



Law Enforcement Officer – Motor Vehicle



REPORT #:L2021-01

REPORT DATE: August 22, 2022

INCIDENT HIGHLIGHTS



DATE:

February 25, 2018



TIME:

6:44 a.m.



VICTIM:

63-year old patrol officer



INDUSTRY/NAICS CODE:

Police Protection/92



LAW ENFORCEMENT AGENCY:

City Police Department; 189 Officers



SAFETY & TRAINING:

19-year veteran with Master Peace Officer Certification



SCENE:

Three lane interstate highway



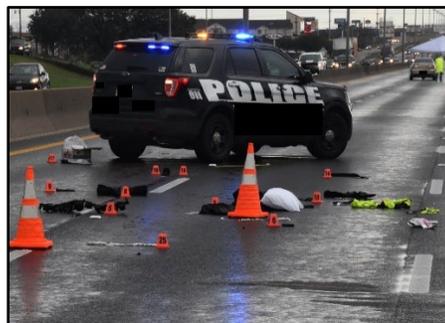
LOCATION:

Texas



EVENT TYPE:

Struck by



Officer Struck While Assisting with Temporary Traffic Control on an Interstate—Texas

SUMMARY

On February 25, 2018, a 63-year-old police officer was struck by a vehicle while directing traffic on a three-lane interstate highway. The officer had responded to a motor vehicle versus pedestrian hit and run fatality on the interstate and was tasked to assist with traffic control. A vehicle that was driven by an individual under the influence of a prescription drug affecting the central nervous system (CNS), traveling at approximately 68 mph, approached the scene, and failed to funnel off the interstate exit lane, striking the officer. The officer was transported to the hospital in serious condition and succumbed to his injuries on April 27, 2018.... [READ THE FULL REPORT> \(p.3\)](#)

CONTRIBUTING FACTORS

Key contributing factors...

- Fire apparatus on scene for initial incident were not utilized for continued scene protection
- Law enforcement officer standing in an area exposed to moving traffic...[LEARN MORE> \(p.8\)](#)

RECOMMENDATIONS

NIOSH investigators concluded that, to help prevent similar occurrences, emergency responders should:

- Position patrol units and other emergency vehicles as they arrive on-scene to maximize the protected work zone for the responders... [LEARN MORE> \(p.8\)](#)

REPORT SLIDES

<https://www.cdc.gov/niosh/topics/leo/pdfs/L202101RS.pdf>

<https://www.cdc.gov/niosh/topics/leo/>





NIOSH Law Enforcement Officer Investigations

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Centers for Disease Control
and Prevention
National Institute for Occupational
Safety and Health



Law Enforcement Officer – Motor Vehicle

SUMMARY

On February 25, 2018, a 63-year-old police officer was struck by a vehicle, while directing traffic on a three-lane interstate highway. The officer had responded to a motor vehicle versus pedestrian hit and run fatality on the interstate and was tasked to assist with traffic control. A vehicle that was driven by an individual under the influence of a prescription drug affecting the central nervous system (CNS), traveling at approximately 68 mph, approached the scene, and failed to funnel off the interstate exit lane, striking the officer. The officer was transported to the hospital in serious condition and succumbed to his injuries on April 27, 2018.

INTRODUCTION

A peace officer¹ from a city police department (PD) was struck by a motorist during a response to a motor vehicle versus pedestrian fatality on an interstate highway ([Photo 1](#)). NIOSH learned of this incident in November 2019. After enlisting the cooperation of the city PD and waiting until the police investigation was closed, a team from the NIOSH Division of Safety Research initiated an investigation on December 3, 2020, that was completed virtually due to the COVID-19 pandemic. The NIOSH Team reviewed records, conducted interviews, and examined other evidence gathered as part of the police crash investigation report. Interviews were conducted with the Crime Scene and Evidence Supervisor, the traffic Sergeant at the time of the incident who was the first to respond, the training administrator for the department, and all first responders to the scene. NIOSH investigators reviewed the officer's training record, incident photographs, the city PD fatal collision report, witness statements, and the PD training academy curriculum. NIOSH also met virtually with the city PD crash reconstruction team and the first responders as part of the NIOSH investigative process.

LAW ENFORCEMENT AGENCY

Approximately 189 sworn officers protect and serve an area with a population of approximately 120,000 citizens. The PD's patrol unit is separated into four sectors, each containing beats (specific areas that police officers patrol). Patrol officers focus closely on specific geographic areas they are assigned.

TRAINING AND EXPERIENCE

According to NIOSH interviews with the training administrator for the department and the Texas Commission on Law Enforcement training mandate guide, all officers are required to graduate from the PD training academy. Additional training requirements vary depending upon the date in which the Officer was first licensed and their specific assignments [[TCOLE 2022](#)].

¹ a civil officer (such as a police officer) whose duty it is to preserve the public peace
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**Photo 1. Photo of the initial motor vehicle-pedestrian scene in the distance.
(Photo courtesy of the city police department)**

OFFICER INFORMATION

The officer (Officer A) that was struck and killed was a 1999 graduate from the PD training academy and had served with the department for 19 years as a peace officer (patrol officer, field training officer, and special weapons and tactics negotiator), and was up to date on all required trainings. The officer also held a bachelor's degree in psychology. At the time of the incident, the officer was wearing soft body armor and a department issued yellow reflective high visibility vest.

ROAD AND WEATHER CONDITIONS

The surface of the interstate roadway was asphalt and assigned a speed limit of 70 mph. The roadway was a 6-lane highway containing 3-lanes each, northbound and southbound, with a single exit lane on the northbound side. The incident occurred on the northbound side.

