

NCHRP

SYNTHESIS 318

NATIONAL
COOPERATIVE
HIGHWAY
RESEARCH
PROGRAM

Safe and Quick Clearance of Traffic Incidents

A Synthesis of Highway Practice

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Systematic, well-designed research provides the most effective approach to the solution of many problems facing highway administrators and engineers. Often, highway problems are of local interest and can best be studied by highway departments individually or in cooperation with their state universities and others. However, the accelerating growth of highway transportation develops increasingly complex problems of wide interest to highway authorities. These problems are best studied through a coordinated program of cooperative research.

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The members of the technical committee selected to monitor this project and to review this report were chosen for recognized scholarly competence and with due consideration for the balance of disciplines appropriate to the project. The opinions and conclusions expressed or implied are those of the research agency that performed the research, and, while they have been accepted as appropriate by the technical committee, they are not necessarily those of the Transportation Research Board, the National Research Council, the American Association of State Highway and Transportation Officials, or the Federal Highway Administration of the U.S. Department of Transportation.

Each report is reviewed and accepted for publication by the technical committee according to procedures established and monitored by the Transportation Research Board Executive Committee and the Governing Board of the National Research Council.

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The **Transportation Research Board** is a division of the National Research Council, which serves the National Academy of Sciences and the National Academy of Engineering. The Board's mission is to promote innovation and progress in transportation through research. In an objective and interdisciplinary setting, the Board facilitates the sharing of information on transportation practice and policy by researchers and practitioners; stimulates research and offers research management services that promote technical excellence; provides expert advice on transportation policy and programs; and disseminates research results broadly and encourages their implementation. The Board's varied activities annually engage more than 4,000 engineers, scientists, and other transportation researchers and practitioners from the public and private sectors and academia, all of whom contribute their expertise in the public interest. The program is supported by state transportation departments, federal agencies including the component administrations of the U.S. Department of Transportation, and other organizations and individuals interested in the development of transportation. **www.TRB.org**

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FOREWORD

*By Staff
Transportation
Research Board*

Highway administrators, engineers, and researchers often face problems for which information already exists, either in documented form or as undocumented experience and practice. This information may be fragmented, scattered, and unevaluated. As a consequence, full knowledge of what has been learned about a problem may not be brought to bear on its solution. Costly research findings may go unused, valuable experience may be overlooked, and due consideration may not be given to recommended practices for solving or alleviating the problem.

There is information on nearly every subject of concern to highway administrators and engineers. Much of it derives from research or from the work of practitioners faced with problems in their day-to-day work. To provide a systematic means for assembling and evaluating such useful information and to make it available to the entire highway community, the American Association of State Highway and Transportation Officials—through the mechanism of the National Cooperative Highway Research Program—authorized the Transportation Research Board to undertake a continuing study. This study, NCHRP Project 20-5, “Synthesis of Information Related to Highway Problems,” searches out and synthesizes useful knowledge from all available sources and prepares concise, documented reports on specific topics. Reports from this endeavor constitute an NCHRP report series, *Synthesis of Highway Practice*.

The synthesis series reports on current knowledge and practice, in a compact format, without the detailed directions usually found in handbooks or design manuals. Each report in the series provides a compendium of the best knowledge available on those measures found to be the most successful in resolving specific problems.

PREFACE

This report of the Transportation Research Board is designed to assist transportation agencies in facilitating the safe and quick clearance of traffic incidents. These incidents range from vehicle disablements and minor crashes to major incidents requiring potentially significant clearance and investigation times. The report profiles laws, policies, and procedures for facilitating clearance of traffic incidents, primarily those initially blocking travel lanes and attended to by the vehicle operator, on highways in urban and rural areas. In recognizing the unique challenges faced by jurisdictions across the country, the study also reports on successful specific-site traffic incident clearance and investigative activities employed to quickly mitigate incidents of varying severity. The report discusses quick clearance legislation, hold harmless laws, and policies governing the removal of accident victims. Also discussed are the duties of private tow companies; various policies governing the rapid clearance of overturned semi-tractor trailers; appropriate actions to take when there is an accompanying fuel spill; and technologies used to provide for continual, uninterrupted flow of communications between agencies participating in incident clearance activities. Appendixes provide a copy of the survey questionnaire and various materials relating to quick clearance.

Information for this report was derived primarily from a detailed survey questionnaire that was distributed to transportation and related agencies in all 50 states. The study also reports on an extensive literature review to identify laws, policies, and information campaigns supporting existing quick clearance practices.

A panel of experts in the subject area guided the work of organizing and evaluating the collected data and reviewed the final synthesis report. A consultant was engaged to collect and synthesize the information and to write this report. Both the consultant and

the members of the oversight panel are acknowledged on the title page. This synthesis is an immediately useful document that records the practices that were acceptable within the limitations of the knowledge available at the time of its preparation. As progress in research and practice continues, new knowledge will be added to that now at hand.

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tions Engineer, Georgia Department of Transportation; and Edward G. Wine, Battalion Chief, Fairfax County Fire and Rescue Department.

This study was managed by Stephen F. Maher, P.E., and Jon Williams, Managers, Synthesis Studies, who worked with the consultant, the Topic Panel, and the Project 20-5 Committee in the development and review of the report. Assistance in project scope development was provided by Donna Vlasak, Senior Program Officer. Don Tippman was responsible for editing and production. Cheryl Keith assisted in meeting logistics and distribution of the questionnaire and draft reports.

Crawford F. Jencks, Manager, National Cooperative Highway Research Program, assisted the NCHRP 20-5 Committee and the Synthesis staff.

Information on current practice was provided by many highway and transportation agencies. Their cooperation and assistance are appreciated.

SAFE AND QUICK CLEARANCE OF TRAFFIC INCIDENTS

SUMMARY

Quick clearance is the practice of rapidly and safely removing temporary obstructions from the roadway. This synthesis profiles laws, policies, and procedures for facilitating the safe and quick clearance of traffic incidents, primarily those initially blocking travel lanes and attended to by the vehicle operator, on highways in urban and rural areas. The study also reports on specific-site traffic incident clearance and investigation activities employed nationwide to quickly mitigate incidents of varying severity, from a vehicle disablement or minor crash to a serious crash or nonhazardous spill.

A comprehensive survey questionnaire was prepared for distribution to transportation and related agencies in all 50 states. The synthesis includes survey questionnaire responses from 34 different agencies in 21 states. The study also reports on the results of an extensive Internet search undertaken to identify laws, policies, and information campaigns supporting existing quick clearance practices.

Quick clearance legislation authorizes the removal of driver-attended disabled or wrecked vehicles from travel lanes in addition to the authority tow of such vehicles without regard to the drivers' being present at the incident site. The four categories of quick clearance legislation are (1) driver stop law, (2) driver removal law, (3) authority removal law, and (4) authority tow law. Approximately 52% of surveyed jurisdictions maintain a driver removal law. An information campaign exists to inform and educate motorists about existing quick clearance laws in 88% of surveyed jurisdictions with such laws. These public information campaigns strive to change motorists' behavior when involved in traffic incidents.

A *hold harmless* law furnishes immunity to incident responders from civil liability in connection with removing vehicles and cargo involved in a traffic incident and obstructing adjacent traffic flow. Approximately 37% of surveyed jurisdictions have hold harmless laws applicable to traffic incidents involving immobilized vehicles or abandoned vehicles, and 36% have laws protecting incident responders removing nonhazardous spilled cargo or debris.

A traffic fatality certification law or policy represents a combined quick clearance and hold harmless act addressing the removal of a fatality from an incident scene where the location obstructs or presents a hazard to the normal flow of adjacent traffic. It represents an effective quick clearance initiative by permitting the temporary removal of the deceased from a highway traveled way. The study revealed that 73% of jurisdictions require medical examiners or coroners to be at the site of a fatal crash before the removal of the deceased from the scene. Approximately 47% of jurisdictions have legislation or policies establishing procedures and responsibilities for removing deceased victims from traffic crashes.

In committing to a jurisdiction's quick clearance practice, some agencies have developed interagency agreements that incorporate the overarching theme of quick clearance and its associated purpose and performance goals. These agreements are commonly termed *open roads* policies. An open roads policy serves to inform incident responders of the urgent need

to rapidly remove disabled or wrecked vehicles, spilled cargo, and debris that obstruct the normal flow of traffic, and the policy disseminates key guidelines to ensure a cooperative effort of incident removal between responding agencies. At least five states, Connecticut, Florida, Maryland, Tennessee, and Wisconsin, have open roads policies.

The duties and responsibilities of private tow companies mandate their consideration as major stakeholders in any quick clearance practice. Law enforcement and transportation agencies alike have recognized the indispensable role that private towing companies have in effecting incident removal and restoring the affected road section to normal operation. Public agencies commonly enter into agreements with one or more commercial towers to secure on-call traffic incident clearance services. Public-private contracts or agreements maintained by surveyed agencies include a rotational list (55% of respondents), zone-based licensing (21%), and city/region-based licensing (10%).

The safe and quick clearance of minor traffic incidents pertains to the fast removal of immobilized or wrecked passenger cars blocking one or more travel lanes. Agencies in approximately 85% of surveyed jurisdictions relocate immobilized vehicles from travel lanes before the arrival of a tow truck for off-site removal. Methods used to relocate vehicles include using a push bumper (89% of respondents), attaching a towline (44%), using a tow truck (11%), and manually pushing the disabled vehicle (11%).

Traffic incidents involving spilled cargo hold a high potential for obstructing all travel lanes in the direction of the incident. In turn, these incidents induce rapid congestion propagation upstream of the incident site if on-scene responders fail to implement immediate cargo relocation or removal. Incident responders in approximately 57% of surveyed jurisdictions relocate spilled, nonhazardous cargo from travel lanes without obtaining permission from the involved operators and owners present at the scene. Approximately 39% of surveyed agencies reported that their jurisdictions have legislation or agreements requiring commercial carriers or cargo owners to reimburse public agencies for costs incurred during clearance activities.

The rapid clearance of overturned semi-tractor trailers and tanker trucks depends on early identification of equipment needs and mobilization of required equipment. First responders in approximately 45% of surveyed jurisdictions use a planned heavy-vehicle identification guide when classifying the type of vehicle involved in a traffic incident. Responders may have available the following vehicle recovery equipment for righting overturned heavy vehicles: heavy-duty tow trucks (100% of respondents), an air-cushion recovery system (83% of jurisdictions), a crane (76%), and a recovery truck with rotator (62%).

The likelihood of a petroleum or engine fluid spill accompanies the occurrence of any vehicle crash. Incidental vehicle fluid spills can delay the opening of travel lanes if on-scene responders do not have the appropriate training and equipment to identify and remove the hazard. Approximately 57% of survey respondents reported that the occurrence of a small-quantity of vehicle fluid spill does not require response and cleanup by a fire department, hazardous materials response team, or environmental agency in their jurisdiction. The majority of surveyed agencies defined an incidental vehicle fluid spill as less than 5 gal.

The maintenance of continual, uninterrupted communications among agencies, both on-site and off-site, coordinating and participating in traffic incident clearance activities, represents a key focal point for ensuring the rapid removal of traffic incidents. Agencies in surveyed jurisdictions have available multiple technologies to communicate between one another. These communications technologies include radio with dedicated frequency (90% of

respondents), cellular phone (86%), computer/Internet (28%), and radio without dedicated frequency (28%). In nearly 85% of surveyed jurisdictions, private towing operators use a cellular phone to communicate with on-site incident responders.

The on-scene investigation of highway crashes represents a mandatory protocol of law enforcement responders, and incident management programs must account for crash investigation within an overall set of procedures to effect incident clearance. The most common data collection techniques used by law enforcement for site crash investigations include the coordinate (traditional) method, total station survey method, and photogrammetry method. The same percentage of surveyed jurisdictions, 76%, uses the coordinate method and the total station survey method. Law enforcement agencies in one-half of surveyed metropolitan areas and in approximately 18% of urban and rural areas use the photogrammetry method.

The operational success of a quick clearance practice rests with incident responders, representing all stakeholder agencies, having firsthand knowledge of quick clearance laws, policies, and agreements, as well as training in traffic incident removal procedures applicable to a wide range of incident types. Of all surveyed agencies, 70% indicated that their incident responders receive some form of training on traffic incident clearance. Incident responders typically train together with personnel from one or more other agencies in their jurisdictions, as indicated by 82% of survey respondents.

A debriefing of the incident management response team gives participating agencies an opportunity to interactively identify opportunities for procedural improvements, future training, allocation of resources, or institutional support. Agencies in one-half of the surveyed jurisdictions meet regularly to evaluate traffic incident management activities. One-third of survey respondents reported that their jurisdictions have a “champion,” charged with resolving institutional and operations issues affecting traffic incident clearance.

INTRODUCTION

PROBLEM STATEMENT

A traffic incident represents an unplanned event creating a temporary reduction in roadway capacity that, in turn, impedes the normal flow of traffic. Incidents include vehicle disablements, crashes, cargo spills, and roadway debris, and they vary widely in severity, from vehicles stranded on the roadway shoulder with a flat tire or overheated engine to multicar crashes or overturned trucks coupled with a cargo spill closing an entire highway section. Incident-induced congestion markedly reduces highway system reliability and the quality of service afforded to road users.

The Texas Transportation Institute's *2002 Urban Mobility Study* (Schrank and Lomax 2002) reported that road users in 75 U.S. urban areas incurred \$67.5 billion in congestion

costs in 2000, and the study attributed 52% to 58% of the total delay experienced by motorists to crashes and vehicle breakdowns. Nevertheless, the greatest impact of traffic incidents concerns the safety of incident responders and the motoring public relative to the occurrence of secondary crashes at or upstream of the primary incident site. In 2001, 28 law enforcement officers and 6 firefighters and emergency medical technicians died after being struck outside their emergency vehicle by another vehicle (Sullivan 2002). From 1997 through 2001, there were 26 firefighter and emergency medical technician fatalities from vehicle strikes, a figure 2.6 times greater than the total number of fatalities from the previous 5-year period. These statistics do not include personnel from other agencies, such as transportation agencies and towing and recovery companies, who represent regular on-scene responders, and who

The screenshot shows a web browser window displaying a news article on the WRAL.com website. The article is titled "DOT To Address Incident Response Efforts" and is dated May 16, 2002. The article discusses a major traffic incident on Interstate 40 in Durham, N.C., where a small truck wrecked, causing significant traffic delays. The article includes a photograph of the cleanup scene and quotes from DOT officials. The website interface includes a navigation menu, a search bar, and a sidebar with "MORE NEWS" and "TOOLS" sections.

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DOT To Address Incident Response Efforts

Another Wreck Along I-40 Backs Up Morning Commute For Hours

POSTED: 4:19 p.m. EDT May 16, 2002
UPDATED: 4:35 p.m. EDT May 16, 2002

DURHAM, N.C. -- A wreck along Interstate 40 Thursday morning had a major impact on commuters.

Around 8 a.m., a small truck wrecked and landed on its side along I-40 east, just past the Durham Freeway. It took two hours before traffic got moving again.

While that amount of time is an improvement over the last big wreck along I-40, some said it is not fast enough.

The Highway Patrol called a tow truck eight minutes after the wreck, but it took an hour to get the tow truck to the wreck. It took another hour to clear the wreckage and sweep up the scene.

By 9:55 a.m., almost two hours after the wreck happened, traffic was backed up for 12 miles.

"We think we can do better," said Kelly Hutchinson of the DOT.

Hutchinson supervises the DOT's incident response effort. She said all the players in Thursday morning's crash will meet early next month, and all the tough questions will be asked.

"We're going to really try to break it down and look at each piece and see which of those pieces of the response puzzle we can minimize and bring the whole response time down to a shorter duration," she said.

On April 9, a tractor-trailer wreck snarled I-40 for six hours. It happened just a few hundred yards from the latest wreck.

The DOT said crews are doing better, but many irate commuters believe crews need to do better.

The DOT is also working on legislation that would protect state crews from liability in cases where wreckage is pushed from the roadway.

Reporter: [Mark Roberts](#)
Photographer: [Edward Wilson](#)
OnLine Producer: [Michelle Singer](#)

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FIGURE 1 Incidents occurring within the traveled way create severe capacity restrictions, leading to excessive delays if not attended to and cleared as quickly as possible. (Courtesy: WRAL.com.)



FIGURE 2 Freeway service patrol vehicles. (Courtesy: Minnesota DOT, New Jersey DOT, and Washington State DOT.)

also bear a safety risk from exposure to adjacent traffic traversing an incident site.

Figure 1 underscores the importance of providing for the safe and timely removal of traffic incidents, particularly those blocking traffic lanes. Incidents occurring within the traveled way create severe capacity restrictions, leading to excessive delays if not attended to and cleared as quickly as possible. The temporary obstruction of just one freeway travel lane reduces the available capacity of single-direction, two-lane and three-lane freeways by 65% and 51%, respectively (Gordon et al. 1996). Compared with those on limited-access highways, the safety and congestion impacts of traffic incidents on arterial operations, already subject to intermittent disruption owing to traffic control devices, may be as critical. The public has become increasingly sensitive to the growing costs of congestion, citing the delays caused by traffic congestion as their top community transportation concern, in a recent national survey (*Managing Our Congested Streets and Highways* 2001). Moreover, 43% of these surveyed travelers recommended clearing crashes quickly as a way to mitigate congestion. A recent survey of commuters in Dallas, Texas, indicated that respondents ranked faster clearance of crashes and other incidents as having the highest effectiveness on reducing congestion (Walters et al. 2000).

Studies show that freeway service patrols are cost-effective for mitigating the effects of minor traffic inci-

idents such as vehicle disablements (Fenno and Ogden 1998). Freeway service patrols, as shown in Figure 2, typically function to satisfy the incident detection, verification, response, and removal components of incident management in the event of a minor incident. The work of roving service patrols has been credited in a reported drop in pedestrian fatalities on Los Angeles County, California, freeways, from 37 deaths in 1993 to 14 deaths in 2001 (Martin 2002).

Jurisdictions across the country have instituted incident management programs to address major incidents requiring a cooperative, multiagency response, as highlighted in Figure 3. These programs may operate under a planned set of procedures and protocol outlined in an incident management manual and driven by a formal on-scene management method such as the Incident Command System. Major incident response efforts collectively provide for victim assistance, traffic management, dissemination of traveler information, and incident removal. Supporting components of incident management programs include response teams for major incidents and traffic management centers.

The establishment of a quick clearance practice can expand the capabilities and optimize the efficiency of the aforementioned successful incident management initiatives while enhancing the safety of responders, victims, and passing motorists. A quick clearance practice effectively supports an ongoing incident management program; however, unlike specific incident mitigation strategies, the



FIGURE 3 Major incidents require a cooperative, multiagency response. (Courtesy: Virginia DOT–Hampton Roads District.)

policies and procedures constituting a quick clearance practice address the congestion and safety impacts of various traffic incident severity levels beginning from the time of incident occurrence.

QUICK CLEARANCE: AN OVERVIEW

Definition

The following definition gives the core objective of a quick clearance practice:

Quick clearance is the practice of rapidly and safely removing temporary obstructions from the roadway.

Such obstructions include disabled or wrecked vehicles, debris, and spilled cargo. According to the stated definition, quick clearance practices increase the safety of incident responders and victims by minimizing their exposure to adjacent passing traffic. Also, a reduced probability of secondary incidents accompanies lower congestion levels resulting from fast removal of lane-blocking obstructions (see Figure 4).

Component Policies and Procedures

A quick clearance practice consists of laws, policies, procedures, and infrastructure aimed at effecting the safe and

timely removal of a traffic incident. Quick clearance serves to eliminate the following common barriers to incident removal:

- Improper/delayed response;
- Prolonged site investigations;
- Indecision driven by unclear policies, standard operating procedures, and liability concerns.

It notably acts beyond the scope of a conventional incident management practice by potentially involving drivers in vehicle removal.

Figure 5 shows the component laws, policies, and procedures of a quick clearance practice in relation to their application within a typical traffic incident duration timeline. Typical quick clearance laws and authority (e.g., authorized public agency) policies include

- Driver vehicle removal,
- Authority vehicle and cargo removal,
- Authority vehicle tow,
- Interagency agreements,
- Public–private towing contracts, and
- Policy on traffic fatality certification.

The incident response and removal activities facilitated by the cited laws and policies have far-reaching effects on maintaining open roads. Laws requiring drivers to move



FIGURE 4 Quick clearance of incidents reduces the probability of secondary incidents, such as overheated vehicles.

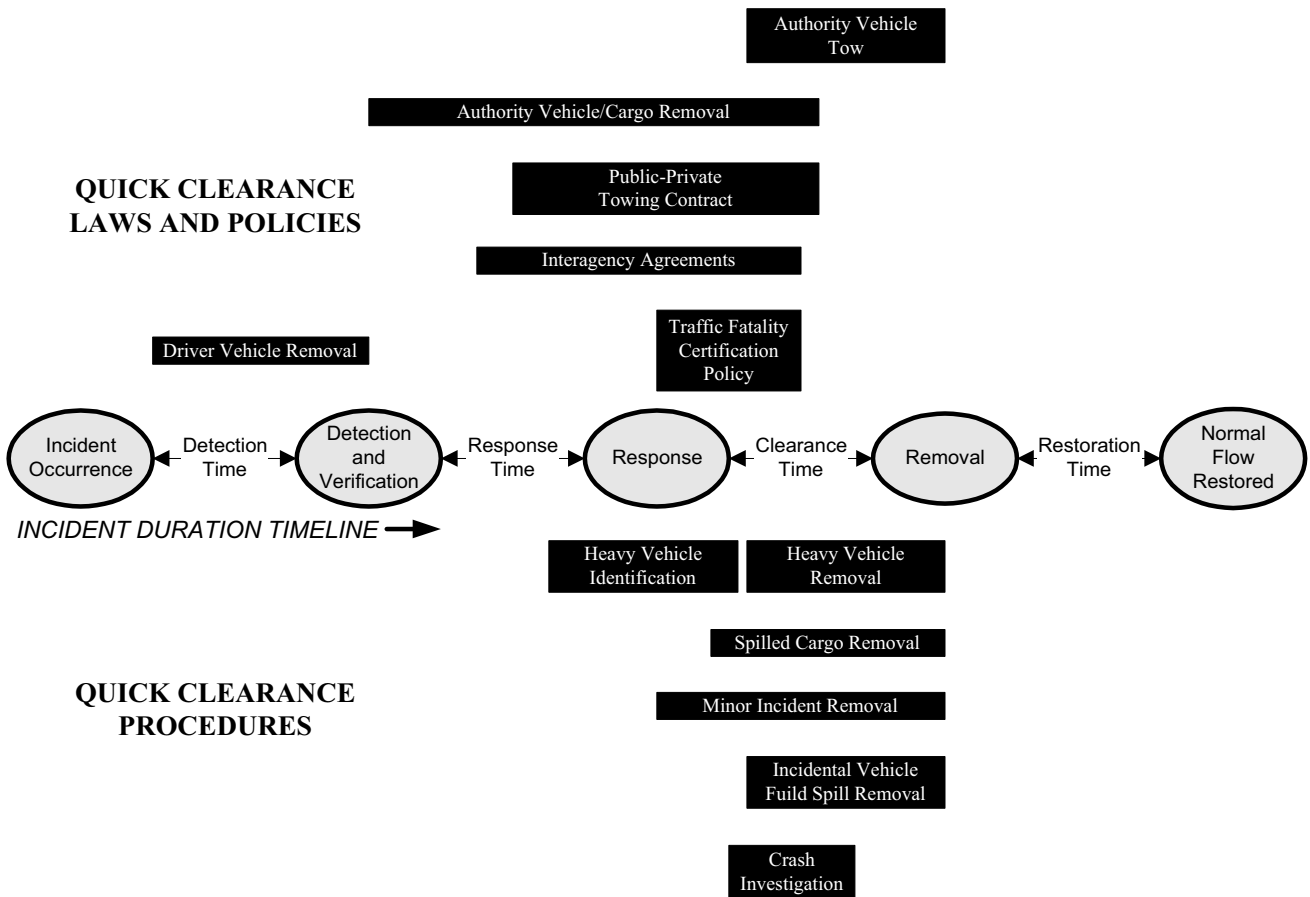


FIGURE 5 Quick clearance laws, policies, and procedures in relation to their application within a typical traffic incident duration timeline.

vehicles obstructing travel lanes may accomplish the clearing of affected travel lanes before the incident is detected and responded to by transportation or law enforcement

agencies. Authority vehicle and cargo removal laws and/or policies afford incident responders the opportunity to aggressively clear incidents without incurring unnecessary

TABLE 1
QUICK CLEARANCE STAKEHOLDERS AND ASSOCIATED DUTIES AND RESPONSIBILITIES

Stakeholder	Quick Clearance Duties and Responsibilities
Transportation agencies	<ul style="list-style-type: none"> • Clear minor incidents • Coordinate and provide for spilled cargo removal • Mitigate incidental vehicle fluid spills • Create interagency agreements and open roads policies • Develop quick clearance laws and policies for vehicle/cargo removal • Promote public information campaigns on quick clearance • Support public–private towing agreements • Construct vehicle relocation areas, such as crash investigation sites • Set traffic incident clearance performance goals • Coordinate incident responder training
Law enforcement	<ul style="list-style-type: none"> • Clear minor incidents • Supervise major incident clearance activities • Conduct crash investigations • Maintain public–private towing contracts • Ensure rapid dispatch of private towing and recovery companies • Create interagency agreements and open roads policies • Develop quick clearance laws and policies for vehicle/cargo removal • Promote public information campaigns on quick clearance • Support traffic fatality certification law • Set traffic incident clearance performance goals
Private towing companies	<ul style="list-style-type: none"> • Maintain compliance with equipment and service regulations • Ensure rapid dispatch to traffic incident scene • Provide for disabled/wrecked vehicle removal and overturned truck removal • Mitigate incidental vehicle fluid spills
Road users	<ul style="list-style-type: none"> • Remove personal vehicles involved in a traffic incident if blocking travel lanes
Elected officials	<ul style="list-style-type: none"> • Establish quick clearance laws
Fire department	<ul style="list-style-type: none"> • Meet victim needs. • Mitigate incidental vehicle fluid spills • Support traffic fatality certification law
Emergency medical service	<ul style="list-style-type: none"> • Meet victim needs • Support traffic fatality certification law
Medical examiner	<ul style="list-style-type: none"> • Develop traffic fatality certification law
Department of health	<ul style="list-style-type: none"> • Manage spilled cargo removal involving food products
Animal control agency	<ul style="list-style-type: none"> • Coordinate and provide for spilled cargo removal involving live animals

delay. A policy on traffic fatality certification can dramatically reduce major incident clearance time. Collectively, these laws and policies reduce the level of congestion at and upstream of the incident site and, in turn, the amount of time required to restore the roadway facility to its normal operation.

The following incident management procedures fall under the purview of quick clearance:

- Minor incident removal,
- Heavy vehicle identification,
- Heavy vehicle removal,
- Spilled cargo removal,
- Incidental vehicle fluid spill removal, and
- Crash investigation.

The stated quick clearance procedures share the core objective of a quick clearance practice and aim to reduce incident clearance and restoration time. For example, the availability of push bumpers on authority vehicles coupled with crash investigation sites (CISs) on the adjacent roadway can greatly enhance minor incident removal. The application of new technologies for investigating crashes by law enforcement officers can significantly reduce crash clearance time. The effectiveness of each strategy depends on the type of equipment, trained personnel, infrastructure, and technology available to complete the task.

Stakeholders

Table 1 list common stakeholders that may participate in a quick clearance practice, in addition to the potential duties

and responsibilities of each stakeholder pertaining to the safe and rapid clearance of traffic incidents. In the absence of hazardous materials incidents, stakeholders involved in regular quick clearance operations include transportation agencies, law enforcement, and private towing companies. Elected officials play important roles in establishing quick clearance legislation. The fire department, emergency medical service, and medical examiner serve in supporting roles in maintaining open roads because of their focus on meeting victim needs. Moreover, the advance coordination and input of these stakeholders marks a crucial step toward establishing an effective traffic fatality certification policy and procedures for clearing major incidents. Road users, including passenger vehicle operators and truckers, have dual stakeholder roles under a quick clearance practice. They represent customers subject to the quality-of-service impacts of traffic incidents, and they are potentially active participants in incident removal by moving their personal vehicles from travel lanes.

Applications

The need for and use of quick clearance laws, policies, and procedures extends beyond roadways traversing major metropolitan areas. Approximately 78% of the total roadway system in the United States is located in rural areas, and 58% of the 42,116 total fatal crashes in 2001 occurred on rural roadway facilities (*Transtats* . . . 2002). Given the typically longer response times characteristic of rural areas, these locales would benefit from quick clearance strategies. Most quick clearance laws represent state statutes, and various policies and procedures developed by agencies in metropolitan areas can serve as models for rural agencies involved in traffic incident management.

Arterial roadways also deserve coverage under a quick clearance practice. These roads typically yield higher crash rates and, in some cases, have limited to no lateral clearance from the edge of the travel lane. However, the availability of adjacent driveways and parking areas can help achieve the fast removal of traffic incidents from the arterial right-of-way.

Benefits

The Washington State Department of Transportation (DOT) initiated an incident response program in 1990 that emphasized roadway clearance, accomplished by pushing or pulling lane-obstructing vehicles or debris off the roadway. The department recognized and accepted the increased exposure to potential tort actions, resulting from incident removal actions, as a price that had to be paid to help limit the growing problem of congestion within the state's urban areas (Berg et al. 1992).

Quick clearance practices have the potential to yield numerous direct benefits to road users and the surrounding community, such as decreases in

- Nonrecurrent congestion delay,
- Secondary incidents,
- Vehicle fuel consumption,
- Vehicle emissions,
- Response time to traffic incidents and other emergencies,
- Motorist stress levels,
- Aggressive driving behavior,
- Impact on the movement of freight in the region,
- Impact on the regional economy,
- Impact on local tourism, and
- Impact on future potential land uses.

TRAFFIC INCIDENT CHARACTERISTICS AND IMPACTS

Type and Severity

Table 2 categorizes traffic incidents attended to by select freeway service patrols in 2001, by type and lateral location. Note the variances by area type. Crashes comprised 5.5% to 12% of all incidents. As previously defined, quick clearance practices promote the rapid and safe removal of temporary obstructions from the roadway. Approximately 20% of incidents occurring on freeways in rural, urban, and metropolitan areas blocked one or more travel lanes, and 65% of the incidents on the Delaware Memorial Bridge blocked one or more travel lanes.

TABLE 2
EXAMPLES OF 2001 FREEWAY SERVICE PATROL ASSISTS BY TYPE AND LATERAL LOCATION

Location	Area Type	Incident Type	Incident Type		
			Crashes (%)	Debris (%)	Disablements/Abandoned Vehicles (%)
Racine, Kenosha, and Waukesha County (WI)	Urban/rural	Shoulder	3.3	2.4	72.9
		Travel lane(s)	2.2	1.0	18.2
Minneapolis–St. Paul (MN)	Metropolitan	Shoulder	4.8	0.7	74.9
		Travel lane(s)	4.1	3.1	12.4
Delaware Memorial Bridge (DE/NJ)	Bridge/tunnel	Shoulder	1.9	1.5	31.5
		Travel lane(s)	10.1	9.3	45.7

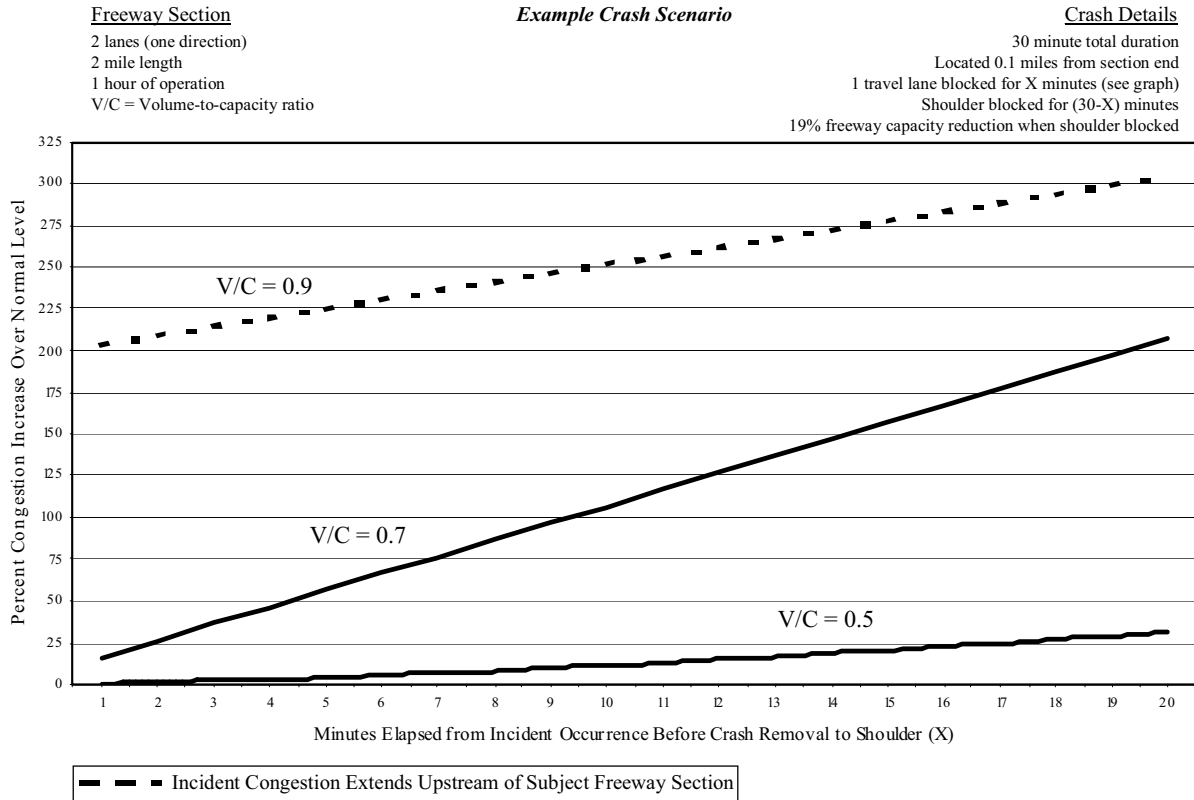


FIGURE 6 Simulation of the effect that a hypothetical single lane-blocking incident has on traffic congestion relative to the duration it obstructs a travel lane.

Since its inception in 1999, the Tennessee DOT HELP freeway service patrol, presently operating in the cities of Knoxville, Nashville, Chattanooga, and Memphis, has relocated a vehicle from travel lanes in 1 of every 15 patrol assists. A study of major freeway incidents that blocked travel lanes for a duration of 45 min or more, in Houston, Texas, reported that 612 major traffic incidents occurred over a 7-year period, from 1986 through 1992 (Ullman and Ogden 1996). Nearly 82% of these major freeway incidents involved, but were not necessarily all caused by, trucks alone. Also, spilled loads and/or overturned trucks accounted for 57% of the major freeway incidents.

Congestion Impacts

Figure 6 provides a telling example of the effect that a lane-blocking incident has on traffic congestion, in addition to the potential benefit reaped by a quick clearance practice. Consider a property-damage-only (PDO) crash of a 30-min duration occurring on a two-lane, 3.22-km (2-mi) freeway section and initially blocking one travel lane. Using the FRESIM (FREway SIMulator) computer freeway simulation model, estimates of the percentage of nonrecurrent congestion increases were obtained, under a range of background traffic demand levels, for the example crash

blocking a travel lane from 1 to 20 min. The simulations concluded at the 20-min mark, because any minor incident would not occupy a travel lane for its entire duration (30 min in the example case). Figure 6 shows that the incident has a low impact on congestion levels under a volume-to-capacity (V/C) ratio of 0.5, characteristic of off-peak periods. When the V/C ratio reaches 0.7 on the two-lane freeway section, the duration of lane blockage has an immense impact on the resulting increase in congestion on the section. If the drivers involved in the incident move their vehicles off the traveled way within 2 min of incident occurrence, then the freeway section incurs a modest 24% increase in hourly congestion over normal levels. However, if the drivers wait to move their vehicles until instructed by a law enforcement or service patrol operator at, for example, the 10-min mark, then the level of hourly congestion experienced by motorists traversing this road section is almost double that under normal conditions. At a V/C ratio of 0.9, every passing minute becomes critical as traffic congestion created by the lane-blocking incident extends upstream of the subject freeway section. Using this scenario, a small savings in incident clearance time significantly reduces vehicle delays and the likelihood of secondary incidents.

Based on a study of crashes on Milwaukee County, Wisconsin, freeways, Drakopoulos et al. (2001) reported

that a first responding law enforcement officer arrived at the site of a given freeway crash on average of approximately 9.8 min after its occurrence. Studies of freeway service patrols indicate that incident response times varied between 5 and 20 min, with a median of 9 min (*Incident Management* . . . 2000). When possible, the appropriate actions of drivers involved in a traffic incident to maintain an open road, as supported by a quick clearance practice, can alleviate potentially large congestion delays and lower the probability of secondary incidents. Karlaftis et al. (1999) found that for each additional minute in primary crash clearance time, the likelihood of a secondary crash occurrence increased by 2.8%.

SYNTHESIS OBJECTIVE

This synthesis profiles laws, policies, and procedures for facilitating the safe and efficient clearance of traffic incidents on highways in urban and rural areas. In particular, the study focuses on quick clearance practices directed at the rapid removal of nonhazardous material incidents, primarily those initially blocking travel lanes and attended to by the vehicle operators. The synthesis addresses the following broad list of topics associated with quick clearance:

- Driver stop and removal legislation,
- Authority removal and tow legislation and policy,
- Motorist education campaigns,
- Interagency agreements and open roads policies,
- Public–private towing contracts and regulations,
- Fatal crash handling and traffic fatality certification policies,
- Minor incident clearance activities,
- Major incident clearance activities,
- Performance standards,
- Cost and financial responsibility,
- Crash investigation technologies,
- Communications technologies,
- Training and institutional issues,
- Perceived and measured benefits, and
- Barriers and lessons learned.

The synthesis presents successful quick clearance practices as reported by surveyed agencies, identifies effective incident removal procedures, and reports on some model legislation and policies for fast and legal removal of vehicles and cargo.

The synthesis is intended to familiarize the reader with the laws, policies, procedures, infrastructure, and technologies associated with developing a quick clearance practice and increasing the efficiency of traffic incident removal operations. The study findings will prove useful for any agency or company involved in the direct removal of nonhazardous traffic incidents that seeks legislative or interagency support of removal activities or a description of alternative removal strategies to minimize clearance time.

SYNTHESIS ORGANIZATION

Four chapters follow this introductory chapter. Chapter two provides a report of past recommendations on quick clearance planning and summarizes examples of planned event applications. Chapter three presents an overview of quick clearance legislation and policies for all 50 states, a discussion on fatal crash handling, and a review of interagency agreements and public–private towing contracts. Chapter four reports on procedures, resources, and specific on-site activities employed to mitigate the occurrence of traffic incidents of varying severity. Chapter five summarizes the results and offers suggestions for future research. In addition, appendixes provide a copy of the survey questionnaire (Appendix A); a listing of state statutes authorizing quick clearance action by motorists (Appendix B); state statutes authorizing quick clearance action by authority (Appendix C); and copies of various quick clearance and open roads policies, tow dispatch programs, and guidelines, regulations, and contracts for private towing companies (Appendixes D–L and N); and the Towing Recovery Association of America Vehicle Identification Guide (Appendix M).

LITERATURE REVIEW AND HISTORICAL PERSPECTIVE

BACKGROUND

A review of the literature and an Internet search showed that quick clearance does not represent a new concept in relation to traffic incident removal. For well over a decade, select jurisdictions have instituted legislation, policies, infrastructure improvements, and technology upgrades to support a quick clearance practice. In the *Freeway Incident Management Handbook*, Reiss and Dunn (1991) identified numerous “fast removal” strategies, including required resources for the removal of an overturned semi-tractor trailer, components of public–private towing contracts, guidelines for conducting crash investigations to minimize the impact on adjacent traffic flow, and the use of CISs. The handbook also includes liability considerations and cites specific state laws and ordinances promoting the fast removal of disabled and wrecked vehicles from highway travel lanes.

The Internet can serve as one of the media for educating motorists about a law or authority policy on quick clear-

ance. For example, as shown in Figure 7, the Houston TranStar partnership posted a 60-s video promoting the Houston “Steer It . . . Clear It” public service campaign with the purpose of informing motorists of recommended and law-supported guidelines on what to do when involved in a minor incident. The TranStar partner agencies appeal to motorists to assist in ensuring the safe and quick clearance of minor incidents, and the video offers motorists instruction on the safe removal, when possible, of their vehicle from the site of a minor incident.

PLANNING CONSIDERATIONS AND RECOMMENDATIONS

National Conference on Traffic Incident Management

AASHTO, the FHWA, the Intelligent Transportation Society of America, and TRB sponsored the National Conference on Traffic Incident Management in March 2002 for the purpose of crafting and advancing a national agenda



FIGURE 7 The Internet serves as one of the media for educating motorists about a law or authority policy on quick clearance. (Courtesy: Houston TranStar.)

for improved traffic incident management (*Proceedings of the National Conference . . . 2002*). The conference convened 167 stakeholders representing transportation, law enforcement, fire and emergency response, and other public- and private-sector partners. In meeting the conference goal, organizers charged participants with the task of identifying and prioritizing issues for advancing the state of the practice in traffic incident management. In turn, the conference generated and ranked many action items under three focus areas: operational issues, technological issues, and institutional issues.

This conference underscored the importance of establishing a quick clearance practice as conference participants developed the following action items pertaining to specific quick clearance themes, strategies, and training. Those action items accompanied by an asterisk denote high priority action items as ranked by the conference participants:

- Begin a comprehensive lobbying effort (from FHWA, industry, etc.) for quick clearance/open roads policy and legislative buy-in;*
- Improve first responder on-scene processes:
 - Place equipment staging at the ramps instead of the scenes,
 - Have push bumpers on all first responder vehicles, and
 - Consider law/policy change for victim removal;
- Accomplish training at police/fire academies;*
- Develop a mutual understanding of each agency's operation by cross-training between agencies;*
- Conduct research on best practices and state of the practice on quick clearance;
- Communicate the advantages of quick clearance;
- Create incentives and disincentives;
- Change the towing rates from an hourly rate to an incident rate;
- Educate the public with programs such as “move to the side of the road”;
- Keep as many lanes open as possible;
- Communicate and educate on the importance of traffic flow;
- Update heavy-duty towing regulations;
- Set performance measures for clearance;
- Create clearer definition of authority/ownership;
- Consider liability; and
- Include traffic incident management as part of the towing industry certification.

This synthesis study complements a notable conference action item: Conduct research on best practices and state of the practice on quick clearance. One of the seven top action items for guiding a national agenda for traffic incident management involved generating national program models and guidelines in the form of model agreements, memorandums of understanding, best practices, and standards.

From the perspective of quick clearance practices, this synthesis helps facilitate that top action item.

Federal Highway Administration Traffic Incident Management Self-Assessment Guide

The FHWA maintains a Traffic Incident Management (TIM) Self-Assessment Guide intended for use by state and regional TIM program managers to assess their achievement of a successful multiagency program to manage traffic incidents effectively and safely (*Traffic Incident . . . 2002*). Managers may also use the tool to evaluate gaps and needs in existing multiagency regional and state-wide efforts to mitigate congestion and safety impacts caused by traffic incidents. The TIM tool consists of a series of questions designed to allow those with traffic incident management responsibilities to rate their performance, by assigning a score ranging from 0 (no progress) to 4 (outstanding efforts), in specific organizational and procedural categories. (The reference entry contains a website address to the TIM Self-Assessment Guide).

