

National Traffic Incident Management Coalition



Improving Traffic Incident Management Together



Promoting a National Agenda for Traffic Incident Management

Why is Traffic Incident Management Important?

- Incidents are estimated to cause between 53% and 58% of total delay experienced by motorists in all urban areas.¹
- Crashes that result from other incidents make up 14%–18% of all crashes. These secondary crashes are estimated to cause 18% of deaths on freeways.²
- In 2002, approximately half of police, EMS, and firefighter fatalities occurred as a result of transportation incidents. About 10% of firefighter and nearly 8% of police officer deaths were caused by a worker being struck by a vehicle.³
- Nearly 10,000 police cars; 2,000 fire trucks; and 3,000 other service vehicles are struck while going to or at traffic incidents.⁴
- In 2002, traffic incident management programs, including surveillance cameras and service patrols, reduced congestion in 56 urban areas by 117 million hours. The annual cost saving resulting from traffic incident management programs in 75 urban areas was estimated to be \$2.3 billion.⁵

¹ Texas Transportation Institute, Urban Mobility Report 2003, College Station, Texas, September 2003.

² Several studies cite that crashes resulting from other incidents make up between 14–20% of all crashes. Transportation Research Record 1581 (Zhou, M. and V. Sisiopiku, Relationship Between Volume-to-Capacity Ratios and Accident Rates, Washington, D.C., 1997) cites one study that produced these results.

³ United States Dept. of Labor—Bureau of Labor Statistics, Census of Fatal Occupational Injuries, Table A-6, Washington, D.C., 2003.

⁴ Speech by Deputy Secretary of Transportation Mortimer Downey, April 1999.

⁵ Texas Transportation Institute, Urban Mobility Report 2003, College Station, Texas, September 2003.

Setting the Scene

It is morning rush hour, and traffic volume grows as drivers begin their daily commutes. On a normal day, traffic levels push the limits of road capacity. Drivers become frustrated with recurring congestion, which exists for no apparent reason. Suddenly a multivehicle incident involving a tanker truck occurs, taking away two lanes on a busy corridor. Traffic on the already-congested road grinds to a halt. Motorists slow and merge to avoid the accident, but also crane their heads to get a view of the spectacle, taking their eyes off the roadway ahead. The chance for secondary crashes increases as the queue builds and reaches oncoming motorists without warning. Law enforcement and emergency personnel are notified and dispatched to the scene, but these responders have trouble coordinating with each other because their communication equipment is not interoperable. Upon arrival, they assess the situation and call for additional resources, including a hazardous materials crew, the Department of Transportation, several towing vehicles, and the coroner. It will take time for these resources to arrive and assess and clean up potentially hazardous material. An investigation also will be needed to determine the cause of the incident.

Responders and their equipment are at risk of being struck by motorists passing the scene. In fact, an ambulance arriving at the scene is struck from behind by a motorist trying to maneuver around the incident. There is significant damage to the vehicle, and two responders are injured. Traffic control becomes a major consideration as more equipment responds to the incident. Because the roadway is a popular corridor for moving freight, many freight carriers with tight delivery windows are caught in the backup. Secondary roads become congested as motorists search for alternate routes. Response personnel who will direct motorists are slow to arrive because of this congestion, and traffic flow in surrounding local communities is significantly impacted.

While this scenario is fictional, the impact of incidents is a real problem. Traffic incidents have a great effect on the safety of responders and on the mobility of the traveling public using our nation's roadways. They contribute to responder deaths and injuries, emergency apparatus damage, motorist injuries and deaths through secondary crashes, and the cost and time of traffic delay in urban and rural areas. The continual increase of traffic volume exacerbates the impact of incidents. Responding to, and coping with, incidents are therefore ever-larger duties of first responders, including transportation agencies. Sometimes efforts by the involved agencies are less than optimally coordinated and therefore, to at least some extent, counterproductive. This paper briefly discusses the issues facing successful traffic incident management programs and the activities the National Traffic Incident Management Coalition (NTIMC) is leading at the national level to improve traffic incident management policies, practices, and programs.

The Right Time for Action

The need to cope with incidents affecting traffic has been recognized for decades. Traffic incident management is a planned and coordinated multidisciplinary process to detect, respond to, remove traffic incidents, and restore traffic flow as safely and quickly as possible. Some localities have established effective lifesaving and delay-reducing strategies and procedures. Cross-disciplinary communications among affected responsibility areas—fire, police, emergency medical providers, towing and recovery services, and transportation system operators—have developed in many areas with good results. Integrated traffic incident management is emerging as a proven solution to address safety and mobility concerns, but improvements like these are not prevalent across the United States.

