadways, improve safety, and relieve congestion. More than half of State departments of transportation (DOTs) have indicated they have some form of access to real-time public safety CAD data ranging from manual incident notifications via phone or email, to filtered views of public safety CAD event lists, to fully integrated data exchanges.

Another NextGen TIM technology involves the use of unmanned aircraft systems (UAS), sometimes referred to as “unmanned aerial systems” or more commonly, “drones”. Small UAS are remotely controlled by a pilot and can be easily flown over a traffic crash scene to capture images using high-definition digital cameras. The real power of UAS image processing lies in photogrammetry, where, using known measurements placed in the UAS photographs, computer software can produce the measurement between any two points in that photograph. The use of UAS for traffic crash investigations reduces responder time on-scene, accelerates investigations, and provides a cost-effective measuring and mapping alternative.

NextGen TIM is promoting emerging applications of UAS for TIM including incident verification, response vehicle routing, queue detection and monitoring, secondary crash detection, and detour route monitoring.

A picture is worth a thousand words, especially in the TIM world where images from the scene help responders and TMC operators alike. Video-sharing technologies allow cameras mounted on service patrol vehicles to stream images from incident scenes to TMCs and support applications that allow responders to view these images in the field. Sharing video enhances the ability of both responders and TMC operators to evaluate incidents, plan their response, and identify the need for additional resources.



Source: North Carolina Department of Transportation

Finally, NextGen TIM focuses on using connected vehicle technology to support responder-to-vehicle (R2V) alerts. When responder vehicles are stopped along roadways, approaching drivers can be warned via in-vehicle navigation providers, who receive alerts from hardware or software that is integrated with responder vehicle emergency lighting. R2V alert technologies are quickly catching on as a way to enhance advance warning, which supports adherence to the Move Over laws and improves safety overall.

Resources

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

[FHWA Traffic Incident Management Site](#)

¹ FHWA. National TIM Responder Training Program. 2017.

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