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MEMORANDUM

DATE: August 1, 2016

TO: Brian Kischnick, City Manager

FROM: Gary G. Mayer, Chief of Police

RE: Traffic Management / SOCCIT

The following memo and article relate to Traffic Management and the Southeast Oakland County Crash Investigation Team (SOCCIT). I am proud of this exemplary team and wanted to share it with City Management.

DATE: July 29, 2016

TO: Chief Gary Mayer

FROM: Sergeants Rick Leonard (AHPD) and Michael Szuminski (TPD)

RE: 'The Police Chief' magazine article on Traffic Management / SOCCIT

The effort of our multi-jurisdictional crash investigation team has been recognized on a national level. The SOCCIT team is currently featured in an article published in the July 2016 issue of The Police Chief Magazine.

Since its inception in November of 2010, the SOCCIT team has had at its core mission the concept of efficiency. The team was founded to pool resources and quickly investigate serious crashes on the roadways of the affected communities, at the same time reducing the overtime burden that frequently is associated with such investigations. We set a goal to investigate crashes efficiently using the best practices in traffic incident management. Since the beginning we have tracked our efforts and reported them annually to the Chiefs of the involved Departments. We believe that we have met these goals and have documented our work well enough to empirically prove that we have met these goals. We have presented programs on the team operations at the Michigan Traffic Safety Summit as well as the Michigan Chiefs of Police Winter Conference. Now we are proud to report that our efforts have been recognized in law enforcement's premier leadership publication.

We have attached the article which was written by Daniel W Gerard, Director of Operations for the University of Cincinnati's Institute of Crime Science. Over the six (6) years the team has been active, we have partnered with several agencies to assist us. One of those important partners is Annjanette Kremer. Ms. Kremer is an engineer with MDOT, she is the State's lead on Traffic Incident Management initiatives. She has been a strong ally and supporter of SOCCIT and it is through her that Mr. Gerard heard of our efforts. Mr. Gerard requested our team protocol documents and copies of our annual

reports. The SOCCIT team's 2015 annual report was used as a reference document for Mr. Gerard's article.

The success of this program has involved a lot of hard work on many fronts. This success would not have been possible without the unwavering support of the Chiefs of the four Departments and their command staffs. Nor would it been possible without the hard work of the members who respond to and investigate these crashes, frequently responding from home. This high quality work is ongoing and the team remains ready to respond when needed. While this article serves as validation of our work product, we will continue to strive to be at the forefront of efficiency and traffic incident management.

The PoliceChief
The Professional Voice of Law Enforcement
July 2016

Best Practices in Traffic Incident Management

Daniel W. Gerard, MS, Director of Operations, University of Cincinnati's Institute of Crime Science, and Captain (Ret.), Cincinnati, Ohio, Police Department

No one enjoys sitting in traffic, yet millions of people do so on their daily commutes, wasting both time and money. In the 2015 Urban Mobility Scorecard, the Texas A&M University Transportation Institute (TTI) found that, in 2014, U.S. citizens spent an extra 6.9 billion hours on roadways and consumed an extra 3.1 billion gallons of fuel during this additional travel time, solely due to traffic congestion, resulting in an extra cost of $160 billion dollars. This is an average extra expenditure of $960 per year for each person in the United States who commutes via motor vehicle. During peak travel times, in order to ensure timely arrival at their destinations, commuters had to allow an average of 48 minutes' travel time for trips that would take only 20 minutes in non-peak traffic. This amounts to an average of 42 hours of additional annual roadway time for the typical daily commuter.[1]

As shocking as these numbers are, they are projected to get worse. The same TTI study also found that in 2013–2014, 95 of the United States' 100 largest metropolitan areas saw increased traffic congestion, up from only 61 metropolitan areas in 2012–2013. Only 59 percent of the traffic congestion occurred during peak travel hours, commonly thought of as the hours in which one commutes to and from work; 41 percent of the daily congestion occurred during non-peak hours, including the overnight hours. By 2020, TTI estimates annual travel delays will increase to 8.3 billion hours and extra fuel consumption to 3.8 billion gallons, resulting in an average annual cost of $1,100 and 47 additional hours of travel time for each daily commuter.[2]

Aside from the economic costs to drivers, every year numerous law enforcement officers, firefighters, emergency medical personnel, transportation workers, tow truck operators, and members of the public are killed or seriously injured in secondary traffic crashes directly related to traffic congestion. A 1999 study of secondary crash causes, found the likelihood of a secondary crash increases by 2.8 percent for each minute the primary incident remains a roadway hazard.[3] The longer a traffic incident remains on the roadway, the higher the risk of either injury or fatality to first responders and to the motoring public from a secondary crash.