The FHWA's tool includes several assessment questions potentially applicable to measuring a TIM program's progress on establishing quick clearance laws, policies, and procedures, in addition to obtaining infrastructure to support quick clearance operations. Pertinent topics covered in the tool include the following:

- Quick clearance policies,
- Fatal accident investigations,
- Prequalified list of available and contracted towing and recovery operators,
- Motorist assist service patrols,
- Formal interagency agreements,
- Training using simulation or in-field exercises,
- Post-incident debriefings,
- Performance targets for response and clearance,
- Prestaging of response equipment,
- Interagency voice communications, and
- Traffic management center (TMC) coordination of incident notification and response.

I-95 Corridor Coalition State of the Practice

A report on incident management practices within the I-95 Corridor Coalition (I-95 CC) area included a summary of member agencies' quick clearance policies, hold harmless policies, and traffic fatality certification policies (*Incident Management . . . 1994*). Many of these issues remain valid. This publication represents one of the first attempts to assess the scope of existing nationwide quick clearance practices, although the stated study restricted surveys to the I-95 CC area and nine other states or agencies.

The study found that most agencies do not have formal quick clearance policies; that is, laws or policies allowing motorists to move vehicles involved in a PDO crash to a safe spot away from the crash scene in the interest of maintaining traffic flow. At the time of the report publication, several of the surveyed states indicated that they were in the process of trying to gain approval of such a policy. The I-95 CC agencies also reported limited adoption of a hold harmless policy, intended to relieve traffic incident responders and associated agencies of tort claims directly connected to the act of removing disabled or wrecked vehicles blocking travel lanes, to more rapidly open the affected highway or facility.

The report noted that in most instances in the I-95 CC area, the removal or moving of a fatality from the incident location is not permitted until the death has been certified by the coroner. Stated were the legality and liability associated with moving a victim's body and the possibility of contributing to the fatality. A select number of agencies instituted the following policies or actions negating the requirement of a coroner's presence at the incident scene to certify a traffic fatality:

- The responding emergency medical service unit may certify a death.
- On-scene responders may telemetrically relay vital signs to the off-site coroner for verification.
- On-scene responders may move the body to a safer refuge in the interest of public safety (Pennsylvania Turnpike Commission).
- On-scene responders may move the body to a safer refuge given the permission of the coroner by telephone or other mode (Rhode Island DOT).

Traffic Incident Management Handbook

The FHWA's *Traffic Incident Management Handbook* (2000) covers quick clearance policies and procedures under a section on traffic incident clearance. It highlights innovative technologies for removing large trucks and conducting crash investigations, and profiles the use of guidelines for developing CISs. The handbook discusses several institutional topics, including towing company issues, wrecker service contracting, removal of truck cargo, and ordinances relating to incident removal. The report appendix offers a model towing agreement that was developed by the Towing and Recovery Association of America (TRAA).

The FHWA handbook includes several notable observations regarding incident removal, as follows:

- Liability for minor damage to vehicles pushed out of the roadway by police patrol cars has led to recent

consideration of limiting or eliminating the use of push bars, even though use of push bumpers reduce delay and congestion.

- In the event of a crash involving spilled cargo, police and transportation officials should be aware of the tendency for insurance companies to "total" the cargo and pursue expeditious removal by using the best and quickest methods available.
- Regarding crash investigations, investigative training for law enforcement seldom contains any discussion of limiting impacts on traffic and may not differentiate between closing a little-used street and a heavily traveled freeway.
- Upon the occurrence of a minor crash, procedures mandating lane clearance minimize "rubbernecking" that otherwise keeps traffic slow and congested as long as volumes remain high.
- When new or enhanced incident management equipment or techniques are proposed, the lack of funding and lack of training time availability are often cited as barriers.
- The success of quick clearance policies is dependant on motorists knowing about the policy or regulation.
- Incidents with overturned trucks being removed by expedient means that damage the load and vehicle have led to few claims, and the few cases that have been brought against public agencies have resulted in the courts, upholding the actions of the public agencies if they were done in good faith and in accordance with established policy and procedures (*Traffic Incident . . .* 2000).

Chicago Arterial Incident Management Study

In a study of Chicago area urban arterial roadways, Raub and Schofer (1997) reported that the following key issues affected traffic incident clearance on arterial roadways:

- Responders' lack of concern for and knowledge of traffic impact, resulting in failure to manage traffic;
- Excessive incident duration;
- Debris and vehicles left on the roadway too long;
- Failure to secure timely and appropriate tow services; and
- Poor evaluation and interagency and interagency planning.

In turn, the researchers offered the following recommendations on traffic incident removal procedure and policy to reduce the significant congestion impacts incurred by arterial road users as a result of incidents:

- Correct tow services should be requested by first responders as soon as the need is recognized, to minimize delay in removal of disabled vehicles.

- The training of both fire and police personnel should reinforce the need to, and ways to, minimize lane blockage at an incident.
- When responders finish their respective tasks, they should remove or relocate their vehicles out of view to reduce distractions to motorists.
- Portable cellular telephones offer an inexpensive and quickly implemented way for police, fire, tow, and public works personnel to communicate at and near the incident scene.
- Vehicle and debris removal must be performed as soon as possible after any injured persons have been removed and hazardous materials have been secured (felony incidents excluded).
- Any vehicle that can be driven or pushed from the roadway should be moved as quickly as possible; legislation should be introduced requiring that vehicles involved in minor collisions and drivable be removed from the roadway before police are contacted.
- Spills from vehicles should be promptly removed [hazardous materials (hazmat) excluded].
- Municipalities should write contracts for tow services to ensure that required services will be available.
- Police should consider a variety of tactics that can be used to make the crash investigation phase more efficient (Raub and Schofer 1997).

PLANNED EVENT APPLICATIONS

From a traffic management perspective, the occurrence of a planned event, such as a national sporting event generating unusually high levels of traffic demand, or a roadway construction activity causing significant reduction in available road capacity, places a premium on the optimal use of available facilities. Such events serve as a platform for deploying innovative traffic management strategies, including expanded and enhanced traffic incident management activities not normally considered under day-to-day traffic conditions because of resource and/or funding constraints. However, the operational success of certain resource, policy, or procedural applications for incident management during a planned event may warrant adopting a permanent strategy or repeating a strategy during a similar event. This section describes the temporary quick clearance practices employed during two large-scale planned events.

2002 Winter Olympic Games

In February 2002, Salt Lake City and the state of Utah hosted the 19th Winter Olympic Games. The Games spanned 17 days, and the 160 individual athletic competitions and 20 significant noncompetition events and ceremonies generated special event traffic for up to 18 h each day (Kinnecom et al. 2002). Quick clearance became the

overarching theme within the Utah DOT incident management plan. The agency received equipment and personnel support from the Illinois DOT, Tennessee DOT, Washington State DOT, and the Nevada State Police, boosting the number of available incident management team crews from 13 to 23. Through a cooperative agreement with the Illinois DOT, the Utah DOT borrowed a 50-ton rotating boom recovery truck to remove traffic incidents that might involve a heavy truck or large tour bus.

The incident management plan for the 2002 Winter Olympic Games included the following notable quick clearance strategies (*Proceedings of the National Conference . . . 2002*):

- Staging of heavy-duty tow trucks throughout Games venue routes between 5 a.m. and 1:00 p.m. (load in),
- Carrying of kits by incident responders to tow every type of bus used to transport people,
- Use of photogrammetry by law enforcement during incident investigations, and
- Deployment of heavy service patrol coverage to reduce the number of abandoned vehicles and lessen security concerns.

The following statistics and performance measures lead to the conclusion that the Utah DOT, together with its partner law enforcement and transportation agencies, developed and deployed a successful quick clearance practice for the Games:

- Twenty-nine vehicles were removed from incident scenes on the athlete routes to facilitate traffic flow.
- Twelve fatality or critical crashes were investigated by law enforcement using photogrammetry in under 1 h, and in one case, police photographed an incident scene, with evidence markers, within 30 min.
- A serious injury crash was cleared in 23 min, thanks to effective teamwork.
- During the Games, incident management team crews spent an average of 70 min at each crash scene, down from an average of 115 min before the Games.
- During the 17 days of the Games, 2,306 motorists were assisted.

Interstate 5 Bridge Construction: Trunnion Repair Project

The Interstate 5 (I-5) bridge spans the Columbia River and represents the primary river crossing between Portland, Oregon, and Vancouver, Washington. After discovering the development of a crack in one of the trunnions on the northbound structure, Oregon and Washington bridge engineers called for an immediate replacement of the counterweight cables, drums, and shafts (trunnions) on the north tower of the northbound I-5 lift bridge. Despite the delay in construction until mid-September 1997, when summer

vacation travel would dwindle, recurring weekday peak-hour traffic using the southbound structure only would experience massive delays in the absence of a traffic management plan. Even if motorists were to cancel unnecessary trips or divert their trips from the Interstate facility, it was determined that recurrent, peak-hour traffic queues would extend approximately 10 mi to the north of the bridge and 4 mi to the south (*Truncheon Operations Plan* 1997).

In developing a traffic management plan for the construction project, a multijurisdiction, bi-state traffic management team—including transportation, law enforcement, and fire officials representing the states of Oregon and Washington, the cities of Portland and Vancouver, and Clark County, Washington—instituted an aggressive incident management plan, with a particular emphasis on quick clearance. The following points highlight the quick clearance strategies used by the Oregon DOT in the Portland metropolitan area throughout the construction of the northbound structure:

- Operation of Oregon DOT roving service patrols and two-person debris pick-up teams on state highways throughout the Portland metropolitan area;
- Designation of 24-h tow zones on segments of I-5, in addition to I-84 and I-205 serving as detour routes. I-205 also serviced the Portland International Airport;
- Provision of standby, contract tow trucks at key locations along major freeway routes serving the I-5 bridge, including light and heavy tow trucks at both ends of the bridge, and on designated alternate routes around the bridge; and
- Monitoring and regulation of oversize cargo transport by trucks.

The Oregon DOT service patrols functioned to clear stalled vehicles from travel lanes, using either push bumpers or tow straps. Patrol personnel received special direction to identify and remove any debris or hazards impeding traffic flow, using available debris removal crews, stationed at various Oregon DOT maintenance yards, as necessary. The primary objective of law enforcement operations concerned promoting safe and efficient traffic movement by emphasizing the legal aspects of motor vehicle operation and ensuring driver compliance with temporary regulations. Contract tow operators had authorization to transport disabled vehicles to the nearest, predesignated drop-off location at no cost to the motorist. Motorists had 6 h to remove their vehicles from the drop-off locations.

HISTORICAL PERSPECTIVE

District 1 of the Illinois DOT pioneered the modern quick clearance practice when, in 1960, the agency began Chi-

cago's Emergency Traffic Patrol (ETP), serving the primary objective of responding to and removing traffic incidents to maintain open roads. The ETP originally consisted of several pick-up trucks operating on Chicago area freeways during peak periods. Today, the ETP mitigates traffic incidents 24 h a day, 365 days a year and patrols 79 center-lane mi encompassing Chicago's seven major expressways. The ETP provided 102,251 assists in 2001 (Mitchell and McKay 2002).

The ETP maintains a fleet of 35 emergency patrol vehicle (EPV) trucks that represent the backbone of the ETP fleet. Figure 8 shows a typical EPV and standard EPV equipment. The diesel-powered EPV has an 80-ft² all-aluminum low-profile compartmentalized body and an advanced technology, fully hydraulic, hands-free under-lift system with a 20,000 lb capacity winch. The unit is equipped with a heavy-duty, front push-plate bumper. This design enables the operator to stay inside the vehicle cab, and be able to lower a tow under-lift, back up to an abandoned or disabled vehicle, attach onto the two front or rear wheels, and raise and relocate the vehicle away from the facility in under 1 min. The truck also has an engine-mounted air compressor for releasing truck air brakes and operating an air-cushion recovery system. The EPV drive line and frame are reinforced to allow the relocation of a loaded semi-tractor trailer off an expressway.

In the event of a major incident involving a large truck or cargo spill, four recovery tow trucks supplement the EVP fleet. The recovery truck fleet comprises one 50- and one 60-ton-capacity static boom recovery tows, one 50-ton-capacity rotating boom recovery tow, and one severe-service 60-ton-capacity rotating boom crash crane. Figure 9 shows the 60-ton-capacity rotator removing spilled cargo from an expressway. The ETP also has a 6.5-yd³-capacity sand truck used to spread sand at crash scenes with petroleum spills, and the ETP possesses an air-cushion recovery system capable of lifting more than 90,000 lb.

ETP operators receive extensive training in the operational problems and hazards typical to an urban freeway system. Training specific to the removal of traffic incidents includes heavy equipment use and emergency recovery procedures, particularly in the handling of tank truck emergencies. Training activities also involve air-cushion recovery work.

Specific duties of ETP operators, or "Minutemen," pertaining to the quick clearance of traffic incidents include the following:

- Expediting clearance at crash scenes by rendering first aid; calling for police, fire, ambulance, or special equipment services such as helping to extricate trapped or injured people from a wrecked vehicle;



FIGURE 8 The Illinois DOT emergency patrol vehicle trucks represent the backbone of the agency's Emergency Traffic Patrol fleet. (Courtesy: Illinois DOT–District 1.)



FIGURE 9 Emergency traffic patrol 60-ton-capacity rotator removing spilled cargo from an expressway. (Courtesy: Illinois DOT–District 1.)

- supplementing police traffic control; and removing vehicles involved in crashes promptly from the roadway.
- Removing crash and other highway debris from the roadway or calling for extra cleanup help and special equipment, sanding for oil or fuel spills, containing of ruptured fuel tank leaks, and the removing of or assistance with the removal of dead animals in traffic lanes.
- Assisting motorists by relocating disabled vehicles and abandoned vehicles from hazardous locations.
- Warning pedestrians to keep off the expressway and providing transportation for stranded pedestrians to the nearest expressway exit.

A cost-effectiveness study of the ETP program reported a cost-benefit ratio of approximately 1 to 17.

QUICK CLEARANCE LEGISLATION AND POLICIES

BACKGROUND

As part of this synthesis study, a comprehensive 49-question survey, directed at those individuals represented in transportation or law enforcement, was prepared for distribution to TRB state representatives in all 50 states. Concurrently, as shown in Figure 10, the study included an extensive Internet search in an effort to identify laws, policies, and information campaigns supporting existing quick clearance practices.

The questionnaire, contained in Appendix A, consists of five parts. Part 1 queries information on the area type and road system serviced by the responding agency, in addition to the scope of available services and infrastructure for traffic incident clearance activities. Part 2 seeks to identify

existing legislation, agency agreements, and policies adopted for the purpose of facilitating the removal of vehicles and/or cargo from travel lanes and clarifying liability issues within surveyed jurisdictions. Part 3 identifies criteria and specific site clearance activities used to mitigate the occurrence of a vehicle disablement or minor crash blocking one or more travel lanes. Part 4 queries criteria and specific site clearance and investigation activities employed to mitigate the occurrence of a serious crash or nonhazardous spill requiring multiagency response and coordination. Part 5 identifies various procedures, barriers, lessons learned, and benefits pertaining to specific traffic incident removal strategies and techniques.

With quick clearance becoming an increasingly important component of incident management programs nation-



FIGURE 10 Tennessee DOT quick clearance motorist information campaign. (Courtesy: Tennessee DOT.)

wide, survey questions were meticulously reviewed so that they would guide respondents in identifying the latest laws, policies, agreements, procedures, equipment, and technologies used in providing for the safe and quick clearance of traffic incidents. The survey instructed agency representatives to submit responses characterizing the quick clearance practices in their jurisdictions. Respondents were encouraged, in completing the survey, to solicit assistance from other stakeholders in transportation, law enforcement, and towing and recovery. After a summary of surveyed agencies, the remainder of this chapter discusses in detail quick clearance laws and policies, interagency agreements, and public–private towing contracts.

SURVEY RESPONSE CHARACTERISTICS

The synthesis includes 34 questionnaire responses. The great majority of respondents represent transportation agencies; state DOT and toll authority officials returned 23 surveys and 6 surveys, respectively. Law enforcement agencies submitted four survey responses. The surveyed agencies encompass 21 states, with 6 states having multiple jurisdictions included in the study.

A significant number of I-95 CC member agencies returned survey responses for use in this study, including turnpike and toll authorities, port authorities, and specific state DOT districts. PB Farradyne, Inc., assisted the study by distributing the survey questionnaire to coalition member agencies. As noted in the previous chapter, the I-95 CC has taken proactive steps toward promoting traffic incident quick clearance. The coalition and PB Farradyne have teamed to develop the forthcoming study, “Quick Clearance and ‘Move-It’ Best Practices,” which represents a recommended quick clearance practice deployment plan for I-95 CC member agencies.

Table 3 presents a complete list of surveyed agencies, and it summarizes existing infrastructure constituting the incident management program in each agency’s jurisdiction. The program components include a freeway service patrol, incident management manual, major incident response team, CISs, and a traffic management center. Freeway or other roving service patrols play an indispensable role in the removal of minor incidents such as PDO crashes and vehicle disablements. Service patrol operators most often arrive at a minor incident scene as the first responders, and they can remind drivers of applicable quick clearance laws or policies to clear travel lanes. Furthermore, operators responding to an incident may carry rapid incident removal equipment such as a hydraulic jack, sand or other absorbent agent, a push bumper or tow chain, and a camera.

A manual on incident management represents an important training and operations tool for incident responders.

From a training perspective, a manual can serve to make incident responders aware of the importance of removing incidents safely and quickly, in addition to educating responders about supporting quick clearance laws, policies, and interagency agreements. As an operations tool, an incident management manual states essential guidelines and procedures to effect incident removal; moreover, it lists the duties, responsibilities, and important contact information of other stakeholders, such as towing operators.

Major incident response teams consist of expert crews trained and equipped to mitigate the occurrence of major incidents, such as crashes involving heavy vehicles. CISs represent a highway infrastructure component existing foremost to shield incident victims and responders from traffic traversing a controlled-access facility, as well as a quick clearance strategy to maintain open roads along highly traveled corridors. Traffic management centers can help facilitate interagency communication, owing to multi-agency staffing, and they can dispatch appropriate personnel and equipment to the incident site in accordance with established quick clearance procedures.

It is important to recognize that the surveyed agencies have jurisdictions encompassing a range of area types. To convey the use of select quick clearance policies, procedures, and equipment by area type, the study assigned each surveyed jurisdiction one of the following four area types:

- Urban/rural,
- Metropolitan,
- Rural, and
- Bridge/tunnel.

The urban/rural classification typically denotes survey responses describing a quick clearance practice applied statewide or districtwide without bias toward a specific metropolitan area. This classification also includes surveys prepared by three agencies owning toll roads:

- The 238-km (148-mi.) New Jersey Turnpike,
- The 278-km (173-mi.) Garden State Parkway, and
- The 723-km (449-mi.) Florida Turnpike.

The cited facilities have characteristics similar to those of other state DOT-managed highway systems classified under the urban/rural area type. The metropolitan area type refers to quick clearance practices specifically covering urban areas with populations exceeding 1 million. Agencies that manage bridges, tunnels, and causeways, where the fast removal of lane-blocking traffic incidents is of critical importance, received a bridge/tunnel designation. The rural area type category includes responses from primarily rural states and counties. Table 3 indicates that three of the four jurisdictions classified under the rural area type do not have any of the listed incident management infrastructure

TABLE 3
SUMMARY OF SURVEYED AGENCIES

Agency	Location	Area Type	Existing Incident Management Infrastructure				
			Freeway Service Patrol	Incident Management Manual	Major Incident Response Team	Crash Investigation Sites	Traffic Management Center
Arkansas SHTD— District 6	Districtwide	Urban/Rural	•				
Connecticut DOT	Statewide	Urban/Rural	•				•
Dallas County Sheriff's Department	Dallas County, TX	Metropolitan	•	•	•		•
Delaware DOT	Statewide	Urban/Rural		•	•		•
Delaware River and Bay Authority	New Castle County, DE (Delaware Memorial Bridge)	Bridge/Tunnel	•		•		•
Delaware River Port Authority	Southern NJ and Southeast PA (4 bridges)	Bridge/Tunnel	•				
Florida DOT— District 1	Districtwide	Urban/Rural	•	•	•		
Florida DOT— District 5	Districtwide	Urban/Rural	•	•	•		•
Florida DOT— District 7	Tampa–St. Petersburg	Metropolitan	•				
Florida Highway Patrol —Troop L	Southeast FL	Urban/Rural	•	•	•	•	
Florida Turnpike Enterprise	Florida Turnpike	Urban/Rural	•	•	•		•
Illinois DOT— District 1	Chicago	Metropolitan	•	•	•	•	•
Louisiana State Police	Statewide	Urban/Rural	•	•	•		•
Maryland SHA	Statewide	Urban/Rural	•	•	•		•
Maryland Transportation Authority	Statewide (4 bridges, 2 tunnels, 1 hwy.)	Bridge/Tunnel	•				•
Minnesota DOT— Metro District	Minneapolis–St. Paul	Metropolitan	•	•		•	•
Montana DOT	Statewide	Rural					
New Hampshire DOT	Statewide	Rural					
New Jersey DOT	Statewide	Urban/Rural	•		•		•
New Jersey Turnpike Authority	New Jersey Turnpike	Urban/Rural	•	•	•		•
New Jersey Highway Authority	Garden State Parkway	Urban/Rural			•		•
Ohio DOT	Statewide	Urban/Rural	•				
Ohio DOT	Columbus	Metropolitan	•		•		•
Ohio/Kentucky DOT—ARTIMIS	Cincinnati, Northern Kentucky	Metropolitan	•				•
Oklahoma DOT	Oklahoma City	Metropolitan					
South Carolina DOT	Statewide	Urban/Rural	•				•
Tennessee DOT	Chattanooga, Knoxville, Memphis, and Nashville	Metropolitan	•				•
Vermont State Police	Statewide	Rural		•			
Virginia DOT— Hampton Roads District	Norfolk, Virginia Beach, and Newport News	Metropolitan	•				•
Washington State DOT	Statewide	Urban/Rural	•		•		•
West Virginia DOT	Statewide	Urban/Rural	•				
Wisconsin DOT— District 2	Milwaukee and Southeastern WI	Metropolitan	•	•		•	•
Wisconsin DOT— District 3	Districtwide	Urban/Rural	•				
Not Stated	Seven rural counties	Rural					

Notes: SHTD = State Highway and Transportation Department; DOT = Department of Transportation; SHA = State Highway Administration; ARTIMIS = Advanced Regional Traffic Interactive Management and Information System.

TABLE 4
SURVEYED JURISDICTIONS WITH LEGISLATION AUTHORIZING THE REMOVAL OF
DISABLED OR ABANDONED VEHICLES, BY AREA TYPE

Area Type	Abandoned/Disabled Vehicle Removal Law?		Range of Allowable Duration Before Removal
	Yes (%)	No. of Respondents	
Urban/rural	88	16	2 hours to 72 hours
Metropolitan	100	6	30 minutes to 48 hours
Rural	100	3	2 hours to 48 hours
Bridge/tunnel	67	3	12 hours to 72 hours
All jurisdictions	89	28	30 minutes to 72 hours

components, and the remaining rural jurisdiction has only an incident management manual. This synthesis will report the state of the practice in quick clearance based on survey responses provided by agencies representing 17 urban/rural areas, 10 metropolitan areas, 4 rural areas, and 3 bridge/tunnel areas.

QUICK CLEARANCE LEGISLATION

Highway obstructions vary in scope by the type of obstruction, location within the highway right-of-way, and owner status. Traffic flow obstructions may include disabled or wrecked vehicles, spilled cargo, or miscellaneous debris. The incident may block travel lanes, the median shoulder, or the right shoulder. Finally, the vehicle owner may either stay with the immobilized vehicle or leave the scene to seek assistance, rendering the vehicle abandoned. Most states maintain laws to address the mitigation of different highway obstruction types, the most common of which involves the removal of unattended or abandoned vehicles after a specified duration. Table 4 indicates that 89% of surveyed jurisdictions have laws authorizing the removal of a disabled or abandoned vehicle from the freeway or major arterial right-of-way after a specified duration. The length of time allowed before authorities would remove an immobilized vehicle stranded on a highway shoulder ranged from 30 min in metropolitan areas to 72 h in urban/rural and bridge/tunnel areas.

This section concerns the identification of legislation authorizing the removal of driver-attended disabled or wrecked vehicles off travel lanes, in addition to the authority tow of such vehicles without regard to the presence of the driver at the incident site. This truly represents quick clearance legislation, because it facilitates driver participation in incident removal and/or provides incident responders with the authority to rapidly remove vehicles and cargo obstructing traffic flow. In effect, 24 h a day, 365 days a year, quick clearance laws, coupled with an effective public information campaign, can dramatically reduce the congestion impact of incidents. That is particularly so for minor crashes, where drivers can move their vehicles out of travel lanes several minutes before the arrival of a first responder. A proposed new section of the 2000 *Manual on*

Uniform Traffic Control Devices (2002), entitled “Control of Traffic Through Traffic Incident Management Areas,” supports the purpose of quick clearance legislation, offering the following guidance: “When a minor traffic incident blocks a travel lane, it should be removed from that lane to the shoulder as quickly as possible.”

A quick clearance law must address the following criteria for incident removal: Who is authorized to initially move the vehicle and/or cargo and where to and by what means can the incident be moved? An examination of state statutes on quick clearance revealed that the scope of these laws vary by the cited criteria. There are four categories of quick clearance legislation:

- Driver stop law,
- Driver removal law,
- Authority removal law, and
- Authority tow law.

The following sections detail each quick clearance law type and identify the state statutes.

DRIVER STOP LAW

Background

The driver stop law marks the oldest type of quick clearance legislation and includes the following standard provisions:

- It applies to drivers involved in a crash, and
- It stipulates that drivers must stop their vehicles without obstructing traffic more than necessary.

The Uniform Vehicle Code, under Section 10-103, has maintained a model driver stop law since 1956 (Reiss and Dunn 1991). Section 10-103 states

The driver of any vehicle involved in an accident resulting only in damage to a vehicle or other property which is driven or attended by any person shall immediately stop such vehicle at the scene of such accident or as close as possible, but shall forthwith return to and in every event shall remain at the scene of such accident until he has fulfilled the requirements of [Section] 10-104. *Every such stop shall be*

made without obstructing traffic more than is necessary (emphasis added). Any person failing to stop or comply with said requirements under such circumstances shall be guilty of a misdemeanor and, upon conviction, shall be punished as provided in [Section] 17-101.

State driver stop laws typically mirror the cited Uniform Vehicle Code model law. However, while the Uniform Vehicle Code covers PDO crashes only, some states have expanded their driver stop laws to include injury and fatal crashes. Consider Section 169.09.1 of the Minnesota Statutes, entitled “Driver to stop for accident with person.”

The driver of any vehicle involved in an accident resulting in immediately demonstrable bodily injury to or death of any person shall immediately stop the vehicle at the scene of the accident, or as close to the scene as possible, but shall then return to and in every event, shall remain at, the scene of the accident until the driver has fulfilled the requirements of this chapter as to the giving of information. *The stop shall be made without unnecessarily obstructing traffic* (emphasis added).

The Virginia DOT and Virginia State Police have teamed up to develop a public information campaign on quick clearance based on a driver stop law covering all types of crashes. Figure 11 displays an excerpt of a brochure from the state’s “Move It” campaign that states drivers must move their vehicles out of travel lanes when involved in non-injury crashes, as mandated by Virginia’s driver stop law.

Internet Search of State Driver Stop Laws

Table 5 indicates the states with driver stop laws. Appendix B contains a detailed table that notes the traffic incident

types covered by the law, lists the applicable statute section number, and cites special conditions other than the previously mentioned general provisions of a driver stop law. For ease of reference, states maintaining driver stop laws, coupled with the applicable traffic incident types, have been shaded in Appendix B.

Table 5 shows that 34 states possess driver stop laws for PDO crashes and/or injury crashes. Driver stop laws in 29 of these states apply to all crash severity levels: PDO crashes, personal injury crashes, and crashes involving a fatality. The remaining five states have driver stop laws for PDO crashes only.

A select number of states that do not have driver stop laws have either driver removal laws instead or, in the case of South Dakota, an authority tow law. Among states without quick clearance legislation, North Carolina, through its statute 20-166, requires drivers involved in any crash, including PDO, to immediately stop their vehicles at the scene of the crash.

Driver Removal Law

Background

A driver removal law also targets drivers involved in traffic incidents. However, this law differs from a driver stop law in that it places direct responsibility on drivers involved in a traffic incident, whose vehicles block all or a portion of a travel lane, to move their vehicles off the traveled way when practicable. This represents the general provision of



HAVE you ever been involved in a “fender bender” and left your car in a traffic lane rather than moving it? This is a pretty common habit in Virginia. If you have a non-injury accident it’s not necessary to wait for the police before moving the vehicles involved. If the vehicles can be driven, move them to a safe location and then exchange the necessary information or contact the police. It’s not just a good thing to do, it’s Virginia law!

When you leave your car on the road, you contribute to traffic back-ups which can cause other accidents. So the next time you’re involved in a non-injury accident and your vehicle can be moved—MOVE IT!

Article II, Code of Virginia, Section 46.2-894. Duty of driver to stop, etc., in event of accident involving injury or death or damage to attended property.—The driver of any vehicle involved in an accident in which a person is killed or injured or in which an attended vehicle or other attended property is damaged shall immediately stop as close to the scene of the accident as possible **without obstructing traffic** and report his name, address, driver’s license number, and vehicle registration number forthwith to the State Police or local law-enforcement agency, to the person struck and injured if such person appears to be capable of understanding and retaining the information, or to the driver or some other occupant of the vehicle collided with or to the custodian of other damaged property.

FIGURE 11 Excerpt from Virginia’s “Move It” quick clearance campaign brochure.

TABLE 5
STATE STATUTES AUTHORIZING MOTORIST QUICK CLEARANCE ACTIONS

State	Driver Stop Law	Driver Removal Law	State	Driver Stop law	Driver Removal law
Alabama	•		Montana	•	
Alaska			Nebraska		
Arizona	•	•	Nevada	•	
Arkansas	•	•	New Hampshire		
California	•		New Jersey	•	•
Colorado	•	•	New Mexico	•	
Connecticut		•	New York		
Delaware			North Carolina		
Florida	•	•	North Dakota	•	
Georgia		•	Ohio		
Hawaii	•		Oklahoma	•	
Idaho	•		Oregon	•	
Illinois	•		Pennsylvania	•	
Indiana	•		Rhode Island	•	
Iowa	•		South Carolina	•	
Kansas	•		South Dakota		
Kentucky			Tennessee	•	•
Louisiana		•	Texas	•	•
Maine			Utah	•	
Maryland	•	•	Vermont		
Massachusetts			Virginia	•	•
Michigan	•		Washington	•	•
Minnesota	•		West Virginia	•	
Mississippi	•		Wisconsin	•	
Missouri		•	Wyoming	•	

the driver removal law. Section 14-224 of the Connecticut Statutes specifies a typical driver removal law:

Each person operating a motor vehicle who is knowingly involved in an accident on a limited access highway which causes damage to property only *shall immediately move or cause his motor vehicle to be moved from the traveled portion of the highway to an untraveled area* (emphasis added) which is adjacent to the accident site if it is possible to move the motor vehicle without risk of further damage to property or injury to any person.

States have established driver removal laws to address occurrences of vehicle disablements, PDO crashes, and injury crashes in which serious personal injury or death is not apparent. In the case of a disablement involving an immobilized vehicle, typical driver removal laws mandate that drivers immediately seek assistance to remove their vehicles from travel lanes. Consider Florida Statute 316.071, entitled “Disabled vehicles obstructing traffic”:

Whenever a vehicle is disabled on any street or highway within the state or for any reason obstructs the regular flow of traffic, the driver shall move the vehicle so as to not obstruct the regular flow of traffic or, if he or she cannot move the vehicle alone, solicit help and move the vehicle so as not to obstruct the regular flow of traffic. Any person failing to comply with the provisions of this section shall be cited for a nonmoving violation, punishable as provided in chapter 318.

Driver removal laws represent the model quick clearance law for involving the motoring public in a quick clearance practice. The law not only charges drivers with

the duty and responsibility for moving their disabled or wrecked vehicle, if possible, off and away from travel lanes, but the law often specifies general guidelines for moving the vehicle and states the preferred locations for temporarily parking the vehicle. Section 28-274 of the Arizona statutes contains a driver removal law and an authority removal law; the section title refers to these laws as quick clearance.

Internet Search of State Driver Removal Laws

Table 5 also indicates those states with driver removal laws. Appendix B provides a summary of specific driver removal laws by state. The search indicated that 14 states maintain driver removal laws, and that the laws apply to driver-attended disablements in 6 states, PDO crashes in 12 states, and minor injury crashes in 7 states. Florida Statute Section 316.027 includes a driver removal law applicable in a serious personal injury or fatal crash. It should be noted that 38 states have driver stop laws, driver removal laws, or both.

The scope of a driver removal law generally varies from state to state, and the law includes one or more of the following provisions governing its application and use:

- Incident type,
- Incident severity,
- Type of highway facility where the incident occurred,
- Lateral location of the incident,



FIGURE 12 New Jersey DOT's Emergency Service Patrol removal of a disabled vehicle from the main traveled way of the road. (Courtesy: New Jersey DOT.)

- Specification of who may move a disabled or wrecked vehicle,
- Specification of where to move traffic obstructing vehicles,
- Specification of immobilized vehicle handling, and
- Specification of a hold harmless clause.

Authority Removal Law

Background

An authority removal law provides authorization to a pre-designated set of public agencies to remove (1) driver-attended disabled or wrecked vehicles and (2) spilled cargo or other personal property blocking a travel lane(s) or otherwise creating a hazard to the flow of adjacent traffic. For definition purposes, an “authority” represents a public agency authorized to remove or cause removal of vehicles under an authority removal law. Such agencies generally include state, county, and local law enforcement, in addition to state DOTs.

Compared with the driver stop law and the driver removal law, the authority removal law charges the on-site incident responder with rapidly removing a vehicle or cargo obstructing traffic. Figure 12 illustrates the intended goal of the authority removal law, in which a first responder representing the New Jersey DOT Emergency Service Patrol moved a disabled vehicle from the main traveled way of the road. The law aims to support a quick clearance practice, particularly in the safe and fast removal of incapacitated vehicles and cargo blocking travel lanes. Drivers cannot single-handedly remove these types of minor and major incidents in a safe manner.

Rhode Island Statute Section 24-8-42, entitled “Emergency management—lane clearance,” furnishes an authority removal law applicable under all types of traffic incidents:

- Whenever any public safety agency through the legitimate exercise of its police powers determines that an emergency is caused by the immobilization of any vehicle(s) on the interstate system or limited access highway, as defined in [Section] 31-1-23(c), resulting in lane blockage and posing a threat to public safety, public safety agencies and those acting at their direction or request shall have emergency authority to move the immobilized vehicle(s).
- There shall be no liability incurred by any state or local public safety department or agents directed by them whether those agents are public safety personnel or not for damages incurred to the immobilized vehicle(s), its contents or surrounding area caused by the emergency measures employed through the legitimate exercise of the police powers vested in that agency to move the vehicle(s) for the purpose of clearing the lane(s) to remove any threat to public safety.

Internet Search of State Authority Removal Laws

Table 6 specifies the states that have authority removal laws involving driver-attended vehicles. Appendix C contains a detailed table that notes the traffic incident types covered by the law, lists the applicable statute section number, and summarizes the key provisions of each law. The applicable traffic incident types under each profiled authority removal law have been shaded in Appendix C.

Table 6 indicates that 14 states have authority removal laws. As shown in Appendix C, the laws address the occurrence of driver-attended disablements in 8 states, PDO

TABLE 6
STATE STATUTES AUTHORIZING AUTHORITY QUICK CLEARANCE ACTIONS

State	Authority Removal Law	Authority Tow Law	State	Authority Removal Law	Authority Tow Law
Alabama			Montana	•	
Alaska			Nebraska		
Arizona	•		Nevada		•
Arkansas			New Hampshire		
California	•	•	New Jersey		•
Colorado	•		New Mexico	•	
Connecticut			New York		
Delaware			North Carolina		
Florida			North Dakota		
Georgia	•		Ohio		
Hawaii			Oklahoma		
Idaho	•		Oregon		•
Illinois	•		Pennsylvania	•	•
Indiana			Rhode Island	•	•
Iowa	•		South Carolina		
Kansas			South Dakota		•
Kentucky			Tennessee	•	•
Louisiana			Texas		•
Maine			Utah		
Maryland			Vermont		
Massachusetts			Virginia		•
Michigan			Washington	•	
Minnesota			West Virginia		
Mississippi			Wisconsin		•
Missouri	•		Wyoming		

crashes in 10 states, and minor injury crashes in 9 states. A review of authority removal laws nationwide shows that, the laws include one or more of the following provisions governing its application and use:

- Incident type,
- Incident severity,
- Type of highway facility where the incident occurred,
- Type of obstruction blocking lanes (i.e., vehicles or cargo),
- Involvement of a commercial vehicle,
- Specification of agencies granted authority to remove or direct removal of incident,
- Specification of where to move traffic obstructing vehicles and/or cargo,
- Specification of vehicle and/or cargo handling after removal, and
- Specification of a hold harmless clause.

Authority Tow Law

Background

An authority tow law accomplishes the same goal as an authority removal law with regard to the maintenance of open roads. However, an authority tow law emphasizes the removal of driver-attended disabled or wrecked vehicles from the highway right-of-way to a legal parking area, to a CIS for example, or other area of safe refuge, such as a storage yard. Select states have expanded the law to in-

clude the removal of spilled cargo from a highway right-of-way. In certain cases, incident responders may apply an authority tow law when drivers or cargo owners cannot provide for the timely removal of an incapacitated vehicle or spilled cargo located on, and perhaps previously moved to, the shoulder. In other instances, states have developed authority tow laws for the specific purpose of protecting those persons involved in or responding to a traffic incident from exposure to adjacent traffic, even if the traffic incident is contained on the shoulder. Note the spatial and temporal criteria outlined in the following excerpt from Oregon Statute Section 819.120, an authority tow law entitled “Immediate custody and removal of vehicle constituting hazard,” for removing a disabled vehicle obstructing a highway shoulder or bicycle lane:

- (1) An authority described under [Section] 819.140 may immediately take custody of a vehicle that is *disabled* (emphasis added), abandoned, parked or left standing unattended on a road or highway right-of-way and that is in such a location as to constitute a hazard or obstruction to motor vehicle traffic using the road or highway.
- (2) As used in this section, a “hazard or obstruction” includes, but is not necessarily limited to:
 - (a) Any vehicle that is parked so that any part of the vehicle extends within the paved portion of the travel lane.
 - (b) Any vehicle that is parked so that any part of the vehicle extends within the highway shoulder or bicycle lane:
 - (A) Of any freeway within the city limits of any city in this state during the hours of 7 a.m. to 9 a.m. and 4 p.m. to 6 p.m.;

- (B) Of any freeway within 1,000 feet of the area where a freeway exit or entrance ramp meets the freeway; or
- (C) Of any highway during or into the period between sunset and sunrise if the vehicle presents a clear danger.
- (3) As used in this section, "hazard or obstruction" does not include parking in a designated parking area along any highway or, *except as described in subsection (2) of this section* (emphasis added), parking temporarily on the shoulder of the highway as indicated by a short passage of time and by the operation of the hazard lights of the vehicle, the raised hood of the vehicle, or advance warning with emergency flares or emergency signs.

Internet Search of State Authority Tow Laws

Table 6 also notes those states with authority tow laws for driver-attended traffic incidents. Appendix C furnishes a summary of specific authority tow laws by state, including the key provisions of each cited law. The table shows that 11 states have an authority tow law, and the law addresses the occurrence of driver-attended disablements in eight states and PDO crashes and injury crashes in six states. Authority tow laws typically have provisions governing their application and use similar to those of authority removal laws.

Surveyed Jurisdictions

The survey questionnaire contained a series of questions on legislation requiring drivers of motor vehicles involved in a PDO crash to relocate their vehicles from a travel lane to another location. Approximately 52% of surveyed jurisdictions, but none of the 4 jurisdictions in rural areas, maintain such driver removal laws. Of those jurisdictions without a quick clearance law, one-fourth of respondents indicated that laws are under consideration in their respective jurisdictions. Nearly 82% of surveyed law enforcement agencies in jurisdictions without driver removal laws ask motorists involved in a PDO crash to relocate their vehicles out of travel lanes. Given the absence of a state quick clearance law and since Ohio represents a "home rule" state, wherein local jurisdictions have authority over incident management policies, the city of Columbus Division of Police enacted and enforces an authority removal policy to effect the rapid removal of roadway obstructions. Appendix D contains the agency's quick clearance policy. The New Jersey DOT also has a regulation authorizing DOT employees to remove vehicles, cargo, and other objects from the traveled portion of any DOT-maintained highway.

Surveyed Jurisdictions with Quick Clearance Legislation

Of the surveyed jurisdictions with quick clearance laws, Connecticut has the oldest law, passed in 1994. Survey

respondents stated that 63% and 37% of quick clearance laws apply to all roadways and to limited-access highways, respectively. Penalties for violation include fines ranging from \$50 to \$200. Survey respondents reported that violators of quick clearance laws commonly offer these reasons for not rapidly clearing vehicles:

- Being unaware of the laws (all respondents),
- Liability concerns (71%), and
- Incorrect interpretation of the laws (57%).

Information campaigns designed to inform and educate motorists of quick clearance laws exist in 88% of surveyed jurisdictions with laws. These public information campaigns strive to change motorists' behavior when involved in traffic incidents. Transportation agencies alone conduct the information campaign in 55% of jurisdictions, and law enforcement handles the campaign in another 18%. The remaining quick clearance awareness programs are co-managed by transportation and law enforcement. Used in approximately 57% of surveyed jurisdictions, freeway signs represent the most common method for informing motorists of the quick clearance law. Figure 10, from the Tennessee DOT's website, shows an image of a typical freeway sign erected by the agency to promote quick clearance of damaged vehicles. Appendix E contains a Washington State DOT standard sign for driver removal of PDO crashes. The remaining information dissemination methods include brochures (43%), the Internet (43%), driver guides (42%), media advertising (36%), highway advisory radio messages (14%), and insurance company campaigns (7%). The Florida DOT—District 5 freeway service patrol, or "Road Rangers" as they are known, instruct operators to give a card to motorists who do not voluntarily move their disabled or wrecked vehicles from travel lanes, one that states Florida's driver stop law (Statute 23:316.061) and driver removal law (Statute 23:316.071). As shown in Figure 13, the Connecticut State Police participated in a 30-s video public service announcement to encourage drivers involved in PDO crashes to move their vehicles to the side of the road, per state law, in an effort to reduce secondary crashes and delays. Appendix F contains an Arkansas State Highway and Transportation Department brochure designed to inform motorists of the state's "Move It" quick clearance practice. Other promotional campaign themes include "Steer-Clear," "Steer It and Clear It," "If You Can Steer It—Clear It," and "Steer It Clear It."

The survey questionnaire asked agency representatives to indicate their level of satisfaction with the existing quick clearance laws in their jurisdictions. The majority (64%) of respondents expressed satisfaction with their jurisdictions' quick clearance legislation. Figure 14 lists the observed benefits of having a quick clearance law, as reported by surveyed agencies. Figure 15 communicates lessons learned from the awareness of quick clearance laws.



FIGURE 13 The Connecticut State Police participated in a 30-s public service announcement video to promote incident quick clearance. (Courtesy: Metropool.)