According to witness statements, weather was light rain with moderate visibility. From archived weather reports, the temperature was approximately 57 degrees Fahrenheit, northeasterly 5-10 mph wind with trace amounts (less than .01" inch) of precipitation and overcast skies. Visibility was reported to be 10 miles [[Weather Underground 2020](#)].



The streetlights along the interstate were not working at the time of the incident, and it is not known why they were not working. However, the lights on the frontage road² were working, and there was ambient light in the area. After the incident, when the investigating officers looked at the line of sight, they determined the driver who struck the officer had clear sight of Officer A's vehicle for approximately 1500 feet. Weather was not considered to be a contributing factor in this incident.

INVESTIGATION

In the early morning of February 25, 2018, at approximately 0527 hours, reports of a male walking along the interstate highway were coming into dispatch. At 0531 hours an officer (Officer C) arrived on scene and observed a body lying in the middle of the highway and reported to dispatch that there was a hit and run fatality. Four additional police officers/patrol units (Officers D, E, F and G) responded to assist with the investigation and close the highway to preserve the crime scene, along with 2 fire apparatuses. The 5 patrol units were positioned diagonally to funnel vehicles traveling northbound from the left-hand lane (Lane 1) to the far right-hand lane (exit lane). This diverted vehicular traffic off the exit onto the northbound frontage road which was across the right shoulder of the highway. Initially, there were 2 fire apparatus positioned diagonally behind the auto-pedestrian scene (where the pedestrian was lying after he was struck). According to the dispatch log, the 2 fire apparatus arrived around 0539 and 0543 hours and cleared the scene at 0551 and 0620 hours once the pedestrian was pronounced dead at the scene. Thirty-four red road flares were used for traffic control and were placed by the officers. The patrol units had their emergency roof-mounted lightbars activated and directional bars operating, flowing from left to right. These further supplemented the orange traffic cones with white reflective bands positioned between the flares and marked patrol units placed by the responding police units. Traffic was diverted off the interstate exit ramp to the frontage road to protect the crime scene and first responders at the scene from vehicular traffic. All officers were wearing their florescent yellow traffic vests with white reflective material.

At approximately 0603 hours, two additional officers (Officer A and Officer B) (assigned to relieve two of the night shift officers) arrived on scene and began coordinating their vehicle positions. Officer A and Officer B were to relieve Officers F and G who were located furthest south of the initial auto-pedestrian incident. Once Officer A was set in lane 1 (furthest south, approximately 1 mile south of the initial auto-pedestrian collision), he deployed additional flares south of his patrol vehicle and then relieved Officer G from that location.

At approximately 0641 hours, Officer D, whose patrol unit was in lane 3 (closest to the exit) was standing in lane 2 with Officer E. The officers were observing the moderate traffic flow and ensuring traffic was complying and exiting the roadway so the initial incident scene just to the north of their position could be processed safely. While looking south, the officers observed a passenger car pull into lane 2 past the emergency vehicles, over the road flares and cones to the south of where they were standing and come to a stop ([Photo 2](#)). The officers thought the passenger vehicle might have had mechanical trouble and needed to get out of the traffic in the exit lane. As the officers turned to look away from the vehicle, another vehicle passed them in the exit lane with a passenger hanging out of the window, yelling, and flailing his arms. The passenger advised Officer D and E that another officer (Officer A) had been struck to the south of their position ([Photo 3](#)).

² a local street that parallels an expressway or through street and that provides access to property near the expressway—also called a service road.



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According to the police investigation, the driver who struck Officer A stated he was on his way back from out of town and as he approached the portion of the highway where the police vehicles were diverting traffic, he “saw an officer (Officer A) waving his flashlight with a cone to change his direction of travel.” The driver stated he could not react fast enough and struck “something” before coming to a stop approximately 100 yards beyond the point of contact. According to the police report, the driver stated that prior to the incident, he believed he was driving approximately 65 miles per hour and had shut off the cruise control in his vehicle just prior to the incident. The vehicle struck a cone prior to coming into contact with the officer. The passenger mirror was missing after impact with the officer and there was visible damage to the windshield. In addition, there was material from the officer’s vest transferred onto the passenger side “A” pillar³ of the car (front passenger side near the front windshield).

A doctor from a nearby medical center who was in the line of traffic witnessed the incident and began attending to Officer A while waiting on EMS to arrive. After EMS arrived on scene, Officer A was transported to a nearby hospital in serious condition and later succumbed to his injuries on April 27, 2018. After conducting the investigation and analyzing the GPS data, the investigating officers determined the vehicle striking the officer was traveling approximately 68 mph.

The officers conducted their investigation and determined that the driver of the vehicle that struck Officer A was operating a motor vehicle while under the influence of an improper dose of a medically prescribed CNS depressant and he was placed under arrest.