Traffic Incident Management

The Federal Highway Administration (FHWA) defines Traffic Incident Management (TIM) as

> *TIM consists of a planned and coordinated multi-disciplinary process to detect, respond to, and clear traffic incidents so that traffic flow may be restored as safely and quickly as possible. Effective TIM reduces the duration and impacts of traffic incidents and improves the safety of motorists, crash victims and emergency responders.*[4]

Recognizing the significance of both the human and economic costs associated with traffic congestion and traffic crash–related incidents, the International Association of Chiefs of Police Highway Safety Committee and Traffic Incident Management Subcommittee, along with numerous international, national, state, and local public and private partners, have worked for several years to address issues surrounding both traffic crashes and congestion and traffic incident response. As part of their work in this area, they have identified best practices in the following areas: strategic TIM planning; use of multi-jurisdictional TIM teams; and cross-functional TIM training and information sharing for those entities involved in TIM response.

The successful programs and strategies highlighted below have all been proven to both save lives and reduce costs. They can easily serve as a blueprint for those jurisdictions that wish to improve their response in the area of TIM as they align with the FHWA's following vision for TIM:

> *Through continuous and enhanced planning and training of all TIM personnel:*

1. *Reduce or eliminate responder and motorist injuries and fatalities*
2. *Promote rapid incident clearance, thereby reducing traffic congestion and vulnerability*
3. *Develop or enhance local TIM Programs that ultimately benefit corridors, regions, and states*
4. *Measure performance that demonstrates improved TIM responses and programs over time*
5. *Emphasize TIM as a system operations "core mission" for all responders*[5]

Strategic TIM Planning

Similar to the Scanning, Analysis, Response Assessment (SARA) police problem-solving model, a good strategic plan clearly lays out a vision for what needs to be accomplished and why it is a problem (problem identification and analysis); how the participants are going to accomplish it (problem response and strategy implementation); who is responsible for task completion (accountability and clear ownership); and what is expected to be gained from implementing the strategy (anticipated results). A successful strategic plan also includes the ability to allow those persons directly involved in the implementation to engage in an ongoing assessment of the applied strategic interventions to clearly identify what works and what needs to be quickly modified in order to achieve the desired results (evaluation).

Statewide Approach: Oregon

In December 2015, the Oregon Department of Transportation and the Oregon State Police, in conjunction with DKS Associates, published the Oregon Traffic Incident Management Strategic Plan, which updated their original 2011 TIM Strategic Plan and established statewide TIM performance criteria for the next five years. The updated Oregon TIM plan shows clear accomplishments in existing TIM practices since the implementation of the original plan, including regular quarterly meetings among Oregon's three regional TIM teams; in-depth analyses of all lane-blocking traffic crashes that exceeded their state legislative–mandated 90-minute clearance goal in order to identify those practices that need improvement when future traffic incidents occur; and the training of more than 2,800 first responders in FHWA National TIM Training.[6]

Building upon these accomplishments, the updated Oregon TIM strategic plan identified five goals and performance objectives for each.

Goal 1: Enhance the Safety of First Responders

Performance Objectives: Reduce the number of responding personnel, from all disciplines, who are struck by vehicles at incident scenes through mandated usage of personal protective equipment. Require scene management and best practices in TIM training of all personnel, including non-public safety personnel, who may respond to a roadway incident scene that requires a TIM application.