	Driver Quick Clearance Law Comments on Observed Benefits
•	“Less traffic congestion when obeyed.”... <i>Connecticut DOT</i>
•	“Reduction of secondary collisions and congestion mitigation.”... <i>Dallas County (TX) Sheriff</i>
•	“Clearing lane blockage quicker.”... <i>Florida Highway Patrol</i>
•	“When used, roadway delays are significantly reduced.”... <i>Louisiana State Police</i>
•	“Less traffic backup, fewer secondary accidents, less incident confusion and danger, easier emergency response team movement.”... <i>Virginia DOT – Hampton Roads</i>
•	“Vehicles are moving off the roadway to shoulders and exits.”... <i>Washington State DOT</i>
•	“Decreased secondary accidents and delay.”... <i>Wisconsin DOT – District 2</i>

FIGURE 14 Observed benefits of having a quick clearance law, as reported by surveyed agencies.

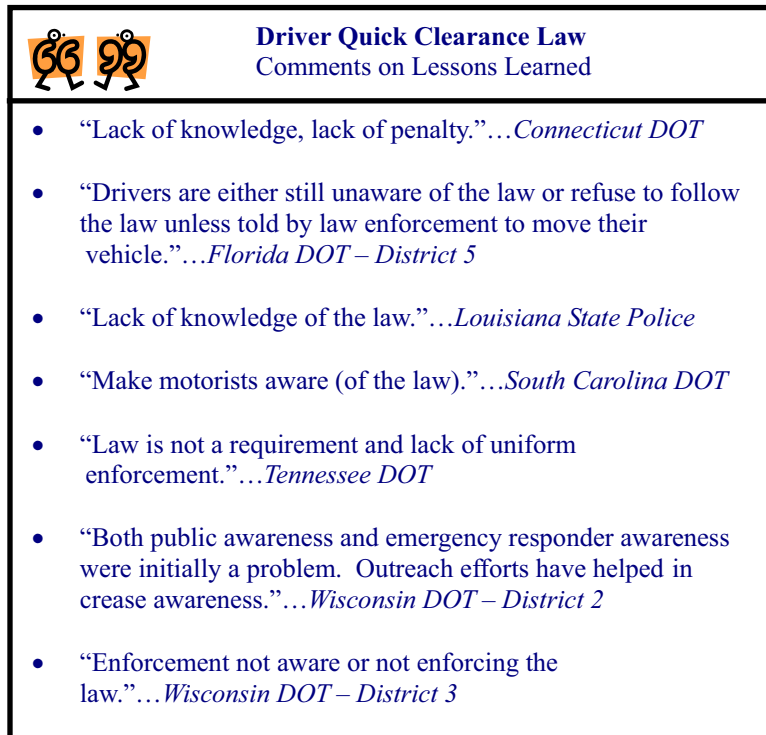


FIGURE 15 Lessons learned from awareness of quick clearance laws, as reported by surveyed agencies.

LIABILITY AND TORT LAW

Background

To ensure an immediate transition from incident response to incident clearance, quick clearance practices require an enabling component to avoid unnecessary delays at the site of a lane-blocking incident. Because no two traffic incidents have the same characteristics nor happen under the same conditions, there is a benefit from legislation that gives incident responders immunity from civil liability in connection with removing vehicles and cargo involved in a traffic incident and obstructing adjacent traffic flow. Such legislation is commonly referred to as a hold harmless law.

Jurisdictions may develop hold harmless laws applicable to a wide range of incident types, protecting drivers and incident responders charged with various duties and responsibilities under a quick clearance law. When a minor traffic incident occurs, the first responder may refrain from pushing vehicles from travel lanes because of liability concerns about additional vehicle damage or the accidental inflation of air bags. In the case of an incident involving an overturned truck and spilled cargo, incident responders may either delay action while determining whether to call the spilled load “junk” or elect to use a more time-consuming method of removing the incident to preserve as much personal property as possible. Hold harmless laws permit responders to quickly clear incidents without concern for potential liability.

Internet Search of State Hold Harmless Legislation

According to a review of state statutes, there are three types of hold harmless laws pertaining to the removal of traffic incidents. The first type of law applies to motorists who adhere to a driver stop law or driver removal law. The general provision of this driver-oriented hold harmless law states that a driver or other person who removes a vehicle involved in a crash is not liable or at fault with regard to the cause of the crash. Table 7 indicates the states that have driver stop laws and/or driver removal laws with hold harmless provisions. Appendix B highlights (in bold type) the hold harmless provisions contained in select states’ driver stop laws and removal laws. California has the only driver stop law with a hold harmless provision. The search concludes that 4 of 14 driver removal laws have hold harmless provisions.

The second and most notable type of hold harmless law protects incident responders who are fulfilling requirements set forth in authority removal laws or authority tow laws. The general provision of this type of hold harmless law involves prohibiting respondents from incurring liability in connection with damages resulting from the removal of disabled or wrecked vehicles and cargo that create obstructions and hazards to the normal flow of traffic. As with authority quick clearance laws, this type of hold harmless law generally designates the agencies protected under the law. Agencies with these laws often include state DOTs, law enforcement, and, in some cases, any responder

TABLE 7
STATE STATUTES CONTAINING HOLD HARMLESS PROVISIONS

State	DS	DR	AR	AT	State	DS	DR	AR	AT
Alabama					Montana			•	
Alaska					Nebraska				
Arizona		•			Nevada				
Arkansas					New Hampshire				
California	•				New Jersey				
Colorado			•		New Mexico				
Connecticut					New York				
Delaware					North Carolina				
Florida					North Dakota				
Georgia		•			Ohio				
Hawaii					Oklahoma				
Idaho					Oregon				
Illinois					Pennsylvania			•	•
Indiana					Rhode Island			•	
Iowa					South Carolina				
Kansas					South Dakota				
Kentucky					Tennessee		•	•	•
Louisiana					Texas				•
Maine					Utah				
Maryland					Vermont				
Massachusetts					Virginia				•
Michigan					Washington		•	•	
Minnesota					West Virginia				
Mississippi					Wisconsin				•
Missouri					Wyoming				

Notes: DS = driver stop law; DR = driver removal law; AR = authority removal law; AT = authority tow law.

working under the direction of a designated authority. Such a measure represents a key stipulation for private towing operators. Table 7 specifies the states that have authority removal laws and/or authority tow laws containing hold harmless provisions. Appendix C summarizes (in bold type) the hold harmless provisions within identified state authority removal laws and authority tow laws. The search reveals that 6 of 14 states with authority removal laws and 5 of 11 states with authority tow laws have supplemented their quick clearance laws with hold harmless provisions to protect incident responders.

The third type of hold harmless law provides immunity to incident responders from any potential liability incurred by the failure to execute the requirements of a quick clearance law. An authority tow law described under Virginia Statute Section 46.2-1212.1, entitled “Authority to provide for removal and disposition of vehicles and cargos of vehicles involved in accidents,” contains a hold harmless provision under Part B of the law.

- A. As a result of a motor vehicle accident or incident, the Department of State Police and/or local law-enforcement agency in conjunction with other public safety agencies may, without the consent of the owner or carrier, remove:
 1. A vehicle, cargo, or other personal property that has been (i) damaged or spilled within the right-of-way or any portion of a roadway in the state highway system and (ii) is blocking the roadway or may otherwise be endangering public safety.

- B. The Department of Transportation, Department of State Police, Department of Emergency Management, local law-enforcement agency and other local public safety agencies and their officers, employees and agents, shall not be held responsible for any damages or claims that may result from the failure to exercise any authority granted under this section provided they are acting in good faith.

Surveyed Jurisdictions

The survey questionnaire included a section profiling the existence of jurisdiction hold harmless laws that provided immunity to incident responders from civil damages in connection with the relocation of the following hazards from a travel lane to another location: immobilized vehicles (driver attended), abandoned vehicles, and nonhazardous cargo or debris. Approximately 37% of surveyed jurisdictions have hold harmless laws applicable to traffic incidents involving immobilized vehicles or abandoned vehicles, and 36% of areas have laws protecting incident responders who remove nonhazardous spilled cargo or debris. The Dallas County, Texas, Sheriff’s Department indicated that the Texas hold harmless law provides immunity from civil damages to Texas DOT personnel only. A similar law aimed at protecting Texas law enforcement officers was introduced in the Texas Legislature in 2001, but did not pass. Of jurisdictions without hold harmless laws, 22% noted that such laws are under consideration in their areas.

Survey responses showed that Wisconsin has the oldest hold harmless law, passed in June 1998. The surveyed agencies reported that 78% of hold harmless laws protect state DOT responders, and two-thirds of laws designate immunity for state police, local police, and freeway service patrol operators. Private towing operators receive direct protection under 22% of laws, as reported by respondents. This figure excludes responses from the Maryland Transportation Authority and the Washington State DOT, where respondents indicated that hold harmless laws protect any incident responder authorized by the cited agencies and police in Washington State. Incident responders who fail to exercise the powers vested by hold harmless laws claimed liability concerns (88% of survey responses). Other reasons given include being unaware of the laws (75%), incorrect interpretation of the laws (13%), and interagency disagreement (13%). The two most used methods of informing incident responders of a hold harmless law, cited in 80% of responses, involves their raising awareness through responder training and at responder meetings. Survey respondents noted that in 20% of cases, responders receive notification of laws through correspondence or incident management manuals.

The Washington State DOT, Washington State Patrol, and the Washington State Attorney General are working to develop a Damaged Load Clearance Policy, building on the state’s hold harmless law. The agencies cite the motivation and purpose of the stated policy as follows:

Traffic congestion caused by incidents has an enormous economic cost to society. This cost is often much greater than the value of trying to salvage a damaged load of cargo involved in a crash. It is the policy to remove the collision debris (and cargo) for the purpose of opening traffic lanes as a higher priority over attempting to salvage portions of the cargo. Salvage operations will be scheduled during nonpeak hours of travel.

As given in their Joint Operations Policy Statement, the Washington State DOT will assume the role of communicating the policy to trucking associations (*A Joint Operations . . . 2002*).

The Tennessee DOT represents the only surveyed agency that reported the filing of a liability lawsuit, one directed at damages incurred while responders cleared a traffic incident, despite the existence of a state hold harmless law. However, the Tennessee Claims Commission exists specifically to handle such claims. All but one surveyed agency professed satisfaction with the hold harmless laws in their jurisdictions. Figure 16 conveys key benefits of a hold harmless law, as reported by surveyed agencies.

The establishment of quick clearance and/or hold harmless legislation requires the support of multiple stakeholders, including one or more high-ranking officials. Table 8 lists areas of support that may assist in successfully enacting legislation, as ranked by respondents, by frequency of importance. The table provides two rankings; one list includes all survey respondents and the other includes only jurisdictions with quick clearance laws. Both rankings emphasize the need for law enforcement, transportation departments, and elected officials to assume proactive roles in developing quick clearance and/or hold harmless legislation. Other stakeholders listed as one of the 10 highest support areas in either list include a towing operator association, trucking association, insurance association, motorist association such as the American Automobile Association, and incident management peer group. It is interesting to note that the surveyed agencies in areas with quick clearance laws ranked the support of DOT legal staff, an elected officials association, an incident management peer group, an insurance association, and a motorist association significantly higher than did the respondents as a whole.

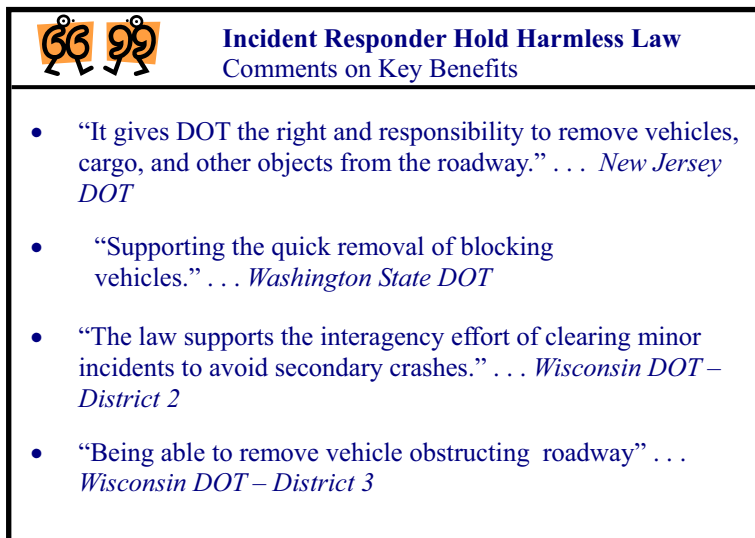


FIGURE 16 Key benefits of hold harmless laws, as reported by surveyed agencies.

TABLE 8
SUPPORT AREAS ASSISTING IN THE ESTABLISHMENT OF QUICK CLEARANCE AND HOLD HARMLESS
LEGISLATION, BY RANK

All Surveyed Jurisdictions		Jurisdictions with Quick Clearance Laws	
Rank	Area of Support	Rank	Area of Support
1	High-ranking police officer	T1	DOT legal staff
2	Elected official	T1	Elected official
3	Police association	3	High-ranking police officer
4	High-ranking DOT official	4	High-ranking DOT official
T5	Towing operator association	5	Elected officials association
T5	Trucking association	T6	Incident management peer group
T5	DOT legal staff	T6	Insurance association
8	Elected officials association	T6	Motorist association (AAA)
9	Insurance association	T6	Police association
10	Motorist association (AAA)	10	Towing operator association
11	FHWA	11	FHWA
12	Incident management peer group	12	Metropolitan planning organization
13	Metropolitan planning organization	13	Major employers
T14	Benefit studies	14	Trucking association
T14	Major employers	15	AASHTO
16	AASHTO	16	Benefit studies

Notes: A "T" in front of the rank number signifies a tie for that position. AAA = American Automobile Association; number of respondents = 27.

FATAL CRASH HANDLING

Traffic Fatality Certification Law

A traffic fatality certification law or policy represents a combined quick clearance and hold harmless act addressing the removal of a fatality from an incident scene where the location obstructs or presents a hazard to the normal flow of adjacent traffic. In the event of a fatal crash, many jurisdictions do not permit incident responders to disturb the victim's body until a medical examiner arrives on the scene to certify the occurrence and cause of death. Adherence to this protocol may create an excessively long incident clearance time and serious congestion impacts relative to the medical examiner's arrival. In metropolitan areas, congestion caused by the fatal crash may lengthen the medical examiner's response time. In rural areas, the medical examiner with jurisdiction at the incident location may have to travel a significant distance to the crash scene.

A traffic fatality certification law represents an effective quick clearance initiative, by permitting the temporary removal of the deceased from a highway. It may also allow certification of a fatality through a responding agency other than a medical examiner; for example, the Chicago Police Department when a traffic fatality occurs on Chicago expressways. Other protocol may be developed to permit a predesignated responding agency to certify a traffic fatality, through remote communication with a medical examiner. The law works in a way similar to that of a quick clearance law by specifying criteria and guidelines for removal, in addition to possible authority designation. A traffic fatality certification law may also be considered a form of hold harmless law, because it protects incident responders from liability associated with moving the decedent's body and possibly contributing to the fatality. The law also

meets the requirement of organ transplant programs, by facilitating the immediate transport of an organ donor to a hospital.

Surveyed Jurisdictions

The survey revealed that 73% of jurisdictions require medical examiners or coroners to respond to the site of a fatal crash before the deceased can be removed. Approximately 47% of jurisdictions have legislation or policies establishing procedures and responsibilities for removing deceased victims from traffic crashes. The Maryland Office of the Chief Medical Examiner (OCME) instructs law enforcement agencies involved in a "special situation," necessitating immediate removal of a fatal crash victim, to follow these steps:

- Complete a form from the OCME describing the characteristics of the traffic crash;
- Take instant photographs of the incident scene, including the decedent's body and its position; and
- Contact the OCME's 24-h center to request permission to relocate the body.

Texas and Tennessee maintain traffic fatality certification laws permitting the removal of a victim's body from the traffic crash site. Texas Statute 49.25.8, entitled "Removal of bodies [removal of remains]," states the following:

When any death under circumstances set out in Section 6 shall have occurred, the body shall not be disturbed or removed from the position in which it is found by any person without authorization from the medical examiner or authorized deputy, *except for the purpose of preserving such body from loss or destruction or maintaining the flow of traffic on a highway, railroad, or airport* (emphasis added).

Tennessee Statute 38-7-108, entitled “Death under suspicious, unusual or unnatural circumstances,” states the following under Part b:

Whenever a death occurs under the circumstances as set forth in this chapter, the body shall not be removed from its position or location without authorization by the county medical examiner, *except to preserve the body from loss or destruction or to maintain the flow of traffic on a highway, railroad, or airport* (emphasis added).

In all but three surveyed jurisdictions, incident responders must first wait for a medical examiner to arrive at the crash site. One agency reported that the deceased is generally transported to an intermediate location for a coroner’s examination, and in Washington State, on-scene responders act according to protocol received from a medical examiner’s office. The Florida Highway Patrol–Troop L and Florida DOT–District 5 indicated that private contractors transport the victim from the crash scene directly to a medical examiner’s office. Approximately 52% of survey respondents indicated that the medical examiner transports deceased victims, but in other instances, an emergency medical service (30%), funeral home (22%), private contractor (9%), or state police (5%) assumes that responsibility. Thirty percent of respondents noted that the organ transplant programs in their areas, including those in Connecticut and Tennessee, allow responders to immediately transport a deceased’s body to a hospital if the victim is an organ donor.

INTERAGENCY AGREEMENTS

Surveyed Jurisdictions

Interagency agreements for incident clearance promote faster restoration of uninterrupted adjacent traffic flow and safety at the scene. These agreements assist in organizing and managing all agencies participating in the incident removal phase, actions which, in turn, improve interagency relationships and clarify decision-making responsibilities. Benefits include improved responder performance and reduced incident clearance times. Interagency agreements for incident clearance may address the following areas: (1) duties and responsibilities of response agencies, (2) jurisdictional authority, and (3) resource sharing among agencies.

The Dallas County, Texas, Sheriff’s Department and Delaware DOT represent the only surveyed agencies, or 7% of respondents, reporting that agreements exist in their jurisdictions designating one agency responsible for clearing traffic incidents on specific split-jurisdiction arterial roadways. One-half of surveyed agencies reported that their jurisdictions have mutual-aid agreements between two or more agencies to facilitate resource sharing. The most common pair of agencies striking resource-sharing

agreements, among 50% of respondents, involves law enforcement and transportation. Other agencies signing agreements include fire and law enforcement (17%), transportation agency and an emergency management agency (17%), county and local law enforcement (8%), and law enforcement–transportation–fire (8%). The Florida Highway Patrol–Troop L stated that its agreement with the Florida DOT also includes private towing companies. Approximately 47% of surveyed jurisdictions have agreements between two or more agencies that outline required duties and responsibilities for clearing traffic incidents. The agreements include law enforcement and a state DOT in all but one surveyed area (92%). Another jurisdiction features an agreement solely between county and local police. Other agencies listed in this type of agreement include private towing companies (25%), freeway service patrols (25%), and fire departments (17%).

Open Roads Policy

In committing to a jurisdiction’s quick clearance practice, some agencies have enhanced their interagency agreements on duties and responsibilities to incorporate the overarching theme of quick clearance. These agreements are commonly termed “open roads” policies. An open roads policy serves to inform incident responders of the urgent need to rapidly remove disabled or wrecked vehicles, spilled cargo, and debris that obstruct the normal flow of traffic. It disseminates key guidelines to ensure a cooperative incident removal effort between responding agencies. The policy essentially represents a charter of quick clearance practice, because it contains the philosophy of the practice in addition to communicating essential decision-making criteria to effect the fast removal of traffic incidents.

The study found that five states have such policies: Connecticut, Florida, Maryland, Tennessee, and Wisconsin. In each case, the policy marks an agreement between the state DOT and state police or department of safety. The Southeastern Wisconsin Traffic Incident Management Enhancement (TIME) Program’s Interagency Freeway Incident Clearance Policy Statement also features stakeholders representing county highway departments, county sheriff’s departments, a city department of public works, and a city police department. Discussion items within the cited states’ open roads policies include the following:

- Purpose of policy;
- Roadways covered by policy;
- Type of incident and provisions;
- Response and clearance time goals;
- Commercial truck company involvement in incident and provisions;
- Investigation of incident;
- Removal of vehicle or cargo blocking the roadway;

- Private towing company and removal/recovery equipment dispatch;
- Private towing company response delay and resulting actions;
- Motorist quick clearance information campaigns;
- Freeway service patrol utilization;
- Allotment of emergency storage space for wrecked vehicles and cargo;
- Specification of post-incident debriefing;
- Emergency light use;
- Obtaining quick clearance support from emergency response agencies, trucking companies, and the media; and
- Liability issues and hold harmless clause.

Appendix G contains the open roads policies for Connecticut, Florida, Maryland, Tennessee, and Wisconsin.

PUBLIC–PRIVATE TOWING CONTRACTS

Private towing companies perform a specific function in incident management: removal of disabled or wrecked vehicles, spilled cargo, and debris from an incident site. The duties and responsibilities of private tow companies mandate their consideration as a major stakeholder in any quick clearance practice. Law enforcement and transportation agencies alike have recognized the indispensable role that private towing companies have in effecting incident removal and restoring the affected road section back to normal operation. Public agencies commonly enter into agreements with one or several commercial towers to secure on-call traffic incident clearance services or, at a minimum, the agencies maintain a contact list of local private towing companies. Public–private contracts serve the following purposes:

- Minimize the time to dispatch a towing or recovery truck to the incident site;
- Reduce the likelihood of towing operator unavailability to respond to a call;
- Facilitate fast and predictable towing operator response times; and

- Ensure the availability of proper equipment and a trained operator.

Incident management manuals should reference contract-authorized private towing companies or specify towing and recovery contacts to help responders and to identify individual stakeholders.

Contract Types

The most common public–private arrangements for furnishing towing and recovery services, as found nationwide, fit into three categories:

- Rotational lists—These are informal, law-enforcement-maintained contact lists of private towing companies, organized geographically depending on jurisdiction. Law enforcement officers select the prequalified commercial towing company appearing at the top of the list and then place that company at the bottom of the list for recirculation. Jurisdiction laws and agency regulations may set detailed requirements for including a private towing company on a rotational list.
- Zone-based licensing—Public agencies or municipalities contract with a single private towing agency to respond to incidents occurring in a predefined geographic area or zone.
- City/region-based licensing—Awarded contracts through competitive bidding, individual private towing companies obtain exclusive rights to respond to all traffic incidents occurring within a municipality or specified roadway segment.

Table 9 provides a summary of surveyed jurisdictions with a public–private towing contract organized by area type. More than 55% of all jurisdictions maintain a rotational list. The highest percentage of zone-based licensing and city/region–based licensing arrangements exist in locations designated as metropolitan or bridge/tunnel area. One-half of surveyed agencies in rural jurisdictions reported that no agreements exist in their areas. In areas where a public–private contract exists, approximately 56% of respondents noted that state police signed the agreement

TABLE 9
SURVEYED JURISDICTIONS WITH PUBLIC–PRIVATE TOWING CONTRACTS, BY
AREA TYPE

Area Type (No. of Respondents)	Percentage of Jurisdictions			
	Rotational List (%)	Zone-Based Licensing (%)	City/Region-Based Licensing (%)	No Agreement Exists (%)
Urban/rural (13)	85	15	0	0
Metropolitan (9)	34	33	22	11
Rural (4)	50	0	0	50
Bridge/tunnel (3)	0	34	33	33
All jurisdictions (29)	55	21	10	14



FIGURE 17 Road Service By Permit Only sign as typically posted in New York City.

with towing agencies, and the balance of survey responses reported that local police (22%) and transportation agencies (22%) each administer the contract. Some jurisdictions maintain multiple rotational lists or licenses, based on incident severity, containing private towing operators specializing in light-duty towing, heavy-duty towing, and recovery operations.

The Minnesota DOT has operated an automatic tow program since March 1994. This program entails having the Minnesota State Patrol immediately dispatch a tow truck to crashes or other lane-blocking incidents occurring on any state highway in the Minneapolis–St. Paul metropolitan area. State Patrol dispatchers select a private towing company from a rotational list. Then, the towing operator proceeds directly to the incident scene instead of waiting for incident verification by a State Patrol or Minnesota DOT freeway service patrol responder. An earlier pilot project using that procedure reduced the average incident duration by 21 min (*Highway Helper* . . . 2000).

The Washington State Patrol, Washington State DOT, and local tow companies implemented a trial automatic tow program, from January 2002 to July 2002, called “Instant Tow Dispatch.” The pilot’s protocol specifies automatic dispatch of a tow truck to the site of a crash or vehicle disablement only when the Washington State DOT can verify the incident by using closed-circuit television cameras. Appendix H contains a summary of the program and a list of stakeholder duties and responsibilities.

State laws or municipal ordinances protect the rights of commercial towing companies authorized to remove disabled or wrecked vehicles in designated areas. Figure 17 shows a typical sign posted on New York City parkways, expressways, thruways, and bridges indicating that only authorized commercial towing companies possessing a permit issued by the commissioner of the New York City Police Department are allowed to solicit services on the cited roadways, which includes the adjacent shoulder areas and entrance and exit ramps to the roadways (*New York City Traffic* . . . 2002).

Florida Statute 323.002 states, under Part 2, that unauthorized towing companies must adhere to the following provisions unless contacted directly by motorists for assistance. In any Florida county or municipality that operates a wrecker operator system:

- (a) It is unlawful for an unauthorized wrecker operator or its employees or agents to monitor police radio for communications between patrol field units and the dispatcher in order to determine the location of a wrecked or disabled vehicle for the purpose of driving by the scene of such vehicle in a manner described in paragraph (b) or paragraph (c). Any person who violates this paragraph is guilty of a noncriminal violation, punishable as provided in [Section] 775.083.
- (b) It is unlawful for an unauthorized wrecker operator to drive by the scene of a wrecked or disabled vehicle before the arrival of an authorized wrecker operator, initiate contact with the owner or operator of such vehicle by soliciting or offering towing services, and tow

such vehicle. Any person who violates this paragraph is guilty of a misdemeanor of the second degree, punishable as provided in [Section] 775.082 or [Section] 775.083.

- (c) When an unauthorized wrecker operator drives by the scene of a wrecked or disabled vehicle and the owner or operator initiates contact by signaling the wrecker operator to stop and provide towing services, the unauthorized wrecker operator must disclose to the owner or operator of the vehicle that he or she is not the authorized wrecker operator who has been designated as part of the wrecker operator system and must disclose, in writing, what charges for towing and storage will apply before the vehicle is connected to the towing apparatus. Any person who violates this paragraph is guilty of a misdemeanor of the second degree, punishable as provided in [Section] 775.082 or [Section] 775.083.
- (d) At the scene of a wrecked or disabled vehicle, it is unlawful for a wrecker operator to falsely identify himself or herself as being part of the wrecker operator system. Any person who violates this paragraph is guilty of a misdemeanor in the first degree, punishable as provided in [Section] 775.082 or [Section] 775.083.

Authority Regulations

Towing Company Service Charges and Reimbursement

The survey responses indicated that most public agencies stipulate how a contracted private towing operator may charge for base services. The survey responses indicated that, by terms of the public–private contract, 27% of private towing companies may bill a time-based charge only (e.g., hourly rate), 27% may bill a fixed-rate charge only (e.g., rate per call), and 27% may bill a combination time-based and fixed-rate charge. Twenty percent of contracts do not set a billing requirement. Survey responders reported that most public–private contracts (79%) do not specify whether a private towing company can perform and bill for vehicle repairs. The remaining 21% responded that a stipulation exists that requires commercial towing companies to first obtain the consent of the vehicle owner before making repairs.

An alternative method that private towing companies use involves charging by the pound. This method assigns minimum base weights to different vehicle classifications based on equipment requirements and removal time. In the event that a towing operator has to perform a special task, such as handling an overturned truck, in removing a wrecked vehicle or spilled cargo, the company multiplies the base weight by a published factor to recover the additional time and equipment costs. Factors include working conditions, severity of vehicle damage, and cargo/debris removal.

Nearly 54% of the surveyed public–private towing contracts specify that private towing companies bill the vehicle

owner involved in the traffic incident. The Virginia DOT–Hampton Roads District is the only surveyed agency designated by a contract to receive private towing company bills, but the agency sponsors a no-charge vehicle tow service from area high-occupancy vehicle lanes. The remaining (38%) of surveyed public–private towing contracts do not have billing provisions. The Delaware River Port Authority represents the only surveyed agency out of 17 respondents that administers a contract that pays private towing companies called to a traffic incident site but not providing services.

Qualification Requirements for Towing Companies

Public–private towing contracts in approximately 32% of surveyed jurisdictions stipulate minimum training requirements for private towing operators. As for prequalification of private towing companies for a rotational list or license, requirements typically include the following:

- Availability of heavy-duty tow trucks,
- Availability of recovery equipment for heavy vehicles,
- Minimum supplies for clearance and cleanup,
- Twenty-four-hour availability,
- Maximum allowable response time,
- Minimum storage space,
- Insurance, and
- Industry certification.

Table 10 summarizes the percentage of surveyed jurisdictions having each of the aforementioned qualification requirements. Certain contracts specify a maximum allowable response time ranging from 15 to 45 min.

Appendix I contains the basic inspection guidelines that private towing companies and their operators must satisfy to be included on a Connecticut Department of Public Safety rotational list. Towing operators must disclose proof of either 10 years of experience in operating wreckers or certification from an approved training program in towing and recovery. A company must maintain a minimum fleet of light-duty and heavy-duty tow trucks that meets state towing capacity standards. Inspection of individual towing and recovery vehicles includes a check of lights, safety aids, towing equipment, service equipment, and mechanical function.

Sample Towing Regulations and Contracts

Survey respondents representing the Advanced Regional Traffic Interactive Management and Information System for the Cincinnati/Northern Kentucky metropolitan area, the Connecticut DOT, and the Virginia DOT–Hampton

TABLE 10
PRIVATE TOWING COMPANY QUALIFICATION REQUIREMENTS TO OBTAIN A PUBLIC CONTRACT

Percentage of Jurisdictions	Qualification Requirement	Sample Criterion
95	24-hour availability	
89	Minimum response time	15–45 minutes
89	Minimum supplies for clearance/cleanup	Broom, shovel, buckets, sand, oil dry
79	Insurance	\$1 million to \$3 million
68	Minimum storage space	Enclosed in building or with fence, Storage for 50 to 60 vehicles, and Available 7 days/week to customers
58	Availability of heavy-duty tow trucks	
53	Availability of recovery equipment for heavy vehicles	
26	Industry certification	

Notes: Number of respondents = 19.

Roads District returned copies of authority regulations or sample bid documents facilitating public–private towing contracts. Appendix J contains the following sample towing regulations and contracts:

- The Cincinnati (Ohio) Wrecker and Towing Rules and Regulations for Police Rotation Wreckers,
- Connecticut Department of Public Safety Regulations Concerning the Operation of a Rotational System for Summoning Wreckers, and
- Virginia DOT City/Region-Based License Invitation for Bids (providing exclusive rights to a private contractor to remove immobilized vehicles blocking des-

ignated high-occupancy vehicle lanes in the Hampton Roads District).

Another example shows the importance of towing in traffic incident removal. Montana, which was designated a rural area type in this study, established the Montana Professional Tow Truck Act under Statute Sections 61-8-901 through 61-8-910. A key component of the act concerns the provision of a “good faith immunity” clause, in Statute Section 61-8-909. It furnishes immunity from damages arising from acts of any person who renders assistance at the site of a traffic incident that creates an immediate hazard on a public roadway. Appendix K contains the entire act.

QUICK CLEARANCE OPERATIONS

BACKGROUND

The operational success of any quick clearance practice depends on the maintenance of planned, stakeholder-coordinated incident removal procedures targeting the rapid removal of traffic incidents and supported by proper equipment and technology. This chapter reports on survey responses pertaining to specific site clearance and investigation activities used to quickly mitigate the occurrence of a traffic incident of varying severity, from a vehicle disablement or minor crash to a serious crash or nonhazardous spill. Operations strategies, equipment, and advanced technology exist to significantly reduce incident clearance time under all classes of incidents, as defined in the proposed changes to Part 6 of the 2000 MUTCD:

- Minor—expected duration under 30 min,
 - Intermediate—expected duration of 30 min to 2 h, and
 - Major—expected duration of more than 2 h (*MUTCD* 2002).
- As illustrated in Figure 18, a high level of uncertainty accompanies the occurrence of major incidents. Incident removal represents a dynamic process affected by many variables, including truck involvement, overturned vehicles, trailer or tanker damage, fuel spills, cargo spills, fatalities, police crime scene designations, weather, travel lanes affected, and volume of passing traffic. Quick clearance procedures, driven by decisions to ensure flexibility in meeting incident removal needs, work to
- Maximize safety of incident responders and victims at the scene;

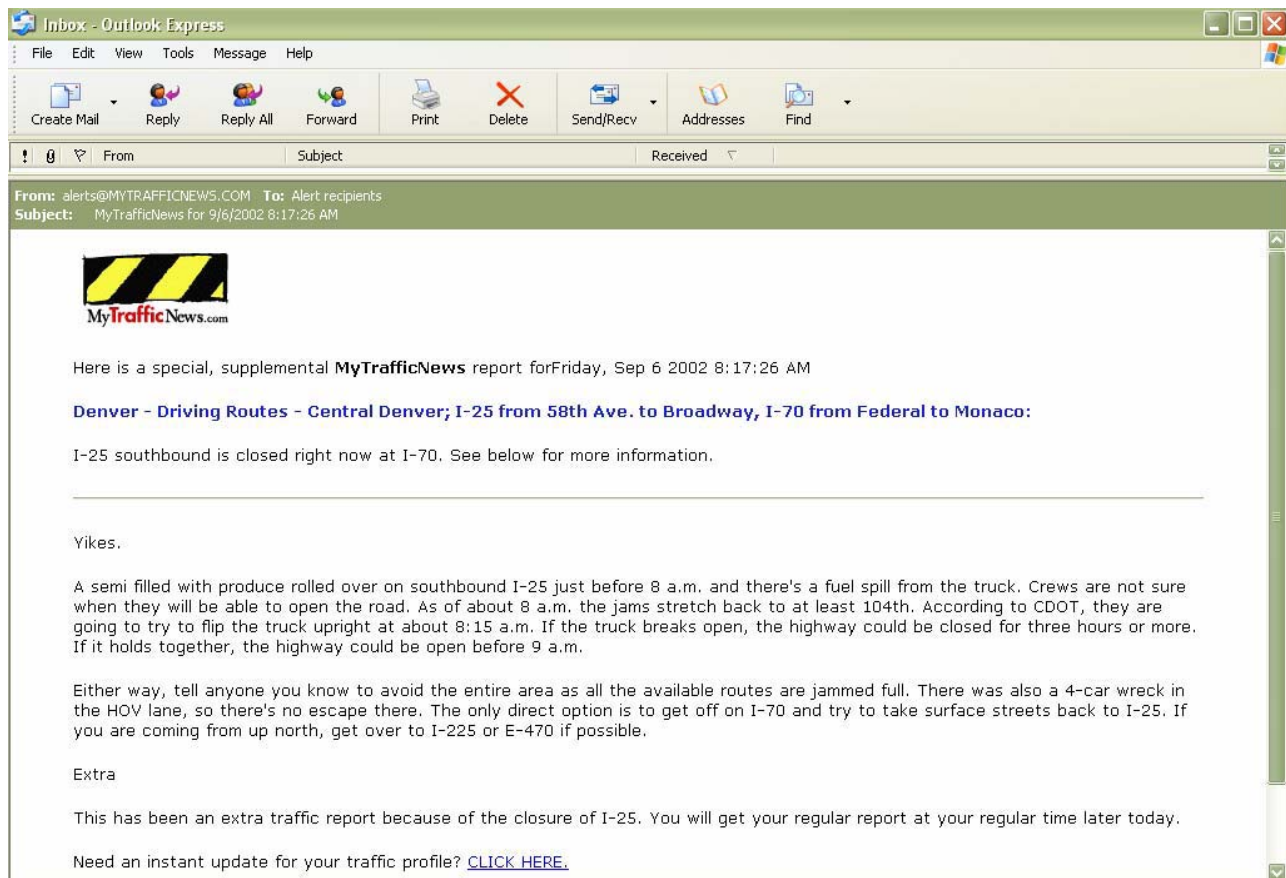


FIGURE 18 Quick clearance procedures reduce the uncertainty in predicting expected traffic incident duration to better inform travelers who may be affected by the incident. (Courtesy: MyTrafficNews.com.)



FIGURE 19 Incidents involving overturned heavy vehicles can have a tremendous impact on arterial and local street operations if not cleared quickly.

- Reduce congestion and safety impacts on the adjacent roadway system; and
- Reduce uncertainty in predicting expected incident duration, to better inform travelers who may be affected by the incident.

A discussion of major incident clearance strategies will center on relocating spilled cargo, removing overturned heavy vehicles, clearing incidental vehicle fluid spills, and conducting an on-scene crash investigation. Incidents like those do not always happen on controlled-access facilities, as shown in Figure 19, and they can have a tremendous impact on arterial and local street operations if not cleared quickly. In many cases, a particular traffic incident may require the application of multiple procedures, each contributing toward the rapid removal of all traffic-obstructing components.

MINOR INCIDENT CLEARANCE ACTIVITIES

Vehicle Removal

The safe and quick clearance of minor traffic incidents pertains to the fast removal of immobilized or wrecked passenger cars blocking one or more travel lanes. This requires effective first responder procedures, supported by

authority removal and tow laws or the establishment of no stopping zones in highly traveled locations, as well as performance-enhancing equipment. Agencies in approximately 85% of surveyed jurisdictions relocate immobilized vehicles from travel lanes before the arrival of a tow truck for off-site removal.

As previously noted, most surveyed jurisdictions operate a freeway service patrol that has the capability of fully removing a minor traffic-obstructing incident, and operators typically represent the first on-scene responder. Freeway service patrols relocate immobilized vehicles in 79% of surveyed jurisdictions, followed by law enforcement (75%), and state DOT (29%). Figure 20 shows a freeway service patrol at the scene of a PDO crash, functioning to ensure that all involved vehicles and crash debris are cleared from travel lanes, in addition to initiating the dispatch of law enforcement and a private towing company. A key first responder duty in assessing vehicles involved in a PDO crash involves determining the correct type of tow truck or car carrier required at the scene to remove an immobilized car or truck. Agencies that typically contact a private towing company for vehicle removal, and that probably use some form of public-private towing agreement, include law enforcement (91% of respondents), freeway service patrol (16%), state DOT (9%), and a traffic management center (9%). Drivers in 9% of surveyed juris-



FIGURE 20 Freeway service patrol, parked in the median shoulder, at the scene of a property-damage-only crash blocking the median shoulder.

dictions may contact a private towing company of their choosing.

Push bumpers are the equipment most commonly used to quickly relocate disabled vehicles from travel lanes, as cited in 89% of survey responses. Respondents noted that other methods used to relocate vehicles include attaching a tow line (44%); using a tow truck (11%), which represents some freeway service patrol fleet vehicles; and manually pushing the disabled vehicle (11%). The Illinois DOT–District 1 advises against emergency traffic patrol responders manually pushing stalled vehicles and prohibits operators from pushing trucks. Certain kinds of damage to a disabled or wrecked vehicle may prevent a responder from attempting to relocate the vehicle. Such damage can include, but is not limited to, locked wheels (74% of respondents), damaged steering (63%), damaged brakes (37%), and flat tires (21%). The Virginia DOT–Hampton Roads District and Connecticut DOT reported vehicle owner refusal as a condition preventing incident responders from immediately relocating vehicles. The Maryland State Highway Administration and the Maryland Transportation Authority stated that none of the cited vehicle damages typically prevent a responder from attempting to relocate a disabled vehicle. Nearly 35% of surveyed jurisdictions permit the immediate relocation of disabled vehicles despite the occurrence of minor injuries to occupants. The Delaware River and Bay Authority and the New

Jersey Highway Authority indicated that nonpolice agencies may immediately relocate disabled vehicles when a driving-while-intoxicated violation or other felony is suspected.

The following are general guidelines for pushing an occupied vehicle from a travel lane to the shoulder:

- Inform the driver of where the vehicle will be pushed to so that the driver understands where to steer.
- Remind the driver to unlock the steering by turning the ignition and keeping the key in the “on” position.
- Remind the driver that the power steering and brakes may not function.
- Ensure that a secure bumper connection exists.
- Guide the driver by providing real-time instructions.
- Push the disabled vehicle to the nearest shoulder or off-ramp and, preferably, to an area not readily visible to traffic.
- Avoid crossing oncoming traffic, if possible.
- Refrain from pushing the disabled vehicle too fast.
- Avoid pushing a disabled vehicle down an appreciable grade.
- Gather as much physical evidence as possible before relocating a wrecked vehicle.

Appendix L contains the Minnesota Incident Management Coordination Team first responder procedures, cate-

gorized by agency, including private towing companies, for handling and initiating the removal of a disabled vehicle or PDO crash occurring in the Minneapolis–St. Paul metropolitan area (Frandrup et al. 2002).

Vehicle Relocation Areas

The results of the survey showed that all agencies involved in relocating disabled vehicles off a traveled way consider removing the vehicle to the nearest shoulder as an option. However, depending on circumstances, agencies may remove vehicles to an alternate location to maximize safety at the scene and to prevent main-line traffic view of the scene. Such refuges include the yard of a private towing company (29% of respondents), the nearest ramp (25%), or a vehicle repair facility (7%). The Florida Highway Patrol–Troop L, Illinois DOT–District 1, and Wisconsin DOT–District 2 promote the use of available CISs located adjacent to area freeways. In the absence of such a site, the Illinois DOT advocates relocating vehicles involved in an incident, when possible, to an adjacent frontage road.

Figure 21 shows a typical Milwaukee area CIS located adjacent to a freeway interchange. Parham et al. (2001) provide the following suggestions regarding the construction of dedicated refuge areas or CISs:

- Establish refuge areas or CISs where the right shoulder does not allow refuge.
- Locate the sites adjacent to or near the freeway lanes.
- Include a median to provide a separation distance equal to the required horizontal clearance (clear zone).
- Provide telephone access.
- Provide sufficient overhead lighting and other features to ensure personal safety.
- Provide for acceleration or deceleration if no shoulder is present.
- Include advance signing.
- Make the area large enough to allow easy movement of tow, police, and fire vehicles. A nominal size is 14 m (45 ft) by 46 m (150 ft).
- Provide separate entrances and exits to limit the possibility of wrong-way movements.

A study addressing the potential construction of freeway CISs in the Duluth, Minnesota, and Superior, Wisconsin, area estimated the preliminary cost at \$30,000 per site to install a 36.6-m (120-ft) bituminous segment with 15:1 tapers, curb, and gutter, and appropriate static signing, within DOT right-of-way and off the shoulder areas (*Duluth TOCC . . . 1999*).

Ran et al. (2000) conducted a survey of drivers in seven southeastern Wisconsin counties to evaluate user's percep-



FIGURE 21 Milwaukee area crash investigation site located adjacent to a freeway interchange.

tions of the effectiveness and benefits of various freeway and incident management services and infrastructure in the region, including CISs. The researchers found that 72% of users have heard of CISs, and 34% of users had a high level of familiarity with them. The study reported, however, that only 7% of users claimed they would use such a site if involved in a minor crash. Based on the results from this study, incident management stakeholders in jurisdictions with existing CISs should consider promoting the use of those sites as part of a public information campaign on quick clearance.

In a case where the scene of a crash, subject to investigation, obstructs arterial traffic flow, incident responders should consider having the wrecked vehicle(s) removed to the nearest intersecting local, low-volume road or to a nearby vacant or underused parking lot.

Performance Evaluation

More than 72% of surveyed agencies expressed satisfaction with minor incident clearance activities in their jurisdictions. Clearance time is defined as elapsed incident duration from the start of incident removal to the departure of response personnel from the site, to remove an incident involving a disabled vehicle blocking a travel lane. Based on 10 survey responses from jurisdictions where agency

first responders actively relocate disabled vehicles, the average is 26 min. One agency, representing a jurisdiction where first responders do not relocate disabled vehicles before the arrival of a tow truck for off-site removal, stated that minor incident clearance times last, on average, 1 h. The Columbus, Ohio, Division of Police promotes a goal of 10 min or less for the clearance of minor incidents.