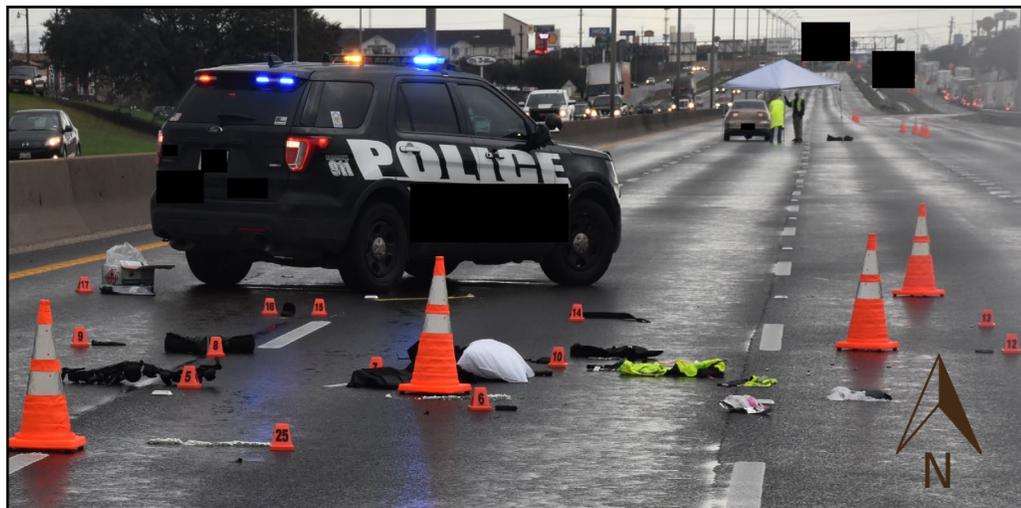


Photo 2. Photo of the scene with Officer A’s patrol unit in Lane 1-2 and the vehicle that struck him in lane 2 in the distance.
(Photo courtesy of the city Police Department.)

³ On a car, pillars are the parts that connect to the roof to the body. The A-pillars are on either side of the front windshield, the B-pillars are behind the front doors, and the C-pillars are on either side of the rear window.

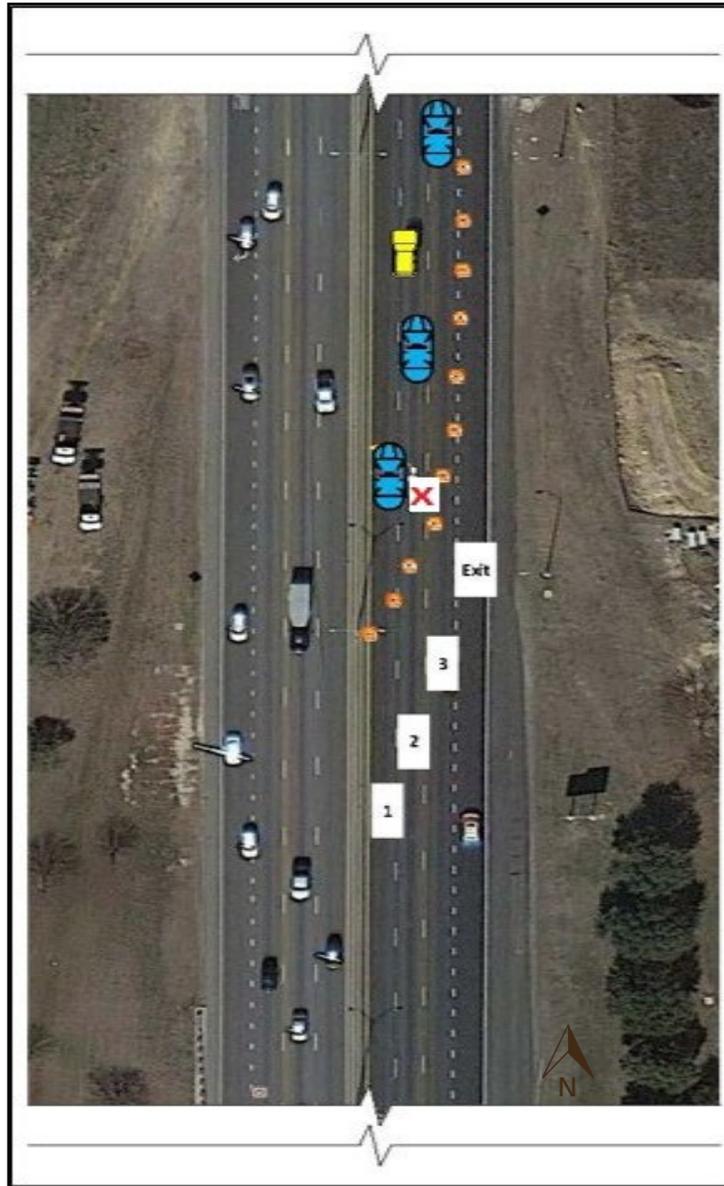


Photo 3. Photo of the scene displaying lane numbers as well as approximate location of Officer A (red “x”) when he was struck and the approximate stopping location of the motor vehicle (yellow) that struck the officer in the distance. (Not to scale or exact placement of cones and vehicles)

(Photo courtesy of the city Police Department. Labels added by NIOSH FACE)



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CAUSE OF DEATH

A Texas medical examiner recorded the cause of death as complications from blunt trauma.

CONTRIBUTING FACTORS

Occupational injuries and fatalities are often the result of one or more contributing factors or key events in a larger sequence of events that ultimately result in the injury or fatality. NIOSH investigators identified the following unrecognized hazards as key contributing factors in this incident:

- *Fire apparatus on scene for initial incident were not utilized for continued scene protection*
- *Law enforcement officer standing in an area exposed to moving traffic*
- *Impaired driver not following traffic patterns requiring heightened situational awareness*

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Emergency responders should position patrol units and other emergency vehicles as they arrive on-scene to maximize the protected work zone for the emergency responders.

Discussion: When dealing with incidents on highways, there are many challenges, such as apparatus and vehicle placement, effectiveness, and emergency responder safety. Regardless of which emergency responder arrives at the scene first, the responder has three primary aims when determining where to park their vehicle: reducing the chance of the vehicle being struck by oncoming traffic, shielding emergency responders from oncoming traffic, and allowing for effective use of equipment and resources to handle the incident [[UFSA 2014](#)]. The coverage protection is maximized with the positioning of additional patrol units and other responding vehicles as they arrive; vehicles may need to be repositioned as the response continues. The largest vehicle should be used as the initial blocking vehicle.