Goal 2: Enhance the Safety of the Traveling Public

Performance Objectives: Reduce the number of secondary crashes and subsequent injuries or fatalities to motorists through detailed, timely, and regularly updated situational information that is conveyed from on-scene personnel to traffic operations centers, so that appropriate notifications and messaging can be quickly sent out to educate those motorists who may be traveling through or happen upon a roadway incident zone.

Goal 3: Improve the Reliability and Efficiency of the Transportation System

Performance Objectives: Reduce the duration of lane closures and the number of secondary crashes at an incident scene through better communications between primary first responders to ensure all proper investigative equipment and barricades are brought to the scene during the initial response phase. Implement timely notification and staging of needed tow vehicles to minimize delays in roadway clearance.

Goal 4: Strengthen the Communications, Coordination, and Collaboration between Response Partners PRIOR to a TIM Incident Taking Place

Performance Objectives: Train 10,000 TIM responders statewide by 2021 and include tow industry regulations and best practices in the curriculum. Mandate additional TIM training requirements and refresher classes in the future. Form additional TIM teams across the state that will be tasked with TIM post-incident best practice reviews and ensuring ongoing dialogue and training among the various TIM responders in their teams' areas of operation.

Goal 5: Establish TIM as a Core Public Safety Discipline

Performance Objectives: Increase TIM outreach and education to both TIM incident responders and to the general public so that TIM is included by public safety and non-public safety agency leaders in their roadway incident response policies and TIM awareness becomes a regular component of all statewide driving-focused public safety and education campaigns.[7]

To ensure the performance objectives for each of these goals are met, existing performance measures were reviewed; additional measures were identified for each of the various newly identified performance objectives; and new measures, for future tracking consideration, were identified. In addition, each performance objective and measure were prioritized for completion in the near term (by 2017), midterm (2018–2021), or longer term (beyond 2021), and each was assigned to a designated responsible entity who has direct accountability for the task completion or implementation.

Through the use of clearly defined goals, objectives, strategies, and measures, the Oregon Traffic Incident Management Strategic Plan establishes a clear statewide vision for ongoing traffic incident management and demonstrates its importance to both TIM incident responders and to the driving public.

Local Approach: Stafford Country, Virginia

On a local level of law enforcement, the Stafford County Virginia Sheriff's Office, winner of the Traffic Incident Management Special Award in the 2015 National Law Enforcement Challenge, implemented its own TIM strategic plan starting in 2014.

Prior to implementing its plan, the Stafford County Sheriff's Office spent a year researching TIM best practices and identified the four key areas the plan would focus on.

Focus Area 1: Training

Stafford County Sheriff Charles Jett required all patrol deputies to complete Strategic Highway Research Program 2 (SHRP 2) training. Once the agency personnel were trained, the sheriff's office held two weeks' worth of SHRP 2 training for other area

traffic incident first responders, ultimately training nearly 400 additional personnel from a variety of disciplines who may respond to a TIM roadway incident in Stafford County.

By providing SHRP 2 training to a wide range of Stafford County traffic incident responders, each entity was able to better understand the on-scene roles of the other responding units. This increased understanding resulted in improved on-scene communications and task coordination, which allowed roadways to be opened faster and reduced the risk of harm from secondary crashes.

Focus Area 2: Formation of the Fredericksburg Regional Incident Management Committee

Initially composed of the Stafford County Sheriff's Office, Stafford County Fire and Rescue Department, Virginia State Police, and the Virginia Department of Transportation, the team met quarterly to discuss a variety of TIM-related topics and ensure everyone clearly understood program goals and their overall roles in achieving those goals. After demonstrated success in reducing roadway clearance times, other area police, fire, and transportation departments were added to the committee, which further increased its effectiveness.

Focus Area 3: Development of a Written TIM Plan

The Fredericksburg Regional Incident Management Committee developed a series of area TIM plans that established optimum detour routes when roadway incidents occurred that required the diversion of traffic. The various contingency plans cover local traffic events lasting 30 minutes or more; regional events in the Washington, D.C., area; and potential multi-day events, such as weather incidents or terrorism, that may affect travel throughout the entire larger metropolitan area.