The DCSD publishes a traffic incident response goal of 6 min and a lane-blocking, PDO crash clearance goal of 20 min. The latest fiscal year 2002 (third quarter) data available indicated that the DCSD responds to incidents in less than 6 min and clears PDO crashes, on average, in 19.8 min. The agency also has a published goal of 15 min maximum to clear an incident involving a stalled vehicle obstructing a traffic lane (*Standard Operating Procedure* n.d.).

MAJOR INCIDENT CLEARANCE ACTIVITIES

Spilled Cargo Removal

Traffic incidents involving spilled cargo hold a high potential for obstructing all travel lanes in the direction in which the incidents occurred, as shown in Figure 22. In turn, these incidents rapidly increase congestion upstream of the



FIGURE 22 Crash resulting in spilled cargo obstructing all travel lanes. (Courtesy: New Jersey DOT.)

incident site if on-scene responders fail to initiate immediate cargo relocation or removal. Incident responders in approximately 57% of surveyed jurisdictions relocate spilled, nonhazardous cargo from travel lanes without obtaining permission from the involved operators and owners present at the scene. Another 25% stated that on-scene responders will relocate spilled cargo if the vehicle operator is not present, and 18% noted that their jurisdictions require the approval of the involved vehicle owner and/or law enforcement before handling spilled cargo. Of the surveyed jurisdictions not permitting immediate removal of spilled cargo, four of five do not have a hold harmless law, whereas the fifth jurisdiction does have a hold harmless law protecting incident responders from tort claims associated with the relocation of nonhazardous cargo.

The results of the survey indicated that multiple agencies generally participate in handling spilled cargo relocation and/or removal. These agencies include a private towing company (87%), state DOT (73%), freeway service patrol (43%), law enforcement (27%), private contractor (23%), and fire department (7%). Private towing companies and private contractors exclusively remove spilled cargo in four surveyed jurisdictions. The Virginia DOT–Hampton Road District reported that cargo owner personnel may assist in clearing incident sites in their jurisdictions. It is important to note that, depending on the time of day, some agencies recommend relocating spilled cargo off travel lanes and then suspend final cleanup activities until after peak traffic hours.

Special Handling Guidelines

Certain nonhazardous cargo spills may still require specialized handling by incident responders, and a quick clearance practice must maintain procedures to rapidly mitigate these special circumstances. Examples include food spills and incidents involving live animals. Incident responders in one-half of surveyed jurisdictions take special action for a traffic incident involving a food spill. Cargo removal activities vary considerably based on the type of food spilled, and surveyed agencies report that in past incidents, on-scene responders have contacted health department officials, contacted the hauler in an attempt to preserve the remaining product, or followed standard hazardous materials response protocol.

In an incident involving live animals, incident responders in 86% of surveyed jurisdictions implement special handling guidelines. To contain the involved animals, on-scene responders will often contact the local animal control agency or Humane Society for assistance and guidance. After a cattle truck crash in spring 2002 closed a section of I-80 for nearly 10 h because of difficulties in controlling

loose cattle and finding a truck to haul them from the incident scene, the Wyoming DOT purchased sections of emergency fencing and stockpiled them at locations along I-80 and I-25 for future use in penning loose livestock (“WYDOT Looking at Ways . . .” 2002).

Recovery of Costs for Services Rendered

The majority of surveyed agencies (82%) indicated that the party involved in the traffic incident retains ownership of abandoned cargo or debris. The remaining respondents (18%) reported that the private towing company or private contractor handling removal operations assumes ownership of abandoned cargo or debris. Public agencies charged with removing spilled cargo in 89% of surveyed jurisdictions bill their services to recoup costs. The Wisconsin DOT–District 2 noted that public agencies typically bill only for damage to infrastructure. The New Jersey DOT bills the responsible party for time and any material used to complete cleanup operations; bills are usually less than \$1,000.

Approximately 39% of surveyed agencies reported that their jurisdictions have legislation or agreements requiring commercial carriers or cargo owners to reimburse public agencies for costs incurred during clearance activities. The Minnesota DOT “Yellow Tag” process allows the agency to charge the responsible party, by billing its insurance company, for costs incurred during the removal of traffic incidents. The Yellow Tag functions as a purchase order, itemizing personnel and equipment costs for mitigating a particular traffic incident.

Overtaken Truck Removal

A traffic incident resulting in an overturned semi-tractor trailer or tanker truck presents an extraordinary challenge to primary quick clearance stakeholders, law enforcement, transportation departments, and private towing companies. The rapid clearance of this incident type depends on early identification of equipment needs and mobilization of required equipment. As noted in the previous chapter, public–private towing contracts and associated qualification requirements furnish considerable support in achieving quick coordination between on-scene responders and private towing companies needed to complete vehicle recovery tasks. In 91% of surveyed jurisdictions, private towing operators handle the righting of overturned trucks, supported in some cases by a state DOT (19%), law enforcement (16%), and freeway service patrol (9%). Law enforcement generally assumes the main role of supervising clearance activities at the site of a major incident involving a serious crash or nonhazardous material spill, as reported by 81% of survey respondents.

TABLE 11
AVAILABLE EQUIPMENT IN SURVEYED JURISDICTIONS FOR CLEARING A MAJOR INCIDENT

Equipment	Percentage of Jurisdictions	Equipment Owner		
		Transportation Agency (%)	Private Towing Company (%)	Police (%)
Heavy-duty tow truck	100	7	93	4
Dump truck	93	92	31	8
Front-end loader	93	85	35	8
Sweeper	93	85	19	8
Air-cushion recovery system	83	4	92	4
Dump truck sander	83	92	21	8
Crane	76	18	91	5
Debris recovery vehicle	72	60	65	10
Earth-moving equipment	72	80	35	5
Recovery truck with rotator	62	6	89	6
Empty box trailer	59	18	82	6
Empty tanker truck	52	0	93	7
Empty livestock trailer	45	8	85	15

Notes: Number of respondents = 29 (number of equipment owner respondents vary). Some jurisdictions have more than one equipment owner per equipment category.

Equipment Mobilization

In communicating vital incident characteristics to off-site incident responders, most notably private towing operators, first responders in approximately 45% of surveyed jurisdictions reference a planned identification guide for heavy vehicles when classifying the type of vehicle involved in a traffic incident. Of those surveyed jurisdictions where first responders use a heavy vehicle identification guide, all but one makes use of the Towing and Recovery Association of America (TRAA) *Vehicle Identification Guide (V-ID)*. The TRAA V-ID card categorizes eight classes of vehicles by weight and specifies the tow truck class capable of towing passenger cars and trucks in each designated vehicle class. The V-ID card provides a checklist of information needed for the correct dispatch of towing and recovery units. It also provides guidance on reading a vehicle identification number, so that towing operators can refer to correct towing procedures. Appendix M contains a TRAA V-ID guide.

Table 11 lists potential equipment used to effect the clearance of a major incident, including the removal of overturned trucks and spilled cargo, along with a percentage of surveyed jurisdictions that have at least one piece of equipment available for use. The table shows that each of the equipment pieces is available for use in removing traffic incidents in 45% or more of the surveyed jurisdictions. Equipment includes an air-cushion recovery system (83% of jurisdictions), a crane (76%), and a recovery truck with rotator (62%). Private towing companies typically own heavy-duty tow trucks, vehicle recovery equipment, and empty truck trailers and tankers; transportation agencies own or rent most other heavy equipment for handling cargo or debris. The Vermont State Police reported that it owns 10 of the 13 pieces of equipment listed in Table 11 for the purpose of clearing major traffic incidents. Incident

management manuals represent an excellent repository for maintaining up-to-date agency equipment lists and application checklists for a range of incident severity levels.

The occurrence of major traffic incidents in overnight hours may affect highway operations at the start of the next morning peak commuting period if not handled expeditiously. Approximately 53% of surveyed agencies reported that state DOT maintenance workers or freeway service patrol operators take their incident response vehicles home at the end of their shifts. This action eliminates the need for incident responders to first report to their headquarters when contacted to respond to a traffic incident.

Vehicle Removal Procedures

Incident characteristics, weather and traffic conditions, the scope of available equipment, and the availability of trained personnel all govern the strategy for removing an overturned heavy vehicle. In jurisdictions with access to heavy-duty tow trucks only, incident responders may have to first remove the contents of an overturned box trailer or tanker truck. Figure 23 shows incident responders having to transfer the contents of an overturned tanker truck to an empty tanker truck before righting the wrecked vehicle. Vehicle removal procedures need not be ad hoc, but simply adaptable to a wide range of incident and environmental characteristics.

Table 12 summarizes incident removal strategies and shows percentages of surveyed jurisdictions' use of each procedure or equipment in their usual practice for clearing incidents involving an overturned, fully loaded (nonhazardous material) box trailer and overturned, fully loaded (nonhazardous material) tanker truck. Towing and recovery agencies generally use one or more of the following pieces



FIGURE 23 Incident responders transferring the contents of an overturned tanker truck to an empty tanker truck before righting the wrecked vehicle. (Courtesy: New Jersey DOT.)

TABLE 12
REMOVAL STRATEGIES FOR OVERTURNED TRUCKS

Overturned Truck with Fully Loaded Box Trailer		Overturned, Fully Loaded Tanker Truck	
Percentage of Jurisdictions	Removal Strategy	Percentage of Jurisdictions	Removal Strategy
96	Use heavy-duty tow truck(s) to right	82	Use heavy-duty tow truck(s) to right
74	Partially unload before righting	73	Completely unload before righting
70	Use air-cushion recovery to right	55	Use air-cushion recovery to right
61	Use crane to right	55	Use crane to right
57	Right fully loaded	45	Use recovery truck rotator to right
52	Completely unload before righting	41	Partially unload before righting
48	Relocate to shoulder before righting	41	Right fully loaded
35	Use recovery truck rotator to right	27	Relocate to shoulder before righting

Notes: Number of respondents = 23 (box trailer) and 22 (tanker truck).

of vehicle recovery equipment for righting overturned heavy vehicles:

- Heavy-duty tow trucks—Two heavy-duty tow trucks can right a tanker truck or semi-tractor trailer, as shown in Figure 24.
- Recovery truck with rotator—As shown in Figure 25, a rotator accomplishes the task of righting an

empty or partially loaded overturned truck faster than any other technique. A rotator does not usually require the assistance of other equipment to complete the task. In addition, rotators can right trucks in areas where there are space limitations, and rotators often occupy fewer travel lanes when performing work compared with other types of vehicle recovery equipment.



FIGURE 24 Two heavy-duty tow trucks (mostly obscured) in the process of righting an overturned tanker truck. (Courtesy: New Jersey DOT.)



FIGURE 25 Recovery truck with rotator righting an overturned semi-tractor trailer. (Courtesy: New Jersey DOT.)



FIGURE 26 Air-cushion recovery system righting an overturned, fully loaded semi-tractor trailer. (Courtesy: New Jersey DOT.)

- Air cushion recovery system—This technique, shown in Figure 26, may prove effective in righting fully loaded semi-tractor trailers susceptible to breaking open during recovery efforts. The use of an air-cushion recovery system by properly trained responders may serve as a faster alternative to manually off-loading truck cargo before righting.
- Crane—As shown in Figure 27, recovery operators use a crane to access and remove an overturned truck located in a grade-separated area or other hard-to-reach position not accessible by towing and recovery trucks.

Survey results indicated that the jurisdiction represented by the Arkansas State Highway and Transportation Department—District 6 typically uses a rotator only in removing an overturned, fully loaded box trailer or tanker truck. The New Jersey Turnpike Authority can access a rotator, air-cushion recovery system, or crane to remove overturned trucks. The New Hampshire DOT and Washington State DOT noted that agencies in their jurisdictions typically right an overturned box trailer or tanker truck without having to unload the contents of the wrecked vehicle.

The Minnesota Incident Management Coordination Team set the following guidelines for on-scene incident re-

sponders involved in heavy vehicle recovery operations (Frandrup et al. 2002):

- (Law enforcement)—If possible, coordinate with other emergency units to make the scene longer, not wider. Move units to one side of the road, if possible, without compromising investigation.
- Communication between the State Patrol and towing company is very important so that the proper equipment and personnel resources arrive on the scene.
- (Towing operator)—Install all recovery equipment before tow trucks are positioned in the traffic lanes. To minimize disruption, do preliminary work such as [with] chains, wire, rope, and snatch blocks before tow trucks block traffic lanes.

Appendix N contains a set of policies and procedures developed by Illinois DOT—District 1 for the handling of an overturned semi-tractor trailer by ETP personnel. As set forth in the Illinois DOT and Illinois State Police Joint Operational Policy Statement, the Illinois DOT and Illinois State Police consider normal off-pavement vehicle and/or cargo recovery operations as nonemergency activities. If an incident occurs at a time of high traffic demand on expressways, Interstate highways, and arterials, the agencies



FIGURE 27 Use of a crane to remove an overturned tanker truck. (Courtesy: Connecticut DOT.)

may require commercial towing and recovery companies to schedule recovery operations during off-peak times.

All of the surveyed agencies reported that incident responders take special action when handling an overturned, but not leaking, tanker truck containing gasoline. All agencies except the Delaware River Port Authority take similar special actions when handling a tanker truck carrying diesel fuel, oil, or a cryogenic load. When such an incident occurs, agencies may call a fire department, emergency management agency, and/or a hazardous materials response team to the incident site to assume initial supervision and handling.

Recovery of Costs for Services Rendered

The survey respondents noted that 82% of public agencies bill the party responsible for the traffic incident for services rendered in removing an overturned truck. The Minnesota DOT and New Hampshire DOT recoup resource expenditures through the responsible party's insurance company. The Washington State DOT may complete a repair cost estimate after assisting at an incident that costs the response team \$300 or more. The repair cost estimate lists the number of hours each DOT employee worked at the scene, the number of operating hours or miles traveled for each piece of support equipment, and the amount of all materials and supplies used in mitigating the incident. The DOT uses the estimate to recover some of the stated costs from the responsible party (Althausen 2001).

The cost of removing an overturned truck varies widely. Surveyed transportation agencies reported a range of from \$500 to \$30,000 depending on incident severity and working conditions. For example, the Vermont State Police bills a minimum of 6 h time at a trooper's salary.

Performance Evaluation

Approximately 52% of surveyed agencies expressed satisfaction with major incident clearance activities in their jurisdictions. Agencies managing bridge/tunnel areas reported the highest satisfaction rating, and agencies in rural areas collectively reported the lowest. Based on 10 survey responses, the average clearance time, defined as the elapsed duration from the start of incident removal to response personnel departure from the site, to remove an overturned truck (no hazardous materials threat) is 3.9 h. Most surveyed agencies do not have a published clearance time goal; however, the Washington State DOT specifies a goal of 90 min or less for a major incident clearance. The Florida DOT and Florida Highway Patrol open roads policy includes the statement "It is the goal of all agencies that all incidents be cleared from the roadway within 90 minutes of the arrival of the first responding officer."

The DCSD has a published goal of 45 min maximum for lane-blockage duration for injury crashes and incidents involving spilled loads. In the event of a crash with major

injuries, the DCSD goal for maximum lane-blockage duration is 60 min. With regard to fatal crashes or crashes involving possible criminal charges, the DCSD has a goal of 90 min maximum for lane-blockage duration (*Standard Operating Procedure* n.d.).

The Wyoming DOT plans to impose a 90-min limit for private towing companies to remove wreckage from DOT-maintained highways. If commercial towing and recovery companies exceed the 90-min threshold, the Wyoming DOT will use its own equipment to move the wreckage off the highway for removal by a private towing company only after congestion caused by the incident has dissipated (“WYDOT Looking at Ways . . .” 2002). None of the surveyed jurisdictions have an agreement establishing incentives or penalties for responders regarding the clearance of traffic incidents.

Incidental Vehicle Fluid Spill Removal

The likelihood of a petroleum or engine fluid spill accompanies the occurrence of any vehicle crash. The location of truck diesel saddle tanks makes them particularly vulnerable to rupture in a crash, as shown in Figure 28. The occurrence of incidental vehicle fluid spills, such as the one

pictured in Figure 29, can delay the opening of travel lanes if on-scene responders do not have the appropriate training and equipment to identify and remove the hazard. In some instances, incident responders may deem a small release of gasoline or other petroleum product a hazardous material incident, even if the fluid spill appears containable on an impervious surface.

Approximately 57% of survey respondents reported that the occurrence of a small quantity vehicle fluid spill *does not* require response and cleanup by a fire department, hazardous materials response team, or environmental agency in their jurisdictions. Surveyed agencies defined the criteria of an incidental vehicle fluid spill as follows:

- Less than 5 gal: five surveyed agencies,
- Less than 25 gal: two surveyed agencies,
- Less than 100 gal: New Jersey DOT, and
- Less than 150 gal: Maryland Transportation Authority.

Transportation agencies remove a minor petroleum or engine fluid spill in 53% of surveyed jurisdictions. Free-way service patrols and private towing companies participate in removal activities in 41% and 35% of surveyed jurisdictions, respectively. The Maryland Transportation Authority has an on-call independent contractor available to



FIGURE 28 The location of truck diesel saddle tanks makes them particularly vulnerable to rupture in a crash. (Courtesy: New Jersey DOT.)



FIGURE 29 The occurrence of incidental vehicle fluid spills can delay the opening of travel lanes if on-scene responders do not have the appropriate training and equipment to identify and remove the hazard.

remove minor spills. Common materials used to remove incidental vehicle fluid spills, as reported by survey respondents, include sand, dry soak, or other absorbent material. The Delaware River Port Authority makes use of PIG Mats to absorb petroleum-based liquids. These mat pads or rolls absorb petroleum and other oil-based liquids without absorbing any water. Public agencies that participate in the cleanup of minor vehicle fluid spills, in about 87% of surveyed jurisdictions, bill to recoup costs. The Florida DOT–District 1 estimated that the typical cost of removing an incidental vehicle fluid spill of less than 5 gal ranges from \$85 to \$150 per incident. The New Jersey DOT provides equipment and personnel to relocate small vehicle fluid spills of 100 gal or less and estimated typical removal costs at less than \$1,000 per incident.

State Policies

The Virginia Department of Emergency Management maintains a document, entitled *Guidelines for the Mitigation of Accidental Discharges of Motor Vehicle Fluids* (2000), which provides practical guidelines for the mitigation of accidental discharges of noncargo motor vehicle

fluids in any quantity. The document states that the following discharges, when not a threat to navigable waters, are exempt from required reporting to the Virginia Emergency Operations Center or National Response Center: (1) accidental discharges from farm vehicles or noncommercial vehicles and (2) accidental discharges from the fuel tanks of commercial vehicles that have a fuel tank capacity of 150 gal or less. The guidelines do not mandate that a hazardous materials contractor mitigate a reportable vehicle fluid spill. Many incidental vehicle fluid spills may exceed reportable guidelines but can be cleaned up expeditiously by regular traffic incident responders.

Section 18.2-324 of the Code of Virginia permits local and state law enforcement officers to enforce cleanup of incidental vehicle fluid spills, and includes the following provision:

Any person removing a wrecked or damaged vehicle from a highway shall remove any glass or other injurious substance dropped upon the highway from such vehicle.

The document specifies the following guidelines on motor vehicle fluid cleanup performed by a fire department, wrecker operator, property owner, or responsible party:

- Large amounts of granular absorbents should be used to safely clean up spills of gasoline. This is necessary to reduce the concentration of gasoline's benzene component to acceptable levels for personal safety and health.
- Contaminated absorbent material and soil should be placed in a suitable container, such as large plastic trash bags, five-gallon plastic pails, or recovery drums.
- If possible, separate biodegradable and nonbiodegradable absorbents into different containers. Nonbiodegradable absorbents include "kitty litter," soil, sand, and vermiculite.
- Each container should be securely sealed and clearly marked to indicate its content. Markings should include the type of absorbent used and the material absorbed.

The multiagency Florida Statewide Incident Management Program has drafted guidelines on the mitigation of accidental discharges of motor vehicle fluids, subject to approval by participating agencies. These guidelines emphasize that early on-scene responders should prioritize reopening travel lanes and accordingly apply available absorbents per clearance procedures.

Interagency Communications

The maintenance of continuous, uninterrupted communications among agencies, both on- and off-site, pertaining to clearance activities for traffic incidents is a key focal point for ensuring the rapid removal of traffic incidents. Agencies in surveyed jurisdictions generally have available multiple technologies with which to communicate with one another. These technologies include a radio with dedicated frequency (90% of respondents), cellular phone (86%), computer/Internet (28%), and radio without dedicated frequency (28%). Jurisdictions nationwide have increasingly implemented 800 MHz trunked radio systems. This equipment allows the sharing of channels in a single-brand, multiple repeater system by participating agencies. Trunking reduces radio user waiting time in accessing the system and furnishes increased channel capacity.

In nearly 85% of surveyed jurisdictions, private towing operators use a cellular phone to communicate with on-site incident responders. Other means of communications include a regular phone (69%), pager (27%), radio with dedicated frequency (15%), and radio without dedicated frequency (12%).

Considered a key component in facilitating efficient incident detection, verification, and response, the use of a traffic management center (TMC) as a communications hub during incident removal operations provides numerous benefits. TMC personnel can assist in sizing up and classifying an incident, dispatch state DOT incident response or maintenance crews, contact private towing and recovery companies, relay agency communications across jurisdic-

tions, and disseminate accurate incident characteristics and predicted duration to travelers and the media. The Connecticut State Police mandates that its troopers contact the Connecticut DOT TMC in Newington directly, rather than individual DOT maintenance yards, if requiring DOT response and reporting to an incident site. Troopers must notify the TMC of all closures of limited-access highways or of any traffic incident causing the closure of one or more travel lanes for a duration of 30 min.

The New York State DOT—Region 11, together with the New York City DOT and the New York City Police Department, is developing the Integrated Incident Management System, a real-time incident management system that will enhance the communication of incident data among incident managers at multiple centers (transportation, law enforcement, fire, emergency medical service, emergency management) and among on-scene incident responders, to permit rapid dispatch of secondary responders to the scene. The system allows incident responders using mobile computers and digital cameras to collect and transmit digital information (text/image) on incident characteristics, to permit fast verification, classification, and location identification (Werner 2001). From the perspective of quick clearance, this next-generation communications infrastructure will serve to reduce the frequency of incorrect incident classifications and improve the accuracy and speed of equipment and personnel dispatch to the incident scene.

CRASH INVESTIGATION TECHNIQUES

The on-scene investigation of highway crashes represents a mandatory protocol of law enforcement responders, and incident management programs must account for crash investigation within an overall set of procedures. Law enforcement officers will conduct a crash investigation whenever they suspect that a particular incident will spur future litigation. Law enforcement must conduct a crash investigation in the event of a fatal or serious injury crash, an incident caused by suspected alcohol or drug use, or an incident involving a suspected felony. A well-investigated crash places a premium on accurate measurements because the judicial system demands it, regardless of the scope of the criminal charge under consideration. A detailed crash investigation necessitates the collection of a large amount of data, including the accurate measurement of skid marks, wrecked vehicle position, crash debris field, and gouges and scratches denoting the area of impact.

The Cincinnati Police Department reported that one of every five crashes occurring on Interstate highways in Cincinnati were movable from the Interstate to a refuge area, to complete a police investigation (Minutes of the Regional Incident Management Task Force, Cincinnati, Ohio, March 2002.) However, incident responders often have to choose

between either performing a crash investigation or opening all travel lanes. In meeting the core objective of a quick clearance practice, law enforcement agencies nationwide have incorporated the use of advanced technologies for collecting required crash scene data within a briefer time frame and using fewer personnel compared with the methods of conventional investigation. The most common data collection techniques used by law enforcement for site crash investigations include

- Coordinate (traditional) method,
- Total station survey method, and
- Photogrammetry method.

The remainder of this section will provide a brief overview of each data collection technique and conclude with a summary of crash investigation strategies used in the areas covered by the study.

Coordinate Method

Investigators using the coordinate method start data collection by laying down a baseline tape straight through the crash scene. The locations of all other objects and sites are measured as a distance along and perpendicular to the baseline tape (x - y coordinates). This activity requires a minimum of two people and usually three to keep the baseline tape in place, take measurements, and record data. Upon returning to their office, the support staff must recreate the crash scene by hand, using the data collected. They start by drawing the baseline established in the field, and then plot each recorded point to scale relative to the baseline. Disadvantages found in using this method include the following:

- Safety—Investigators must take most measurements in the highway traveled way,
- Time—Investigators can take only 30 to 45 measurements an hour,
- Data accuracy and completeness—The method requires investigators to take measurements at precise right angles from the baseline tape, and
- Convenience—Investigators may have difficulty clearing a path for the baseline tape and/or keeping it steady (Jacobson et al. 1992).

Some law enforcement agencies have turned to laser units as an alternative to using tape measures, for measuring distances. The use of laser units improves investigator safety compared with traditional data collection methods.

Total Station Survey Method

Investigators employing the total station survey method obtain horizontal distance measurements through an infra-

red electronic distance meter combined with a rod-mounted prism placed on an object of interest. The total station equipment also consists of a theodolite or electronic transit to measure the horizontal angle to an object and an internal level to measure vertical angles. When initiating data collection, an investigator first places the theodolite at a site from which he or she can view all the objects to be measured. Because the prism connects to a tall rod, total stations can measure over the top of objects, including moving traffic. The investigator with the rod-mounted prism places it on a point or object to be measured, and a second investigator sites the total station on the prism, measuring distance, horizontal angle, and vertical angle simultaneously. A computer accompanying the total station stores all data collected electronically. Using computer-aided drafting software, office staff can produce a computer drawing recreating the crash scene (Jacobson et al. 1992).

A study of total station survey use by the Washington State Patrol in Seattle area crash investigations by Jacobson et al. (1992) revealed that crashes investigated using this method were cleared an average of 51 min sooner than were crashes investigated using the coordinate method, a 28% savings in incident clearance time. The study noted the following advantages to using the total station survey method:

- There is the ability to provide more accurate and detailed collision and scene diagrams.
- Theodolites can be set off the roadway, and measurements can be taken across open lanes of traffic.
- Additional types of scene diagrams can be produced quickly and efficiently.
- Investigators can easily prepare momentum diagrams, time and distance diagrams, and vehicle damage profiles.

Limitations of the total station survey method include maintaining investigator expertise, investigator difficulty in citing the prism in dense fog, and potential measurement inconsistencies in extremely hot weather.

Photogrammetry Method

Photogrammetry represents the technology of obtaining information, either in the form of three-dimensional data or qualitative data, through analyzing and interpreting photographs. Photogrammetry records objects with noncontact methods and calculates the real dimensions of objects within the image through photographic triangulation. Required equipment for crash investigations includes a camera, measurement software, measurement targets or evidence markers, a personal computer, a scanner if using a conventional camera, a computer-aided drafting software

package, and electronic storage media (Walters and Cooner 2001).

Investigators using photogrammetry for crash investigation first mark all relevant objects and natural targets at the scene and then take analog or digital photographs of the markers. Because the computer photogrammetry program treats each photographed evidence marker as a three-dimensional dot, on-scene investigators must include each evidence marker in at least three different photographs at great angles. Investigators must also ensure that overlapping photographs contain a minimum of six common points to satisfy measurement software requirements. Away from the crash site, the staff uses the measurement software to make measurements from imported photographs. The computer-aided drafting software package facilitates the creation of electronic plans and profiles illustrating the crash scene. Investigators may use the photogrammetry method at night provided that there are ample light sources to fully illuminate the crash scene (*Photogrammetry Field Manual* n.d.). However, improved camera technology for taking photographs in low light has reduced drawbacks associated with nighttime application of photogrammetry.

A study by Walters and Cooner (2002) compared Chattanooga Police Department crash investigation times, using photogrammetry and the coordinate method (laser and roller tape). The study reported that photogrammetry reduced the overall incident clearance time by an average of 61 min, or a 58% reduction, in 11 cases included in the comparison. The photogrammetry method required just one officer, whereas three officers were needed to collect data using the coordinate method. A comparison of measurement accuracy for seven incidents yielded just a 2.3% difference between the photogrammetry and coordinate methods.

Experience of Surveyed Jurisdictions

Table 13 provides a summary of on-scene crash investigation techniques used by law enforcement agencies in sur-

veyed jurisdictions. The table shows that the same percentage of surveyed jurisdictions, 76%, use the coordinate method and the total station survey method. Law enforcement agencies in one-half of surveyed metropolitan areas and in approximately 18% of urban/rural areas use the photogrammetry method. The Columbus, Ohio, Division of Police uses its helicopter to take aerial photographs of crash scenes.

The DCSD began using photogrammetry for freeway crash investigations in December 2000. The DCSD received funding from the FHWA, FTA, and the Federal Motor Carrier Safety Administration Intelligent Transportation System peer-to-peer program to cover training costs. A Texas Transportation Institute study of 34 lane-blocking incidents requiring DCSD response and subsequent crash investigation using photogrammetry reported that the incidents had a mean total duration of 26 min, and all of the incidents had a total duration of less than 1 h (Walters and Cooner 2002).

The Louisiana State Police uses either the coordinate method or the total station survey method when conducting a crash investigation. The agency stated that investigators require an average of 1.5 h to complete crash investigations with the coordinate method versus 45 min with the total station survey method. Law enforcement agencies in approximately 8% of surveyed jurisdictions have published time goals for crash investigations.

QUICK CLEARANCE SUPPORT AND ASSESSMENT

Responder Training

The operational success of a quick clearance practice rests on the situation whereby incident responders, representing all stakeholder agencies, have firsthand knowledge of quick clearance laws, policies, and agreements, as well as training in traffic incident removal procedures applicable to a wide range of incident types. Seventy percent of surveyed agencies indicated that their incident responders

TABLE 13
ON-SCENE CRASH INVESTIGATION TECHNIQUES USED BY LAW ENFORCEMENT AGENCIES IN SURVEYED JURISDICTIONS

Area Type (No. of Respondents)	Percentage of Jurisdictions		
	Coordinate Method (%)	Total Station Survey Method (%)	Photogrammetry Method (%)
Urban/rural (11)	73	91	18
Metropolitan (8)	75	75	50
Rural (3)	67	33	0
Bridge/tunnel (3)	100	67	0
All jurisdictions (25)	76	76	24

Notes: Some jurisdictions use more than one technique.

TABLE 14
TRAINING ACTIVITIES FOR INCIDENT RESPONDERS AND PRIVATE TOWING OPERATORS

	Incident Responders ¹		Private Towing Operators ²	
	Percentage of Jurisdictions	Method/Topic	Percentage of Jurisdictions	Method/Topic
Training Type	81	In-house instruction	70	Local/regional course/workshop
	81	Local/regional course/workshop	50	Industry certification
	67	National course/workshop	30	Regional/statewide conference
	43	Regional/statewide conference	20	National course/workshop
	24	National conference	10	National conference
Instruction Methods	100	Classroom instruction	89	Classroom instruction
	71	Distribution of manual	78	Tabletop exercise
	71	Tabletop exercise	56	Distribution of a manual
	62	Distribution of video	56	Distribution of a video
	52	Practice drill in field	44	Practice drill in field
Incident Clearance Topics	90	Removing disabled vehicles	88	Parking response vehicles
	86	First responder duties	88	Removing disabled vehicles
	81	Parking response vehicles	88	Removing overturned trucks
	76	Clearing non-hazmat cargo spills	75	Clearing non-hazmat cargo spills
	76	Communications	63	Traffic incident classification
	76	Hazardous material classification	50	Clearing minor petroleum spills
	67	Applicable liability laws	50	Communications
	67	Clearing minor petroleum spills	50	Hazardous material classification
	67	Removing overturned trucks	38	Applicable liability laws
	67	Traffic incident classification	38	First responder duties
	62	Handling fatal/felony incidents	25	Handling fatal/felony incidents

¹Number of respondents = 21 (incident responder training).

²Number of respondents = 8–10 (private towing operator training).

receive some form of training in traffic incident clearance. However, that percentage does not include any agencies located in rural areas. Based on 14 survey responses, approximately 71% of private towing operators in surveyed jurisdictions, all located in metropolitan or urban/rural areas, obtain industry or multiagency cross training on traffic incident clearance. Incident responders typically train together with personnel from one or more other agencies in their jurisdictions, as indicated by 82% of survey respondents. Surveyed agencies reported training held with personnel from local fire departments (83% of respondents), transportation agencies (83%), local police (78%), state police (78%), freeway service patrol (78%), private towing company (72%), and emergency medical service (61%). It is interesting to note that 28% of surveyed agencies train with a medical examiner. Most surveyed agencies (88%) have trained together with other agencies in adjacent jurisdictions. Cross-jurisdictional training not only prepares agencies for major incidents, but it also provides agencies with the opportunity to share effective incident management strategies or obtain firsthand reports on various equipment and technology, such as that used in crash investigations.

Table 14 summarizes various methods used to train incident responders and private towing operators, in addition to quick clearance topics covered in training activities. Most responders receive training through in-house instruction or a workshop. For example, the Illinois State Police hosts a traffic incident clearance workshop for private tow-

ing operators. The Minnesota DOT coordinates a biennial Incident Management Workshop attended by the DOT, the FHWA, freeway service operators, law enforcement personnel, towing service providers, city and county organizations, truck industry representatives, insurance companies, and others (*Highway Helper Summary Report 2000*). Figure 30 shows that Minnesota DOT officials developed specialized presentations to private towing and recovery operators to communicate incident management procedures and the importance of rapidly removing incidents. Such information allows them to become more responsive at the incident site. A flexible method of training incident responders and private towing operators, used in more than one-half of surveyed jurisdictions, involves the distribution of a video. Figure 31 shows an excerpt from a training video of the Hampton Roads Highway Incident Management Committee. The video supplements the Virginia–Hampton Roads area incident management manual. Priority actions for incident responders are addressed in the video (*Incident Management Response Plan 2000*). More than one-half of respondents indicated that occasional practice drills on traffic incident clearance take place in their jurisdictions. Illinois DOT–District 1 Emergency Traffic Patrol personnel have trained with members of the Chicago Fire Department on traffic incident clearance procedures (see Figure 32).

Additionally, professional certification denotes an effective means of ensuring that private towing operators have complete knowledge of equipment operation and procedures

Towing and Recovery- *a critical piece in the Incident Management process*



FIGURE 30 Minnesota DOT presentation to private towing and recovery operators on incident management procedures and the importance of rapidly removing incidents. (Courtesy: Minnesota DOT.)



FIGURE 31 Hampton Roads (Virginia) highway incident management video.



FIGURE 32 Illinois DOT–District 1 Emergency Traffic Patrol personnel training with members of the Chicago Fire Department on traffic incident clearance procedures. (Courtesy: Illinois DOT–District 1.)

to assess and effect the removal of traffic incidents of varying severity. As an example, the TRAA sponsors a national towing operator certification program consisting of the following three levels:

- Level 1: Light-duty towing and recovery,
- Level 2: Medium-duty towing and recovery, and
- Level 3: Heavy recovery specialty.

Level 2 and Level 3 certification require operators to fulfill certain prerequisites, and both levels address incident management topics. Level 3 certification particularly covers several methods of performing a heavy-vehicle recovery operation.

Incident Management Response Team Debriefings

A debriefing for the incident management response team gives participating agencies an opportunity to interactively identify opportunities for procedural improvements, future training, allocation of resources, or institutional support. In general, team debriefing meetings should do the following:

- Recreate past major incident chronologies,
- Provide positive and negative aspects of current incident response and removal operations,
- Recommend possible improvements,
- Discuss various suggestions and determine necessary changes, and
- Terminate meetings on a positive note.

Agencies in one-half of surveyed jurisdictions meet on a regular basis to evaluate traffic incident management activities. Meetings generally occur bimonthly or quarterly. Thirty percent of respondents indicated that agencies meet

in their jurisdictions only after the occurrence of a major incident, and agencies in 20% of surveyed jurisdictions do not meet at all. At least one state or regional law enforcement and transportation agency representative attends an incident management meeting. Other agencies commonly represented at meetings include freeway service patrol (71% of respondents), private towing company (71%), local police (67%), local fire department (67%), and emergency medical service (58%).

A recent meeting of the Minnesota Incident Management Coordination Team illustrates the productivity of having regular incident management meetings between stakeholders. A representative from the towing and recovery industry communicated to Minnesota DOT maintenance and freeway service patrol representatives that responders may incur new towing challenges when handling select 2003 model passenger cars. The towing representative offered suggestions for future removal of these vehicles. As shown in Figure 33, stakeholder agencies supporting the TIME program in southeastern Wisconsin formed a special task force to develop a public outreach campaign to promote the state's quick clearance law.

Advantage of a Traffic Incident Clearance Champion

One-third of survey respondents reported that their jurisdictions have a “champion” charged with resolving institutional and operations issues affecting traffic incident clearance. These champions have the authority and position to mitigate circumstances hampering quick clearance activities. They also promote stakeholder buy-in. It is suggested that jurisdictions that currently have a champion have an alternate official as a replacement if the current champion elects to resign from his or her present position.



Organization/Relationships

- **Committees:**
 - Emergency Responders
 - Corridor Traffic Management
 - Special Events
 - Outreach
- **Task Forces:**
 - Construction
 - Clearance Laws



FIGURE 33 Stakeholder agencies supporting the TIME program in southeastern Wisconsin formed a special task force to develop a public outreach campaign to promote the state's quick clearance law. (Courtesy: Wisconsin DOT–District 2.)

Quantitative Evaluation

Evaluation represents a key element in maintaining the successful operation of any incident management component, and it may also serve to garner support for or validate quick clearance strategies. One-third of survey respondents indicated that a study of congestion delay has been conducted for their jurisdictions. A cost-benefit study of incident clearance activities has been performed for about 30% of surveyed jurisdictions. For example, the Connecticut DOT operates a Freeway Incident Management System (FIMS) on a 90.3-km (56.1-mi) section of I-95 between Branford and the New York State line. The FIMS consists of speed detectors, closed-circuit television cameras, variable message signs, and a TMC. As previously mentioned, the Connecticut DOT and Connecticut State Police signed an open roads policy in 1995. A study of incidents occurring on the I-95 section reported that average crash clearance times dropped from 87 min in 1993 (no FIMS or open roads policy) to 40 min in 1998, a 54% reduction. With regard to other types of traffic incidents, average incident clearance times dropped from 36 min to 27 min, a 25% reduction (*ConnDOT I-95* . . . 2001).

A study of secondary incidents has been conducted in 17% of surveyed jurisdictions. Chang et al. (2000) estimated benefits owing to efficient removal of stationary vehicles from travel lanes as part of a greater Maryland

CHART (Coordinated Highways Action Response Team) incident management system. The researchers first studied the relationship between the total number of lane changes and the total number of peak-period lane-blocking crashes occurring on I-495 and I-95 freeway segments. They concluded that approximately 5,330 nonmandatory lane changes will cause one crash. Then, the researchers computed the number of lane changes for primary incidents resulting in lane blockages, based on the incident duration, the number of travel lanes blocked, and the approximate traffic flow rate adjacent to the incident. Finally, they estimated the number of potentially reduced secondary crashes for each freeway segment patrolled by the CHART ETP by multiplying the above-mentioned ratio and the estimated number of lane changes for each primary incident considered in the patrol area. The study concluded that the CHART freeway service patrol, through its rapid removal of lane-blocking obstructions, may have prevented 385 potential secondary crashes in 2000 along 365 km (227 mi) of freeway covered by the ETP.

Lessons Learned

Table 15 presents a ranking of barriers encountered by surveyed agencies in developing strategies to facilitate the safe and quick clearance of traffic incidents. Agencies in metropolitan and urban/rural areas indicated “conflicting response agency priorities” as the top institutional barrier. The top bar-

riers in rural areas involved “liability concerns” and “equipment constraints.” Surveyed agencies managing bridge/tunnel areas also identified “liability concerns” and “conflicting response agency priorities” as top barriers. The Florida Turnpike reported not having experienced any notable institutional barriers in developing quick clearance strategies. Other agencies reported “fire and rescue priorities,” “lack of champions,” and “number of stakeholders” as additional barriers.

TABLE 15
BARRIERS TO DEVELOPING QUICK CLEARANCE STRATEGIES, BY RANK

Rank	Institutional Barrier
1	Conflicting response agency priorities
2	Liability concerns
3	Equipment constraints
T4	Conflicting response agency responsibilities
T4	Conflicts with private towing operators
T4	Training constraints
7	Jurisdictional conflicts
8	Personnel constraints
9	Funding constraints

Notes: A “T” in column one indicates that these barriers were tied for fourth place. Number of respondents = 28.

This synthesis study profiled a large number of services, policies, equipment, and technology that aid in the safe and quick clearance of traffic incidents. The quick clearance strategies can be divided into two general categories: policy and infrastructure. Policy initiatives, such as an inter-agency agreement, can be established by current stakeholder staff at the cost of required research and legal

TABLE 16
SUPPORTING POLICIES AND INFRASTRUCTURE IN FACILITATING QUICK CLEARANCE OF TRAFFIC INCIDENTS, BY RANK

Rank	Supporting Policy or Infrastructure	Classification
1	Freeway service patrol	Infrastructure
T2	Quick clearance law	Policy
T2	Traffic management center	Infrastructure
4	Public education	Policy
5	Incident responder training	Policy
6	Interagency agreement	Policy
7	Hold harmless law	Policy
8	Incident management manual	Infrastructure
9	First responder guidelines	Policy
10	Private towing company equipment requirements	Policy
T11	Mutual-aid agreement	Policy
T11	Using photogrammetry method	Infrastructure
13	Strategically located equipment storage sites	Infrastructure
T14	Incident clearance goal times	Policy
T14	Policy/equipment for cleanup of minor spill	Policy/Infrastructure
T14	Private towing operator training	Policy
T17	Public-private towing agreement	Policy
T17	Traffic fatality certification policy	Policy
T19	Tow truck with rotator	Infrastructure
T19	Using total station survey method	Infrastructure
21	Crash investigation sites	Infrastructure
22	Debris recovery vehicle	Infrastructure
23	Incentives/penalties for quick clearance	Policy
24	Air-cushion recovery system	Infrastructure
25	Heavy vehicle identification guide	Policy
26	Employ traffic safety officer	Infrastructure
27	Recognition of organ donor program	Policy

Notes: a “T” in column one indicates a tie for that ranking. Number of respondents = 28.

review. Infrastructure, such as photogrammetry equipment, requires budget planning and a significant capital investment. Table 16 lists the various components of quick clearance supporting policy and infrastructure, as ranked by respondents. The following list denotes the top component of a successful quick clearance practice for each area type:

- Urban/rural—Public education,
- Metropolitan—Freeway service patrol,
- Rural—Hold harmless law, and
- Bridge/tunnel—Freeway service patrol and TMC.

Funding

The sources of funding used to support the development and deployment of quick clearance strategies include state, federal, and local agencies. Survey respondents indicated that their jurisdictions have the following funding mechanisms:

- 80% federal and 20% state and local funding (38% of respondents),
- 100% state funding (23%),
- 100% toll authority funding (15%—all responding toll authorities),
- 100% federal funding (8%),
- Federal and state funding mix (8%), and
- State and local funding mix (8%).

CONCLUSIONS

This synthesis yields important information, tailored for immediate use and application, concerning the development and maintenance of a quick clearance practice aimed at effecting the safe and timely removal of traffic incidents. The study offers a new definition of quick clearance and presents detailed classifications of laws, policies, and agreements that facilitate institutional support of quick clearance strategies. Moreover, the study inventories specific site traffic incident clearance and investigation activities employed nationwide to quickly mitigate incidents of varying severity levels. The survey responses collected served to identify specific trends in the practice, and the examination of individual practices revealed unique policies and infrastructure that other agencies may find to be cost-effective applications.