At the time of the incident, police department policy allowed for the fire department and their associated apparatus to terminate their participation in the response once the police units had fully established a traffic control pattern and exerted full control of the scene. The fire department's role was to help with traffic control and provide first aid and fire control. After this fatal incident, the police department modified their standard operating procedure (SOP) to automatically dispatch two fire apparatus to injury incidents or possible injury incidents on any high speed roadway. The updated SOP requires the fire department and their associated apparatus to remain on scene until the roadway is clear or the vehicles are able to move to a safe location (e.g. off the highway or on a wide shoulder).

The following recommendations appear in the U. S. Fire Administration's Emergency Vehicle Safety Initiative [[USFA 2014](#)].

- *Place emergency vehicles between the flow of traffic and the personnel working on the incident to act as a shield.*
- *Turn front wheels away from the working responders so the apparatus (vehicle) is not driven into them if struck from behind.*
- *Consider parking additional emergency vehicles 150 to 200 feet behind the shielding vehicles to act as additional barriers between responders and the flow of traffic.*
- *Park all fire apparatus at an angle so the tailboard protects the driver from traffic.*



- *Position ambulances in a manner that protects the patient loading area from approaching traffic.*
- *Position law enforcement vehicles so they provide a barrier and visual warning between oncoming traffic and the incident work zone*

One of the first priorities is to prevent further incidents at the scene by positioning patrol units to provide protection for everyone involved and to warn motorists of the crash. Officers should use appropriate emergency lighting and consider the effects of emergency vehicle lighting on drivers to consider the terrain, visibility and overall configuration of the incident scene when positioning response vehicles to protect the scene [ERSI 2021]. Additionally, responders should locate themselves in the most protected space possible that allows them to accomplish the tasks they need to perform. If officers do not need to be near the traffic, they should be as far away as possible. Officers should not lose sight of their own safety by standing between vehicles or turning their back to traffic [Law Enforcement Exploring 2010].

Even when a large apparatus with active warning lights is blocking a scene, civilian vehicles can still strike the apparatus and endanger the responders. It is important to keep in mind that until traffic has been stopped upstream, responders are vulnerable.

Recommendation #2: Law enforcement agencies should ensure their standard operating procedure (SOP) provides step-by-step guidance on how to properly establish a temporary traffic control plan, including advance warning and transition areas for highway/roadway emergency incidents.

Discussion: Ensuring the standard operating procedure includes step-by-step guidance on traffic incident management can improve the safety of emergency responders. The National Fire Protection Association (NFPA) develops voluntary standards and recommended practices that can be adopted by any agency or organization. NFPA 1091 Standard for Traffic Control Incident Management Personnel Professional Qualifications (2015 Edition) can be applied by anyone who performs Temporary Traffic Control (TTC) duties at incident scenes, regardless of the agency to which the individual belongs. The standard was developed in response to the need to mitigate risks for all responders and specifies the minimum Job Performance Requirements (JPR) for Traffic Control Incident Management Personnel (TCIMP).

Temporary traffic control at incident scenes is not uniformly taught across all responder disciplines, and in some cases, it is not formally taught at all. The NFPA 1091 standard establishes the job performance requirements and training criteria for all persons involved in TTC at incident scenes. Adopting a common protocol across agencies enables responders to work together and reduces confusion at the incident. To be qualified as a TCIMP, the responder must meet each of the nine JPRs as described in Chapter 4. Each JPR contains a description of the responsibility, as well as a requisite knowledge and skills section.

The nine JPRs include:

- Size up incident and establish command.
- Position vehicle to provide a Traffic Incident Management Area (TIMA) (Diagram 1).
- Establish the TIMA.
- Establish advance warning.
- Operate as a member of a team within a TIMA using unified command.



- Manage noninvolved persons.
- Monitor and adjust TTC to address problems or changing conditions.
- Adapt the TIMA in response to the hazard.
- Perform demobilization functions [NFPA 2015].

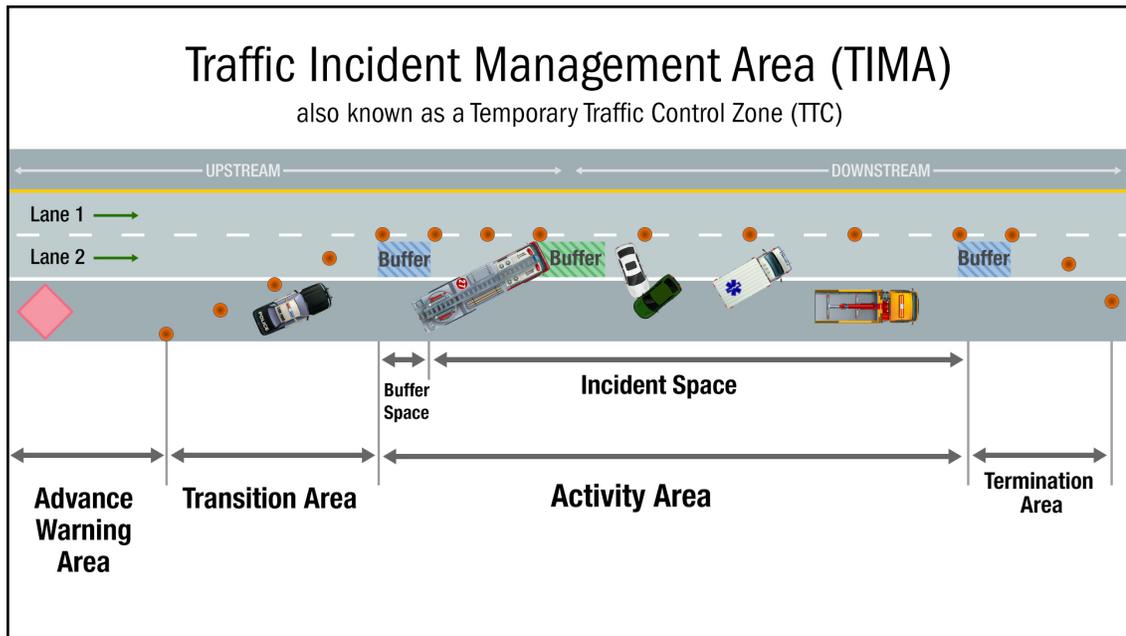


Diagram 1. Traffic Incident Management Area (TIMA)
Temporary Traffic Control Zone example.