Focus Area 4: Dedicated TIM Support Vehicle

A traffic incident support vehicle that was outfitted with all the necessary TIM equipment was put into service and responded to 74 calls for service in 2014.

Since the implementation of the Stafford County Virginia Sheriff's Office TIM strategic plan, regional traffic crashes with incident clearance times of 60–90 minutes were reduced from 50 percent of all crashes to 14 percent of all crashes. Additionally, 28 percent of regional traffic crash incidents are now cleared in 30 minutes or less, up from none being cleared in 30 minutes or less just two years ago.[8]

Use of Multi-Jurisdictional TIM Teams

The 2013 Law Enforcement Management and Administrative Statistics (LEMAS) survey showed that 48 percent of local police departments in the United States employed fewer than 10 officers, 95 percent employed fewer than 100 officers, and only 5 percent employed more than 100 officers.[9] These numbers, coupled with the fact that law enforcement agencies struggle with budget and funding issues, demonstrate that law enforcement agencies strive every day to handle an ever-increasing volume of calls for service with less resources.

The numbers further reveal that a traffic incident has the capability to overwhelm the resources of many individual agencies, especially those that are not large enough to have dedicated officers who specialize in TIM or regularly receive refresher training in TIM best practices. To lessen the burden an incident can have on an individual agency, many locales have formed multi-jurisdictional TIM teams that jointly respond when an incident occurs on their roadways or highways. The use of a trained multi-jurisdictional TIM team increases on-scene investigative efficiency and effectiveness, reduces individual agency overtime costs, increases officer training opportunities, and helps alleviate the agencies' personnel drain when an incident occurs, as multiple agencies share in both the workload and cost.

The state of Michigan's Southeast Oakland County Crash Investigation Team (SOCCIT) is an excellent example of the benefits a multi-jurisdictional TIM team can provide. Formed in 2010, without outside funding, SOCCIT is made up of 19 officers from the Auburn Hills Police Department, the Bloomfield Township Police Department, the Bloomfield Hills Police Department, and the Troy Police Department. Together, these four jurisdictions are responsible for handling traffic events on 975 miles of roadways, including 24 miles of I-75, one of the highest volume interstate highways in the United States. SOCCIT is activated for traffic crash investigations that involve fatalities or serious injuries, crashes that are complex and require specialized investigative ability or reconstruction, and crash investigations that will ultimately result in criminal prosecution. Since its formation, SOCCIT has completed 77 investigations.

The leadership structure of SOCCIT is unusual. Direct oversight of SOCCIT is administered by an executive board, consisting of the police chiefs of the four participating departments. The executive board appoints a lieutenant or captain from one of the agencies as the team coordinator and a sergeant as the team facilitator. In addition to the assigned investigators, each department also appoints a designated supervisor to manage the SOCCIT officers from its agency.

Various individual SOCCIT officers have specialized training in several traffic-related areas including standardized field sobriety testing, drug recognition expert, advanced traffic crash reconstruction, forensic mapping, and motor carrier enforcement, which provide a wide range of skills for the team to draw upon when responding to a scene while also reducing the specialized training costs for each member department. SOCCIT investigators jointly train once a quarter with an emphasis on skills development, scene management, and TIM best practices. Incident debriefs of all SOCCIT investigations in the previous quarter are undertaken and peer critiqued for best practices and lessons learned.

When a SOCCIT-eligible traffic event occurs, the team is activated and all on-duty team members are immediately dispatched to the scene. A simultaneous request is also made to either the Michigan Department of Transportation (MDOT) or the Road Commission for Oakland County (RCOC) to immediately assemble and deliver the needed barricade equipment to the scene to relieve those officers posted on traffic control duty around the incident as quickly as possible so they can return to their patrol duties.

Once SOCCIT begins its investigation, the investigators have an established goal of two hours or less to complete the investigation of the roadway portion of the incident. Essential fire department and tow vehicles are requested 30 minutes prior to their estimated need to eliminate scene downtime and additional road closure time waiting for required additional resources to arrive.