The synthesis revealed several strategies that have succeeded, as identified through the study survey and literature review, for agencies and stakeholder coalitions to consider as they seek to develop or enhance quick clearance practices. The general categories of these strategies are quick clearance legislation, quick clearance policies, activities related to the clearance of minor incidents and major incidents, and ways to support and assess quick clearance practices.

- Quick Clearance Legislation

- Evaluate scope of existing legislation authorizing the removal or tow of driver attended disabled or wrecked vehicles off of travel lanes.



FIGURE 34 Quick clearance practices should use public information campaigns to promote motorist awareness of quick clearance laws. (Courtesy: Wisconsin DOT.)

- Consider launching a public information campaign based on a current driver stop law.
 - Establish a driver removal law for involving the motoring public in a quick clearance practice.
 - Develop authority removal and tow laws to permit public agency removal of driver attended vehicles and/or spilled cargo obstructing traffic.
 - Use public information campaigns to promote motorist awareness of quick clearance laws (Figure 34).
 - Establish hold harmless laws protecting drivers and incident responders charged with various duties and responsibilities under a quick clearance law.
 - Protect transportation agencies and law enforcement under a hold harmless law in addition to personnel working under the direction of designated authorities.
 - Develop a traffic fatality certification law to permit the removal of the body of a crash victim from a highway traveled way, thus increasing scene safety and satisfying the requirements of organ transplant programs.
 - Involve medical examiners in the planning of incident clearance procedures.
- Quick Clearance Policies
 - Include private towing companies as a primary quick clearance stakeholder.
 - Implement quick clearance policies and procedures in rural areas.
 - Develop quick clearance initiatives for handling traffic incidents on arterials.
 - Work with other incident management stakeholders to develop an open roads policy.
 - Maintain multiple rotational lists or towing licenses for different classes of towing and recovery.
 - Institute an automatic tow program in areas having intelligent transportation system infrastructure for traffic monitoring.
 - Enact laws to protect the rights of commercial towing companies authorized to remove disabled or wrecked vehicles in designated areas.
 - Explore the idea of having private towing companies charge by the pound (vehicle weight plus factors) as a means of charging for services rendered.
 - Develop prequalification guidelines for private towing company inclusion on a rotational list.
 - Minor Incident Clearance
 - Create first responder procedural guidelines for removing a minor lane-blocking traffic incident.
 - Remove disabled or wrecked vehicles to a location maximizing scene safety and preventing mainline traffic view of the scene.
 - Consider construction of crash investigation sites.
 - Promote motorist use of crash investigation sites within a greater quick clearance public information campaign.
 - Establish a minor traffic incident clearance time goal for responders.
- Major Incident Clearance
 - Implement action plans facilitating the rapid removal of spilled, nonhazardous cargo.
 - Maintain contingency plans and specialized equipment to quickly mitigate cargo spills involving food and live animals.
 - Develop a policy and framework for recouping personnel and equipment costs expended in clearing a traffic incident through the responsible party.
 - Use a heavy-vehicle identification guide when communicating to off-site private towing and recovery agencies the type of vehicle involved in a traffic incident.
 - Consider obtaining other heavy-vehicle recovery equipment, such as a recovery truck with rotator.
 - Review procedures for handling cargo contained in an overturned heavy vehicle.
 - Establish guidelines, minimizing unnecessary travel lane blockage, for on-scene incident responders handling heavy-vehicle recovery operations.
 - Create a major traffic incident clearance time goal for responders.
 - Maintain contingency plans for removing major incidents in the event a private towing and recovery company incurs excessive delay in clearing the incident.
 - Develop decision criteria and action plans for transportation agency or private towing company removal of incidental vehicle fluid spills.
 - Designate a traffic management center, if available, as a quick clearance practice communications and responder dispatch hub.
 - Explore the use of advanced technologies for conducting on-scene crash investigations.
 - Quick Clearance Support and Assessment
 - Train with agencies in adjacent jurisdictions in an effort to learn of new incident clearance strategies, equipment, and technology.
 - Include private towing and recovery companies in training programs for incident management.
 - Use various training techniques, including the distribution of videos and the formulation of stakeholder-specific instructional presentations.
 - Hold regular incident management response team debriefings to identify and correct lessons learned from recent incidents.
 - Appoint a quick clearance practice “champion.”

Because there is limited information in the literature concerning the cost-effectiveness of laws, policies, strategies, and tactics, research might be conducted to evaluate the cost-effectiveness of quick clearance practices. Such an evaluation should include an examination of the impacts on secondary

incident occurrence and a survey of road-user behavior. The results of such studies could assist agencies and stakeholder coalitions in the reevaluation or planning of institutional and operational initiatives, toward the safe and rapid clearance of traffic incidents, and in quick clearance practices as a whole.

REFERENCES

- A Joint Operations Policy Statement*, Washington State Patrol and Washington State Department of Transportation, Olympia, February 2002.
- Althausser, J., *State of Washington Incident Response Team—Northwest Region Guidelines Revised—2001*, Washington State Department of Transportation, Olympia, March 2001.
- Berg, D., B. Legg, and L. Showalter, “Seattle Area Incident Management Program,” *ITE Journal*, Vol. 62, No. 3, March 1992, pp. 37–41.
- Chang, G., A. Petrov, P. Lin, N. Zou, and J.Y. Point-Du-Jour, *Performance Evaluation of CHART Real-Time Incident Management System—Year 2000*, Draft Final Report, University of Maryland and Maryland State Highway Administration, Baltimore, March 2002.
- ConnDOT I-95 Freeway Incident Management System (FIMS)—*Before-and-After Study*, Prepared for the Connecticut Department of Transportation by Howard/Stein-Hudson Associates, Inc., Boston, January 2001.
- Drakopoulos, A., M.R. Shrestha, and E. Ornek, “Freeway Crash Timeline Characteristics and Uses,” *Transportation Research Record 1748*, Transportation Research Board, National Research Council, Washington, D.C., 2001, pp. 132–143.
- Duluth TOCC—*Duluth/Superior Area Incident Management Plan*, Prepared for the Duluth Transportation Operations and Communications Center Incident Management Work Team by BRW, Inc., December 1999, 169 pp.
- Fenno, D.W. and M.A. Ogden, “Freeway Service Patrols: A State of the Practice,” *Transportation Research Record 1634*, Transportation Research Board, National Research Council, Washington, D.C., 1998, pp. 28–38.
- Frاندrup, C., S. Groth, S. Anderson, J. Sroga, and J. Hanzalik, *Traffic Incident Management Recommended Operational Guidelines—March 2002*, Incident Management Coordination Team, Minn., March 2002.
- Gordon, R., R. Reiss, H. Haenel, E.R. Case, R.L. French, A. Mohaddes, and R. Wolcott, *Traffic Control Systems Handbook*, Report FHWA-SA-95-032, Federal Highway Administration, Washington, D.C., 1996.
- Guidelines for the Mitigation of Accidental Discharges of Motor Vehicle Fluids*, Virginia Department of Emergency Management, Richmond, July 2000.
- Highway Helper Summary Report*, Minnesota Department of Transportation—Metropolitan Division, St. Paul, 2000.
- Incident Management, Detection, Response, and Operations: State-of-the-Practice Reports for I-95 Corridor Coalition Agencies*, Report No. I-95-CC-2-94-03, I-95 Corridor Coalition, Trenton, N.J., 1994.
- Incident Management Response Plan*, Video, Hampton Roads Highway Incident Management Committee, Suffolk, Va., 2000.
- Incident Management: Successful Practices: A Cross-Cutting Study: Improving Mobility and Saving Lives*, Report FHWA-JPO-99-018, Federal Highway Administration, Washington, D.C., 2000, 27 pp.
- Jacobson, L.N., B. Legg, and A.J. O’Brien, “Incident Management Using Total Stations,” *Transportation Research Record 1376*, Transportation Research Board, National Research Council, Washington, D.C., 1992, pp. 64–70.
- Karlaftis, M.G., S.P. Latoski, N.J. Richards, and K.C. Sinha, “ITS Impacts on Safety and Traffic Management: An Investigation of Secondary Crashes,” *ITS Journal*, Vol. 7, No. 1, 1999, pp. 39–52.
- Kinnecom, D.A., A. Gemperline, and B.G. Hansen, “Traffic Operations During the 2002 Olympic Winter Games,” Preprint No. AB02H582, Prepared for the ITE 2002 Annual Meeting and Exhibit, Institute of Transportation Engineers, Philadelphia, Pa., August 4–7, 2002.
- Managing Our Congested Streets and Highways*, Report FHWA-OP-01-018, Federal Highway Administration, Washington, D.C., 2001, 18 pp.
- Manual on Uniform Traffic Control Devices (MUTCD)*, Millennium Edition, Proposed Revision No. 2, 5/21/2002, Washington, D.C., 2002 [Online]. Available: http://mutcd.fhwa.dot.gov/kno-millennium_npa.htm. [2002, November 2].
- Martin, H., “Freeways Are Perilous for Stranded Drivers,” *Los Angeles Times*, September 17, 2002.
- Mitchell, J.G. and J. McKay, *Introduction to the Illinois Department of Transportation Emergency Traffic Patrol*, Illinois Department of Transportation, Chicago, 2002.
- “More Plow Drivers, Troopers Approved to Help Keep I-80 Open,” Wyoming Department of Transportation, Cheyenne, 2002 [Online]. Available: http://dot.statewy.us/web/news/press_releases/2002/i80_corridor/i80_corridor.html [2002, November 12].
- New York City Traffic Rules and Regulations*, New York, N.Y., November 2002.
- Parham, A.H., F. Fitzpatrick, M.D. Wooldridge, and D. Fenno, “Strategies to Facilitate Incident Management on New or Reconstructed Freeways,” Paper No. 01-3301, Prepared for the 80th Annual Meeting of the Transportation Research Board, Washington, D.C., January 7–11, 2001.
- Photogrammetry Field Manual*, Dallas County Sheriff’s Department, Dallas County, Tex., n.d.
- Proceedings of the National Conference on Traffic Incident Management: A Road Map to the Future*, March 11–13, 2002, American Association of State Highway and Transportation Officials, Washington, D.C., June 2002.
- Ran, B., R. Sonntag, A. Drakopoulos, B. Barrett, P. Sattayahatawa, B. Nemeth, S. Leight, and T. Miller, “Evaluation of the Southeastern Wisconsin TIME Program—Phase 1,” University of Wisconsin, Madison, September 2000.

- Raub, R.A. and J.L. Schofer, "Managing Incidents on Urban Arterial Roadways," *Transportation Research Record 1603*, Transportation Research Board, National Research Council, Washington, D.C., 1997, pp. 12–19.
- Reiss, R. and W. Dunn, Jr., *Freeway Incident Management Handbook*, Final Report, Report FHWA-HI-94-053, Federal Highway Administration, Washington, D.C., July 1991, 142 pp.
- Schrank, D. and T. Lomax, *2002 Urban Mobility Study*, Texas Transportation Institute, College Station, June 2002, 82 pp.
- Standard Operating Procedure*, Dallas County Sheriff's Department—Traffic Section, Dallas County, Tex., n.d.
- Sullivan, J., "Highway Incident Safety for Emergency Responders," Presented at the 2002 Fire–Rescue International, Kansas City, Mo., August 23–26, 2002.
- Traffic Incident Management Handbook*, Report DOT-T-01-01, Federal Highway Administration, Washington, D.C., 2000.
- "Traffic Incident Management Self Assessment Guide," Federal Highway Administration, Washington, D.C., 2002 [Online]. Available: <http://ops.fhwa.dot.gov/Travel/IncidentMgmt/timsa.htm>. [2003, February 11].
- "Transtats: The Intermodal Transportation Database," U.S. Bureau of Transportation Statistics, Washington, D.C., 2002 [Online]. Available: <http://www.transtats.bts.gov>. [2002, October 23].
- Truncheon Operations Plan*, Oregon Department of Transportation—Region 1 Traffic Operations, Portland, 1997.
- Ullman, G.L. and M.A. Ogden, "Analysis of Major Freeway Incidents in Houston, Texas," *Transportation Research Record 1554*, Transportation Research Board, National Research Council, Washington, D.C., 1996, pp. 221–227.
- Walters, C.H. and S.A. Cooner, *Understanding Road Rage: Implementation Plan for Promising Mitigation Measures*, Report No. TX-02/4945-3, Texas Transportation Institute, College Station, November 2001.
- Walters, C.H. and S.A. Cooner, *Understanding Road Rage: Driver Irritants and Promising Mitigation Measures*, Project Summary Report 4945-S, Texas Transportation Institute, College Station, February 2002.
- Walters, C.H., V.J. Pezoldt, K.N. Womack, S.A. Cooner, and B.T. Kuhn, *Understanding Road Rage: Summary of First-Year Activities*, Report No. TX-01/4945-1, Texas Transportation Institute, College Station, November 2000.
- Werner, J., "New York's Groundbreaking IIMS Project Approaches Phase 2," *ITS Cooperative Deployment Network*, November 14, 2001 [Online]. Available: http://www.nawgits.com/icdn/iims_mark.html [2002, November 12].
- "WYDOT Looking at Ways to Keep Traffic Moving on I-80," Wyoming Department of Transportation, Cheyenne, 2002 [Online]. Available: http://dot.state.wy.us/web/news/press_releases/2002/i80/i80.html. [2002, November 12].

APPENDIX A

Study Questionnaire

NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

Project 20-5, Topic 33-05

SAFE AND QUICK CLEARANCE OF TRAFFIC INCIDENTS

QUESTIONNAIRE

Name of Primary Respondent: _____
 Title: _____
 Agency: _____
 Phone Number: _____
 Fax Number: _____
 E-mail: _____

Attached is a questionnaire aimed at obtaining current information on various strategies, techniques, and equipment used to facilitate the safe management and quick clearance of traffic incidents in urban and rural areas. The questionnaire primarily focuses on motorist and agency response to the occurrence of vehicle disablements and crashes blocking highway travel lanes. Also, the survey expands to examine specific policies and procedures employed to investigate major traffic incidents during the clearance phase. The questionnaire requests detailed information on services and infrastructure for clearing traffic incidents, supporting quick clearance legislation and policies, traffic incident clearance and investigation activities, and clearance strategy planning and related issues.

To minimize your agency's time investment in completing the questionnaire, the investigators offer these recommendations:

1. Forward the questionnaire to the agency official supervising incident management operations.
2. Consider obtaining input from law enforcement agencies in your jurisdiction on the following questions:
 Question 3, Question 8, Question 9, Question 16, Question 17, Question 18, Question 30, Question 31,
 Question 33, Question 34, Question 35, Question 36.
3. Consider obtaining input from towing and recovery agencies in your jurisdiction on the following questions:
 Question 24, Question 31, Question 36, Question 43.

The questionnaire consists of the following five parts: Part 1—Background, Part 2—Legislation and Policy, Part 3—Minor Incident Clearance Activities, Part 4—Major Incident Clearance Activities, and Part 5—Planning and Institutional Issues. Please return the completed questionnaire and any supporting documents, digital photos, or electronic files to:

Steven Latoski, P.E.
Dunn Engineering Associates, P.C.
66 Main Street
Westhampton Beach, New York 11978
 Fax: 631.288.2544
 E-mail: slatoski@dunn-pc.com

If you have any questions, please call Mr. Latoski at 631.288.2480. Please transmit your agency's questionnaire response at your earliest convenience.

Please forward copies of this questionnaire to those persons represented in state Department of Transportation districts or other county and city agencies who may be involved in managing and/or handling the clearance of traffic incidents in urban or rural areas.

THANK YOU FOR YOUR TIME AND EFFORT!!

PART 1 BACKGROUND

Objective: *Part 1 queries information on the area type and freeway system serviced by the responding agency in addition to the scope of available services and infrastructure for traffic incident clearance activities.*

1. What areas (e.g., cities, counties) comprise your jurisdiction? _____

2. How many freeway lane-miles traverse your jurisdiction? Urban _____ Rural _____

3. Does a freeway service patrol (FSP) operate within your jurisdiction? Yes No Unknown

If yes,

3a. What agency operates the FSP? State DOT Police Private industry Other: _____

3b. Describe the scope of regular FSP operations by completing the applicable blanks below. Unknown

Weekday patrol times: _____; Weekday patrol coverage: _____ highway miles

Weekend patrol times: _____; Weekend patrol coverage: _____ highway miles

3c. How many total traffic incidents were responded to by the FSP in 2001? _____

Unknown

How many traffic incidents involved:

Crashes blocking 1+ travel lanes? _____

Crashes blocking only the shoulder? _____

Debris blocking 1+ travel lanes? _____

Debris blocking only the shoulder? _____

Disablements/abandoned vehicles blocking 1+ travel lanes? _____

Disablements/abandoned vehicles blocking only the shoulder? _____

3d. Has a cost-benefit study of FSP operations been conducted? Yes No Unknown

If yes, list or attach the results: _____

3e. Please send a list of equipment and supplies utilized by the FSP.

4. Does an incident management manual exist for your jurisdiction? Yes No Unknown

If yes, please send a copy of the incident management manual.

5. Does your jurisdiction maintain a major incident response team? Yes No Unknown

6. Do accident investigation sites exist along freeways in your jurisdiction? Yes No Unknown

If yes,

6a. How many accident investigation sites exist? _____ sites covering approximately _____ lane-miles

6b. Has a cost-benefit study of accident investigation site use been conducted? Yes No Unknown

If yes, list or attach the results:

7. Does a traffic management center operate within your jurisdiction? Yes No Unknown

If yes, indicate the agencies or groups maintaining staff at the traffic management center. (check all that apply)

State DOT

State police

FSP

Fire department

Major incident response team

Other: _____

Unknown

PART 2 LEGISLATION AND POLICY

Objective: *Part 2 seeks to identify existing legislation, agency agreements, and policies adopted for the purpose of facilitating the removal of vehicles and/or cargo from travel lanes and clarifying liability issues within the jurisdiction of those surveyed.*

8. Does your jurisdiction have a law requiring drivers of motor vehicles involved in a property damage only crash to relocate their vehicle from a travel lane to another location? Yes No Unknown

If no, is this law currently under consideration in your jurisdiction? Yes No Unknown

If no, do law enforcement agencies ask motorists involved in a property damage only crash to relocate their vehicles when receiving notification of the crash? Yes No Unknown

If yes,

8a. When did the law take effect? Unknown _____

8b. Indicate the roadways covered by the law. (check all that apply)

Unknown Limited-access highways only All roadways

List other exceptions: _____

8c. How often has the law been enforced? _____ violations/month or _____ violations in 2001 Unknown

8d. What penalty and/or fine do violators of the law incur? _____

8e. Which of the following reasons are commonly cited by violators of the law? (check all that apply)

Unaware of law Liability concern Incorrect interpretation of law

Other: _____

Unknown

8f. Does a program exist to inform and educate motorists of the law? Yes No Unknown

If yes, what agency bears responsibility for informing motorists of the law? _____

If yes, which of the following methods have been used to inform motorists of the law? (check all that apply)

Freeway signs Media advertising Internet

Driver guide (DMV) Insurance company campaign Brochure

Other: _____ Unknown

If yes, what is the name of the promotion campaign? _____

8g. Indicate the degree of your agency's satisfaction with the law.

Very satisfied Satisfied Unsatisfied Very unsatisfied Unknown

8h. What benefits (if any) have been observed? _____

8i. What problems (if any) have been experienced? _____

8j. Please send a copy of the legislation.

9. Does your jurisdiction have a law (e.g., "hold harmless") providing immunity to incident responders from civil damages in connection with relocating the following hazards from a travel lane to another location?

Immobilized vehicles (driver attended): Yes No Unknown

Abandoned vehicles: Yes No Unknown

Nonhazardous cargo or debris: Yes No Unknown

If no, is this law currently under consideration in your jurisdiction? Yes No Unknown

If yes,

9a. When did the law take effect? Unknown _____

9b. Which of the following agency incident responders does the law protect? (check all that apply)

- State police State DOT FSP
 Private towing operators Local police Local DPW (Department of Public Works)
 Any public agency responder authorized by _____
 Any private agency responder authorized by _____
 Unknown

9c. Which of the following reasons are commonly cited by responders who fail to exercise the powers vested by the law? (check all that apply)

- Unknown Unaware of law Liability concern
 Incorrect interpretation of law Interagency disagreement Other: _____

9d. Which of the following methods have been used to inform responders of the law? (check all that apply)

- Incident management manual Correspondence Responder training
 Responder meeting Other: _____ Unknown

9e. Have any liability lawsuits, directed at damages incurred while clearing a traffic incident, been brought against agencies in your jurisdiction? Yes No Unknown

If yes, briefly describe or cite case reference: _____

9f. Has any agency in your jurisdiction been sued in connection with a secondary crash for not clearing a traffic incident in a timely manner? Yes No Unknown

If yes, briefly describe or cite case reference: _____

9g. Indicate the degree of your agency's satisfaction with the law.

- Very satisfied Satisfied Unsatisfied Very unsatisfied Unknown

9h. Before enacting a "hold harmless" law, have any liability lawsuits, directed at damages incurred while clearing a traffic incident, been brought against agencies in your jurisdiction? Yes No Unknown

If yes, briefly describe or cite case reference: _____

9i. What are the most important aspects of the legislation that your organization deems helpful and supportive?

9j. Please send a copy of the legislation.

10. Does your jurisdiction have legislation authorizing the removal of disabled or abandoned vehicles from freeway or major arterial rights-of-way after a specified duration? Yes No Unknown

If yes, state time limit: _____

11. Does your jurisdiction have an agreement between two or more agencies that outlines required duties and responsibilities for clearing traffic incidents? Yes No Unknown

If yes,

11a. Which of the following agencies signed the agreement? (check all that apply)

- State police State DOT FSP
 Private towing company Local police Local DPW
 Fire department Other: _____ Unknown

11b. Please send a copy of the agreement.

12. Do agencies in your jurisdiction have an agreement designating one agency responsible for clearing traffic incidents on specific split-jurisdiction arterial roadways? Yes No Unknown

If yes, please send a copy of the agreement.

13. Does your jurisdiction have a mutual-aid agreement between two or more agencies to facilitate resource sharing? Yes No Unknown

If yes,

- 13a. Which of the following agencies signed the agreement? (check all that apply)

- State police State DOT FSP
 Private towing company Local police Local DPW
 Fire department Other: _____ Unknown

- 13b. Please send a copy of the agreement.

14. Does your jurisdiction have legislation or an agreement requiring commercial carriers or cargo owners to reimburse public agencies for costs incurred during clearance activities? Yes No Unknown

If yes, please send a copy of the legislation or agreement.

15. Does your jurisdiction have an agreement establishing incentives or penalties for responders regarding the clearance of traffic incidents? Yes No Unknown

If yes, describe: _____

16. Which type of public-private towing contract exists in your jurisdiction? Unknown
 No agreement exists Rotational list Zone-based licensing
 Franchise-based licensing City/region-based licensing Other: _____

If an agreement exists,

- 16a. What public agency signed the contract? Unknown
 State police State DOT Local police
 Local DPW FSP Other: _____

- 16b. Does the contract stipulate minimum training requirements for private towing operators?

- Yes No Unknown

If yes, describe requirements: _____

- 16c. Which of the following requirements must private towing companies meet for qualification? (check all that apply) Unknown

- Availability of heavy-duty tow trucks: Describe requirements: _____
 Availability of recovery equipment for heavy vehicles: Describe requirements: _____
 Minimum supplies for clearance/clean-up: Describe requirements: _____
 24-hour availability: Describe requirements: _____
 Minimum response time: Describe requirements: _____
 Minimum storage space: Describe requirements: _____
 Insurance: Describe requirements: _____
 Industry certification: Describe requirements: _____

- 16d. By terms of the contract, how can private towing companies charge for base services? Unknown

- Time-based only (e.g., hourly rate) Fixed-rate only (e.g., rate per call) No standard set

- 16e. Does the contract specify that private towing companies bill a specific party? Unknown

- Yes, bill agency Yes, bill vehicle owner No specification in contract

- 16f. Does the contract permit private towing companies to perform and bill for vehicle repairs? Unknown

- Yes Yes, given consent of vehicle owner No specification in contract

- 16g. Does the contract mandate payment for private towing companies called to a traffic incident site but not providing services? Yes No Unknown

- 16h. Please send a copy of the contract or agreement.

PART 3 MINOR TRAFFIC INCIDENT CLEARANCE ACTIVITIES

Objective: Part 3 contains questions on criteria and specific on-site clearance activities used to mitigate the occurrence of a vehicle disablement or minor crash blocking one or more travel lanes.

17. Do agencies in your jurisdiction relocate disabled vehicles (e.g., vehicles having broken down or involved in a minor crash that cannot be driven) from travel lanes prior to the arrival of a tow truck for off-site removal?
 Yes No Unknown

If no, what is the average clearance time to remove a disabled vehicle blocking a travel lane? _____

If yes,

- 17a. What agency relocates disabled vehicles from the travel lane? (check all that apply) Unknown
 FSP State DOT Police

- 17b. What equipment do responders use to relocate disabled vehicles? Unknown
 Push bumper Line tow Other: _____

- 17c. What damaged components of a disabled vehicle typically prevent a responder from attempting to relocate the vehicle? (check all that apply) Unknown
 Steering (damaged) Brakes (damaged) Tires (flat)
 Locked wheels Windshield (cracked) Other: _____

- 17d. Where are disabled vehicles typically relocated to? (check all that apply) Unknown
 Nearest shoulder Nearest ramp Accident investigation site
 Private towing company yard Vehicle repair facility Other: _____

- 17e. Do non-police agencies immediately relocate disabled vehicles when a DWI or other felony is suspected?
 Yes No Unknown

- 17f. Do agencies immediately relocate disabled vehicles despite the occurrence of minor injuries?
 Yes No Unknown

- 17g. What is the average clearance time (elapsed incident duration from the start of incident removal to response personnel departure from the site) to remove an incident involving a disabled vehicle blocking a travel lane?
 Unknown

- 17h. Does your jurisdiction have a published clearance time goal? Yes No Unknown

If yes, what is that goal (in minutes)? _____

18. How do incident responders, including law enforcement, collectively operate emergency flashing lights at an incident site? (review and check all appropriate scenarios) Unknown
- | | | | | |
|--|---|--|------------------------------|--------------------------------|
| <input type="checkbox"/> Front and rear blue/red flashing lights on: | <input type="checkbox"/> In-lane incident | <input type="checkbox"/> Shoulder incident | <input type="checkbox"/> Day | <input type="checkbox"/> Night |
| <input type="checkbox"/> Front (only) blue/red flashing lights on: | <input type="checkbox"/> In-lane incident | <input type="checkbox"/> Shoulder incident | <input type="checkbox"/> Day | <input type="checkbox"/> Night |
| <input type="checkbox"/> Strobe lights on: | <input type="checkbox"/> In-lane incident | <input type="checkbox"/> Shoulder incident | <input type="checkbox"/> Day | <input type="checkbox"/> Night |
| <input type="checkbox"/> Amber (only) flashing lights on: | <input type="checkbox"/> In-lane incident | <input type="checkbox"/> Shoulder incident | <input type="checkbox"/> Day | <input type="checkbox"/> Night |
| <input type="checkbox"/> All flashing lights off: | <input type="checkbox"/> In-lane incident | <input type="checkbox"/> Shoulder incident | <input type="checkbox"/> Day | <input type="checkbox"/> Night |

19. What agency contacts a private towing company for vehicle removal? (check all that apply) Unknown
 Police FSP State DOT
 Transportation management center Fire department Other: _____

PART 4 MAJOR TRAFFIC INCIDENT CLEARANCE ACTIVITIES

Objective: Part 4 consists of questions on criteria and specific on-site clearance and investigation activities employed to mitigate the occurrence of a serious crash or nonhazardous spill requiring multi-agency response and coordination.

20. Do agencies in your jurisdiction relocate spilled, nonhazardous cargo from travel lanes without obtaining permission from the involved operators and owners?

Yes Yes, if vehicle operator is not present No Unknown

If no,

20a. From what party must permission be obtained? Unknown

Vehicle operator Carrier of cargo Owner of cargo
 Cargo insurer Police Other: _____

21. What agency handles spilled cargo relocation and/or removal? (check all that apply)

Unknown State DOT FSP
 Police Private towing operator Other: _____

21a. Does the agency handling removal operations assume ownership of abandoned cargo or debris?

Yes No, another agency: _____ takes ownership
 No, responsible party retains ownership Unknown

21b. Do public agencies bill services to recoup costs? Yes No Unknown

21c. What is the typical cost range of cargo relocation and/or removal? _____
 Unknown

22. Do responders take special action when handling an incident involving a food spill?

Yes No Unknown

If yes, describe: _____

23. Do responders take special action when handling an incident involving live animals?

Yes No Unknown

If yes, describe: _____

24. How do agencies in your jurisdiction remove the following types of incidents involving overturned trucks and/or trailers? *Note: Indicate the procedure(s) denoting your jurisdiction's "usual practice."*

Incident involving an overturned, fully loaded (nonhazardous material) box trailer. (check all that apply)

Relocate to shoulder before uprighting Completely unload before uprighting
 Partially unload before uprighting Upright fully loaded
 Use recovery truck rotator to upright Use inflatable air-bag system to upright
 Use heavy-duty tow truck(s) to upright Use crane to upright
 Other: _____ Unknown

Incident involving an overturned, fully loaded (nonhazardous material) tanker truck. (check all that apply)

Relocate to shoulder before uprighting Completely unload before uprighting
 Partially unload before uprighting Upright fully loaded
 Use recovery truck rotator to upright Use inflatable air-bag system to upright
 Use heavy-duty tow truck(s) to upright Use crane to upright
 Other: _____ Unknown

25. Do responders take special action when handling an overturned, but not leaking, tanker truck containing:

a. Gasoline? Yes No **If yes, describe:** _____

b. Diesel fuel? Yes No **If yes, describe:** _____

c. Oil? Yes No **If yes, describe:** _____

d. Cryogenic load? Yes No **If yes, describe:** _____

Unknown

26. What agency handles the uprighting of overturned trucks? (check all that apply)
 State DOT FSP Police
 Private towing operator Other: _____ Unknown
- 26a. Do public agencies bill services to recoup costs? Yes No
- 26b. What is the typical cost range of removing an overturned truck? _____
27. What is the average clearance time (elapsed incident duration from the start of incident removal to response personnel departure from the site) to remove an overturned (no haz-mat threat) truck? _____
 Unknown
- 27a. Does your jurisdiction have a published clearance time goal? Yes No Unknown
If yes, what is that goal (in minutes)? _____
28. Does the occurrence of a small quantity of petroleum or engine fluid spill not require response and clean-up by a fire department, hazardous materials response team, or environmental agency? Yes No Unknown
If yes,
- 28a. What criteria define a minor petroleum or engine fluid spill? _____
 Unknown
- 28b. What agency removes the petroleum or engine fluid spill? Unknown
 Police FSP State DOT Other: _____
- 28c. Describe the process: _____
- 28d. Do public agencies bill services to recoup costs? Yes No Unknown
- 28e. What is the typical cost range of clean-up? Unknown _____
29. What agency typically supervises clearance activities (e.g., subsequent to victim treatment and transport) at the site of a major incident involving a serious crash or nonhazardous material spill? Unknown
 State police State DOT Fire department Other: _____
30. Do on-site responders (typically law enforcement officers) reference a preplanned heavy-vehicle identification guide when classifying the type of vehicle involved in an incident for dispatch to off-site towing and recovery operators?
 Yes No Unknown
If yes, do on-site responders use the Towing & Recovery Association of America (TRAA) Vehicle Identification Guide? Yes No Unknown
31. Which of the following equipment is available for use in your jurisdiction for the clearance of a major, non-hazardous incident? If checked, indicate the equipment owner (D = State DOT, T = Private towing company, P = Police). (check all that apply) Unknown
- | | |
|---|--|
| <input type="checkbox"/> (D T P) Heavy-duty tow truck | <input type="checkbox"/> (D T P) Recovery truck with rotator |
| <input type="checkbox"/> (D T P) Air cushion recovery | <input type="checkbox"/> (D T P) Dump truck sander |
| <input type="checkbox"/> (D T P) Dump truck | <input type="checkbox"/> (D T P) Sweeper |
| <input type="checkbox"/> (D T P) Front-end loader | <input type="checkbox"/> (D T P) Debris recovery vehicle |
| <input type="checkbox"/> (D T P) Crane | <input type="checkbox"/> (D T P) Empty tanker truck |
| <input type="checkbox"/> (D T P) Empty box trailer | <input type="checkbox"/> (D T P) Empty livestock trailer |
| <input type="checkbox"/> (D T P) Earth moving equipment | <input type="checkbox"/> (D T P) Other: _____ |
32. Do state DOT maintenance workers or FSP operators take incident response vehicles home in the event of an overnight incident? Yes No Unknown

33. In a fatal crash, does a medical examiner have to respond to the site of the crash before the deceased victim is removed from the scene? Yes No Unknown
- 33a. Does your jurisdiction have legislation or an agreement establishing procedures and responsibilities for removing deceased victims from traffic crashes? Yes No Unknown
If yes, please send a copy of the legislation or agreement.
- 33b. What agency assumes responsibility for transporting a deceased victim? Unknown
 Emergency medical service (private or fire dept.) Fire department
 State police Other: _____
- 33c. Indicate the protocol followed when transporting a deceased victim. (check all that apply) Unknown
 Wait for the coroner to arrive at the site of the crash
 Transport to intermediate location for coroner examination
 Transport to hospital
 Other: _____
- 33d. Does the organ transplant program allow agencies in your jurisdiction to immediately transport a deceased victim to the hospital? Yes No Unknown
34. Which of the following data collection techniques is used by police for on-site crash investigations?
 Coordinate (traditional) method Average investigation time: _____
 Total station survey method Average investigation time: _____
 Photogrammetry method Average investigation time: _____
 Other: _____ Average investigation time: _____
 Unknown
- 34a. Does your jurisdiction have a published crash investigation time goal? Yes No Unknown
If yes, what is that goal (in minutes)? _____
35. Which of the following communication technologies are used between incident responders? (check all that apply) Unknown
 Cellular Radio with dedicated frequency
 Computer/Internet Radio without dedicated frequency
 Other: _____
36. Which of the following communications technologies are used by the private towing operator to communicate with on-site incident responders? (check all that apply)
 Cellular Radio with dedicated frequency
 Computer/Internet Radio without dedicated frequency
 Regular phone Pager
 Other: _____ Unknown

PART 5 PLANNING AND INSTITUTIONAL ISSUES

Objective: Part 5 aims to identify various procedures, barriers, lessons learned, and benefits regarding specific traffic incident clearance strategies and techniques.

37. Indicate the degree of your agency's satisfaction with current minor traffic incident clearance activities.
 Very satisfied Satisfied Unsatisfied Very unsatisfied Unknown
38. Indicate the degree of your agency's satisfaction with current major traffic incident clearance activities.
 Very satisfied Satisfied Unsatisfied Very unsatisfied Unknown

39. Which of the following areas of support would assist in establishing quick clearance and/or hold harmless legislation? If checked, indicate the corresponding degree of importance (H = high, M = medium, L = low).
- | | |
|---|---|
| <input type="checkbox"/> (H M L) FHWA | <input type="checkbox"/> (H M L) AASHTO |
| <input type="checkbox"/> (H M L) DOT legal staff | <input type="checkbox"/> (H M L) Elected official |
| <input type="checkbox"/> (H M L) High-ranking DOT official | <input type="checkbox"/> (H M L) High-ranking police officer |
| <input type="checkbox"/> (H M L) Elected officials association | <input type="checkbox"/> (H M L) Incident management peer group |
| <input type="checkbox"/> (H M L) Metropolitan planning organization | <input type="checkbox"/> (H M L) Towing operator association |
| <input type="checkbox"/> (H M L) Police association | <input type="checkbox"/> (H M L) Motorist association (AAA) |
| <input type="checkbox"/> (H M L) Trucking association | <input type="checkbox"/> (H M L) Insurance association |
| <input type="checkbox"/> (H M L) Major employers | <input type="checkbox"/> (H M L) Benefit studies |
| <input type="checkbox"/> (H M L) Other: _____ | |
40. Which of the following barriers did your agency encounter in developing strategies to facilitate the safe and quick clearance of traffic incidents? If checked, indicate the corresponding degree of importance (H = high, M = medium, L = low).
- | | |
|--|--|
| <input type="checkbox"/> (H M L) Jurisdictional conflicts | <input type="checkbox"/> (H M L) Conflicting response, agency responsibilities |
| <input type="checkbox"/> (H M L) Liability concerns | <input type="checkbox"/> (H M L) Conflicting response, agency priorities |
| <input type="checkbox"/> (H M L) Equipment constraints | <input type="checkbox"/> (H M L) Personnel constraints |
| <input type="checkbox"/> (H M L) Training constraints | <input type="checkbox"/> (H M L) Funding constraints |
| <input type="checkbox"/> (H M L) Conflicts with private towing operators | <input type="checkbox"/> (H M L) Other: _____ |
41. Which of the following services, policies, equipment, or infrastructure does your agency consider important in facilitating the safe and quick clearance of traffic incidents? If checked, indicate the corresponding degree of importance (H = high, M = medium, L = low).
- | | |
|---|--|
| <input type="checkbox"/> (H M L) Quick clearance law | <input type="checkbox"/> (H M L) Hold harmless law |
| <input type="checkbox"/> (H M L) Public education | <input type="checkbox"/> (H M L) Interagency agreement |
| <input type="checkbox"/> (H M L) Mutual-aid agreement | <input type="checkbox"/> (H M L) Public-private towing agreement |
| <input type="checkbox"/> (H M L) Incident clearance goal times | <input type="checkbox"/> (H M L) Incentives/penalties for incident clearance |
| <input type="checkbox"/> (H M L) Tow truck with rotator | <input type="checkbox"/> (H M L) Air-bag recovery system |
| <input type="checkbox"/> (H M L) Debris recovery vehicle | <input type="checkbox"/> (H M L) Policy/equipment for clean-up of minor spill |
| <input type="checkbox"/> (H M L) Heavy vehicle identification guide | <input type="checkbox"/> (H M L) Coroner policy for fatal traffic crashes |
| <input type="checkbox"/> (H M L) Recognition of organ donor program | <input type="checkbox"/> (H M L) Using total station survey method |
| <input type="checkbox"/> (H M L) Using photogrammetry method | <input type="checkbox"/> (H M L) Incident responder training |
| <input type="checkbox"/> (H M L) Private towing operator training | <input type="checkbox"/> (H M L) Private tow company equipment requirements |
| <input type="checkbox"/> (H M L) FSP | <input type="checkbox"/> (H M L) Incident management manual |
| <input type="checkbox"/> (H M L) Accident investigation sites | <input type="checkbox"/> (H M L) Strategically located equipment storage sites |
| <input type="checkbox"/> (H M L) Employ traffic safety officer | <input type="checkbox"/> (H M L) Traffic management center |
| <input type="checkbox"/> (H M L) First-responder guidelines | <input type="checkbox"/> (H M L) Other: _____ |
42. Have incident responders from your agency received training on traffic incident clearance?
 Yes No Unknown
- If yes,**
- 42a. Indicate the type of training received. (check all that apply) Unknown
- | | | |
|--|---|---|
| <input type="checkbox"/> In-house instruction | <input type="checkbox"/> Local/regional course/workshop | <input type="checkbox"/> National course/workshop |
| <input type="checkbox"/> Regional/statewide conference | <input type="checkbox"/> National conference | <input type="checkbox"/> Other: _____ |
- 42b. What instruction methods were used to train incident responders? (check all that apply) Unknown
- | | | |
|--|--|--|
| <input type="checkbox"/> Distribution of manual | <input type="checkbox"/> Distribution of video | <input type="checkbox"/> Classroom instruction |
| <input type="checkbox"/> Practice drill in field | <input type="checkbox"/> Tabletop exercise | <input type="checkbox"/> Other: _____ |
- 42c. Which of the following traffic incident clearance topics were covered during training? (check all that apply)
- | | | |
|--|--|---|
| <input type="checkbox"/> Traffic incident classification | <input type="checkbox"/> Hazardous material classification | <input type="checkbox"/> First responder duties |
| <input type="checkbox"/> Removing disabled vehicles | <input type="checkbox"/> Removing overturned trucks | <input type="checkbox"/> Clearing non-hazmat cargo spills |
| <input type="checkbox"/> Parking response vehicles | <input type="checkbox"/> Handling fatal/felony incidents | <input type="checkbox"/> Clearing minor petroleum spills |
| <input type="checkbox"/> Applicable liability laws | <input type="checkbox"/> Communications | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Unknown | | |

42d. Has your agency trained together with other agencies in your jurisdiction? Yes No Unknown

If yes, which of the following agencies or groups has your agency trained with? (check all that apply)

- State police FSP Private towing companies
 State DOT Emergency medical service Local fire department
 Local police Local DPW Major incident response team
 Medical examiner Environmental mgmt. agency Other: _____

If yes, has your agency trained together with other agencies in an *adjacent* jurisdiction?

- Yes No Unknown

43. Have private towing operators in your jurisdiction received training on traffic incident clearance?

- Yes No Unknown

If yes,

43a. Indicate the type of training received. (check all that apply) Unknown

- Industry certification Local/regional course/workshop National course/workshop
 Regional/statewide conference National conference Other: _____

43b. What instruction methods were used to train private towing operators? (check all that apply) Unknown

- Distribution of manual Distribution of video Classroom instruction
 Practice drill in field Tabletop exercise Other: _____

43c. Which of the following traffic incident clearance topics were covered during training? (check all that apply)

- Traffic incident classification Hazardous material classification First responder duties
 Removing disabled vehicles Removing overturned trucks Clearing non-hazmat cargo spills
 Parking response vehicles Handling fatal/felony incidents Clearing minor petroleum spills
 Applicable liability laws Communications Other: _____
 Unknown

44. Do agencies in your jurisdiction meet to evaluate traffic incident management activities?

- Yes, on a regular basis Yes, only after the occurrence of a major incident No Unknown

If yes, which of the following agencies typically meet for an evaluation? Unknown

- State police FSP Private towing companies
 State DOT Emergency medical service Local fire department
 Local police Local DPW Major incident response team
 Medical examiner Environmental mgmt. agency Other: _____

45. Does your jurisdiction have a traffic safety officer or “champion” charged with resolving institutional and operations issues affecting traffic incident clearance? Yes No Unknown

46. Which of the following served as a funding source for traffic incident clearance activities? (check all that apply and indicate the approximate percentage of funding support) Unknown

- (___%) Federal (___%) State (___%) Local: _____ (___%) Other: _____

47. Has a study of congestion delay been conducted for your jurisdiction? Yes No Unknown

If yes, list or attach the results: _____

48. Has a study of secondary incidents been conducted for your jurisdiction? Yes No Unknown

If yes, list or attach the results: _____

49. Has a cost-benefit study of incident clearance activities been conducted for your jurisdiction?

- Yes No Unknown

If yes, list or attach the results: _____

REQUEST FOR INFORMATION

To best illustrate the contributing components of the overall quick clearance practice, we urge survey respondents to include, with their questionnaire responses, electronic or hardcopy documents of any supporting material in addition to digital photos of quick clearance activities.

Please provide an Internet link or contact for more information on the following survey items:

Freeway service patrol: _____

Incident management manual: _____

Quick clearance law: _____

Hold harmless law: _____

Minor incident clearance: _____

Removal of cargo and overturned trucks: _____

Fatal crash handling: _____

On-site crash investigation: _____

Incident responder training: _____

Benefit analysis: _____

Please return the completed questionnaire and any supporting documents, digital photos, or electronic files to:

Steven Latoski, P.E.
Dunn Engineering Associates, P.C.
66 Main Street
Westhampton Beach, New York 11978
Fax: 631.288.2544
E-mail: slatoski@dunn-pc.com

End of survey. Thank you.