Source: Emergency Responder Safety Institute: Responder Safety [ERSI 2022].

The standard also stresses the importance of reinforcing the training; Section 1.2.6 states that TCIMP “shall remain current with general knowledge and skills and job performance requirements addressed for the level of qualification” [NFPA 2015]. Additionally, the Traffic Incident Management (TIM) Handbook contains detailed information to assist law enforcement agencies in creating policies and is based on The Manual on Uniform Traffic Control Devices (MUTCD) [FHWA 2010]. The MUTCD contains the standards for traffic control devices and direction for temporary traffic control (TTC) that is used to protect emergency responders, victims, and others at the incident scene. The MUTCD defines a TIMA as “an area of a highway where temporary traffic controls are installed, as authorized by a public authority or the official having jurisdiction of the roadway, in response to a road user incident, natural disaster, hazardous material spill, or other unplanned incident” [FHWA 2009]. In addition, “it is a type of TTC zone and extends from the first warning device (such as a sign, light, or cone) to the last TTC device or to a point where vehicles return to the original lane alignment and are clear of the incident” [FHWA 2009].



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Each TTC zone is different, depending upon:

- type of work
- duration
- location
- type of highway/roadway
- lay of the land
- lighting
- weather

The TIM handbook suggests forming a multiagency team of all emergency responders and coordinating incident response efforts [[FHWA 2010](#)]. Joint in-person TIM training provides an opportunity to identify potentially conflicting procedures and come to consensus on response protocols. The discussions can lead to formalized TIM policies and procedures among responder agencies and outline expectations.

Typical Applications (TA) for common situations can be found in Chapter 6H of the Manual on Uniform Traffic Control Devices (MUTCD); however, these activities and applications do not cover every possible situation and should be modified as needed. Establishing TTC zones varies with road configuration, location of the work, work activity, duration of work, road user volumes, road vehicle mix (buses, trucks, cars, motorcycles, and bicycles), and driver speed. Chapter 6H also contains formulas for determining taper lengths and sign spacing [[FHWA 2009](#)].

Each TA provides information as well as a diagram of the applicable TTC zone description. Features from more than one TA can be combined or adapted to create a TTC zone. TA-37 Double Lane Closure on a Freeway states: “An arrow board shall be used when a freeway lane is closed. When more than one freeway lane is closed, a separate arrow board shall be used for each closed lane.”

The following additional guidance is provided in TA-37:

Ordinarily, the preferred position for the second arrow board is in the closed exterior lane at the upstream end of the second merging taper. However, the second arrow board should be placed in the closed interior lane at the downstream end of the second merging taper in the following situations:

- *When a shadow vehicle is used in the interior closed lane and the second arrow board is mounted on the shadow vehicle.*
- *If alignment or other conditions create any confusion as to which lane is closed by the second arrow board.*
- *When the first arrow board is placed in the closed exterior lane at the downstream end of the first merging taper (the alternative position when the shoulder is narrow) [[FHWA 2009](#)].”*

Chapter 6I “Control of Traffic through Traffic Incident Management Areas” provides guidance on the recommended size of a TIMA, depending upon road configuration, vehicle speed, and weather conditions. The purpose of temporary traffic control at a TIMA is to alert motorists to the incident, divert the traffic away from the incident area, and protect emergency responders as well as others in the area. The TIMA begins where the motorist is first warned of an upcoming



incident and is dependent on traffic speed, expected behaviors and reactions of the motorist, weather, and roadway/highway conditions [FHWA 2010]. TIM has been shown to reduce both overall incident duration as well as secondary crashes. It is estimated that the likelihood of a secondary crash increases by 2.8 percent for every minute that the primary incident remains a hazard [FHWA 2010].

Incidents are divided into three general classes according to the duration: major, intermediate, and minor. Each class has unique traffic control characteristics and needs. MUTCD defines these durations as:

- *Major traffic incidents are typically traffic incidents involving hazardous materials, fatal traffic crashes involving numerous vehicles, and other natural or man-made disasters. These traffic incidents typically involve closing all or part of a roadway facility for a period exceeding 2 hours.*
- *Intermediate traffic incidents typically affect travel lanes for a time period of 30 minutes to 2 hours, and usually require traffic control on the scene to divert road users past the blockage. Full roadway closures might be needed for short periods during traffic incident clearance to allow traffic incident responders to accomplish their tasks.*
- *Minor traffic incidents are typically disabled vehicles and minor crashes that result in lane closures of less than 30 minutes. On-scene responders are typically law enforcement and towing companies, and occasionally highway agency service patrol vehicles” [FHWA 2010].*

First responders should evaluate the incident scene and deploy the proper TTC zone, paying special attention to the upstream traffic and the decision sight distance of drivers. The decision sight distance is the distance a driver needs to become aware of something unexpected or a hazard in a roadway, recognize the hazard, develop a plan to respond—such as an appropriate speed and path—and then safely complete an action [Transportation Research Institute 1997]. MUTCD recommends the following formula for determining taper length: “L” is the taper length in feet; “W” is the width of offset in feet; and “S” is the posted speed limit, or the anticipated operating speed in mph, or the off peak 85th-percentile speed prior to work starting (see Table) [FHWA 2009]. Diagram 2 is an example of temporary traffic control tapered lane closure that is recommended by MUTCD to be used for highway/roadway emergency incidents [WisDOT 2014].