If the incident involves a fatality, the Oakland County Medical Examiner's Office (OCME) is promptly notified and responds to the scene to conduct its parallel investigation, working directly with SOCCIT investigators. When the fatality involves a complicated extraction from a vehicle, SOCCIT and the OCME have developed a joint protocol in which the vehicle is moved from the roadway to a secure location where the supervised extrication is completed and evidence preserved. This procedure greatly reduces roadway closure time.

In 2015, SOCCIT was activated 20 times, an increase of 25 percent over 2014. However, the cumulative overtime costs to the four member police departments was only $10,777, an average of only $538 per incident, which is far less than the cost of handling the incidents individually by the jurisdiction of occurrence.[10]

Cross-Functional TIM Training and Information Sharing

While roadway incidents can take on a wide variety of forms, they share one commonality—the need for public safety personnel and other responders to mitigate and successfully resolve the event, so that normal traffic operations can resume as safely and quickly as possible. To accomplish this in the most effective and efficient manner possible, the various responding entities must work together and understand each other's role in TIM.

The U.S. FHWA, in its 2010 report, *Best Practices in Traffic Incident Management*, listed inadequate joint training among responders as a challenge to effective TIM operations.[11] The National Traffic Incident Management Coalition's National Unified Goal for TIM lists Multidisciplinary National Incident Management System and TIM training as a core strategy for achieving the unified TIM goals of responder safety and safe, quick clearance of roadway incidents.[12] To better increase responder understanding and awareness, innovative joint TIM training efforts are being undertaken at the national, regional, state, and local levels.

Nationally, the FHA and the National Highway Institute offer a variety of both online and on-site TIM training for law enforcement officers, fire and rescue personnel, transportation workers, and towing and recovery agencies including courses such as the Tier 1 National TIM Responder Training Program, Managing Traffic Incident and Roadway Emergencies, and Using the Incident Command System at Highway Incidents. In 2008, the U.S. Fire Administration and the U.S. Department of Transportation jointly published *Traffic Incident Management Systems* to guide fire and rescue response at TIM scenes.[13]

Regionally, TIM conferences (both statewide and multi-state) bring together the various TIM responders to discuss best practices and lessons learned at incidents and to develop joint action plans for future traffic incidents that require a TIM response. Recognizing that a major traffic incident on a border roadway, interstate highway, or bridge has the ability to significantly impact traffic in surrounding states, Ohio has taken the lead on hosting multi-state TIM seminars. In 2014 and 2015, Ohio held conferences that included law enforcement, fire and rescue, transportation, and towing personnel from Ohio and the neighboring states of Kentucky, Indiana, Pennsylvania, and West Virginia. The conference agendas included a TIM regional overview, a session on improving responder communication and coordination at major roadway incidents, and TIM best practice presentations

from each of the responder disciplines represented.

At the state level, there are several innovative current TIM initiatives and best practices being implemented that enhance both responder training and communications. Colonel Tracy Trott of the Tennessee Highway Patrol (THP) partnered with the Tennessee Department of Transportation (TDOT) to build the first TIM training facility in the United States on the grounds of the THP Academy. The Tennessee Traffic Incident Management Training Facility opened in late 2014 and is dedicated to the THP troopers and TDOT highway workers who were killed in secondary crash incidents while performing their duties. The facility includes a multi-lane section of interstate highway, complete with guard rails, cable barriers, and an on ramp, as well as a two-lane roadway and four-way intersection. Training at the new facility is hands on and incorporates real TIM scenarios that have occurred on Tennessee roadways. The training is open to all TIM responders and disciplines who wish to improve their TIM skills.[14]

The California Highway Patrol (CHP) requires all tow personnel to complete SHRP 2 training in order to participate in the tow rotation program on California roadways. In addition, CHP has included TIM responder training in its freeway service patrol curriculum and also added a TIM responder training session to its own CHP Academy training and to the California Department of Transportation's (Caltrans') new employee academy.[15]