APPENDIX B

State Statutes Authorizing Motorist Quick Clearance Actions

State	Traffic Incident Type	Driver Stop Law		Driver Removal Law	
		Statute Section	Special Conditions	Statute Section	Special Conditions
Alabama	Disablement PDO Crash Injury Crash	No Applicable State Statutes 32-10-1 • Includes fatal crashes.		No Applicable State Statutes	
Alaska		No Applicable State Statutes			
Arizona	Disablement PDO Crash Injury Crash	No Applicable State Statutes 28-662		No Applicable State Statutes 28-674 • Crash occurs on controlled access highway or multilane highway. • Driver or any other person who removes the vehicle is not liable or at fault regarding the cause of the crash. • Serious physical injury or death is not apparent.	
Arkansas	Disablement PDO Crash Injury Crash	No Applicable State Statutes 27-53-102		No Applicable State Statutes 27-53-102 • Does not apply if the vehicle is disabled or there is a visible or apparent injury to a person.	
California	Disablement PDO Crash Injury Crash	No Applicable State Statutes Vehicle Code 20002 • Moving the vehicle does not affect the question of fault.		No Applicable State Statutes	
Colorado	Disablement PDO Crash Injury Crash	No Applicable State Statutes 42-4-1602		No Applicable State Statutes 42-4-1602 • Crash occurs on the traveled portion, median, or ramp of a divided highway. • Driver shall move vehicle to a frontage road, the nearest suitable cross street, or other suitable location.	
Connecticut	Disablement PDO Crash Injury Crash	No Applicable State Statutes		No Applicable State Statutes 14-224 • Driver shall move vehicle or cause vehicle to be moved if it is possible without risk of further damage to property or injury to any person.	
Delaware		No Applicable State Statutes			
Florida	Disablement PDO Crash Injury Crash	No Applicable State Statutes		23:316.071 • If driver cannot move the vehicle alone, he or she must solicit help to move the vehicle. 23:316.061 23:316.027 • Includes fatal crashes.	

State	Traffic Incident Type	Driver Stop Law		Driver Removal Law	
		Statute Section	Special Conditions	Statute Section	Special Conditions
Georgia	Disablement PDO Crash	No Applicable State Statutes		40-6-275	<ul style="list-style-type: none"> Crash occurs on expressway or multilane highway. Driver shall move vehicle into a safe refuge on the shoulder, emergency lane, or median or to a place otherwise removed from the roadway. Driver or any other person who removes the vehicle is not liable or at fault regarding the cause of the crash. Serious personal injury or death is not apparent.
	Injury Crash				
Hawaii	Disablement PDO Crash	No Applicable State Statutes		No Applicable State Statutes	
	Injury Crash	291C-13 291C-12 291C-12.5 291-12.6	<ul style="list-style-type: none"> Includes fatal crashes. 		
Idaho	Disablement PDO Crash	No Applicable State Statutes		No Applicable State Statutes	
	Injury Crash	49-1301			
Illinois	Disablement PDO Crash	No Applicable State Statutes		No Applicable State Statutes	
	Injury Crash	625 ILCS 5/11-402 625 ILCS 5/11-401	<ul style="list-style-type: none"> Includes fatal crashes. 		
Indiana	Disablement PDO Crash	No Applicable State Statutes		No Applicable State Statutes	
	Injury Crash	9-26-1-2 9-26-1-1	<ul style="list-style-type: none"> Includes fatal crashes. 		
Iowa	Disablement PDO Crash	No Applicable State Statutes		No Applicable State Statutes	
	Injury Crash	8:321.262 8:321.261	<ul style="list-style-type: none"> Includes fatal crashes. 		
Kansas	Disablement PDO Crash	No Applicable State Statutes		No Applicable State Statutes	
	Injury Crash	8-1603			
Kentucky		No Applicable State Statutes			
Louisiana	Disablement PDO Crash	No Applicable State Statutes		No Applicable State Statutes 32:141 <ul style="list-style-type: none"> Excludes crashes resulting in serious injury or death of any person. 	
	Injury Crash				
Maine		No Applicable State Statutes			
Maryland	Disablement PDO Crash	No Applicable State Statutes		21-1407	<ul style="list-style-type: none"> Disablement or crash occurs on any vehicular crossing or highway under the jurisdiction of the Maryland Transportation Authority. Vehicle shall be moved, if possible: to the roadway shoulder; adjacent to the emergency walkway on a bridge; as otherwise directed by a patrol officer.
	Injury Crash	20-103 20-102	<ul style="list-style-type: none"> Includes fatal crashes. 		
Massachusetts		No Applicable State Statutes			
Michigan	Disablement PDO Crash	No Applicable State Statutes		No Applicable State Statutes	
	Injury Crash	257.618 257.617	<ul style="list-style-type: none"> Includes fatal crashes. 		
Minnesota	Disablement PDO Crash	No Applicable State Statutes		No Applicable State Statutes	
	Injury Crash	169.09.2 169.09.1	<ul style="list-style-type: none"> Includes fatal crashes. 		

State	Traffic Incident Type	Driver Stop Law		Driver Removal Law	
		Statute Section	Special Conditions	Statute Section	Special Conditions
Mississippi	Disablement	No Applicable State Statutes		No Applicable State Statutes	
	PDO Crash	63-3-403			
	Injury Crash	63-3-401	• Includes fatal crashes.		
Missouri	Disablement	No Applicable State Statutes		304.151.1	• Driver shall make every reasonable effort to move the vehicle or have it moved so as to not block the regular flow of traffic.
	PDO Crash				
	Injury Crash			No Applicable State Statutes	
Montana	Disablement	No Applicable State Statutes		No Applicable State Statutes	
	PDO Crash	61-7-104			
	Injury Crash	61-7-103	• Includes fatal crashes.		
Nebraska	No Applicable State Statutes				
Nevada	Disablement	No Applicable State Statutes		No Applicable State Statutes	
	PDO Crash	484.221			
	Injury Crash	484.219	• Includes fatal crashes.		
New Hampshire	No Applicable State Statutes				
New Jersey	Disablement	No Applicable State Statutes		39:4-136	• If the driver cannot move the vehicle, the driver shall immediately, by the quickest means of communication, notify the nearest police authority.
	PDO Crash	39:4-129		No Applicable State Statutes	
	Injury Crash	• Includes fatal crashes.			
New Mexico	Disablement	No Applicable State Statutes		No Applicable State Statutes	
	PDO Crash	66-7-202			
	Injury Crash	66-7-201	• Includes fatal crashes.		
New York	No Applicable State Statutes				
North Carolina	No Applicable State Statutes				
North Dakota	Disablement	No Applicable State Statutes		No Applicable State Statutes	
	PDO Crash	39-08-05			
	Injury Crash	39-08-04	• Includes fatal crashes.		
Ohio	No Applicable State Statutes				
Oklahoma	Disablement	No Applicable State Statutes		No Applicable State Statutes	
	PDO Crash	47-10-103			
	Injury Crash	47-10-102	• Includes fatal crashes.		
Oregon	Disablement	No Applicable State Statutes		No Applicable State Statutes	
	PDO Crash	811.700			
	Injury Crash	811.705	• Includes fatal crashes.		
Pennsylvania	Disablement	No Applicable State Statutes		No Applicable State Statutes	
	PDO Crash	75:3743			
	Injury Crash	75:3742	• Includes fatal crashes.		
Rhode Island	Disablement	No Applicable State Statutes		No Applicable State Statutes	
	PDO Crash	31-26-2			
	Injury Crash	31-26-1	• Includes fatal crashes.		
South Carolina	Disablement	No Applicable State Statutes		No Applicable State Statutes	
	PDO Crash	56-5-1220			
	Injury Crash	56-5-1210	• Includes fatal crashes.		
South Dakota	No Applicable State Statutes				

State	Traffic Incident Type	Driver Stop Law		Driver Removal Law	
		Statute Section	Special Conditions	Statute Section	Special Conditions
Tennessee	Disablement PDO Crash	No Applicable State Statutes		No Applicable State Statutes	
	Injury Crash	55-10-102		55-10-117	<ul style="list-style-type: none"> Crash occurs on a divided, controlled access highway or Interstate highway. Driver shall move vehicle into a safe refuge on the shoulder, emergency lane, or median or to a place otherwise removed from the roadway. Driver or any other person who removes the vehicle is not liable or at fault regarding the cause of the crash. Serious personal injury or death is not apparent.
Texas	Disablement PDO Crash	No Applicable State Statutes		No Applicable State Statutes	
	Injury Crash	550.022		550.022	<ul style="list-style-type: none"> Crash occurs on a main line, ramp, shoulder, or adjacent area of a freeway in a metropolitan area. Driver shall move vehicle as soon as possible to a designated accident investigation site, if available, a location on the frontage road, the nearest suitable cross street, or other suitable location.
Utah	Disablement PDO Crash Injury Crash	No Applicable State Statutes		No Applicable State Statutes	
Vermont		No Applicable State Statutes			
Virginia	Disablement PDO Crash Injury Crash	No Applicable State Statutes		46.2-888	
		46.2-894	<ul style="list-style-type: none"> Includes fatal crashes. 		<ul style="list-style-type: none"> Driver may move the vehicle only so far as is necessary to prevent obstructing the regular flow of traffic.
Washington	Disablement	No Applicable State Statutes		46.52.020	
	PDO Crash Injury Crash	46.52.020	<ul style="list-style-type: none"> Includes fatal crashes. 	No Applicable State Statutes	
West Virginia	Disablement PDO Crash Injury Crash	No Applicable State Statutes		No Applicable State Statutes	
Wisconsin	Disablement PDO Crash Injury Crash	No Applicable State Statutes		No Applicable State Statutes	
		346.67	<ul style="list-style-type: none"> Includes fatal crashes. 		
Wyoming	Disablement PDO Crash Injury Crash	No Applicable State Statutes		No Applicable State Statutes	
		31-5-1102 31-5-1101	<ul style="list-style-type: none"> Includes fatal crashes. 		

Notes: Bold type indicates hold harmless provisions within states' driver stop laws and driver removal laws.

APPENDIX C

State Statutes Authorizing Authority Quick Clearance Actions

State	Traffic Incident Type	Authority Removal Law		Authority Tow Law	
		Statute Section	Summary	Statute Section	Summary
Arizona	Disablement PDO Crash Injury Crash	28-674	<ul style="list-style-type: none"> • Incident occurs on roadways in the state highway system. • Applicable to vehicles involved in crash and debris caused by crash. • State DOT may require and assist in the removal of vehicles that are incapacitated on the main traveled portion of the road. • Move can be accomplished by driver of vehicle involved or with the assistance of a towing or recovery vehicle. • Serious physical injury or death is not apparent. 	No Applicable State Statutes	
California	Disablement	Vehicle Code 22654	<ul style="list-style-type: none"> • Any state, county, or city authority charged with the maintenance of any highway may move any disabled vehicle to the nearest available position on the same highway to keep the highway open. 	Vehicle Code 22654	<ul style="list-style-type: none"> • Employees of the State DOT may remove any disabled vehicle obstructing traffic on a freeway to the nearest available location where parking is permitted.
	PDO Crash Injury Crash	No Applicable State Statutes		No Applicable State Statutes	

State	Traffic Incident Type	Authority Removal Law		Authority Tow Law	
		Statute Section	Summary	Statute Section	Summary
Colorado	Disablement PDO Crash Injury Crash	42-4-1803	<ul style="list-style-type: none"> • Applicable to an attended or unattended motor vehicle, vehicle, cargo, or debris standing upon any portion of a highway right-of-way and constituting an obstruction to traffic. • Any local, county, or state law enforcement officer or agency employee is authorized to cause the vehicle or other obstruction to be moved. • No agency employee shall cause any motor vehicle to be moved unless such employee has obtained approval from a law enforcement officer. • The removal activity should create as little damage as possible to the vehicle, or cargo, or both. • Neither the law enforcement officer, the agency employee, nor anyone acting under the direction of such officer or employee shall be liable for any damage to such motor vehicle, vehicle, cargo, or debris occasioned by such removal. 	No Applicable State Statutes	
Georgia	Disablement PDO Crash Injury Crash	32-6-2	<ul style="list-style-type: none"> • Incident occurs on a state highway. • State or local law enforcement officer or authorized employee of the Department of Motor Vehicle Safety may move a vehicle parked in violation or require the driver or other person in charge of the vehicle to move the same. • The officers, with or without the consent of the owner, may remove any obstruction, cargo, or personal property which is abandoned, unattended, or damaged as a result of a vehicle accident to mitigate traffic congestion. 	No Applicable State Statutes	
Idaho	Disablement PDO Crash Injury Crash	No Applicable State Statutes		No Applicable State Statutes	
		49-662	<ul style="list-style-type: none"> • Any peace officer is authorized to require the driver of an inoperable vehicle to have the vehicle moved to a position off the main-traveled part of the highway. 		
Illinois	Disablement	625 ILCS 5/11-1302	<ul style="list-style-type: none"> • The DOT is authorized to move the vehicle to a position off the paved or improved or main-traveled part of the highway. 	No Applicable State Statutes	
	PDO Crash Injury Crash	No Applicable State Statutes			

State	Traffic Incident Type	Authority Removal Law		Authority Tow Law	
		Statute Section	Summary	Statute Section	Summary
Iowa	Disablement	8:321.356	<ul style="list-style-type: none"> Any peace officer is authorized to move a disabled vehicle, or require the driver to move the same, to a position off the paved or improved or main-traveled part of the highway. 	No Applicable State Statutes	
	PDO Crash Injury Crash	No Applicable State Statutes			
Missouri	Disablement	No Applicable State Statutes		No Applicable State Statutes	
	PDO Crash Injury Crash	304.155.2	<ul style="list-style-type: none"> The state transportation department may immediately remove any wrecked vehicle, spilled cargo, or other personal property creating a traffic hazard because of its position in relation to the state highway. If the property creating a traffic hazard is a commercial motor vehicle, the department's authority shall be limited to authorizing a towing company to remove the commercial motor vehicle to a place of safety. The owner or designated representative of the commercial motor vehicle shall have a reasonable opportunity to contact a towing company of choice. 		
Montana	Disablement	No Applicable State Statutes		No Applicable State Statutes	
	PDO Crash Injury Crash	61-8-909	<ul style="list-style-type: none"> A person who renders assistance in an emergency that is life-threatening to the occupant of a wrecked or disabled vehicle or that is creating an immediate traffic hazard on a public roadway or who renders emergency assistance as directed by a law enforcement officer or other emergency responder at the scene of a motor vehicle accident is immune from damages arising from acts related to the rendering of assistance. 		
Nevada	Disablement	No Applicable State Statutes		484.397	<ul style="list-style-type: none"> Any police officer may provide for the immediate removal of a disabled vehicle obstructing traffic on any highway, bridge or causeway, or tunnel.
	PDO Crash Injury Crash	No Applicable State Statutes		No Applicable State Statutes	

State	Traffic Incident Type	Authority Removal Law		Authority Tow Law	
		Statute Section	Summary	Statute Section	Summary
New Jersey	Disablement	No Applicable State Statutes		39:4-136	<ul style="list-style-type: none"> Any peace officer may provide for the removal of any vehicle, upon a roadway, which is disabled to the extent that the operator cannot move it. Owner shall pay the reasonable costs of removal and storage.
	PDO Crash Injury Crash	No Applicable State Statutes		No Applicable State Statutes	
New Mexico	Disablement	66-7-349	<ul style="list-style-type: none"> The state highway and transportation department or a police officer may remove or cause to be removed a vehicle obstructing traffic from the paved or main-traveled part of a highway to the nearest place of safety. 	No Applicable State Statutes	
	PDO Crash Injury Crash	No Applicable State Statutes		No Applicable State Statutes	
Oregon	Disablement	No Applicable State Statutes		819.120	<ul style="list-style-type: none"> An authority may immediately take custody of any disabled vehicle that partially blocks the paved portion of a highway travel lane. An authority may immediately take custody of any disabled vehicle that partially blocks a highway shoulder or bicycle lane: <ol style="list-style-type: none"> Of any freeway within the city limits of any city during the hours of 7 a.m. to 9 a.m. and 4 p.m. to 6 p.m.; Of any freeway within 1,000 feet of the area where a freeway exit or entrance ramp meets the freeway; Of any highway during or into the period between sunrise and sunset if the vehicle presents a clear danger. An authority typically represents city, county, or state law enforcement based on highway jurisdiction. Vehicle owner is liable for all costs and expenses incurred in the removal and custody of the vehicle and its contents.
	PDO Crash Injury Crash	No Applicable State Statutes		No Applicable State Statutes	

State	Traffic Incident Type	Authority Removal Law		Authority Tow Law	
		Statute Section	Summary	Statute Section	Summary
Pennsylvania	Disablement	No Applicable State Statutes		No Applicable State Statutes	
	PDO Crash Injury Crash	75:7310	<ul style="list-style-type: none"> Police officers may remove or direct removal of wrecked vehicles and spilled cargo from any roadway to the nearest point off the roadway where the vehicle or spilled cargo will not obstruct traffic. No liability shall attach to the police officer or to any person acting under the direction of the police officer for damage to a vehicle or damage to or loss of any portion of the contents or load or spilled cargo. 	75:7310	<ul style="list-style-type: none"> Immediately following the accident, the wrecked vehicle or spilled cargo shall be removed or directed to be from the roadway by a police officer if the owner or operator fails to have the vehicle removed within a reasonable time. No liability shall attach to the police officer or to any person acting under the direction of the police officer for damage to a vehicle or damage to or loss of any portion of the contents or load or spilled cargo.
Rhode Island	Disablement	24-8-42	<ul style="list-style-type: none"> Public safety agency determines an emergency is caused by the immobilization of any vehicle(s) on the Interstate system or limited access highway resulting in lane blockage. Public safety agency then has emergency authority to remove the immobilized vehicle(s) and its contents. There shall be no liability incurred by any state or local public safety department or agents directed by them for damages incurred to the immobilized vehicle(s), its contents, or surrounding area caused by the measures employed to clear travel lane(s). 	31-21-3 31-21-11	<ul style="list-style-type: none"> Any police officer is authorized to provide for the removal of a disabled vehicle obstructing traffic on any bridge or causeway or in any tunnel to the nearest garage, service station, or other place of safety. The department of administration is authorized to remove a disabled vehicle obstructing traffic on any state highway, state bridge, state causeway or in a state tunnel to the nearest garage, service station, or other place of safety at no expense to the owner/operator for its removal.
	PDO Crash Injury Crash	No Applicable State Statutes		No Applicable State Statutes	
South Dakota	Disablement PDO Crash Injury Crash	No Applicable State Statutes		32-30-14	<ul style="list-style-type: none"> A vehicle obstructing traffic on a bridge, causeway, in any tunnel, or on the traveled portion of any roadway, which appears to have sustained reportable accident damage, may be removed at any time.

State	Traffic Incident Type	Authority Removal Law		Authority Tow Law	
		Statute Section	Summary	Statute Section	Summary
Tennessee	Disablement PDO Crash Injury Crash	No Applicable State Statutes		No Applicable State Statutes	
		54-16-113	<ul style="list-style-type: none"> • The department of safety, DOT, or local law enforcement may immediately remove or cause to be removed any wrecked vehicle, spilled cargo, or other personal property obstructing traffic because of its position in relation to the highway. • Vehicles, cargo, or personal property may be removed to any place within the immediate vicinity. • No removal shall occur after a crash resulting in apparent serious personal injury or death until a law enforcement officer collects adequate crash information. • When the property obstructing traffic is a motor carrier, the agency causing its removal shall make a reasonable effort to allow the owner to arrange for its removal. • The department of safety, DOT, or local law enforcement agency may require the owner or carrier of the vehicle, spilled cargo, or personal property removed to pay for any costs incurred in removal. • Any liability of the department of safety or the DOT for damage of vehicles or cargo resulting from removal shall be determined through the Tennessee Claims Commission. • Any liability of local law enforcement agencies for damage to vehicles or cargo resulting from removal shall be determined through the Tennessee Governmental Tort Liability Act. 	54-16-113	<ul style="list-style-type: none"> • The removal of vehicles away from the immediate vicinity by law enforcement agencies shall be subject to standard procedure. • The DOT shall notify the department of safety or the local law enforcement agency before removing or ordering the removal of a vehicle away from the immediate vicinity. • The department of safety, DOT, or local law enforcement agency may require the owner or carrier of the vehicle, spilled cargo, or personal property removed or disposed of to pay for any costs incurred in the removal and subsequent disposition. • Any liability of the department of safety or the DOT for damage of vehicles or cargo resulting from removal shall be determined through the Tennessee Claims Commission. • Any liability of local law enforcement agencies for damage to vehicles or cargo resulting from removal shall be determined through the Tennessee Governmental Tort Liability Act.

State	Traffic Incident Type	Authority Removal Law		Authority Tow Law	
		Statute Section	Summary	Statute Section	Summary
Texas	Disablement PDO Crash Injury Crash	No Applicable State Statutes		472.011 472.012 472.013 472.014	<ul style="list-style-type: none"> • DOT may remove personal property from the right-of-way or roadway of the state highway system if the DOT determines the property blocks the roadway or endangers public safety. • Personal property includes a damaged or disabled vehicle, spilled cargo, a hazardous material, or a hazardous substance. • DOT may remove personal property without the consent of the owner or carrier of the property. • The owner and the carrier of personal property removed shall reimburse the DOT for the costs of removal and disposition. • The DOT is not liable for any damage to personal property resulting from its removal or disposal unless the removal or disposal is carried out in a grossly negligent manner. • The DOT is not liable for any damage resulting from the failure to exercise authority granted under this statute section.

State	Traffic Incident Type	Authority Removal Law		Authority Tow Law	
		Statute Section	Summary	Statute Section	Summary
Virginia	Disablement	No Applicable State Statutes		46.2-888	<ul style="list-style-type: none"> If the driver of a vehicle involved in a crash or experiencing a mechanical breakdown does not promptly remove the vehicle from the shoulder after notifying a law enforcement officer, such removal may be ordered by a law enforcement officer at the expense of the owner if the vehicle creates a traffic hazard.
	PDO Crash Injury Crash			46.2-1212.1	<ul style="list-style-type: none"> In the event of a motor vehicle crash or incident, the state police and/or local law enforcement agency in conjunction with other public safety agencies may, without the consent of the owner or carrier, remove a vehicle, cargo, or other personal property that has been (i) damaged or spilled within the right-of-way or any portion of a roadway in the state highway system and (ii) is blocking the roadway. The owner and carrier, if any, of the vehicle, cargo, or personal property removed or disposed of shall reimburse the DOT, state police, local law enforcement agency, and local public safety agencies for all costs incurred in the removal and subsequent disposition of such property. The DOT, state police, local law enforcement agency and other local public safety agencies and their officers, employees and agents, shall not be held responsible for any damages or claims that may result from the failure to exercise any authority granted under this section provided they are acting in good faith.

State	Traffic Incident Type	Authority Removal Law		Authority Tow Law	
		Statute Section	Summary	Statute Section	Summary
Washington	Disablement PDO Crash	46.52.020	<p>No Applicable State Statutes</p> <ul style="list-style-type: none"> Crash occurs on a roadway or freeway main line, shoulder, median, and adjacent area. A law enforcement officer or representative of the DOT may cause a motor vehicle, cargo, or debris to be moved from the roadway to a location on an exit ramp shoulder, the frontage road, the nearest suitable cross street, or other suitable location. The DOT representative, nor anyone acting under the direction of the officer or the DOT representative, is held liable for damage to the vehicle, cargo, or debris caused by reasonable efforts of removal. 	No Applicable State Statutes	
	Injury Crash	No Applicable State Statutes		No Applicable State Statutes	
Wisconsin	Disablement PDO Crash Injury Crash	No Applicable State Statutes		349.13	<ul style="list-style-type: none"> Any traffic officer is authorized to move a disabled vehicle, or require the operator to move the vehicle, obstructing the roadway of a freeway or expressway to a position where parking is permitted or to either private or public parking or storage premises. The vehicle operator or owner shall pay the reasonable charges for moving or towing or any storage involved. In counties having a population of 500,000 or more, whenever any traffic officer finds a disabled vehicle obstructing traffic on any portion of the interstate system, limited access highway or any expressway, the county may remove such vehicle. No person who removes or stores a disabled vehicle, accident debris or other object that obstructs the roadway of a freeway or expressway may incur any civil liability for the act.

Notes: Bold type indicates hold harmless provisions within states' authority removal and authority tow laws.

APPENDIX D

Columbus, Ohio, Division of Police Quick Clearance Policy

QUICK CLEARANCE POLICY

Definition

A planned and coordinated action to detect and remove roadway obstructions as quickly and as safely as possible, in order to restore the normal flow of traffic.

Policy

On the freeway system, all personnel will utilize a quick clearance policy. In instances where a vehicle other than a commercial motor vehicle has been involved in a property damage or injury accident, that vehicle will be removed from the active roadway as soon as safely possible. The preferred course of action is to remove all vehicles from the freeway system and then complete all necessary paperwork.

When encountering roadway obstructions involving commercial motor vehicles, officers will have a plan before attempting to clear the roadway of the commercial motor vehicle. The plan will constitute at the least, input from the senior on-scene Traffic and Engineering personnel (ODOT or City of Columbus), a traffic supervisor and a representative from the involved towing company.

Under no circumstances will officers attempt to move a motor vehicle when the following circumstances exist:

1. A vehicle carrying HAZMAT has overturned or received significant structural damage.
2. The vehicle is involved in a fatal or potential fatality.

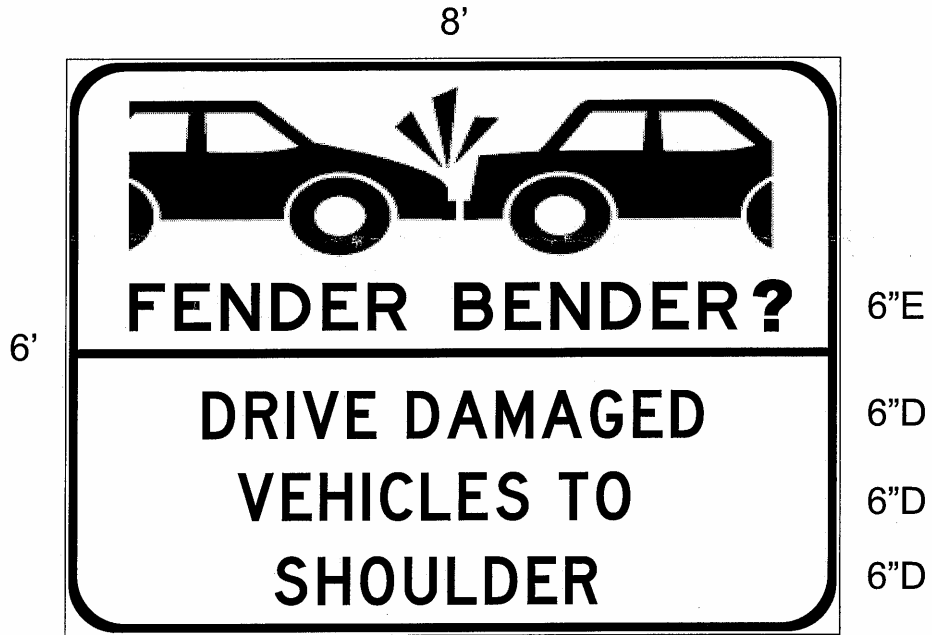
In the instances above, approval must be obtained by the proper fire officials, the Accident Investigation Unit or both before moving the vehicle.

In the course of implementing this policy additional damage may be caused to the vehicle being moved. Officers will weigh this additional damage against the safety to the rest of the motoring public, if the vehicle is not moved. Additional damage to vehicles and the roadway is acceptable *if it is necessary for the safety of the motoring public.*

COLUMBUS DIVISION OF POLICE

APPENDIX E

Washington State DOT Standard Sign for Driver Removal of Property-Damage-Only Crashes



SPECIAL
BLACK ON WHITE

APPENDIX F

Arkansas State Highway and Transportation Department's "MOVE IT" Brochure

MOVE IT

Have you ever been involved in a motor vehicle accident and left your car in a lane rather than moving it? This is a pretty common habit in Arkansas. However, when you leave your car on the road, you contribute to traffic congestion which can cause other accidents.

According to Arkansas law if you have a non-injury accident, do not wait for the police before moving the vehicles involved.

If the vehicles can be driven, move them to a safe location and then contact the police and exchange the necessary information. It's not just a good thing to do, it's the Arkansas law! So the next time you're involved in a non-injury accident and your vehicle can be moved – MOVE IT!

Q

QUESTION:

I've just had an accident – what do I do?

A

ANSWER:

- Check for injuries. Notify the nearest police station, sheriff's office, state trooper or emergency medical service immediately if anyone is injured or killed.
- If there are no injuries and your car can be driven, move your car off the roadway and notify the proper law enforcement agency.
- Safely warn oncoming traffic of the accident or hazard to prevent other accidents.
- Give your name, address, vehicle license plate number and driver's license number to anyone else who was involved in the accident. Get the same information from others involved in the accident. You may want to obtain additional information including phone number, vehicle identification number, vehicle description and insurance information. You may also want to get the names, addresses and phone numbers of any witnesses.

It's the law in Arkansas

Ark. Code Ann. 27-53-102

(a) (1) The driver of any vehicle involved in an accident resulting only in damage to a vehicle which is driven or attended by any person shall immediately stop the vehicle at the scene of the accident, or as close thereto as possible, but shall immediately return to and in every event shall remain at the scene of the accident until he has fulfilled the requirements of 27-53-103 (Duty to give information and render aid.)

(2) Every such stop shall be made without obstructing traffic more than is necessary.

(b) An accident of this nature shall include all accidents which occur upon the streets or highways, upon the parking area of private business establishments, or elsewhere throughout the state.

(c) (1) The driver shall remove his vehicle from the roadway, except that the driver may leave the vehicle in the roadway if the vehicle is disabled or there is a visible or apparent injury to a person.

(2) The removal of a vehicle from the roadway pursuant to this section shall not constitute an admission of liability nor a waiver of a claim for personal injury.

APPENDIX G

State Open Roads Policies

CONNECTICUT

This agreement made this 2nd day of November, 1995 by and between the Department of Transportation (DOT) and the Department of Public Safety (DPS) establishes a policy for State Police and DOT personnel to remove vehicles from roadways and restore a safe and orderly flow of traffic following a motor vehicle accident or incident on a state highway.

Nothing in this policy is meant to inhibit or interfere with the authority of fire officials under Section 7-313e of the Connecticut General Statutes. Therefore, whenever any fire department responds to and takes action at the scene of an emergency, the implementation of this policy shall be coordinated with the fire chief or fire officer-in-charge.

Both agencies agree that public safety has the highest priority and it must be addressed at all times.

PURPOSE: To enable the safe movement of traffic.

To minimize the congestion cost of highway incidents.

To prevent the occurrence of secondary accidents.

GENERAL: When an incident occurs on a Connecticut limited access state highway and the travel portion is totally or partially blocked, the Connecticut State Police, in cooperation with the on-scene Department of Transportation representative, shall reopen the roadway as soon as possible on a priority basis.

Members of the State Police will conduct their required investigation in as expedient a manner as possible, considering the severity of the collision and the quality of their investigation. Lengthy investigations will require investigators to work diligently in an attempt to minimize traffic delays. This may mean that certain "non-critical" portions of an investigation can be conducted at a later time when traffic congestion is non-existent (i.e., non-peak periods).

In circumstances in which it is determined that cargo or a vehicle is blocking the highway or portion thereof so as to constitute a traffic hazard or obstruction to the free movement of traffic, the Department of Transportation and/or the State Police on-scene representatives may direct the removal/relocation of the cargo or vehicle from the travel portion of the highway. Such representatives shall document the reasons for ordering the removal of the cargo and/or vehicle.

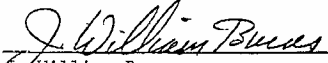
In order to avoid traffic congestion or obstructions to the free movement of traffic which may create a safety hazard, delays in the reopening of a highway caused by a company dispatching additional trucks and/or equipment will not be allowed.

If commercial help does not arrive in a reasonable time or is unable to correct the situation, the Department of Transportation will assign the necessary equipment and personnel to reopen the road or lane as soon as possible.

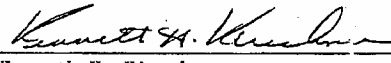
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Every effort will be made to remove all material to a safe location in the shortest time possible, using whatever equipment is necessary.

In witness whereof, each party hereto has caused this document to be executed in its name and on its behalf by its duly authorized officer or agent as of this day and year first above written.


J. William Burns
Commissioner
Department of Transportation

Date: November 2, 1995


Kenneth H. Kirschner
Commissioner
Department of Public Safety

Date: Oct 16, 1995

*FLORIDA***State of Florida****“OPEN ROADS POLICY”*****Quick Clearance for Safety and Mobility***

This agreement by and between the Florida Highway Patrol (FHP) and the Florida Department of Transportation (FDOT) establishes a policy for FHP and FDOT personnel to expedite the removal of vehicles, cargo, and debris from roadways on the State Highway System to restore, in an URGENT MANNER the safe and orderly flow of traffic following a motor vehicle crash or incident on Florida's roadways.

Whereas: Public safety is the highest priority and must be maintained especially when injuries or hazardous materials are involved. The quality of life in the State of Florida is heavily dependent upon the free movement of people, vehicles, and commerce. The FHP and FDOT share the responsibility for achieving and maintaining the degree of order necessary to make this free movement possible. Agencies have the responsibility to do whatever is reasonable to reduce the risk to responders, secondary crashes, and delays associated with incidents, crashes, roadway maintenance, construction, and enforcement activities.

The following operating standards are based on the philosophy that the State Highway System will not be closed or restricted any longer than is absolutely necessary.

Be it resolved: Roadways will be cleared of damaged vehicles, spilled cargo, and debris as soon as it is safe to do so. It is understood that damage to vehicles or cargo may occur as a result of clearing the roadway on an urgent basis. While reasonable attempts to avoid such damage shall be taken, the highest priority is restoring traffic to normal conditions. Incident caused congestion has an enormous cost to society.

Florida Highway Patrol Responsibilities

Members of FHP who respond to the scene of traffic incidents will make clearing the travel portion of the roadway a high priority. When an investigation is required, it will be conducted in as expedient a manner as possible considering the severity of the collision. Non-critical portions of the investigation may be delayed until lighter traffic conditions allow completion of those tasks. The FHP will close only those lanes absolutely necessary to safely conduct the investigation. The FHP will coordinate with FDOT representatives to set up appropriate traffic control, establish alternate routes, expedite the safe movement of traffic at the scene, and restore the roadway to normal conditions as soon as possible.

Whenever practical, damaged vehicles on access controlled roadways will be removed to off ramps, accident investigation sites, or other safe areas for completion of investigations to reduce the delays associated with motorists slowing to "gawk." Tow trucks will be requested as soon as it is evident that they will be needed to clear the roadway. FHP will assure that all authorized tow operators have met established competency levels and that the equipment is of appropriate size, capacity, and design to meet all standards of the State of Florida.

The FHP will not unnecessarily cause any delay in reopening all or part of a roadway to allow a company to dispatch its own equipment to off-load cargo or recover a vehicle or load that is impacting traffic during peak traffic hours or creating a hazard to the public. The FHP and FDOT will cooperate in planning and implementing clearance operations in the most safe and expeditious manner.

Florida Department of Transportation Responsibilities

When requested by FHP or other emergency agency, FDOT will respond and deploy resources to major traffic incidents 24 hours a day, 7 days per week. Each FDOT District will develop and implement response procedures to meet the goal of providing initial traffic control within **30 minutes** of notification during the assigned working hours of each maintenance yard, and **60 minutes** after hours.

The FDOT, in coordination with FHP, will upgrade traffic controls, determine detour routes, and discuss clearance strategies. When requested, FDOT will provide temporary traffic controls to ensure a safe work zone for all responders and the motoring public.

The FDOT, in cooperation with the FHP, will determine and deploy the necessary heavy equipment and manpower to reopen the roadway if there is a delay in clearing the travel lanes, or if the task is beyond the capabilities of the wrecker service on scene. If cargo or spilled loads [non-hazardous] are involved, FDOT will make every effort to assist in the relocation of the materials in the shortest possible time, using whatever equipment necessary. All such materials or any vehicles relocated by FDOT will be moved the minimum possible distance to eliminate traffic hazards.

FDOT personnel will document all hours and equipment used for traffic control, roadway clearance, and debris clean up. FDOT will place traffic control devices at the scene should any damaged vehicles or cargo remain on the shoulder adjacent to the travel lanes for removal at a later time.

The FDOT and FHP will continually work together to ensure that the needs of motorists on state roadways are being met in the most professional, safe, and efficient manner.

Therefore, it is agreed as follows:

The FHP and the FDOT will evaluate and continually update and modify their operating policies, procedures, rules, and standards to assure they are consistent with this "OPEN ROADS POLICY" agreement.

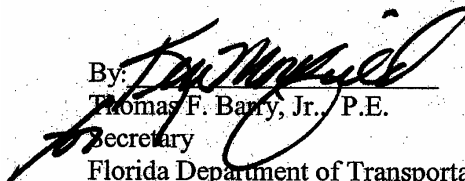
FHP, together with FDOT, will research, evaluate, and conduct training in the most advanced technologies, equipment, and approved methods for the documentation and investigation of crash or incident scenes. FHP, using these techniques, will prioritize the investigative tasks and reopen travel lanes upon completion of tasks that must be conducted, without the impediment of traffic flowing.

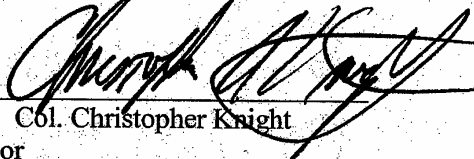
Roadways will be cleared as soon as possible. It is the goal of all agencies that **all incidents be cleared from the roadway within 90 minutes of the arrival of the first responding officer.** This goal being made with the understanding that more complex scenarios may require additional time for complete clearance.

It is further agreed that:

FHP and FDOT will actively solicit and enlist other state, county, and local agencies, political subdivisions, industry groups, and professional associations to endorse and become party to this "OPEN ROADS PHILOSOPHY" for the State of Florida.

In witness whereof, each party hereto has caused this document to be executed in its name and on its behalf by its duly authorized Chief Executive.


By: 
Thomas F. Barry, Jr., P.E.
Secretary
Florida Department of Transportation

By: 
Col. Christopher Knight
Director
Florida Highway Patrol

Date: 10/30/02

Date: 11-7-02

Reviewed By:


Agency's General Counsel Office


Agency's General Counsel Office

MARYLAND
 INTERAGENCY AGREEMENT
 MD/SHA-MSP
 REMOVAL OF VEHICLES FROM ROADWAY

This agreement made this 26th day of October, 1990, by and between the Maryland State Highway Administration (SHA) and the Maryland State Police (MSP) is to provide guidance for State Police, and State Highway personnel in removing vehicles from roadways in certain situations to maintain a safe and orderly flow of traffic.

WITNESSETH: Whereas, the SHA is proposing to remove certain vehicles from the roadway on an urgent basis following collisions or where vehicles are abandoned and are causing a hazardous situation to exist.

I. General:

Whenever a road or lane is closed or partially blocked by an accident and traffic delays or safety problems may occur, the Resident Maintenance Engineer or his Representative, in cooperation with the police officer in charge, should reopen the roadway as soon as possible ON AN URGENT BASIS. This recognizes that public safety is the highest priority and must be secured, especially if injuries or hazardous materials are involved. It is understood that damage to vehicles or cargo may occur as a result of clearing the road on an urgent basis. While reasonable attempts to avoid such damage should be made, the highest priority is public safety.

II. Procedure/Requirements - SHA

A. General

The Resident Maintenance Engineer or his representative is to assign the necessary equipment and manpower to reopen the road or lane as soon as possible.

If materials being transported are involved, the SHA will make every effort to relocate the materials in the shortest possible time, using whatever equipment is necessary. All such materials will be relocated as short a distance as possible, but not be placed so as to present a traffic hazard.

The Resident Maintenance Engineer or his representative is to prepare a list of the personnel and equipment used and the work hours involved so that the owner of the vehicle and/or cargo can be billed for the work. Appropriate warning devices (barricades, signs, arrowboards, etc.) are to be placed on the scene should either the damaged vehicle(s) or cargo remain adjacent to a lane or on the shoulder.

B. Hazardous/Flammable/Exploding Materials

No attempt is to be made by State Highway Administration personnel/equipment to move any hazardous or flammable or explosive material for any reason. If SHA is first on the scene and cargo content is not readily identifiable, the Resident Maintenance Engineer or his representative will contact the proper authorities to ascertain if special measures should be taken.

As soon as the public safety has been secured then reopening of the roadway is to proceed as described under "GENERAL" in this agreement.

III. MSP Duties and Responsibilities

Members of the Maryland State Police who are the on-scene motor vehicle collision investigators will work in cooperation with other Emergency Service Personnel and members of the MD State Highway Administration who are at the scene.

Members of the State Police will conduct their required investigation in as expedient a manner as possible, considering the severity of the collision and the quality of their investigation. Lengthy investigations will require investigators to work diligently in an attempt to minimize traffic delays. This may mean that certain "non-critical" portions of an investigation be conducted at a later time when traffic congestion is non-existent (i.e., non-peak periods).

It should be understood that as fire and rescue service personnel complete their required tasks of extrication, administration of medical assistance and removal of the injured, the Maryland State Police Officer in Charge may choose to release them unless a HAZMAT situation exists.

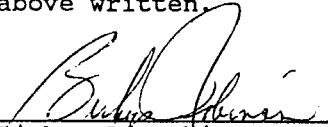
This will also hold true for allied police personnel, additional troopers and members of the State Highway Administration as each complete their required functions, returning the roadway to normal as soon as possible.


Members of the Maryland State Police shall not unnessarily cause a delay in the reopening of a roadway in allowing a company to dispatch (an) additional truck(s) for immediate off-loading where this action will result in additional back ups or hazardous circumstances during peak traffic periods.

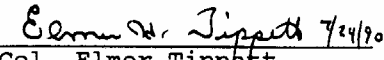
IV. Liability Issues

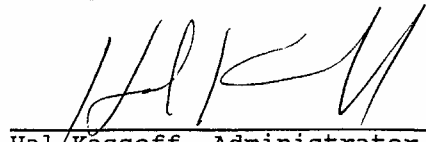
Maryland State Highway Administration's policy for the immediate removal of certain vehicles from roadway's on an URGENT BASIS, utilizing available resources, recognizes that public safety is of the highest priority. Furthermore SHA realizes that damage to vehicles or cargo contained therein may occur as the result of their clearing the roadway, and SHA assumes liability under these circumstances for said damage, should that become an issue. SHA's liability under these circumstances would be no greater than they might expect from negligence etc. on the part of snow equipment operations. As outlined in the "Limits of Liability" portion of the MD Tort Claims Act, SHA is only responsible for the first \$1,000.00 in damages and the Maryland State Treasurers office would cover any additional damages under the State's Self-Insurance Program. SHA would not automatically be liable for damages resulting from clearing the roadway unless there was clear evidence on the Administration's part, that negligence was used in said operation.

In Witness Whereof, each party hereto has caused this agreement to be executed in its name and on its behalf by its duly authorized officer or agent as of this day and year first above written.