Table. MUTCD formula for determining taper length.

Speed (S)	Taper Length (L) in feet
40 mph or less	$L = WS^2 / 60$
45 mph or more	$L = WS$

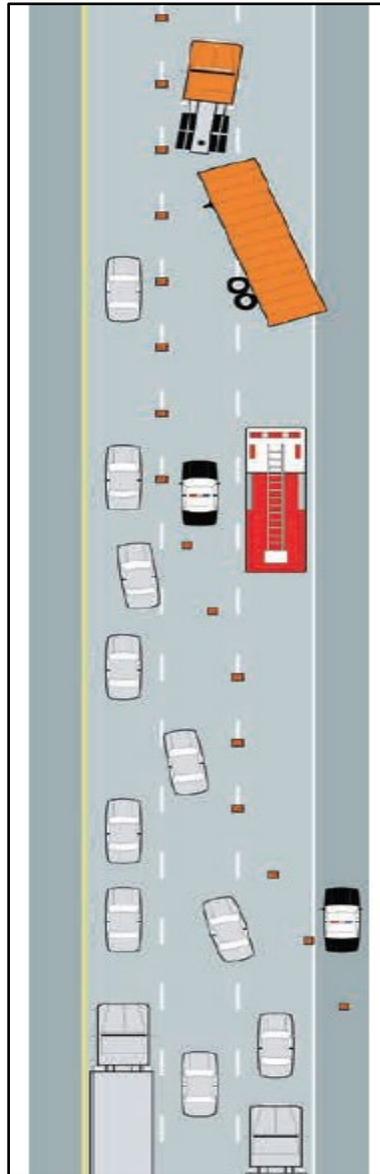


Diagram 2. Example of temporary traffic control tapered lane closure for highway/roadway emergency incidents.
(Source: Wisconsin Department of Transportation Emergency Traffic Control and Scene Management Guidelines [[WisDOT 2014](#)])



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Studies have estimated brake reaction times for specific situations. Driving-related variables such as expectancy (driver being alert to dangers or being informed in plenty of time of traffic changes ahead), driver’s age, and cognitive load were considered in estimating the time from the motorist’s perception to brake reaction. Expectancy has the greatest effect; a surprised motorist takes longer to brake [Green 2013]. A motorist’s brake reaction time is slower when cognitive load is high. For example, winding or complex roadways, looking at in-car displays, and cell phone use all increase a motorist’s cognitive load. The higher the speed, the less time a motorist has to make a decision, and the greater the need for more advanced warning. According to the TIM Handbook, on a high-speed roadway, the distance, in feet, for placing the first advanced warning should be computed by multiplying the speed limit 8–12 times, with the greater range preferred when practical. On an open roadway/highway it should extend 1,500 feet or more. [FHWA 2010].

Recommendation #3: Law enforcement officers and other emergency responders should maintain situational awareness within the established temporary traffic control zone to ensure they minimize their exposure to oncoming traffic.

Discussion: Situational awareness involves being aware of one’s surroundings and identifying potential threats or dangerous conditions that can occur around you. It is important for all law enforcement officers and other emergency responders to maintain and practice good situational awareness throughout an operation, especially at highway/roadway incidents. This will better protect themselves and those around them. A crash scene is a dynamic situation and can change in seconds; a threat can come from any direction, exposing the officer or other emergency responders to 360° vulnerability. Not having the capability to apply or manage situational awareness can create more problems for the officers and others present at the scene. Dr. Rich Gasaway states: “Once the initial size up is complete and you decide on your action plan, it is very easy to move right into the implementation of your plan without giving thought to outcome of the plan first. When you force yourself to think about the outcome, it causes you to think through the steps to achieve the plan and you may be able to see where your plan might go awry before you start down that path” [Gasaway 2016].

Continuous assessments of a scene are necessary to keep the scene as safe as possible, identify safety factors that should be considered, and adjust the traffic management system accordingly. Three phases or processes are necessary to achieve situational awareness—perception of the elements in the environment, understanding of the current situation, and predicting future actions of the elements in the environment [Endsley 1995].

According to The Emergency Responder Safety Institute (ERSI), training is the first line of defense. ERSI recommends training all emergency response personnel to “work under the premise of if it’s moving, and you’re not driving it, it is out to kill you” [Emergency Responder Safety Institute 2009]. All responders should understand and appreciate the risks they are exposed to when operating in or around moving vehicles. Many variants can influence approaching vehicles, such as:

- *Speed—can be very slow or exceeding the speed limit.*
- *Operators—can be vision impaired, under the influence of drugs or alcohol, distracted, or have a medical condition that affects their judgment or abilities.*
- *Weather—snow, rain, or other inclement weather.*
- *Time of day—darkness reduces visibility and reaction time; sunlight can obscure visibility.*
- *Visual obstructions—lay of the land, buildings.*



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One of the most complex aspects of situational awareness development is being able to predict the future. Given the list of potential contributing factors above, the potential for a highway incident becomes highly probable. Emergency responders should be mindful and vigilant when on the roadway. At any given time, there are many drivers affected by the list of contributors that result in responder-victim roadway incidents [[SAMatters 2021](#)].

Recommendation #4: State, county, and municipal agencies responding to roadway incidents are encouraged to use and practice the National Incident Management System (NIMS) Incident Command System (ICS) to guide the shift change process during emergency events.