Locally, agencies across the United States are working on improving their TIM responses. The Arizona Highway Patrol and Michigan Department of Transportation offer TIM classes to local fire and rescue personnel that emphasize proper vehicle positioning to minimize lane blockages and demonstrate quick clearance techniques that minimize roadway closure time. In Virginia, all officers who work off-duty traffic control on Virginia Department of Transportation construction projects must complete SHRP 2 training prior to working in the construction zone. Completion of the SHRP 2 training ensures officers are better prepared to manage a roadway incident and minimize additional congestion in areas where vehicle traffic is already likely to be heavier due to the condensed lanes of travel. The Dallas and Ft. Worth North Central Texas Council of Governments (NCTCOG) developed separate TIM trainings for both first responders and executive-level personnel. Within the first three years of the NCTCOG TIM training operation, more than 600 first responders and 70 agency executives completed the training.[16]

Nashville, Tennessee, and Philadelphia, Pennsylvania, have both developed programs that incorporate public safety 9-1-1 call takers, dispatchers, and traffic operations center staff into their TIM trainings and programs. These personnel are often overlooked when it comes to TIM response efficiency; however, by including them early in the TIM response process, better information can be obtained from initial callers who report roadway incidents and more accurate reports of current conditions can be relayed to the dispatched first responders while they are en route to the incident location.

Conclusion

It is clear that roadway incidents across the United States have a high annual cost in money and injuries and fatalities. It is equally clear that a wide combination of federal, state, and local public and private organizations, both public safety and nonpublic safety, are working diligently every day to improve the TIM responses to those incidents and minimize their harm to both first responders and to the driving public.

The TIM best practices outlined above are proven to save lives and reduce costs. It is critical that these TIM efforts—and countless others not detailed in this article—continue to receive the funding and publicity they deserve. Thus, those that are empirically proven to be the most effective can continue and also be replicated in additional areas, and other new TIM ideas and programs can be researched, developed, implemented, evaluated, and publicized so that they, too, can make roadways safer for those who drive and work on them every day. ♦

Captain **Daniel W. Gerard**, MS, recently retired after 29 years of service with the Cincinnati, Ohio, Police Department (CPD) and is the director of operations for the Institute of Crime Science. He received his BS and MS in criminal justice from the University of Cincinnati, is a graduate of the Southern Police Institute at the University of Louisville, and completed the Senior Management Institute for Police offered by the Police Executive Research Forum. Captain Gerard has served as an invited speaker, trainer, instructor, and consultant for numerous police agencies and universities throughout the United States and Canada. His areas of expertise include violence reduction, criminal gangs, traffic safety, the use of social media in criminal investigations, evidence-based policing, place-based policing, police and academic partnerships, police management, and police research.

The author wishes to thank the members and staff of the International Association of Chiefs of Police Traffic Incident Management Subcommittee for their help in compiling TIM best practices and data for this article.

Notes:
[1]Texas A&M Transportation Institute, "2015 Urban Mobility Scorecard," August 2015 (accessed March 8, 2016).
[2]Ibid.
[3]Matthew G. Karlaftis et al., "ITS Impacts on Safety and Traffic Management: An Investigation of Secondary Crash Causes," *Intelligent Transportation Systems Journal* 5, no. 1 (1999): 39–52.
[4]Federal Highway Administration, "Traffic Incident Management" (accessed March 9, 2016).
[5]Katherine L. Belmore, Steven J. Cyra, and Genevieve M. Schnell, *Advanced Traffic Incident Management for Mid-Level Managers: A Workshop Recap and Summary of Good Practices*, 2013.
[6]*Oregon Traffic Incident Management Strategic Plan*, December 2015 (accessed March 8, 2016).
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[8]International Association of Chiefs of Police, "Traffic Incident Management," *Traffic Safety Innovations 2015* (accessed March 3, 2016).
[9]Law Enforcement Management and Administrative Statistics, *Local Police Departments, 2013: Personnel, Policies, and Practices*, 2015 (accessed March 11, 2016).
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[13]U.S. Fire Administration, *Traffic Incident Management Systems* (Federal Emergency Management Agency, March 2012), 2 (accessed May 23, 2016).
[14]Tennessee Department of Transportation, "Traffic Incident Management Training" (accessed May 23, 2016).
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[16]U.S. Department of Transportation, Federal Highway Administration, "Best Practices in Traffic Incident Management" (accessed May 23, 2016).

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