In recent years, transportation and public safety organizations also have conducted studies, training, regional meetings, and national conferences to advance traffic incident management practices. These activities have led to better tools and procedures and, perhaps most importantly, a much better understanding of the respective roles of affected agencies and the need for more effective communication and coordination.

A core characteristic of the traffic incident management problem is that it is, properly, a responsibility shared by many disciplines. These disciplines often have unique origins, histories, and collective memories—in short, unique cultures. Successful efforts in individual localities have transcended these differing cultures to foster effective communications and engender a sense of cooperation. Focus on one or two specific problem areas has not been allowed to overwhelm other problems. Procedures and understandings leading to sensible solutions for all of the problems stemming from traffic incidents have arisen.

Creating a multidisciplinary coalition at the national level will foster improved communication and cooperation across these cultural and disciplinary lines everywhere.



More Than 10 Years of Traffic Incident Management Activities

Model Procedures Guide for Highway Incidents, National Fire Service Traffic Incident Management Consortium, 2004

Sharing Information Between Public Safety and Transportation Agencies for Traffic Incident Management, National Cooperative Highway Research Program, 2004

Measuring and Communicating the Effects of Traffic Incident Management Improvements, National Cooperative Highway Research Program, 2004

Safe and Quick Clearance of Traffic Incidents, National Cooperative Highway Research Program, 2004

Traffic Incident Management Tow Operators Workplan Guide, Towing and Recovery Association of America, 2003

Traffic Incident Management Self-Assessment Guide, Federal Highway Administration, 2002

National Conference on Traffic Incident Management, 2002

Traffic Safety for the New Millennium: Strategies for Law Enforcement, National Highway Traffic Safety Administration, 2001

Regional Traffic Incident Management Programs: An Implementation Guide, Federal Highway Administration, 2001

Protecting Emergency Responders on the Highways, Cumberland Valley Volunteer Firemen's Association, 2000

Managing Traffic Incidents and Roadway Emergencies Course, National Highway Institute, 1998–Present

Traffic Incident Management Handbook, Federal Highway Administration, 1991 (updated 2000)

National Traffic Incident Management Coalition, established in early 1990s

The Primary Issues Facing Successful Traffic Incident Management

Successful traffic incident management programs have been established in many areas of the country. However, there is still work to be done to institutionalize traffic incident management in the missions and operating structures of all transportation and public safety agencies. In 2002, the National Conference on Traffic Incident Management was convened to develop and advance an agenda for improved traffic incident management at the national level. More than 150 practitioners and policy experts from the fire and emergency response, law enforcement, towing, technology, transportation, and motorist communities discussed barriers and opportunities to improving traffic incident management. Three overarching topics focused conference discussion on the primary issues in traffic incident management, reflecting areas in which there are gaps between average and best practice.



Issues for Traffic Incident Management Programs and Institutions

Policy

Traffic incident management is often part of, but not at the center of, an agency's routine mission. As such, benefits and performance are not measured. Policy makers are not informed of the benefits of traffic incident management and the potential for further improvements for enhanced safety and reduced delay. Traffic incident management is only one of several agency operational responsibilities and is not usually a service program with its own line-item budget. Traffic incident management, as performed by transportation agencies, is often a fragmented, part-time reactive activity with responsibilities divided among maintenance, traffic operations units, TMC management, and ITS project staff. Local laws and conventions such as boundary constraints, towing practices, and clearance policies inhibit improvements in key areas.

Program Resources

Traffic incident management, as a lower-tier activity, often is limited by resource availability from budgets unrelated to traffic incident management or agency priorities. Practitioners are challenged to fund new programs and/or take on new responsibilities in a constrained fiscal environment and times of downsizing governments. Resource availability often is uneven among stakeholder agencies.

Multiagency Relationships

Each agency has a unique culture that is not well understood by other stakeholders. Roles are defined informally on a case-by-case basis. Role conflicts may be partially resolved at the site and are disregarded after the incident. Key stakeholders can be uninvolved for extended periods. Stakeholder involvement is determined by personality strength or agency size. Level of attention and involvement depends on recent events or the personality of a strong program chairperson. Problems can be repeated frequently.

Issues for Traffic Incident Management On-Scene Operations



Responder Safety

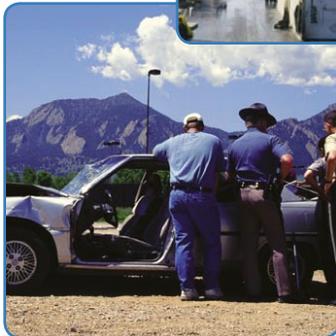
Traffic incidents are one of the most dangerous tasks responders handle. Improving safety requires training, equipment, research, policy development, updated statutes, and performance standards.