Discussion: Although it was not identified to be a contributing factor for this incident, use of an ICS promotes orderly incident response actions and management. In prolonged incidents, ICS addresses the steps that must be taken when a change in command or responding personnel is required. In 2004, the National Cooperative Highway Research Program (NCHRP) published Report 520, “Sharing Information Between Public Safety and Transportation Agencies for Traffic Incident Management.” The U.S. Fire Administration published Traffic Incident Management Systems, FA-330/March 2012. Recommendations from both reports include developing a formalized Traffic Incident Management (TIM) information-sharing method between public safety and transportation agencies. State, county, and municipal response agencies should meet regularly to discuss and practice information sharing. During incidents, ICS-based tactical sheets should be used for information sharing purposes. When necessary, transfer of command should follow a predetermined ICS-based procedure. The Federal Emergency Management Agency (FEMA) suggests the following to transfer command with minimal disruption:

- *The transfer should take place face-to-face*
- *Include a complete briefing that captures essential information for continuing safe and effective operations*
- *The effective time and date of the transfer of command should be communicated to all personnel involved in the incident [[USFA 2012](#)].*

The transfer of command briefing should include the following:

- *Situation status*
- *Incident objectives and priorities (Incident Action Plan)*
- *Current organization*
- *Resource assignments*
- *Resources in route and/or ordered*
- *Facilities established*
- *Communications plan*
- *Prognosis, concerns, and related issues*
- *Introduction of Command Staff and General Staff [[USFA 2012](#)]*



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Recommendation #5: State, county, and municipal authorities should consider promoting public awareness campaigns to inform motorists of the risks that law enforcement officers face while operating along the roadside and of the need to follow “Move Over” laws.

Discussion: In 2007, the National Safety Commission, the National Sheriffs' Association, and the National Association of Police Organizations established Move Over America, the first nationally coordinated effort to educate Americans about "Move Over" laws. All 50 states have some form of law that requires motorists to move over and/or slow down when approaching stationary emergency vehicles displaying flashing lights. Most states include tow trucks, wreckers, highway maintenance, and recovery vehicles in the list to which this law applies. Some states also instruct drivers to slow down to a speed safe for weather, road, and traffic conditions. Other states are more specific. For example, in Texas or Wyoming on a highway with a speed limit 25 mph or greater, the driver must slow by at least 20 mph below the posted speed limit, and if the speed limit is 20 mph or less, the driver must slow to 5 mph [[NSC 2015](#)].

In 2003, the Texas Move Over/Slow Down law went into effect, requiring all Texas drivers to move one lane over, if possible, when approaching an emergency vehicle parked on the shoulder with warning lights in operation. If moving over isn't practical or possible, drivers must slow down to at least 20 miles per hour below the posted speed limit [[GVEC 2020](#)].

One of the more potentially hazardous actions law enforcement officers often must do during their shift is getting out of their patrol unit while parked on the side of a roadway. Being struck and killed is a major cause of law enforcement deaths [[NIOSH 2021](#)]. The purpose of the Move Over Law is to protect law enforcement officers and other workers from being hit by passing vehicles [[NSC 2015](#)]. Failure of motorists to move over remains a significant concern for the safety of officers and emergency responders; therefore, a continual public awareness campaign to educate the public and promote the "Move Over" laws should be considered. Public service announcements, billboards, and handouts are all methods used by states to promote "Move Over" laws.

In this incident, temporary traffic control devices, emergency vehicles with activated directional lighting, along with cones and flares, were positioned to funnel vehicles traveling north bound on the three-lane interstate off the right exit lane. Public awareness campaigns to educate drivers on the dangers faced by emergency responders when assisting at traffic incidents and the need to move over could have an impact and potentially decrease the risk for law enforcement officers and other emergency responders being struck by motorists.

Free resources are available, including those found at:

[Emergency Responder Safety Institute](#)
[Move Over America](#)

Recommendation #6: State, county, and municipal authorities should consider promoting public awareness campaigns to educate motorists of the limitations that substances and/or medications may impose on safe operation of motor vehicles and the dangers that impaired driving imposes on motorists and others.

Discussion: Several commonly used prescription and over-the-counter medications are known, or have the potential, to have an adverse effect on driving performance. In this case, one of these medications prescribed to the driver of the



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vehicle that struck officer A was a CNS depressant. Prescribed CNS depressants are medicines that include sedatives, tranquilizers, and hypnotics. These drugs can slow brain activity, making them useful for treating anxiety, panic, acute stress reactions, and sleep disorders [[NIDA 2018](#)]. These medications are known to have mild analgesic effects and cause respiratory depression, especially when taken in large amounts. The types of medicines usually have warning labels on bottles indicating the potential for drowsiness and advising against operation of machinery.

Driving while impaired by any substance can be deadly. We know a lot about alcohol's effects on driving but, we need more research to fully understand the impacts of drug use on crash injuries and deaths. One research challenge is distinguishing between presence of drugs and impairment by drugs in the body [[CDC 2020](#)].

Most prescribed CNS depressants act on the brain by increasing activity of gamma-aminobutyric acid (GABA), a chemical that slows brain activity. This action causes the drowsy and calming effects that make the medicine effective for anxiety and sleep disorders. People who start taking prescribed CNS depressants usually feel sleepy and uncoordinated for the first few days until the body adjusts to the medication. Other potential effects from the use of prescribed CNS depressants that could impact driving can include:

- slurred speech
- poor concentration
- confusion
- headache
- light-headedness
- dizziness
- problems with movement and memory
- slowed breathing [[NIDA 2018](#)]

Those who drive under the influence of drugs, whether obtained legally or illegally, pose a danger to themselves, their passengers, and other road users. Thus, there is a need for more public awareness campaigns, such as the National Highway Traffic Safety Administration's (NHTSA) "[If You Feel Different, You Drive Different](#)" campaign, to educate Americans about the dangers of driving while impaired by drugs, and to promote safer choices. Each year the NHTSA teams up with law enforcement to promote this campaign ad to remind drivers that drug-impaired driving isn't a mistake; it's a crime.

