U.S. Department of Transportation
Federal Highway Administration

Next-Generation Traffic Incident Management: Technology for Saving Lives (NextGen TIM Tech)

TIM Technology Supporting Postcrash Care

Photo Credit: Enforcement Engineering, Inc.

The U.S. Department of Transportation's National Roadway Safety Strategy relies on the Safe System Approach to mitigate risks associated with roadway crashes. Once a crash happens, actions can be taken to care for the injured, protect responding personnel, and prevent secondary crashes.

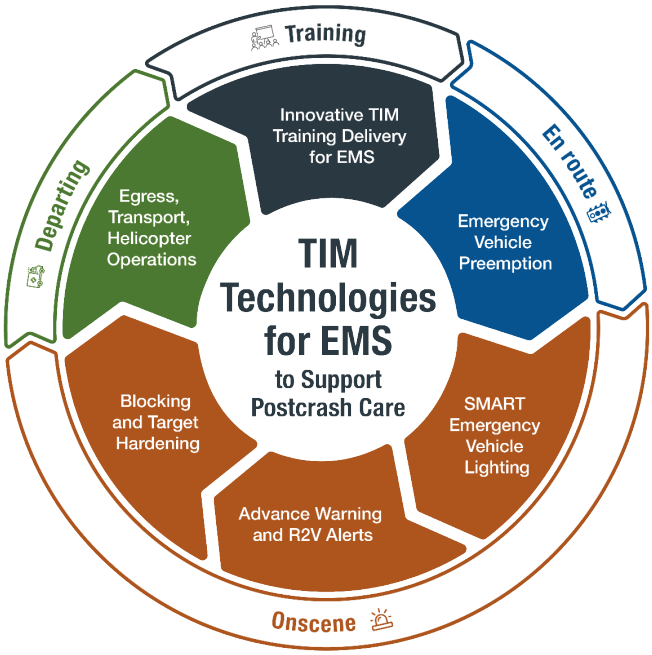
Just as the safe system relies on a holistic approach and multiple layers of protection, the TIM strategy for supporting postcrash care also encompasses multiple facets of expediting care and protecting responders (*figure 1*). Training TIM responders, facilitating safe and fast responses, protecting responders at the scenes, and helping these responders depart safely are the layers that describe TIM technology supporting postcrash care.

TRAINING

Training for responders promotes a shared understanding of the recommended practices for safety at traffic incident scenes. In-person, Web-based, and virtual training are all delivery methods for the National TIM Responder Training Program, which has reached nearly 700,000 TIM responders. Innovative training delivery approaches, like virtual and online courses, help to reach target audiences, such as emergency medical services (EMS), when preparing responders for their roles at incident scenes.

EN ROUTE

Emergency vehicle operation is a dangerous part of the job for public safety agencies like law enforcement, fire, and EMS. Emergency vehicle preemption (EVP) changes traffic signals to provide a green light for the approaching emergency response vehicles, while also giving drivers who may cross their paths a red light.



ONSCENE

A variety of TIM technologies can help make traffic incident scenes safer. The process starts with warning approaching drivers that something ahead warrants their attention. Motorist alerts use mapping and navigation systems that drivers frequently use to warn them of roadway incidents. As the drivers get closer, new smart emergency vehicle lighting technology directs them around the incident without an overload of blinding, bright flashing lights. Channelizing devices that synchronize and light sequentially easily guide drivers into available lanes. In the area immediately around the existing incident, strategically positioned vehicles protect responders by providing a barrier between them and approaching traffic. Employing these TIM technologies at or near the scene helps to create a safer working environment for EMS responders who are occupied with caring for the injured.

Figure 1. Chart. Graphic depiction of TIM aspects of postcrash care. EMS = emergency medical services; R2V = responder to vehicle; TIM = traffic incident management. (Source: Federal Highway Administration.)

DEPARTING

In addition to receiving immediate care provided at the scene of a crash, the survivability of those injured relies on quick access to emergency care at an appropriate level of trauma center. TIM provides a means by which EMS can quickly depart from an incident scene. In addition, TIM technology and training includes medical helicopter operations, an integral part of rural and remote TIM.

BENEFITS

In late 2018, the Georgia Department of Heath mandated the National TIM Responder Training program as a required training course for emergency medical technician recertification in the State. As a result, the number of EMS trained in Georgia went from 638 in January 2019 to 13,891 in October 2023.

The St. Paul Fire Department in Minnesota experienced a 71-percent reduction in emergency vehicle crashes after deploying EVP.[1]

The Grand Prairie Fire Department in Texas outfitted two surplus fire apparatuses with truck-mounted crash attenuators and arrow boards to serve as blocking vehicles at freeway incidents (*figure 2*).

The Pennsylvania Turnpike equipped 158 maintenance and service patrol vehicles with the ability to broadcast electronic emergency alerts, reducing roadside crashes involving roadside agency vehicles from 30 in 2018 to 0 in 2020.[2]

CONCLUSION

Postcrash care seeks to increase the survivability for persons involved in crashes by providing better access to medical care while enhancing the safety of responders. To learn more about *Next-Gen TIM Tech* and technologies that your agency can use to protect motorists and responders after a traffic incident, contact Joe Tebo, Paul Jodoin, or James Austrich, FHWA Office of Operations.

Figure 2. Photo. Surplus fire apparatuses repurposed as blocking vehicles. (Photo Credit: Grand Prairie, Texas, Fire Department.)

[1] Fire Chief, Department of Fire and Safety Services to a City Councilman, St. Paul, MN. 1977. "Emergency Vehicle Accident Study (Year 1977)."

[2] Leiss, Todd. PA Turnpike Commission. November 2021.

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For more information, visit the FHWA EDC7 Next-Generation TIM Web Page

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