Secondary Crash Prevention

These crashes can range from 14%–20% of all crashes. Improvements in traffic control, quick clearance, and management of the original incident scene could reduce the rate of secondary crashes.

Traffic Control

Traffic control often is not a consistent part of all incidents. All responders may not understand and use the basic procedures required for the safe movement of traffic. Proper use of traffic-control devices and detour routes, better on-scene traffic control, and continuous monitoring of the incident impact can improve responder safety and traffic flow and decrease secondary crashes and motorist delays.



Incident Site Management

Although agencies may respond to similar traffic incidents on a frequent basis, multiagency efforts to streamline processes are unusual. Proper positioning of response vehicles, early deployment of tow trucks, and mutually understood emergency-lighting procedures can improve safety, traffic flow, and clearance times.

Quick Clearance

Implementing quick clearance requires individual and multiagency actions in changing laws and policies; training; striking interagency agreements; setting on-scene responder priorities; streamlining investigation procedures, towing regulations, and procedural updates; and establishing challenging performance standards for clearance.



Issues for Traffic Incident Management Communications and Technology

Integrated Interagency Communications

Voice communications among diverse response agencies have been hampered by a lack of direct connectivity among communications systems. In addition, data and information transfer (e.g., incident detection, traffic information, and resource availability) among agencies and applications may be nonexistent, possibly caused by incompatibility (e.g., lack of a “common language” or lack of integration).

Transportation Management Systems

While the use of technology for detection, verification, and clearance of highway incidents has increased dramatically over the past decade, multiagency co-location in centers that use this technology is limited. Surveillance and detection efforts would benefit from the integration of transportation management systems and public safety computer-aided dispatch technologies. Multiagency agreements on policies and procedures for traffic management during incident response (signal timing changes, opening and closing lanes, and ramp metering) may not yet be established.

Traveler Information

Agencies may not be able to integrate and interpret information from multiple sources. Access to real-time, incident-specific information and travel-time estimates for route segments may not be available to motorists.

At the end of the 2002 meeting, conferees identified the following eight, national-level action areas to advance the state of the practice in traffic incident management:

- High-level multiagency coordination
- Public education
- Improved operational performance
- Technology deployment
- National framework/coalition
- Integrated multiagency operations
- Training
- Research

The need to designate a national organization to spearhead, conduct, and track activities in traffic incident management was a consistent theme among these action areas. Responding to this need, the National Traffic Incident Management Coalition was established to assume a leadership role for developing a national agenda for traffic incident management.

The National Traffic Incident Management Coalition

Shortly after the 2002 National Conference on Traffic Incident Management, a multidisciplinary steering group was formed to organize a coalition. Membership was further expanded when the National Traffic Incident Management Coalition was officially launched on June 23, 2004. At that meeting, the coalition agreed to focus its efforts on achieving the following vision, mission, and goals.

Vision—Safe and efficient management of all incidents that occur on or substantially affect the nation’s roadways.

Mission—Provide a multidisciplinary partnership forum spanning the public safety and transportation communities:

- To coordinate experiences, knowledge, practices, and ideas toward safer and more efficient management of incidents affecting traffic
- Which:
 - Enhances the safety of on-scene responders and of motorists passing or approaching a roadway incident
 - Strengthens services to incident victims and stranded motorists
 - Reduces incident delays and costs to the traveling public and commercial carriers.

Goal #1—Promote and support the successful development and conduct of local, regional, and statewide traffic incident management programs through peer networking, mentoring, and knowledge exchange among public safety and transportation professionals.

Goal #2—Develop, provide input to, and recommend for adoption by Coalition partner organizations multidisciplinary best practices, guides, standards, and performance measures in support of sound traffic incident management activities.

Goal #3—Develop and recommend appropriate research problem statements for referral to one or more Coalition partners to take advantage of multiple research avenues.

For More Information About Traffic Incident Management:

www.TIMcoalition.org
www.trafficincident.org
www.fhwa.dot.gov/incidentmgmt

Coalition Contact Information:

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Coalition Charter Organizations

American Association of State Highway and Transportation Officials

American Traffic Safety Services Association

American Transportation Research Institute

Association of Public-Safety Communications Officials International

Cumberland Valley Volunteer Firemen’s Association

Federal Highway Administration

I-95 Corridor Coalition

Institute of Transportation Engineers

International Association of Chiefs of Police

International Association of Fire Chiefs

International Association of Fire Fighters

International Fire Service Training Association

ITS America

National Association of State EMS Directors

National Emergency Number Association

National Fire Protection Association

National Volunteer Fire Council

Towing and Recovery Association of America

Transportation Research Board

U.S. Fire Administration



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