To enhance awareness, public officials should team up with agencies such as the NHTSA to help educate Americans about the dangers while driving under the influence of any substance that could impair their reaction time, perception, and judgement. Examples of education materials could include increased signage and greater public service announcements. NHTSA is determined to put an end to impaired driving — to save lives. Remember: Impairment is impairment, no matter the substance [[NHTSA 2021](#)].



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REFERENCES

- CDC [2020]. [Drug Impaired Driving Fact Sheet](#). Atlanta, GA: Centers for Disease Control and Prevention: Transportation Safety.
- Emergency Responder Safety Institute [2022]. [Traffic Incident Management Area \(TIMA\) Diagram](#). Harrisburg, PA: Accessed May 2022.
- Emergency Responder Safety Institute [2021]. [Effects of Emergency Vehicle Lighting Characteristics on Driver Perception and Behavior](#). Harrisburg, PA: Study Report, Accessed: May 2022.
- Emergency Responder Safety Institute [2009]. [Protecting the Emergency Responders on the Highways, a Ten Year Review](#). Berkeley Springs, WV: Cumberland Valley Volunteer Firemen's Association
- Endsley MR [1995]. [Toward a Theory of Situation Awareness in Dynamic Systems](#). Human Factors 37:32–64.
- FHWA [2009]. [Temporary Traffic Control, part 6](#). In: Manual on uniform traffic control devices for streets and highways. Washington, DC: U.S. Department of Transportation, Federal Highway Administration.
- FHWA [2010]. [Traffic Incident Management Handbook](#). Washington, DC: U.S. Department of Transportation, Federal Highway Administration.
- Gasaway R [2016]. [Enhancing the OODA Loop](#). SAMatters.com.
- GVEC [2020]. [The Texas Move Over Slow Down Law Gets Extended](#). News & Announcements, The GVEC Review. February 2020.
- Law Enforcement Exploring [2010]. [Traffic Accident Study Guide 2010](#): Section 6 accident scene procedures.
- NFPA [2015]. NFPA 1091 Standard for traffic control incident management professional qualifications. Quincy, MA: National Fire Protection Association.
- NHTSA [2021]. [Drug-Impaired Driving | NHTSA](#). Washington, DC: National Highway Traffic Safety Administration.
- NIDA [2018]. [Drug Facts: Prescription CNS Depressants](#). Bethesda, MD: National Institute of Health.
- NIOSH [2021]. [Law Enforcement Officer Motor Vehicle Safety](#): Atlanta, GA: Centers for Disease Control and Prevention
- NSC [2015]. [Move over America](#). Jacksonville, FL: National Safety Commission.
- SAMatters [2021]. [Situational Awareness on the Roadway - Situational Awareness Matters!](#) SAMatters.com
- TCOLE [2022]. [Training Requirements - Texas Commission on Law Enforcement](#)
- Transportation Research Institute [1997]. [Stopping Site Distance and Decision Sight Distance](#). Corvallis, Oregon: Oregon State University, Transportation Research Institute.



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USFA [2012]. [Traffic Incident Management Systems](#) - FA-330/March 2012. Emmitsburg, MD: U.S. Federal Emergency Management Agency, U.S. Fire Administration.

USFA [2014]. [Emergency Vehicle Safety Initiative](#). Chapter 8 roadway incident scene management. Emmitsburg, MD: U.S. Federal Emergency Management Agency, U.S. Fire Administration.

Weather Underground [2021]. [Weather History for Austin, TX – February 2018](#). Atlanta, GA: The Weather Channel Interactive, Inc.

WisDOT [2014]. [Emergency Traffic Control and Scene Management Guidelines](#). Madison, WI: Wisconsin Department of Transportation.

ADDITIONAL RESOURCES

[Basic Incident Command – IS-200 -Transfer of Command](#)

[Emergency Responder Safety Institute – Cumberland Valley Volunteer Firemen’s Association: Highway Incident Safety and MUTCD Guidelines for Emergency Responders](#)

[Emergency Responder Safety Institute – Hardening Blocking Vehicles for Traffic Incidents and Planned Special Events – Report of Workshop Proceedings](#)

[Emergency Responder Institute – Slow Down and Move Over Video – Responder Safety](#)

[FEMA U.S. Fire Administration Traffic Incident Management Systems](#)

[Move Over America](#)

[National Incident Management System - Guideline for Mutual Aid](#)

[Responder Safety – Starting and Sustaining a TIM Committee](#)

[Responder Safety – Understanding NFPA 1091](#)

[USDA Incident Command System 200](#)

INVESTIGATOR INFORMATION

This incident was investigated by LCDR Melanie Fowler, Environmental Health Officer, Nancy Romano, Safety and Occupational Health Specialist, and Jennifer E. Lincoln, Health Scientist Fatality Investigations Team of the Surveillance and Field Investigations Branch, Division of Safety Research, NIOSH, located in Morgantown, West Virginia. This report was coauthored by LCDR Melanie L. Fowler, Nancy Romano, Jennifer E. Lincoln, and Stephanie Kraynak. An expert subject matter review was conducted by Todd Leiss, Assistant Director of Training, Emergency Responder Safety Institute.



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