 07/14/90
Bishop L. Robinson
Secretary
Public Safety and
Correctional Services


Richard H. Trainor
Secretary
Maryland Department of
Transportation

 7/24/90
Col. Elmer Tippet
Superintendent
Maryland State Police


Hal Kassoff, Administrator
MD State Highway Administration

TENNESSEE

INTERAGENCY MEMORANDUM OF UNDERSTANDING
BETWEEN THE
TENNESSEE DEPARTMENT OF SAFETY (DOS), INCLUDING THE TENNESSEE
HIGHWAY PATROL (THP) AND COMMERCIAL VEHICLE ENFORCEMENT
(CVE), AND THE TENNESSEE DEPARTMENT OF TRANSPORTATION (TDOT)

Relative to

**URGENT CLEARANCE OF HIGHWAY INCIDENTS AND SAFETY AT
INCIDENT SCENES**

This memorandum of understanding by and between the parties named above is to provide guidance for personnel representing DOS (THP, CVE) and TDOT relative to incidents on Tennessee highways, including crashes and spilled cargo, to ensure public safety, promote safe and orderly flow of traffic, protect the safety of emergency responders, and restore the roadway to full capacity as soon as possible following an incident.

WHEREAS, traffic congestion is a growing problem in Tennessee, especially on the controlled-access highways which carry the highest traffic volumes, and

WHEREAS, when congestion increases, so do the costs—in wasted time, fuel and money, missed schedules and late deliveries, increased air pollution and road rage, and

WHEREAS, national studies have shown that about 60% of all congestion is related to incidents (e.g., crashes, stalled vehicles, debris, special events, road work) rather than inadequate roadway capacity, and

WHEREAS, national studies have shown that up to 20% of all collisions on controlled-access highways are "secondary," attributable to an earlier incident that has not been fully cleared, and

WHEREAS, emergency responders are especially at risk at the scene of incidents on high-speed, controlled-access roadways, and

WHEREAS, DOS (THP, CVE) and TDOT have responsibilities and resources to address the problems caused by highway incidents.

NOW, THEREFORE, BE IT RESOLVED THAT:

The purpose of this memorandum is to facilitate joint efforts to alleviate the growing problems associated with incidents on Tennessee's roadways, especially the controlled-access roadways, by emphasizing URGENT AND SAFE CLEARANCE of highway incidents.

DOS (THP and CVE) Responsibilities

1. THP, with the assistance of CVE when necessary, will conduct investigations in as expedient a manner as possible considering the severity of the incident. Investigators will work diligently to minimize traffic delays. When possible non-critical aspects of an investigation shall be conducted away from the immediate scene or at a another time when the impact on traffic would be less.
2. At the scene of non-injury collisions, THP and CVE officers will quickly relocate vehicle(s) from the travel lanes and conduct investigations as far from the roadway as practical.
3. Troopers will encourage and assist other emergency responders in clearing incident scenes as soon as possible after their respective duties have been performed so as to reduce distractions for motorists (gawking) and restore the roadway to more normal conditions.
4. When one or more lanes of a controlled-access highway is blocked, THP will call for a wrecker capable of removing the vehicle or cargo as quickly as possible. If the "zone wrecker" does not have the capability to quickly clear the roadway, THP will call for the closest wrecker that has the needed capability. The THP Dispatcher will determine the estimated time of arrival (ETA) and advise the responders at the scene.
5. If the owner of a vehicle or the cargo blocking a roadway requests that a specific towing company be contacted to remove the vehicle or cargo, THP will only approve the request if there is reason to believe that the requested company can respond as quickly as other available towing companies with comparable equipment.
6. THP will not allow a lane to be blocked for the sole purpose of transferring non-hazardous cargo from one vehicle to another unless no other reasonable alternative is available.
7. In the enforcement of state laws and regulations, THP with the assistance of CVE will try to minimize the impacts on traffic, especially during peak commuting periods, and will not block or restrict lanes except as necessary for safety.
8. CVE will seek assistance from the trucking industry to continue encouraging proper loading of cargo and proper operating procedures to minimize incidents caused by truck rollovers.
9. The DOS will include information in the Tennessee Driver's Handbook and other DOS publications instructing motorists about applicable laws and emphasizing the need for urgent clearance.

TDOT Responsibilities

10. Within the areas served by *HELP*, TDOT will dispatch *HELP* trucks to incident scenes when requested by THP or CVE. Whenever possible TDOT will also dispatch *HELP* trucks outside of the normal service areas when requested by THP.
11. TDOT will install reference markers, signs and other FHWA-approved markings as requested by DOS to allow quicker location of incidents and to facilitate investigation and reporting of incidents.
12. Whenever possible, TDOT will provide equipment and personnel to facilitate quick removal of vehicles, cargo and debris from the roadway.
13. When requested, TDOT will assist in establishing temporary detours and associated traffic control.
14. When requested, TDOT will provide space, if available, for emergency storage of vehicles, cargo or debris to facilitate prompt reopening of the roadway.
15. TDOT will designate a primary contact person(s) and alternates for each of TDOT's Regions and Districts to work with the THP on the use of TDOT equipment and personnel, storage space and other matters to promote "quick clearance."
16. TDOT will strive to minimize the traffic impacts of highway construction and maintenance and will consult with DOS (THP and CVE) about ways to accomplish that objective.
17. TDOT will place information regarding quick clearance on the Official State Highway Map and other publications, including the TDOT web page.
18. TDOT will erect signs at strategic locations on controlled access highways advising motorists that, following non-injury crashes, vehicles should be driven to the shoulder.


Shared Responsibilities


19. All the parties hereto will work together at incident scenes to promote urgent clearance, safety for motorists and emergency responders, and thorough investigations as required by the circumstances.
20. TDOT will explore funding opportunities for a Statewide Incident Management Plan and DOS, (THP and CVE) will assist in preparing and implementing the plan.
21. DOS, (THP, CVE) and TDOT will meet periodically to discuss experiences with incident management and to work toward improvements. Working sessions will be held at least annually in each of TDOT Region Offices with THP, CVE, TDOT and other state and local agencies to discuss incident management and related issues.

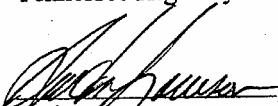
22. TDOT and THP (and CVE and other agencies as needed) will meet for a de-briefing within ten (10) working days following any incident that requires complete closure of an Interstate highway (in one or both directions of travel) for more than three (3) hours and following any incident that requires closure of one or more lanes for more than six (6) hours. The purpose of the meeting will not be to find fault or to assign blame but to identify opportunities for improvements in procedures, training or allocation of resources. A one-page report will be prepared jointly by the representatives of THP and TDOT and forwarded through the chain-of-command to the Commissioners of DOS and TDOT within one month of the date of the incident.
23. DOS (THP, CVE) and TDOT will actively promote the idea of "quick clearance" and will seek the cooperation of other law enforcement and emergency response agencies, trucking companies, towing operators, and the news media throughout Tennessee.
24. DOS (THP, CVE) and TDOT will work together to advise motorists that, following a non-injury accident on a controlled-access highway, motorists should steer their vehicles out of the travel lanes and stop at a safe location on the shoulder.
25. THP, CVE and TDOT will position emergency equipment at incident scenes so as to minimize the impacts on traffic flow and to avoid blocking or restricting lanes unnecessarily. Further, the parties will limit the use of emergency lights if practical at incident scenes to minimize distractions to motorists. The parties will also encourage other emergency responders to position their equipment and use emergency lights in the same manner.
26. All of the parties will work together to identify and apply new technologies and new operating procedures that might reduce the time required to respond to incidents and restore roadways to normal operating conditions as soon as possible.
27. For incidents involving hazardous material all of the parties will work together with the Tennessee Emergency Management Agency (TEMA) and other responsible agencies. Once public safety has been assured the priority will shift to restoring the roadway to full capacity as soon as possible.
28. THP and/or CVE will notify the designated TDOT contacts of any situation that calls for closing any lane(s) of an Interstate highway for more than thirty (30) minutes and will try to consult with TDOT in advance about alternatives to minimize the impact of traffic.
29. The parties hereto understand that damage to vehicles or cargo may occur as the result of clearing the roadway on an urgent basis. Reasonable efforts should be made to avoid such damage, but the priority will be to restore full roadway capacity in an expedient manner.
30. All of the parties will advise their personnel of this Agreement and promote implementation at every level of their organizations. THP and CVE will incorporate

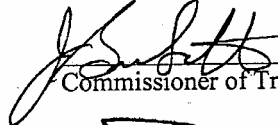
the provisions of this agreement into General Orders, and TDOT will distribute Advisory Memorandums to personnel in Headquarters, Regions, Districts and County Offices.

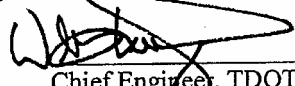
AGREED AND EXECUTED BY:

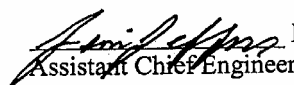

Date: 09/12/01
Commissioner of Safety


Date: 09/12/01
Colonel,
Tennessee Highway Patrol


Date: 09/12/01
Major,
Commercial Vehicle Enforcement


Date: 9-12-01
Commissioner of Transportation


Date: 9-12-01
Chief Engineer, TDOT


Date: 9-12-01
Assistant Chief Engineer
(Operations), TDOT



Interagency Freeway Incident Clearance Policy Statement

The Traffic Incident Management Enhancement (TIME) Program is a regional partnership to maintain the safe and efficient movement of traffic on the freeway system in Southeastern Wisconsin. Continuing population growth and increases in traffic volumes contribute to hazardous driving conditions, congestion, delay, and air pollution. Traffic incidents are events that reduce roadway capacity or cause unexpected heavy traffic. Traffic Incidents aggravate the problem of traffic congestion and have serious safety and economic effects.

Most traffic incidents are minor, but many are major and involve personal injuries, fatalities, or hazardous materials spills. Both major and minor traffic incidents contribute to a significant impact on traffic flow and every effort should be made to clear them as quickly and safely as possible. Incident-related delay accounts for more than half of all highway congestion. When an incident occurs, each minute it takes to respond to and clear can add five minutes of delay and also dramatically increases the likelihood of secondary crashes.

Public safety and transportation agencies that manage the freeway system have a responsibility to do whatever is reasonable to reduce the delays associated with traffic incidents. In 1998, the Wisconsin State Legislature revised state laws pertaining to the clearance of traffic incidents and crashes on all Wisconsin roadways. Known as the Incident Clearance Law (Wisconsin Act 258), these state statutes provide for safer conditions for motorists involved in crashes; help reduce the occurrence of secondary crashes by removing obstructions from the highway; and shorten the amount of time required to restore normal traffic flow after an incident has occurred. The following policy defines the responsibilities of agencies involved in incident clearance in order to comply with the guidance of Wisconsin Act 258 and the philosophy that our freeways will not be closed or restricted for any longer than is absolutely necessary.

Safe Quick Clearance Philosophy

1. While clearing an incident as quickly as possible must be treated as a high priority; the safety of incident responders and of the public will not be compromised. The safety of all concerned in an incident, including responders, motorists, and victims, must always be the number one priority in clearance.
2. Whenever a freeway or lane is partially closed, or blocked by a crash or incident, law enforcement and transportation agencies will make every reasonable effort to open the roadway as soon as possible ON AN URGENT BASIS while maintaining and protecting the safety of responders and the public.

It is critical for freeways to be cleared as soon as initial investigative needs are met and hazardous cargo removed. It is understood that damage to vehicles or cargo may occur as a result of aggressively clearing the roadway. Reasonable measures should be taken to avoid such damage, however our priorities are to maintain the safety of respondents, victims, and the general public; to restore traffic to a normal flow and prevent further hazardous conditions from developing, consistent with the provisions of Act 258.

Law Enforcement Agencies

Law enforcement personnel who patrol the freeway and respond to the scene of traffic incidents will make clearing the roadway a priority. In the event of a crash and subsequent investigation, it will be conducted as quickly as possible, considering the severity of the incident. Lengthy investigations will require prioritization of tasks, diligent use of resources, and due consideration of alternate routes to reduce traffic delay. Non-critical portions of the investigation may be delayed until lighter traffic conditions allow for expedited completion of those tasks. Law enforcement officers and state and local transportation representatives will cooperate to establish necessary lane closures, determine alternate routes, expedite movement of traffic, and restore the freeway to normal as soon as possible.

Whenever practical, damaged vehicles will be moved to Crash Investigation Sites or other areas, out of view of mainline traffic for completion of investigations. Gateway Patrols or appropriate tow and recovery services will be requested as soon as it is evident that they will be needed to clear the roadway.

Law enforcement will not unnecessarily delay reopening all or part of a roadway to allow any company to dispatch their own equipment to off load, reload or remove one of their own vehicles that is impacting traffic.

On-scene Incident Commanders will coordinate with other emergency response agencies to establish a protocol for emergency vehicle response, parking, and traffic control at freeway incident scenes. The TIME Resource Manual should be referenced to assist Commanders and other incident responders.

State and Local Transportation Agencies

State and local transportation agencies or other maintenance personnel, including Traffic Response Units (TRU), in consultation with the on-scene Incident Commander, will establish traffic control, determine alternate routes, and coordinate support from the WisDOT Traffic Operations Center (TOC) as required. It is understood that transportation agency personnel who respond to incident scenes have traffic management and traveler information as their first priorities. Transportation agency personnel have no hazardous materials responsibilities or authority. Transportation agency personnel in cooperation with the Incident Commander and other law enforcement officers will determine the necessary equipment and other resources required to reopen the freeway or lanes as soon as possible. If materials being transported are involved, transportation agencies will make every effort to clear the traveled way in the shortest possible time, using whatever equipment is necessary. All such materials or vehicles will be relocated off the freeway to eliminate traffic hazards. Such activities could involve pushing the materials to the side of the roadway.

Transportation agency responders will place traffic control and/or warning devices at the scene should any damaged vehicles or cargo remain adjacent to the lane or shoulder for removal at a later time. Transportation agency personnel will document all hours and equipment used to clear the incident to seek reimbursement from the causing party. The TIME Resource Manual should be referenced for appropriate traffic control and other guidelines.

Transportation Agencies will continue to work together with Law Enforcement to ensure that the needs of motorists on the region's freeways are being met in the most professional and efficient manner.



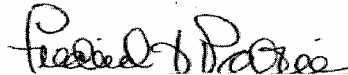
Les Fafard, District Director
District 2, WisDOT



Mike Brown, Highway Commissioner
Fond du Lac County



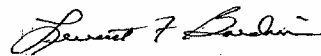
Larry Zarletti, Sheriff
Kenosha County



Fred Patrie, Highway Commissioner
Kenosha County



Robert Bereiter, District Commander
District 2, Wisconsin State Patrol



Leverett Baldwin, Sheriff
Milwaukee County Sheriff

David Pichette

David Pichette, District Commander
District 3, Wisconsin State Patrol

Jack Theusch

Jack Theusch, Sheriff
Washington County

Gary H. Pucker

Gary Pucker, Sheriff
Fond du Lac County

William Kruziki

William Kruziki, Sheriff
Waukesha County

Maury Straub

Maury Straub, Sheriff
Ozaukee County

Richard A. Bolte

Richard A. Bolte, Director
Waukesha Public Works

Robert R. Dreblow

Robert R. Dreblow, Highway Commissioner
Ozaukee County

Jack Pitrof

Jack Pitrof, Chief
Menomonee Falls Police Department

William L. McReynolds

William L. McReynolds, Sheriff
Racine County

David Graves

David Graves, Sheriff
Walworth County

Glen Lampark

Glen Lampark, Director
Racine County Public Works

Brian Dupont

Brian Dupont, Highway Commissioner
Walworth County

APPENDIX H

Washington State Patrol “Instant Tow Dispatch” Program

Washington State Patrol
Instant Tow Dispatch
2502 112th Street East
Tacoma Washington 98445

Summary/Overview

The Washington State Patrol, Washington State Department of Transportation and local tow companies are implementing a test program called “Instant Tow Dispatch”. The purpose of this program is to better serve the motoring public by the timely removal of blocking collisions or disabled vehicles on Interstate 5, State Route 16 and State Route 512 in specified high traffic areas.

The program will be tested for six months and then evaluated by WSP and WSDOT to determine its effectiveness.

This program will involve the monitoring of (WSDOT) cameras that are already in place and functional. Collisions/disabled vehicles observed by these cameras that are blocking one or more lanes of travel will have one tow truck dispatched immediately to the scene. WSP Communications will dispatch a tow truck from the current rotational list that is in effect. The collision/disabled vehicle dispatch information to the appropriate zone responsible for that area will not change. **Only vehicles observed by the cameras will have an instant tow dispatched.**

By dispatching one tow truck, it is anticipated the Trooper and the tow truck should arrive at approximately the same time. This would save valuable time and reduce prolonged traffic backups due to the obstructions.

Tow truck drivers that arrive at a collision scene prior to the Trooper will not relocate the vehicles. Tow truck drivers may position their vehicles to protect the scene until the Trooper arrives and provides further guidance. Disabled vehicles should be removed from the freeway and WSP Communications advised of the location.

The focus area for the “Instant Dispatch Tow” will be as follows:

Interstate 5- Northbound and Southbound between mileposts 127 (SR 512) and 136 (Port of Tacoma Road).

State Route 512- Eastbound and Westbound between Steele Street and Interstate 5.

State Route 16- Eastbound and Westbound between Interstate 5 and the Narrows Bridge.

Operational Hours

The proposed hours of Instant Tow Dispatch are as follows:

Monday –Friday 9:30 AM to 2:30 PM and 6:30 PM to 5:30 AM

Saturday/Sunday and Holidays- 24 Hours

- **Service Patrol hours are 5:30 AM to 9:30 AM and 2:30 PM to 6:30 PM**
- **Service Patrol will be utilized during its normal patrol hours unless they are unavailable**

WSP Responsibilities

Communications: Monitor the traffic in the focus area using the WSDOT cameras provided. In conjunction with appropriate zone notification for collisions or blocking disabled vehicles, activate one instant tow.

Tow trucks not utilized will be returned to the top of the rotational list.

Troopers: Provide timely and accurate information indicating arrival time at the scene, when roadway was reopened and if the instant tow was used or not needed.

If the tow truck is not utilized, advise communications to return the tow truck back to the top of the rotational list.

WSDOT RESPONSIBILITIES

Create and maintain an accountability form to be used by the tow truck drivers to record vehicle/driver information, location information, times, dates etc.

Maintain the existing cameras and advise WSP Communications when or if cameras become inoperative.

Maintain statistical information from the Tow companies indicating the number of "Dead Runs" and actual tows off the roadway.

Compile monthly statistics to be used for future evaluations

Tow Companies/Drivers Responsibilities

Provide one tow truck for instant dispatch upon request from WSP Communications. Additionally advise WSP if a tow truck is not immediately available so that the request can then be made of the next Tow Company in rotation.

Maintain a log of actual tows used and "Dead Runs".

Fax report forms to WSP Tacoma Communications daily. (253) 536-4360

Drivers Responsibilities:

Collision Scenes-Upon arrival at a collision scene, DO NOT MOVE THE VEHICLES prior to the Troopers arrival. Driver may position the tow truck in the roadway to protect the scene. If injuries are obvious, contact your dispatch to relay the information to the WSP Communications Center.

Disabled Vehicles-Tow vehicles off the roadway to the next exit ramp or appropriate safe location.

Complete the accountability form that is provided from WSDOT.

APPENDIX I

Connecticut Department of Public Safety Inspection Guidelines for Private Towing Companies

Basic Inspection Guide Lines

INSPECTION PREPARATION:

The wrecker operator must apply to a state police troop commander who shall arrange for an inspection of all wreckers, equipment and facilities to ensure compliance with the requirements of this program.

The wrecker operator (business) must have ready for inspection, the wrecker(s) and documented proof of qualified drivers. Copies of all certification will be accepted. A copy of the Dealer and Repairer License will be included in the wrecker rotation file.

THE FOLLOWING DOCUMENTS WILL BE INSPECTED.:

Examine operator license for: (14-36)

- License status.
- Class, endorsements, and restrictions.
For qualifying operators, as defined by 391.11 of FMCSR., medical examiner's certificate and any waivers if required will be inspected.

Qualification of driver as required by these regulations: (Sec. 29-23a-6)

Check for proof of either:

- Ten years of experience operating wreckers;
(or)
- Certification from an approved training program in towing and recovery.
Note: Issues concerning the qualification of drivers shall be brought to the attention of the wrecker inspection supervisor.

Check the vehicle for:

The vehicle to be inspected must be registered as a "wrecker."

NOTE: In addition to the "wrecker" registration, the vehicle may display an apportioned plate for use in commercial operations.

- Verify that the vehicle's V.I.N. number matches the registration.
- Verify that the registration address matches the address listed on the Dealer/Repairer license.
NOTE: No equipment, other than equipment registered to the address listed on the Dealer/Repairer License, will be inspected.

CHOOSE THE WRECKER INSPECTION SITE:

The wrecker inspection should be done at the address listed on the Dealer/Repairer license.

- The inspecting trooper will verify this address with the business location.
- No inspections will be conducted, except as noted under selecting a safe location, on facilities other than at the address listed on the Dealer/Repairer License.

NOTE: All deficiencies shall be reported to the Department of Motor Vehicles, Dealer and Repairer Division.

A safe location, preferably a paved, level surface away from traffic, should be chosen.

NOTE: Should the address site hinder or prohibit the safe inspection of equipment, inspections may be conducted at a site chosen by the inspecting trooper. The inspecting trooper should consider the operation of the service wrecker when conducting off-site inspections. If an off-site inspection is conducted, the inspecting trooper will ensure that a site inspection is also completed to verify the business address.

- Place chock blocks in position beginning on the driver's side, one in the front and one behind the drive axle tires or between the axles.
- Have the operator turn the engine off in first gear or leave in Park position.
- Inform the driver of what you will be doing.

For those service wreckers that meet the definition of a commercial motor vehicle, (Sections 14-163c and 14-1 [11]), a complete MCSAP Inspection, Level 1 or 5, will be performed by a certified trooper.

A copy of this report shall be retained with the inspecting file.

THE INSPECTION WILL INCLUDE:**LIGHTING:** (Sec. 14-96)

- Systematically check headlights, tail lamps, stop lamps, turn signals, four way flashers, clearance and ID lamps, side marker lamps, and rear registration plate lamp for operation, proper color, mounting, and visibility.

In addition the following lighting is also required:

- Flashing (amber) lights: (Sec. 14-66)
Two will be mounted not less than eight feet from the road surface to base of light near the rear most portion of cab.

NOTE: *Adjustable mounts for required lighting is accepted. These should be inspected for proper height. Any additional (amber) flashing or revolving light used on a legally registered wrecker needs no additional permits.*

- Two (2) rear operational spotlights. (Sec. 29-23a-9(h) and 14-66)

MARKINGS: (Sec. 14-66(b), Regulations)

Each wrecker will display:

The name and address

(or)

The name and telephone number

of the licensee on the two front doors in letters and numerals of at **least 3 inches in height and of proportional width.**

- The wrecker will be marked with the exact name as listed on the Dealer/Repairer license.
- If the address is displayed, it must match the address as listed on the Dealer/Repairer license.
- If the wrecker falls under the federal regulations, valid Interstate Commerce Commission, (ICC), (or) Department of Transportation, (DOT) numbers must also be displayed in accordance with 390.21 of the FMCSR

Tires, Wheels, and Rims: (Secs. 14-98, 14-98a)

- Check tires for overall conditions of proper inflation, tread depth, sidewall separation, exposed cord or fabric, and any contact with any part of vehicle.
- Check wheels and rims for slippage in clamp area, unseated locking rings, broken or missing lugs, studs, or clamps, broken or bent rims.

Frame and Body:

- Check for corrosion fatigue, missing cross members, cracks in frame, and missing or defective body parts.

Fuel Tank(s):

- Check for loose mounting, leaks, and other damage.

Exhaust System: (Sec. 14-80(d))

- Check system for leaks and broken or loose mounts.
- Check that fuel lines, electrical wires, or any other combustible parts of the vehicle are not in contact with or charred by the exhaust system.

Steering System: (Sec. 14-80)

Have the driver rock the steering wheel and check key components.

- Observe for movement in the pitman arm, steering gearbox, and tie rod ends.
- Check for loose, worn, bent, damaged, or missing parts.
- Check for loose bolts, nuts, and any welded repairs.

Suspension:

- Check for indications of misaligned, shifted, cracked or missing springs, shackles, bolts, frame mounts, and checked or missing U-bolts.

Brakes: (Sec. 14-80h)

- Check for missing, inoperative, contaminated (with oil or grease), cracked, or leaking parts in the system.
- Check the operation of the parking brake.

Equipment Requirements:

In addition to the minimum requirements under Sec. 14-66, C.G.S., Wreckers, service wreckers certified for use with the Department of Public Safety Wrecker Rotational System shall be equipped with the following:

Note: No service wreckers will be inspected for use within the respective class unless they meet the minimum GVWR and winch ratings.

Light-duty service wrecker operator shall have:

- ❑ One wrecker of 11,000 GVWR or greater, with a single winch capacity of at least 8,000 lbs. and a wheel lift. (Sec. 29-23a-1(2), Sec. 29-23a-2-[a])
- and**
- ❑ One-car carrier of 14,500 GVWR or greater. (Sec. 29-23a-1(2))
- ❑ Communications, such as two-way radio or wireless telephone. (Sec. 29-23a-9[h])
- ❑ Three flares. (Sec. 14-66) and three triangle reflectors. (Sec. 29-23a-9[h])
- ❑ Shovel, broom, and any other equipment necessary to clear debris from scene. (Sec. 29-23a-9[h])

Heavy-duty service operator shall have:

Two wreckers of 31,000 lbs. or greater GVWR. (Sec. 29-23a-1(2)) with boom capacities of:

- ❑ **25 tons**
- and**
- ❑ **20 tons**, respectively. (Sec. 29-23a-1[3])
- ❑ At least one wrecker shall be equipped with under-reach axle lift. Such wrecker shall be capable of towing a loaded tractor trailer unit. (Sec. 29-23a-2[b])

NOTE: This requirement may be satisfied by a third dedicated under-lift vehicle without a boom.

- ❑ Communications such as a two-way radio or wireless telephone. (Sec. 29-23a-9[I])
- ❑ A second rear spotlight. (Sec. 29-23a-9[i])
- ❑ Ten flares and (10) triangle reflectors. (Sec. 29-23a-9[i])
- ❑ Two shovels, one round and one square. (Sec. 29-23a-9[I])
- ❑ One heavy-duty push-broom. (Sec. 29-23a-9[i])
- ❑ Two pry bars. (Sec. 29-23a-9[i])
- ❑ One pair bolt cutters. (Sec. 29-23a-9[i])
- ❑ Ten large T-bolts and shut-off fittings for buses. (Sec. 29-23a-9[i])
- ❑ The capability of providing air to the towed vehicle to facilitate the brake system. (Sec. 29-23s-9[i])
- ❑ Sufficient auxiliary equipment available to right overturned vehicles and perform other vehicle recovery operations. (Sec. 29-23a-2-[b]) This equipment will be listed on the Wrecker Service Information Summary.

COMPLETION OF THE INSPECTION:

After completing the inspection the trooper shall;

- ❑ Inform the driver that the inspection is complete.
- ❑ Point out and explain all defects and violations to the driver and/or owner.
- ❑ Complete the required inspection forms. In addition to any MCSAP inspection reports completed for qualifying vehicles, the following reports are required:

Wrecker Information Summary, DPS-884-C, shall list all information pertinent to the service wrecker.

Wrecker Service List of Qualified Drivers, DPS-884-C1, shall list all drivers who are certified under this program.

Wrecker Vehicle Inspection Report, Light Duty, DPS-888-C (Rev. 10/99), shall be used to record all light-duty service wrecker inspections.

NOTE: *A space has been provided for the MCSAP inspection report number.*

Wrecker Vehicle Inspection Report, Heavy Duty, DPS-888-C-1 (Rev. 10/99), shall be used to record all heavy-duty service wrecker inspections.

NOTE: *A space has been provided for the MCSAP inspection report number.*

Wrecker Inspection Decal

- ❑ First determine that the service wrecker operator meets the definition of specific class, i.e., "Light-duty or Heavy-duty".

NOTE: *All service wreckers should be inspected before an inspection decal is awarded to insure that the service wrecker operator has the required vehicles. Vehicles subjected to Waiver/Modification requests will not be considered until approved.*

- ❑ A "Wrecker Inspection Decal" will be awarded to those service wreckers that pass inspection and are certified for service under these regulations.
- ❑ The inspecting trooper shall affix the decal to the outside lower left-hand corner of the rear window, behind the operator's head. The decal shall not obstruct the operator's vision.
- ❑ Whenever a certified wrecker is sold, modified to different specifications, or is no longer in use by the service wrecker operator, or the service wrecker operator is no longer participating with the wrecker rotation system, the wrecker inspection decal will be returned to the troop.
- ❑ A copy of all inspection reports shall be forwarded to:

Department of Motor Vehicles
Dealer and Repairer Division
60 State Street
Wethersfield, Connecticut 06161

APPENDIX J

Sample Public-Private Towing Regulations and Contracts

*CINCINNATI (OH) WRECKER AND TOWING RULES AND REGULATIONS
FOR POLICE ROTATION WRECKERS*

**WRECKER AND TOWING RULES AND REGULATIONS
FOR POLICE ROTATION WRECKERS**

Promulgated by the City Manager under authority of Section 869.21, C.M.C.

Revised 08/24/2001

The City of Cincinnati, in its concern for the safe and efficient operation of wreckers within the City limits, hereby promulgates the following rules and regulations concerning wrecker licensing. Every person, firm, or corporation licensed under Section 869-7, Cincinnati Municipal Code, will be governed by the following rules and regulations.

I. Information Requirement, Wrecker Inspections, and Restrictions.

A. Information required by the Impound Unit and Police Chief:

1. Every Cincinnati Police Division rotation wrecker company will submit to the Impound Unit the name and home address of the owner, the location of it's storage facility, telephone number or numbers of the location where the wrecker or wreckers will be maintained, and a description of the type of service said wrecker company is equipped to render
2. The rotation wrecker company will submit to the Cincinnati Police Division the name, address, SS #, and DOB of all persons employed in the towing or storage operation and any additional information as required by the Cincinnati Police Division.
3. Notice in writing to the Police Impound Unit Commander must be made of any change in the information contained in Section I.A.2.

- B. No person, firm, or corporation, on the Cincinnati Police Division wrecker rotation list regulated under Section 869-7, Cincinnati Municipal Code, or their agents or employees shall respond to the scene of an accident unless dispatched as herein provided or engaged by a third person having a direct interest in the vehicle or vehicles involved.**

II. Wrecker and Equipment Requirements.

A. Every wrecker and wrecker operator must meet the following minimum requirements:

1. Every wrecker and impounding premise shall be made available for inspection upon request of the Police Division, including all billing records from Cincinnati Police Division rotation tows, to insure compliance with these rules and regulations.
2. Each wrecker shall be tested every 12 months by a certified inspector designated by the Police Division. Testing and inspection will begin July 1 of each year. Inspections shall be valid until July 31 of the following year. The Police Division may make additional tests and inspections at anytime.
 - a. Equipment specified in Police Division Form 271 shall be required and inspected and/or tested.
3. The name of the towing company and its address or telephone number will be permanently painted or affixed on the left and right sides of the wrecker. The name and address or telephone number shall be readily visible to the public and consist of letters and numbers of at least four inches in height. All wrecker equipment and wrecker personnel will maintain a professional appearance.
4. The Cincinnati Police rotation sticker (i.e., PR) shall be affixed to the lower right corner of the windshield of the wrecker. Any expired police rotation sticker shall be promptly removed. Any police rotation sticker shall be destroyed whenever the wrecker is disposed of or the towing company's issued rotation sticker is revoked. Removal is the responsibility of the wrecker owner.

B. Minimum Capacity of all Wreckers.

1. Any wrecker of less than 10,000 pounds gross vehicle weight (GVW) with dual rear wheels cannot be issued a City of Cincinnati Towing License.

<u>Classification</u>	<u>Manufacturer's Rated Capacity (GVW)</u>
Regular Wrecker	10,000 lbs. GVW
Heavy Duty Wrecker	50,000 lbs. GVW

2. The manufacturer's capacity of the winch, winchline, crane, and boom shall meet or exceed the following:

<u>Classification</u>	<u>Capacity of Winch, Winchline,* Crane & Boom</u>
Regular Wrecker	5,000 lbs. (power)
Heavy Duty Wrecker	50,000 lbs. (power)

*Single line capacity, flexible hoisting rope, 6 x 37, improved plow steel, is recommended.

3. The manufacturer's rated capacity shall meet or exceed the following:

<u>Wrecker Size</u>	<u>Cable Size (meeting above rated capacity)</u>
Regular Wrecker	5/16 inch or larger
Heavy Duty Wrecker	5/8 inch or larger

- C. Anyone contemplating additions or changes in wrecker equipment may request assistance from the Impoundment Unit Supervisor to assure himself of meeting minimum requirements.

III. Regulations Regarding Police Rotation Tows or Moves.

A. Security requirements at the storage facility shall, at a minimum, meet the following standards:

- Fencing:** Eight feet high completely enclosing the facility.
- Office:** Must be attended during company's normal hours of operation.
- Telephone:** Service must be registered at the actual location of the facility.
- Lighting:** Of sufficient intensity to provide for security of the stored vehicles and the personal safety of the persons responding to the facility for release.
- Capacity:** Capable of storing at least 15 vehicles.

B. Rotation wreckers will be employed to remove vehicles involved in accidents, to impound vehicles under Section 513-1, Cincinnati Municipal Code, to move certain vehicles where impoundment is not necessary, to legally impound any vehicle, or to remove other heavy objects necessary to police investigations, such as safes.

C. In order to expedite removal of vehicles blocking traffic, creating hazardous conditions, blocking private drives, etc., and to minimize lost police officer man hours waiting for wrecker service, rapid wrecker response is necessary. Therefore, a wrecker operator:

1. Will not accept a run unless the wrecker operator can respond immediately. Thirty minutes is the maximum response time day or night.
2. Will not refuse a tow or move when dispatched.
3. Must respond from a point within the wrecker operator's district off assignment except at the discretion of the Impound Unit Supervisor. District assignments may vary according to need.

D. A vehicle removed by a wrecker under Section 869-7, Cincinnati Municipal Code, shall not be taken outside the corporate limits of the City of Cincinnati for storage without written permission of the owner or operator of the vehicle removed.

E. Payment for services will be made on a monthly basis after receipt of a claim voucher(s) from the towing operator.

F. Definitions.

1. A "Move Only" is defined as "a vehicle moved from one location to another within the immediate vicinity when impoundment is not intended."
2. A "Regular Tow" is defined as "capable of being removed by a single boom tow, or a roll back tow."
3. A "Special Event Tow" is defined as "when tow operator remains with police officer for a specified period of time towing or moving vehicles as need arises. (e.g. snow emergencies, parade details, etc.)"

G. All wrecker storage facilities will post a sign approved by the Cincinnati Police Division Impound Unit Commander. The sign will state the set rotation fees established by these wrecker rules and regulations for auto accident tows and will be clearly visible to all customers. The lettering on the sign must be one inch in height.

H. Fees paid by the City of Cincinnati are as follows:

1. Move Only: \$15.00 Regular Duty; \$45.00 Heavy Duty
2. Regular Tow: \$35.00 an hour. One hour minimum, then increments of fifteen minutes rounding to the higher dollar up to \$35.00; i.e.,
 - 01-15 = \$09.00
 - 16-30 = \$18.00
 - 31-45 = \$27.00
 - 46-00 = \$35.00
3. If it is necessary to use a heavy duty wrecker, add \$65.00 to the regular tow fee of \$35.00 for the first one hour minimum, then increments of fifteen minutes rounding to the higher dollar up to \$100.00; i.e.,
 - 01-15 = \$25.00
 - 16-30 = \$50.00
 - 31-45 = \$75.00
 - 46-00 = \$100.00
4. Special Event Tow: \$20.00 per tow or \$35.00 per hour, whichever is greater.
5. If a heavy object, such as a safe is handled, the fee shall be the same as for a regular tow, \$35.00.
6. If an extra wrecker is required to "right" or remove the vehicle, charge \$35 for the first hour (labor included), and \$35.00 an hour labor in increments of fifteen minutes rounding to the higher dollar up to \$35.00 for every hour after the first hour.
7. The Impoundment Unit Supervisor will verify all charges above regular tow fees. In extenuating circumstances or extreme cases where additional equipment or labor is required, adjustments may be made to the fee upon review, and with concurrence of the Impoundment Unit Supervisor or his immediate supervisor.

I. Fees to be charged for rotation tows by rotation wreckers when the vehicle is taken to and stored at the rotation wreckers lot are as follows:

1. Follow section 513-7 of the Cincinnati Municipal Code; i.e., basic impoundment charge of \$90.00 (includes initial \$35.00 tow fee), \$12.00 per day storage fee (includes day of impoundment), and additional \$50.00 fee charged on any motor vehicle the owner has willfully failed to claim within 120 hours after the notice of impoundment has been mailed, or personally given to the registered owner. (ALS and Auto Recoveries are excluded from the \$50.00 fee)
2. Fees after the one hour minimum; follow the fee schedule in section III H 2 of this document.
3. Fees for heavy duty tows; add \$60.00 to the basic impoundment charge of \$90.00 for a total of \$150.00 for the one hour minimum. Fees after the one hour minimum; follow the fee schedule in section III H 3.
4. Follow section 4513.61 of the Ohio Revised Code.

IV. Administration of Chapter 869, Cincinnati Municipal Code.

- A. The following regulations govern the Department of Safety and the Department of Finance relative to the administration of Chapter 869, Cincinnati Municipal Code.
1. All information solicited in Section I.A.1 will be investigated, catalogued, and filed in the office of the Police Division's Impoundment Unit and utilized to provide for the efficient dispatch of wrecking and towing equipment licensed under said chapter.
 2. Positions on the police rotation towing list are assigned by the Impound Unit Commander and are based on the needs of the Cincinnati Police Division. The list or schedule of available wreckers maintained at Police Communications Section will be classified according to police district boundaries. Additions or deletions to the police rotation list are done at the discretion of the Police Division.
 3. A rotation wrecker will be dispatched by police personnel to any location in the police district in which the wrecker's business, equipment and storage facilities are situated, except at the discretion of the Impound Unit Commander.
 - a. The police dispatcher may, if wreckers are unavailable in a certain district, utilize a wrecker(s) from another district(s).
 - b. While the purpose underlying the dispatching of rotation wrecking or towing equipment is that of providing an emergency service, the scheduling of such dispatching will equitably distribute the calls for such service among wrecker rotation companies registered in a common police district.
 4. The Police Chief or the Police Chief's designee shall have the authority to remove a company from the police rotation towing list for a period of seven days or less if the wrecker(s) and storage facility are not maintained or operated as required by these rules and regulations, or Chapter 869 of the Cincinnati Municipal Code. Repeat violations may result in the Police Chief or the Police Chief's designee removing the driver or the wrecker company from the police rotation list, including, but not limited to, permanent removal.
 5. The following will also be considered as a basis for removal from the police rotation towing list:
 - a. Post accident damage to a motor vehicle towed by the wrecker company and/or the company's failure to cooperate with the damage claimant.
 - b. Missing or exchanged parts, accessories, or property.
 - c. Any unnecessary delay, intimidation, threats of excessive charges or any other means which denies the owner or the owner's authorized agent prompt possession of the property.
 - d. Non-compliance with professional conduct and appearance as deemed appropriate by the Impound Unit Commander.

e. The company or the company's employee operating a wrecker in violation of Ohio law or local law.

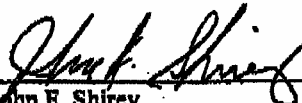
1. Any violation of Chapter 45 of the Ohio Revised Code or Title V titles "Traffic Code" of the Cincinnati Municipal Code which occurs during the operation of a licensee's wrecker and which results in two points being placed against the wrecker operator's driver's license pursuant to Ohio Revised Code Section 4507.021 shall be cause for temporary removal of the licensee's participation in the police rotation towing list for a period not exceeding seven days. Violations which result in the imposition of four or more points pursuant to Ohio Revised Code Section 4507.021 against the wrecker operator's driver's license shall be cause for the permanent removal from the police rotation list.

f. Repeated violations of these rules and regulations by the company and/or the company's employees.

B. Appeal of Suspension

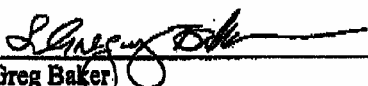
1. When a company is removed from the police rotation towing list, the company may appeal the removal to the Impoundment Unit Supervisor within 10 days after written notification of such removal. The Police Chief or the Police Chief's written designee will conduct a hearing, concerning the matter, and may sustain, reduce, or eliminate any removal or recommendation for revocation.

APPROVED:



John F. Shirey
City Manager

9/27/01
Date



Greg Baker
Director of Safety

9/21/01
Date

*CONNECTICUT DEPARTMENT OF PUBLIC SAFETY
REGULATIONS FOR OPERATING A WRECKER ROTATIONAL SYSTEM*

DEPARTMENT OF PUBLIC SAFETY

**REGULATIONS CONCERNING THE OPERATION OF A ROTATIONAL SYSTEM
FOR SUMMONING WRECKERS**

The Regulations of Connecticut State Agencies are amended by adding Sections 29-23a-1 to 29-23a-17, inclusive, as follows:

(NEW) **Sec. 29-23a-1. Definitions.**

As used in Sections 29-23a-1 to 29-23a-17, inclusive:

- (1) "GVWR" means gross vehicle weight rating;
- (2) "Light-duty service wrecker operator" means a wrecker operator with a wrecker of 11,000 pounds or greater GVWR and a one-car carrier of 14,500 pounds or greater GVWR;
- (3) "Heavy-duty service wrecker operator" means a wrecker operator with two wreckers of 31,000 pounds or greater GVWR and boom capacity of 25 tons and 20 tons, respectively; and
- (4) "Wrecker operator" means a wrecker operator participating in the rotational system established by Sections 29-23a-1 to 29-23a-17, inclusive.

(NEW) **Sec. 29-23a-2. Equipment Requirements for Light-duty and Heavy-duty Service Wrecker Operators.**

- (a) A wrecker of the type referred to in subdivision (2) of Section 29-23a-1 shall be equipped with a single winch and wheel lift. Such winch shall have a minimum capacity of 8,000 pounds.
- (b) In addition to the requirements set forth in subdivision (3) of Section 29-23a-1, a heavy-duty service wrecker operator shall have available at least one wrecker with an under-reach axle lift. Such wrecker shall be capable of towing a loaded tractor-trailer unit. This requirement may be satisfied by a third dedicated under-lift vehicle without a boom. A heavy-duty service wrecker operator shall also have available sufficient auxiliary equipment to right overturned vehicles and perform other vehicle recovery operations.
- (c) A wrecker operator shall not tow a motor vehicle if the load the towed vehicle places on the wrecker boom assembly exceeds the wrecker's rated boom capacity, or if the weight of the wrecker and the load exceeds the maximum weight rating of the wrecker's axle assemblies as set forth in subsection (b) of Section 14-267a of the Connecticut General Statutes.

(NEW) **Sec. 29-23a-3. Rotational System for Summoning Wreckers.**

State police troop commanders may prepare separate rotational lists for light-duty and heavy-duty service wrecker operators for each municipality within the geographical area covered by each state police troop. If there is no wrecker service within municipal borders, the troop commander shall establish a rotational list of wrecker operators from adjoining municipalities.

(NEW) Sec. 29-23a-4. Placement on Rotational Lists.

- (a) A wrecker operator seeking placement on any rotational list shall apply to the troop commander of the state police troop whose jurisdiction includes the municipality where the wrecker operator's business is located.
- (b) A wrecker operator may hold only as many places on a rotational list as it has locations licensed by the Commissioner of Motor Vehicles under authority of sections 14-51 to 14-65j, inclusive, of the Connecticut General Statutes, and Sections 14-63-1 to 14-63-49, inclusive, of the Regulations of Connecticut State Agencies.
- (c) The state police troop commander or his or her designee shall confirm that each wrecker operator is able to provide prompt and efficient service and meets all requirements of sections 14-12(h), 14-51 to 14-65j, inclusive, and 14-66 of the Connecticut General Statutes, and Sections 14-63-1 to 14-63-49, inclusive, of the Regulations of Connecticut State Agencies, which pertain to vehicle safety and mechanical standards, dealer/repairer licensing and wrecker licensing.

(NEW) Sec. 29-23a-5. Performance Standards.

Wrecker operators shall be available 24 hours per day, seven days per week, and shall respond to calls for service on limited-access highways no later than 20 minutes after notification by state police, 30 minutes in all other locations. Where traffic conditions warrant, required response times may be reduced at the discretion of the state police troop supervisor on duty or his or her designee. Where a shorter response time is required, the wrecker operator shall be so advised when notified of the call for service.

(NEW) Sec. 29-23a-6. Qualification of Drivers.

Six months after the effective date of Sections 29-23a-1 to 29-23a-17, inclusive, drivers for wrecker operators participating in the state police rotational system shall successfully complete the National Driver Certification Program of the Towing and Recovery Association of America or a certification program approved by the Commissioner of Public Safety. Thereafter, drivers shall be certified in accordance with the provisions of this section six months after they begin work for a wrecker operator participating in the state police rotational system. Drivers who can demonstrate that they have at least 10 years of experience operating wreckers need not be certified. Applicants may prove that they have the requisite experience by providing the Commissioner of Public Safety with an employment history.

(NEW) Sec. 29-23a-7. Operation of the System.

- (a) The state police troop supervisor on duty or his or her designee shall use rotational lists to arrange the towing or transportation of disabled motor vehicles if the vehicle owner or operator is incapacitated, unavailable or leaves the procurement of wrecker service to the trooper at the scene.
- (b) If the vehicle owner or operator is present and able to respond, the trooper shall inquire whether he or she wishes to choose a wrecker service. If he or she wishes to do so, the troop shall notify the wrecker operator selected, except as set forth in subsection (c) of this section.
- (c) If the wrecker operator chosen in accordance with subsection (b) of this section cannot be contacted, or is unable or unwilling to respond within the response times set forth in Section 29-23a-5, the next available wrecker operator on the rotational list for the type of towing operation required shall be summoned to the scene to provide service.

(NEW) Sec. 29-23a-8. Emergencies.

- (a) In the event of emergency, the state police troop supervisor on duty or his or her designee shall determine the most expeditious method of obtaining wrecker service. In making such determination, consideration may be given to weather conditions, traffic

density and speed, the number of other calls for police services and the availability of police personnel.

- (b) If a wrecker operator is summoned out of rotational sequence due to an emergency, the wrecker operator summoned shall be considered to have received its next rotational call.

(NEW)

Sec. 29-23a-9. Responsibilities of Wrecker Operators.

- (a) All wrecker operators shall meet the response times set forth in Section 29-23a-5. The wrecker operator receiving the call for service shall perform the required service. The call for service may not be delegated to another wrecker operator.
- (b) Wrecker operators shall promptly and efficiently remove from the roadway designated vehicles, associated debris and spills of fluids used in vehicle operations, such as gasoline, oil or antifreeze. Vehicles shall be removed to the wrecker operator's place of business, an alternate storage location approved by the Commissioner of Motor Vehicles, a location requested by the vehicle owner or operator, or a facility under state police control in furtherance of a criminal investigation. Debris shall be removed to the wrecker operator's place of business, unless directed otherwise by state police, or employees of the Connecticut Departments of Environmental Protection or Transportation.
- (c) The wrecker operator shall obtain the approval of the trooper at the scene prior to departing from the scene of the call for service. The trooper at the scene shall confirm that the roadway has been substantially cleared of all debris prior to releasing the wrecker operator from the scene.
- (d) The wrecker operator shall be responsible for safe removal of the vehicle, its contents and occupants, except where an occupant cannot be legally transported, an arrest has been made or where other arrangements have been made for transportation of occupants. Where the wrecker operator cannot transport all vehicle occupants because of occupancy limitations in the wrecker, the trooper at the scene may assist in providing transportation. Where the trooper at the scene cannot assist in providing transportation, the state police troop supervisor on duty or his or her designee shall make such arrangements as are necessary to safely remove vehicle occupants from the roadway. In order to minimize the likelihood that the wrecker operator cannot transport vehicle occupants because of occupancy limitations, the wrecker operator shall not respond with passengers to a call for service.
- (e) The wrecker operator shall provide the troop with a telephone number allowing contact on a 24-hour, seven-day-per-week basis. No more than one such number each for normal duty hours and other than normal duty hours shall be accepted by the troop.
- (f) A wrecker operator shall notify the appropriate troop before responding to a request for service not transmitted by state police, if such call causes the wrecker operator to perform the service on a road under state police jurisdiction.
- (g) A wrecker operator shall notify the troop whenever a vehicle is removed from the highway pursuant to a rotational call for service, if there is no trooper at the scene at the time the vehicle is to be removed from the highway.
- (h) In addition to the equipment required by section 14-66 of the Connecticut General Statutes, a light-duty service wrecker operator responding to a scene shall be equipped with communications equipment, such as a two-way radio or wireless telephone, a second rear spot light, three triangle reflectors and shovels, brooms and any other equipment necessary to clear the roadway of debris.
- (i) In addition to the equipment required by section 14-66 of the Connecticut General Statutes, a heavy-duty service wrecker operator responding to a call for service shall be

equipped with communications equipment, such as a two-way radio or wireless telephone, a second rear spot light, a total of 10 flares, 10 triangle reflectors, two shovels (one round, one square), one heavy-duty push broom, two pry bars, one bolt cutter, 10 large T-bolts and shut off fittings for buses. Heavy-duty service wrecker operators shall also be capable of providing air to the towed vehicle to facilitate brake system operation.

- (j) Vehicle storage facilities shall be used and maintained in accordance with section 14-66 of the Connecticut General Statutes and Sections 14-63-34 to 14-63-37b, inclusive, of the Regulations of Connecticut State Agencies.

(NEW) **Sec. 29-23a-10. Discharge from a Scene.**

- (a) Whenever the trooper at the scene finds that the wrecker operator is incapable of safe removal of the vehicle, or that the actions of the wrecker operator are a hazard to any person or property, he or she may order that the wrecker operator leave the scene.
- (b) Whenever a wrecker operator is ordered from the scene, the trooper who took such action shall submit a written report to the troop commander regarding the circumstances of the incident and the reasons for discharge of the wrecker operator from the scene.

(NEW) **Sec. 29-23a-11. Additional Equipment at the Scene.**

When the wrecker operator at the scene of a call for service determines that additional equipment is necessary to effectuate removal of the vehicle, the wrecker operator shall inform the trooper at the scene that additional equipment is necessary. If the wrecker operator cannot obtain the necessary equipment within a reasonable time of such notification, then the trooper at the scene shall inform the state police troop supervisor on duty or his or her designee of the additional equipment requirements. Such equipment then may be obtained from the nearest known provider able to furnish the equipment requested. The provisions of this section shall not relieve a wrecker operator of the obligation to respond to a call for service with the equipment required by subsections (h) or (i) of Section 29-23a-9.

(NEW) **Sec. 29-23a-12. On-site Repairs.**

The trooper at the scene of a call for service may request that the wrecker operator provide on-site repairs including, but not limited to, starting the vehicle's ignition or changing a tire. The wrecker operator may refuse to perform such repairs if he or she reasonably believes that remaining at the site is likely to result in unnecessary risk of physical harm or property damage.

(NEW) **Sec. 29-23a-13. Troop Procedures for Summoning Wreckers.**

- (a) The state police troop supervisor on duty or his or her designee shall contact wrecker operators by telephone in accordance with the requirements of this section. If there is no answer after 10 rings, or the person placing the call encounters a busy signal, the number shall be dialed a second time to ensure that it is correct. If there is no answer a second time, the call shall be logged and the next wrecker operator on the rotational list shall be contacted. In the event of a busy signal, the state police troop supervisor on duty or his or her designee shall attempt to reach the wrecker operator two more times after the initial call before contacting the next wrecker operator on the rotational list. If the state police troop supervisor on duty or his or her designee placing the call reaches an answering service, answering machine or pager system, he or she shall leave a message. Where traffic conditions require a more immediate response, the state police troop supervisor on duty or his or her designee may contact the next wrecker operator on the list after the first call is met with a busy signal, answering service, answering

machine or pager system. Any wrecker operator that cannot be reached when contacted shall be placed at the end of the rotational list.

- (b) It shall be the responsibility of the wrecker operator to contact the troop and confirm receipt of a call for service received by an answering service, answering machine or pager system. If the wrecker operator does not confirm receipt of the call for service within 10 minutes of notification by state police, or sooner if traffic conditions warrant, the state police troop supervisor on duty or his or her designee may treat the call as if there had been no answer. Where traffic conditions make it impracticable to wait 10 minutes, the wrecker operator who cannot be reached in a timely manner because of the use of an answering service, answering machine or pager system shall be placed at the end of the rotational list.

(NEW) **Sec. 29-23a-14. Unsatisfactory Service.**

The trooper at the scene of a call for service who observes unsatisfactory service by a wrecker operator shall file a written report of such unsatisfactory service with the troop commander.

(NEW) **Sec. 29-23a-15. Waiver.**

The Commissioner of Public Safety shall grant variations or exemptions from, or approve equivalent or alternate compliance with, Sections 29-23a-1 to 29-23a-17, inclusive, where strict compliance with such provisions would entail practical difficulty or unnecessary hardship or is otherwise adjudged unwarranted, provided any such variation, exemption, approved equivalent or alternate compliance shall, in the opinion of the Commissioner of Public Safety, secure the public safety.

(NEW) **Sec. 29-23a-16. Removal from List.**

- (a) A wrecker operator may be removed from one or more rotational lists for failing to meet the requirements of Sections 29-23a-1 to 29-23a-17, inclusive, or for violating any statute or regulation concerning the operation of a motor vehicle repair, towing, or storage facility, or any statute or regulation concerning the operation of a motor vehicle.
- (b) Before a wrecker operator may be removed from a rotational list, the state police troop commander responsible for such list shall forward to a hearing officer designated by the Commissioner of Public Safety to conduct removal proceedings a written complaint specifying the reasons that removal is sought. Removal proceedings shall be conducted as required by Section 29-23a-17.

(NEW) **Sec. 29-23a-17. Hearings.**

Proceedings to remove a wrecker operator from any rotational list shall be conducted in accordance with the requirements of Chapter 54 of the Connecticut General Statutes, the Uniform Administrative Procedure Act, and the regulations of the Department of Public Safety concerning hearings, Sections 29-2-1 to 29-2-10, inclusive.

STATEMENT OF PURPOSE: To establish regulations for the operation of a rotational system for summoning wreckers pursuant to Section 29-23a of the Connecticut General Statutes.

*VIRGINIA DOT CITY/REGION-BASED LICENSE
INVITATION FOR BIDS*

I. PURPOSE

The purpose of this Invitation for Bids is to establish a contract with one or more qualified contractor(s) to provide all labor, equipment, and qualified personnel to perform wrecker service to remove vehicles from the HOV Diamond Lanes and HOV Reversible Roadway System in the cities of Chesapeake, Norfolk, and Virginia Beach. The wrecker service shall be on call twenty-four (24) hours a day, seven (7) days a week, and shall drop the disabled vehicle at the closest exit off the roadway in a safe location at the times and frequencies specified herein.

II. LOCATION OF WORK – Towing Limits

I-64 HOV Diamond Lanes: From Battlefield Blvd. Interchange in Chesapeake to the I-64/I-264/Route 44 Interchange in Virginia Beach. Disabled vehicles shall be towed at no expense to the motorists if disabled anywhere on the mainline section of roadway (Monday – Friday) westbound from 5:00 a.m. to 8:30 a.m.; and eastbound from 3:00 p.m. to 6:00 p.m.

I-64 HOV Reversible Roadway System: Disabled vehicles shall be towed at no expense to the motorist at all times on the reversible roadway including all associated ramps and flyovers.

Route 44 Shoulder and HOV Diamond Lanes: From Rosemont Road to the I-64/I-264/Route 44 Interchange, disabled vehicles shall be towed at no expense to the motorist if disabled anywhere on the mainline section of roadway (Monday-Friday) westbound from 4:00 a.m. to 9:30 a.m.; and eastbound from 2:00 p.m. to 7:00 p.m.

I-564 HOV Diamond Lanes: From I-64 to the runway tunnel, disabled vehicles shall be towed at no expense to the motorist if disabled anywhere on the mainline section of roadway (Monday- Friday) westbound from 5:00 a.m. to 8:30 a.m. and eastbound from 3:00 p.m. to 6:00 p.m.

III. EQUIPMENT

The wrecker shall be equipped with overhead emergency lights, rear floodlights, wheel lift, and all other standard safety items required for wreckers. Sufficient hand and/or power tools to provide services as outlined in Section IV must also be provided on each wrecker.

IV. APPLICATION

The wrecker shall be operated by a knowledgeable and qualified operator who possesses a valid Virginia Driver's license for the type and size of wrecker being operated. The Contractor shall ensure that employees are identifiable by uniform and safety vest. The wrecker shall be immediately available to remove stalled or damaged vehicles from the HOV Diamond Lanes and HOV Reversible Roadway System. Towing will consist of moving the disabled vehicle to the nearest exit from the freeway and dropping the vehicle in a safe location. The contractor will not be permitted to charge or accept money from motorists for towing the vehicle from point of break down to nearest exit/safe location. The wrecker services will be responsible for any damages resulting from the removal or towing of accident/disabled vehicles from the roadway to include but not limited to the vehicle being towed, the bridge structure and its appurtenances, other vehicles, etc. saving harmless the Commonwealth of Virginia and its employees.

Response Services

The wrecker service will be en route no later than five (5) minutes after being called and arrive at the vehicle to be towed within twenty (20) minutes. Under no circumstances will a vehicle involved in an accident be removed or disturbed until the Virginia State Police, or other law enforcement agency, gives approval for towing. Contractor will pickup, sweep roadway and remove all debris in the roadway resulting from the vehicle accident prior to leaving the scene of the accident.

The wrecker service will supply the Department with documentation, verifying each service call for payment. This documentation should consist of the service ticket issued at the time of towing. The ticket shall be completed in its entirety including date, time, location of pickup and drop off, towing operators name (printed) complete customers name and signature, mailing address, phone number or if military, where stationed or name of ship, name and type of vehicle, license plate (number and state). Any tickets received that are incomplete or illegible will not be processed for payment. The decision to not pay an illegible or incomplete ticket will be at the discretion of the Department.

The Department will pay the wrecker service as stated herein for the quoted rate per size of of vehicle per tows as follows:

Vehicles Van/ sport utility vehicle size or smaller

Vehicles larger than a van/ sport utility vehicle

This price shall be full compensation to the contractor for furnishing, operating, and maintaining all materials, labor, tools, equipment, and incidentals necessary to complete the work.

In the event the Motorist requests the Contractor to carry the disabled vehicle beyond the nearest exit/safe location, the motorist shall only be responsible for the additional towing cost from nearest exit/safe location to the requested drop off point. This additional towing cost to the motorist will be charged at the established rate per mile quoted on the pricing schedule. The Contractor shall be equipped and capable of accepting payment from the motorist for extended towing services in any form: cash, check, or credit card. If the Department finds that any towing operator has encouraged a motorist by intimidation or pressure to pay in cash, that towing operator shall not be allowed to perform further services of this contract. If after the Department has requested that said towing operator no longer perform services for this contract, and the operator is found to continue performing service, the Department reserves the right to refuse payment for those services.

Storage

Any vehicles that are towed to the Contractor's compound for storage shall be stored for the first forty-eight (48) hours at no cost to the motorist. Any additional twenty-four (24) hours intervals shall be billed to the motorist at the quoted price on the Pricing Schedule per twenty-four (24) hour intervals. The twenty-four (24) hour period will begin at the time of pick-up as indicated on the Contractor's ticket.

V. SPECIAL TERMS AND CONDITIONS

Renewal of Contract

This contract may be renewed by the Purchasing Agency for a period of four successive one-year periods only under the terms and conditions of the original contract except as stated in 1., 2., 3., and 4 below. Such written notice shall be given (approximately 90 days) prior to the expiration date of each contract period.

1. If the Purchasing Agency elects to exercise the option to renew the contract for an additional one-year period, the contract price(s) for the additional one year shall be the contract prices of the original contract increased/decreased by no more than the percentage increase/decrease of the "services" category of the CPI-W section of the Consumer Price Index of the United States Bureau of Labor Statistics for the latest twelve months for which statistics are available, as mutually agreed by the Purchasing Agency and the contractor.
2. If during the first one-year renewal the Purchasing Agency elects to exercise the option to renew the contract for the second additional one-year period, the contract price(s) for the second additional one-year period shall be equal to the contract price(s) of the first one-year extension period increased/decreased by no more than the percentage increase/decrease of the "services" category of the CPI-W section for the Consumer Price Index of the United States Bureau of Labor Statistics for the latest twelve months for which statistics are available, as mutually agreed by the Purchasing Agency and the contractor.

3. If during the second one-year renewal the Purchasing Agency elects to exercise the option to renew the contract for the third additional one-year period, the contract price(s) for the third additional one-year period shall be equal to the contract price(s) of the second one-year extension period increased/decreased by no more than the percentage increase/decrease of the "services" category of the CPI-W section for the Consumer Price Index of the United States Bureau of Labor Statistics for the latest twelve months for which statistics are available, as mutually agreed by the Purchasing Agency and the contractor.

4. If during the third one-year renewal the Purchasing Agency elects to exercise the option to renew the contract for the fourth additional one-year period, the contract price(s) for the fourth additional one-year period shall be equal to the contract price(s) of the third one-year extension period increased/decreased by no more than the percentage increase/decrease of the "services" category of the CPI-W section for the Consumer Price Index of the United States of Labor Statistics for the latest twelve months for which statistics are available, as mutually agreed by the Purchasing Agency and the contractor.

Quantities

The quantities of tows listed are approximate and are to be used for bidding purposes only. There will be no additional compensation allowed for overruns or underruns to these estimates.

Award

VDOT will make the award to the lowest responsive, responsible bidder based on a total lump sum basis. The purchasing office reserves the right to conduct any test it may deem advisable to make all evaluations. The Commonwealth also reserves the right to reject any or all bids, in whole or in part, to waive informalities and to delete items prior to making the award, whenever it is deemed in the sole opinion of VDOT to be in its best interest.

Certificate of Insurance

The successful bidder shall maintain at all times during the performance of the contract, Worker's Compensation, General liability, and Property Damage Insurance with an insurance carrier licensed in the Commonwealth of Virginia. The limits of this insurance must not be less than \$500,000. A certificate of insurance showing this coverage must be submitted prior to an award. It will be required within 14 days after request. VDOT and the Commonwealth of Virginia shall be named as an additional insured and waived subrogation on all Workers' Compensation. Such insurance policies shall not be cancelled by the Contractor or insurance carrier without thirty (30) days prior written notice to VDOT. In the event the Contractor fails to maintain the insurance required, VDOT may cancel, terminate, and / or void the contract. VDOT reserves the right to approve or reject the insurance provider and will give notice of acceptance to the Contractor via a written purchase order.

Insurance Coverage and Limits Required:

1. Worker's Compensation – Statutory requirements and benefits.
2. Employer's Liability – \$100,000
3. Commercial General Liability - \$500,000 combined single limit. The Commonwealth of Virginia is to be named as an additional insured with respect to the services being procured. This coverage is to include Premises/Operators Liability, Products and Completed Operations Coverage, Independent Contractor's Liability, Owner's and Contractor's Protective Liability and Personal Injury Liability.
4. Automobile Liability - \$500,000.

APPENDIX K

Montana Professional Tow Truck Act

61-8-901. Short title. This part may be cited as the “Montana Professional Tow Truck Act”.

History: En. Sec. 1, Ch. 283, L. 1995.

61-8-902. Purpose. The legislature recognizes that:

- (1) wrecked, disabled, and abandoned motor vehicles on the public roadways create hazards that imperil lives and property and require expeditious removal;
- (2) officers investigating accidents on the public roadways need immediately available towing and recovery vehicles staffed by competent operators and adequately equipped to clear the roadways and remove hazardous obstructions with minimum damage to property;
- (3) certain standards and classifications are needed for professional tow trucks and equipment used for towing and recovering wrecked, disabled, and abandoned motor vehicles or other objects creating hazards on the public roadways;
- (4) encouragement of a competitive and qualified professional towing industry requires establishment of a uniform and equitable qualification system based on the equipment and the standards provided in [61-8-905](#) through [61-8-907](#) and a system for the fair consideration of all qualified tow truck companies; and
- (5) the use of nonqualified tow truck companies or private motor vehicles to tow or recover for hire wrecked, disabled, or abandoned vehicles creates additional hazards and, except in limited situations, should be prohibited. However, when a person or tow truck company responds in good faith to life-threatening emergency situations, it should not be liable for civil damages for acts or omissions, other than damages occasioned by gross negligence or by willful or wanton acts or omissions.

History: En. Sec. 2, Ch. 283, L. 1995.

61-8-903. Definitions. As used in this part, the following definitions apply:

- (1) “Commercial tow truck operator” or “operator” means a person, firm, or other entity that owns or operates a commercial tow truck as defined in [61-9-416](#).
- (2) “Department” means the department of justice provided for in [2-15-2001](#).
- (3) “Local government” means a county, a municipality, or other local board or body that has authority to enact laws relating to traffic.
- (4) “Qualified tow truck operator” means a commercial tow truck operator:
 - (a) that has equipment that:
 - (i) meets the requirements of [61-8-906](#), [61-8-907](#), and [61-9-416](#); and
 - (ii) has been classified in accordance with [61-8-905](#); and
 - (b) that participates in the law enforcement rotation system provided for in [61-8-908](#).

History: En. Sec. 3, Ch. 283, L. 1995.

61-8-904. Prohibition -- exception.

- (1) A commercial tow truck operator may not operate for compensation upon the public roadways of this state unless the operator complies with the provisions of [61-8-906](#)(1) and [61-8-907](#).
- (2) A commercial tow truck operator may not participate in the law enforcement rotation system provided for in [61-8-908](#) unless the operator complies with the provisions of [61-8-905](#) through [61-8-907](#).
- (3) Sections [61-8-901](#) through [61-8-908](#) and [61-8-910](#) do not apply to a commercial tow truck operator that does not operate for compensation.

History: En. Sec. 4, Ch. 283, L. 1995.

61-8-905. Classification standards.

- (1) Commercial tow trucks are divided into the following five classes based on the manufacturer's rating:
 - (a) Class A tow truck equipment must have a minimum manufacturer's rating of 4 tons and must be mounted on a truck chassis with a minimum manufacturer's rating of 10,000 pounds gross vehicle weight.
 - (b) Class B tow truck equipment must have a minimum manufacturer's rating of 8 tons and must be mounted on a truck chassis with a minimum manufacturer's rating of 18,000 pounds gross vehicle weight.
 - (c) Class C tow truck equipment must have a minimum manufacturer's rating of 16 tons and must be mounted on a chassis that has a minimum manufacturer's rating of 32,000 pounds gross vehicle Weight.
 - (d) Class D is class A, B, or C tow truck equipment that includes manufactured rollbacks and car carriers with manufacturer's gross vehicle ratings ranging from 10,000 pounds to 30,000 pounds. The rollbacks and car carriers must be mounted on a truck-trailer chassis that, at a minimum, is equal to the minimum gross weight of the rollback or car carrier.
 - (e) Class E includes two or more tow trucks working together with a combined manufacturer's rating of a minimum of 80,000 pounds with access to supportive equipment, such as forklifts, banders, and air bags, for the recovery of rollovers and wrecked, disabled, and abandoned vehicles whose cargo requires special handling. Class E refers to tow truck companies and not to tow truck equipment.
- (2)
 - (a) An operator of non-commercially manufactured or modified tow truck equipment in use on October 1, 1995, that wishes to participate in the law enforcement rotation system must have its equipment classified by the department within a time period set by the department. Once the equipment is classified, further modifications may not be made.
 - (b)
 - (i) The department shall establish a committee composed of members selected from the:
 - (A) tow truck industry;
 - (B) the motor carrier services division of the department of transportation; and
 - (C) the highway patrol.
 - (ii) The committee is responsible for hearing disputes that may arise regarding the classification of non-commercially manufactured or modified tow truck equipment.
 - (iii) The department shall establish by rule a procedure for hearing a dispute.
 - (c) After October 1, 1995, an operator of new non-commercially manufactured or modified tow truck equipment must have its equipment independently certified before participating in the law enforcement rotation system.

History: En. Sec. 5, Ch. 283, L. 1995.

61-8-906. Liability insurance—storage requirements.

- (1) Notwithstanding the provisions of [61-6-301](#), a commercial tow truck operator shall continuously provide:
 - (a) insurance against loss resulting from liability imposed by law for bodily injury or death or damage to property caused by the maintenance or use of a commercial tow truck, as defined in [61-9-416](#), or occurring on the business premises of a commercial tow truck operator in an amount not less than:
 - (i) \$300,000 for class A tow trucks;
 - (ii) \$500,000 for class B tow trucks; and
 - (iii) \$750,000 for class C tow trucks;
 - (b) insurance to cover the damage to cargo or other property entrusted to the care of the commercial tow truck operator; and
 - (c) garage keepers legal liability insurance.
- (2) A qualified tow truck operator shall provide a storage facility, either a fenced lot or a building, that is:
 - (a) adequate for the secure storage and safekeeping of stored vehicles;
 - (b) located in a place that is reasonably convenient for public access;
 - (c) available to public access between 8 a.m. and 5 p.m., Monday through Friday, excluding legal holidays; and
 - (d) large enough to store all the vehicles towed for law enforcement agencies.

History: En. Sec. 6, Ch. 283, L. 1995.

61-8-907. Inspection—fees—decal.

- (1) The tow truck equipment of a commercial tow truck operator must have an annual safety inspection. A highway patrol officer, an employee of the department of transportation appointed as a peace officer in accordance with [61-12-201](#), or an inspector certified by the department shall conduct the inspection and require the commercial tow truck operator to provide proof of compliance with the provisions of [61-8-906](#).
- (2) (a) Upon satisfactory completion of the inspection and verification of the insurance requirements, a decal showing the last inspection date and the expiration date of the insurance coverage must be affixed in a prominent place on the tow truck.
 - (b) If the commercial tow truck operator is participating in the law enforcement rotation system, the decal must also show the classification of the operator's tow truck equipment.
- (3) The department may establish an inspection fee that may not exceed the actual costs of the inspection. The fees must be deposited in the state highway account in the state special revenue fund.

History: En. Sec. 7, Ch. 283, L. 1995.

61-8-908. State law enforcement rotation system -- local government rotation system.

- (1) The department shall establish an equitable rotation system among qualified tow truck operators that apply to the department in writing to be placed on the system. The rotation system:
 - (a) must be administered by the highway patrol in a manner that will give priority to public safety;
 - (b) must be based on the classification of equipment as provided in [61-8-905](#); and
 - (c) may include only qualified tow truck operators.
- (2) The rotation system is not applicable when the owner or driver of a wrecked or disabled vehicle obstructing a public roadway requests a tow truck operator of the owner's or driver's choice and the operator meets the insurance requirements provided in [61-8-906](#) and the safety inspection requirements provided in [61-8-907](#).
- (3) (a) (i) The law enforcement officer at the scene of the wreck shall call the qualified tow truck operator that is next on the rotation list if:
 - (A) a request for a tow truck is not made by the owner or driver;
 - (B) the requested tow truck cannot respond in a timely manner; or
 - (C) the law enforcement officer determines that the requested tow truck is unable to handle the wrecked or disabled vehicle.
 (ii) If the qualified tow truck operator is not classified to handle the wrecked or disabled vehicle, the officer shall call the qualified tow truck operator next on the rotation list that is classified to handle the wrecked or disabled vehicle.
 - (b) If a qualified tow truck operator classified to handle the wrecked or disabled vehicle is not reasonably available, the law enforcement officer may request other equipment to remove the hazard.
- (4) The department shall administer the state law enforcement rotation system. A qualified tow truck operator may examine the rotation system schedule established by the department in order to determine if the system is being administered in an equitable manner.
- (5) A qualified tow truck operator gives implied consent to a reasonable inspection during normal business hours of its premises, vehicles, and equipment by the department of transportation, highway patrol, or a local government to ensure compliance with [61-8-905](#) through [61-8-907](#).
- (6) A local law enforcement agency may adopt and administer a local law enforcement rotation system. A tow truck operator desiring to be placed on the local law enforcement rotation system must be a qualified tow truck operator as provided in this part.

History: En. Sec. 8, Ch. 283, L. 1995.

61-8-909. Good faith immunity. A person who renders assistance in an emergency that is life-threatening to the occupant of a wrecked, disabled, or abandoned vehicle or that is creating an immediate hazard on a public roadway or who renders emergency assistance as directed by a law enforcement officer or other emergency responder at the scene of a motor vehicle accident is immune from damages arising from acts or omissions related to the rendering of assistance unless the damages are occasioned by the gross negligence or by the willful or wanton acts or omissions of the person rendering the assistance.

History: En. Sec. 9, Ch. 283, L. 1995.

61-8-910. Violation -- penalty. A commercial tow truck operator that violates a provision of [61-8-906](#) or [61-8-907](#) is guilty of a misdemeanor and is subject to the penalty provided in [61-8-711](#).

History: En. Sec. 10, Ch. 283, L. 1995.

61-8-911. Rulemaking authority. The department shall adopt reasonable and necessary rules to administer the provisions of this part.

History: En. Sec. 11, Ch. 283, L. 1995.

APPENDIX L

Minnesota Incident Management Coordination Team Guidelines for Disabled Vehicle/PDO Crash Removal

Disabled Vehicle

The majority of incidents on the freeway system are disabled vehicles. If a Highway Helper is available, some disabled vehicles can be fixed quickly. In other situations, the vehicle must be towed. All disabled vehicles should be moved to the shoulder (preferably the right shoulder) or pushed out of the traveled lane.

Law Enforcement:

BLOCKING

- Protect the scene by proper placement of squad utilizing emergency lights to the rear.
- If **unoccupied** blocking:
 - Immediately call MSP Dispatch for a Zone Tow for rapid removal.
 - Complete impound document and notify MSP Dispatch with appropriate vehicle identification information.
- If **occupied** blocking:
 - Coordinate with the motorist a method and site to push the vehicle onto a non-blocking location.
 - Work with motorist for a quick removal from the right of way after clearing vehicle from lane of traffic by contacting Highway Helper, tow truck or other appropriate parties.

NOT BLOCKING – No Hazard

- If **unoccupied**:
 - Run registration checks and mark the vehicle with freeway paint or red tag document to monitor time frame which vehicle has been abandoned.
 - First available opportunity, remove vehicle from roadway using State Patrol General Order Guidelines, which reference this type of incident (*currently 2 hour grace period on controlled access freeway*).
- If **occupied**:
 - Work with motorist for a quick removal from the right of way by contacting Highway Helper, tow truck or other appropriate or requested parties.

Towing Operator:

BLOCKING—STATE PATROL NOT ON SCENE

- When traffic conditions allow, position tow truck behind the blocking vehicle so that the warning lights can protect the scene until help arrives.
- If **unoccupied** blocking:
 - Wait until law enforcement arrives on the scene and then position the tow truck for removal of the vehicle.
 - If traffic conditions allow the removal of the vehicle before the Patrol arrives, remove the vehicle and tow to the nearest safe location (usually the right shoulder).
 - Notify the Patrol of your location.
- If **occupied** blocking:
 - If the owner of the vehicle gives consent to move the vehicle, move the vehicle to a safe place.
 - If the owner does not give you consent to remove the vehicle, stand by until the Patrol arrives.

NOT BLOCKING – Hazard

- If **unoccupied**:
 - Position your truck so that its warning light will protect the scene.
 - Wait until the Patrol arrives on the scene.
 - Communicate with the trooper about the towing procedures.
 - Position the tow truck for the removal of the vehicle.

- **If occupied:**
 - Protect the scene by positioning your tow truck so that the warning lights will warn oncoming traffic.
 - Advise the owner of the vehicle that the Patrol is on its way.
 - If the owner of the vehicle gives consent to remove the vehicle, begin the towing process if it can be done in a safe manner.
 - If the owner does not give you consent to remove the vehicle, stand by until the Patrol arrives.

These events may differ considerably due to traffic, weather, time of day, and road conditions.

Highway Helper:

BLOCKING

- If first to arrive and traffic conditions allow, protect the scene by proper placement of vehicle utilizing emergency lights to the rear and/or chevron arrow and notify TMC.
- **If unoccupied blocking:**
 - Immediately call for a Zone Tow for rapid removal.
- **If occupied blocking:**
 - Coordinate with the motorist a method and site to push the vehicle to a non-blocking location.
 - Work with motorist for a quick removal from the right of way after clearing vehicle from lane of traffic. Render assistance, call for tow truck or transport motorist to off-freeway location.

NOT BLOCKING – No Hazard

- **If unoccupied:**
 - Mark the vehicle with freeway paint or red tag document to monitor time frame which vehicle is abandoned.
- **If occupied:**
 - Work with the motorist for a quick removal from the right of way by rendering assistance, calling for a tow truck or transporting motorist to an off-freeway location.

Fire Service:

Usually not a responding agency – Contact MSP Dispatch for driver assistance.

Mn/DOT Maintenance:

Usually not a responding agency – Contact DOT Maintenance Dispatch for driver assistance.

Crash – Property Damage

Property damage crashes are very common during stop and go congestion. These are usually rear-end crashes and the drivers will usually relocate their vehicles to the shoulder before law enforcement arrives.

Law Enforcement:

- Upon arrival, protect the scene by utilizing squad car with emergency lights activated to the rear.
- Once it is determined that there are no injuries to party, attempt to move vehicles onto the same side of the roadway if possible (either all on right shoulder or all on left shoulder).
- If needed, request further assistance for traffic direction and scene protection and/or utilize additional traffic control devices such as cones or flares.
- Call for Zone Tow immediately if vehicles have been rendered immovable due to damage. Advise Tow through Dispatch of any special tow equipment that will be needed.
- Obtain necessary information from involved parties.
- Maintain control of involved parties allowing them to remain in their respective vehicles or in the safety of the squad car.
- Review physical evidence at scene and take photos, if necessary.
- Have MSP Dispatch contact Mn/DOT Dispatch if there is any roadway or structural damage to state property.
- Clear scene as quickly as possible and consider completing follow-up paperwork off the freeway.

Towing Operator:

PATROL NOT ON SCENE

- If traffic conditions allow, protect the scene by using rear facing warning lights on tow truck.
- Check for injuries.
- If the vehicle needs to be towed and it can be done in a safe manner, then with the owner's consent tow the vehicle to a safe place and advise the Patrol of the location.
- If towing cannot be done in a safe manner protect the scene by the use of flares, flags or cones.

PATROL ON SCENE

- Position tow truck so the towing process can begin.
- Coordinate with MSP trooper for vehicle removal and communicate how to best reenter traffic flow.

Highway Helper:

- If first to arrive, protect the scene by utilizing vehicle with emergency lights and/or chevron arrow activated to the rear and notify TMC.
- Once it is determined that parties are not injured, attempt to move vehicles onto the same side of the roadway if possible (either all on right shoulder or all on left shoulder)
- Provide additional traffic control using cones or flares.
- Coordinate all activities with MSP Trooper once they arrive and clear the scene when no longer needed.

Fire Service:

Usually not a responding agency – Contact MSP for driver assistance.

Mn/DOT Maintenance:


- Usually not a responding agency – Report to Mn/DOT Dispatch for driver assistance.
- If Mn/DOT Maintenance should come across an accident and no other responders have arrived, they should protect the scene, call Mn/DOT Dispatch, check for injuries and render first aid as possible. Coordinate all activities with MSP Trooper once they arrive and clear the scene when no longer needed.
- Mn/DOT employees are allowed to help contain and clean up motor vehicle's own liquids. Sorbent products, and as a last option sand, may be used to contain liquids such as radiator, transmission and hydraulic fluids as well as engine oil, gasoline and diesel fuels at the scene. Mn/DOT employees involved in such activities must have annual "Right-To-Know" training dealing with these liquids.

APPENDIX M


Towing and Recovery Association of America Vehicle Identification Guide

TRAA VEHICLE IDENTIFICATION GUIDE[®]

CLASS 1 • LIGHT-DUTY • (6,000 lbs. or less GVW - 4 tires)*




CLASS 2 • LIGHT-DUTY • (6,001 - 10,000 lbs. GVW - 4 tires)*




Classes 1 and 2 include passenger vehicles, light trucks, minivans, full size pickups, sport utility vehicles and full size vans.


CLASS 3 • MEDIUM-DUTY • (10,001 - 14,000 lbs. GVW - 6 tires or more)*




CLASS 4 • MEDIUM-DUTY • (14,001 - 16,000 lbs. GVW - 6 tires or more)*



CLASS 5 • MEDIUM-DUTY • (16,001 - 19,500 lbs. GVW - 6 tires or more)*




CLASS 6 • MEDIUM-DUTY • (19,501 - 26,000 lbs. GVW - 6 tires or more)*




Classes 3 through 6 include a wide range of mid-size vehicles, delivery trucks, utility vehicles, motorhomes, parcel trucks, ambulances, small dump trucks, landscape trucks, flatbed and stake trucks, refrigerated and box trucks, small and medium school and transit busses.

CLASS 7 • HEAVY-DUTY • (26,001 - 33,000 lbs. GVW - 6 tires or more)*



CLASS 8 • HEAVY-DUTY • (33,001 lbs. and over GVW - 10 tires or more)*



Classes 7 and 8 include a wide range of heavy vehicles, large delivery trucks, motor coaches, refuse trucks, cement mixers, all tractor trailer combinations including double trailers.

Information Needed To Correctly Dispatch Towing and Recovery Units:

- Year, Make and Model of Vehicle to be Towed or Recovered
- DOT Classification (Class 1 – 8 based on GVW)
- Location of Vehicle
- Type of Tow (impound, accident, recovery motorist assist, etc.)
- Additional Vehicle Information
 - 2 wheel drive, 4 wheel drive, all wheel drive
 - damage to vehicle, tire condition
 - vehicle loaded or empty
 - cargo contents
 - does the vehicle have a trailer
 - are the keys with the vehicle

Note: Any vehicle may carry hazardous materials. Advise if placarded.

*** Note:** The Gross Vehicle Weight Rating (GVWR) of the vehicle to be towed or recovered can be found on the identification label on the vehicle's driver's side doorframe. The number of pounds listed on the label can then be compared with the DOT Classification Vehicle Type Chart for the correct DOT class.

Law enforcement communications with towing and recovery operators describing an incident and the vehicles involved can insure quick and efficient clearing of these scenes and less disruption to traffic flow. In an effort to standardize communications, the towing industry is adopting the federal vehicle class standards as outlined herein.

VIN CODES

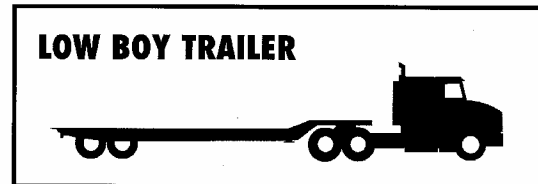
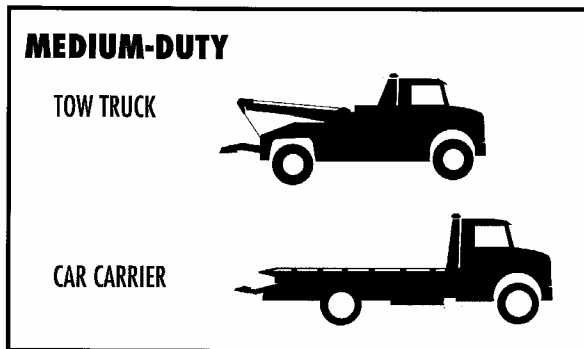
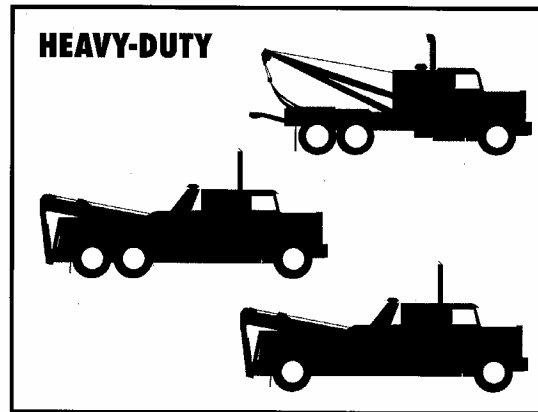
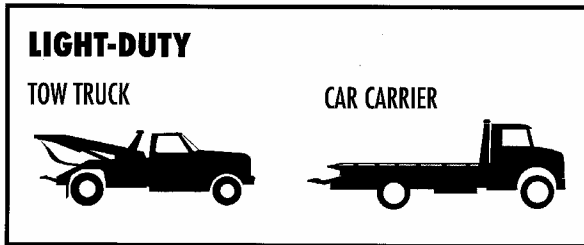
The year of the vehicle is critical information for towing operators in order for them to reference correct towing procedures. The diagrams on the front are examples of classifications. The following information about vehicle identification numbers affixed to the chassis will help determine the vehicle's year. As noted, the vehicle's year, identified by a letter or number in the VIN sequence, is the eighth character from the right.

1P8ZA1279SZ215470

EXAMPLE 1995 VIN NUMBER: _____ ↑

1980.....A	1987.....H	1994.....R	2001.....1	2008.....8
1981.....B	1988.....J	1995.....S	2002.....2	2009.....9
1982.....C	1989.....K	1996.....T	2003.....3	2010.....A
1983.....D	1990.....L	1997.....V	2004.....4	2011.....B
1984.....E	1991.....M	1998.....W	2005.....5	2012.....C
1985.....F	1992.....N	1999.....X	2006.....6	
1986.....G	1993.....P	2000.....Y	2007.....7	

TOW TRUCK/CAR CARRIER CLASSIFICATION



Illustrations © T.T. Publications and Vehicle Identification Guide: ©TRAA

APPENDIX N

Illinois DOT–District 1 Policies and Procedures for Handling an Overturned Semi-Tractor Trailer



Illinois Department of Transportation Memorandum

To: Emergency Traffic Patrol Employees

From: John G. Mitchell

Subject: Policies and Procedures Article 4.14
Expressway Operations. Overturn Semi-Tractor Trailer

Date: June 3, 1999

In determining what action is to be taken in regards to an overturn tractor-trailer, the following factors should be considered:

1. Amount of damage to the vehicle and trailer.
2. Type of load/trailer/cargo/haz-mat.
3. Weight of load.
4. Integrity of trailer.
5. Weather conditions.
6. Time of day. Duration time of recovery efforts.
7. Lane closure or blockage.
8. Safety to public and emergency responders.

Possible course of actions to be considered:

1. Uprighting
2. Relocating by dragging entire vehicle.
3. Use of air cushions.
4. Offloading.
5. Private recovery firms.

Supervisor course of action:

1. Consider all possible recovery efforts.
2. Make a decision based on factors stated above with safety as top priority.
3. Consult with other agency supervisors on the scene and/or ETP manager.
4. Removal and/or relocating of the unit in question should be the nearest/safest area possible.

All attempts to recover from the incident should be done using all available and necessary manpower and equipment including that of other agencies of government that are on the scene or could be called to the scene.

Again consider all factors present and take the best and safest possible course of action.

Abbreviations used without definition in TRB Publications:

AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
APTA	American Public Transportation Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
IEEE	Institute of Electrical and Electronics Engineers
ITE	Institute of Transportation Engineers
NCHRP	National Cooperative Highway Research Program
NCTRP	National Cooperative Transit Research and Development Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
SAE	Society of Automotive Engineers
TCRP	Transit Cooperative Research Program
TRB	Transportation Research Board
U.S.DOT	United States Department of Transportation