Responder Safety

ntimc
National Traffic Incident Management Coalition

NATIONAL UNIFIED GOAL (NUG) FOR TRAFFIC INCIDENT MANAGEMENT

The opportunity to enhance the safety of incident scenes is a key motivator for law enforcement, fire, emergency medical services (EMS), and towing and recovery to participate with transportation responders in traffic incident management programs.

While secondary incidents involving emergency responders can take many forms, they often occur when emergency responders are struck by passing vehicles while they are working at a traffic incident scene. For example, a law enforcement officer may be struck while assisting a stranded motorist or while directing traffic; a firefighter may be hit by a motorist while advancing a hose line across a roadway toward a vehicle fire; or a paramedic may be struck by a car while attending to an incident victim.

Public safety professions are high-risk, and have a safety culture with a low tolerance for any preventable deaths or injuries. As roadways grow more congested, and driver behavior deteriorates, concern mounts for responder safety at traffic incidents. Transportation agencies and private sector responders are equally concerned for the safety of their traffic incident responders.

The concerns are borne out by National Institute for Occupational Safety and Health (NIOSH) data showing an upward trend in numbers of workers of all types killed as a result of being struck by vehicles. In 2005, NIOSH reported 390 workers killed in struck-by incidents, up from 278 in 2004, and up from an annual average of 365 over the 2000-2004 time period. In 2005, struck-by incidents accounted for 7 percent of the total number of fatal occupational injuries. (Figure 1)

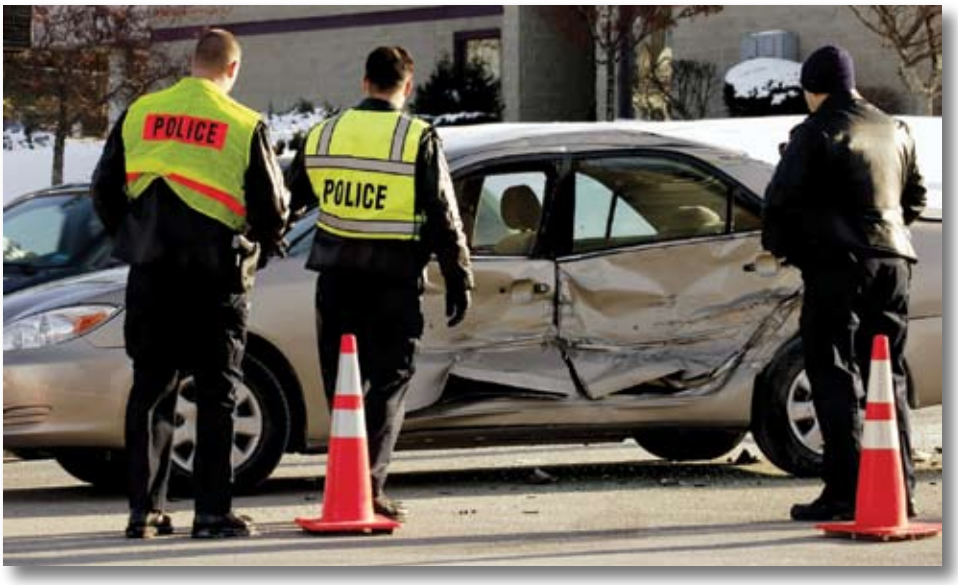
	2000-2004 AVERAGE	2004 NUMBER	2005 NUMBER
Worker Struck by Vehicle (All Occupations)	365	378	390 (7 percent)

Figure 1. Struck-by incidents accounted for 7 percent of fatal occupational injuries in 2005.[1]

Fire Services

As dangerous as firefighting is, transportation-related incidents claim about 20 percent of the roughly 105 firefighter on-duty deaths each year, and struck-by deaths account for a growing proportion. In June 2001, NIOSH reported that the number of firefighters struck and killed by motor vehicles had increased by 89 percent in the previous five years. Seventeen firefighters had been struck and killed between 1995 and 1999, compared to 9 between 1990 and 1994. The report, *Traffic Hazards to Fire Fighters While Working Along Roadways*,[2] states:

". . . Motorists accustomed to a clear, unobstructed roadway may not recognize and avoid closed lanes or emergency workers on or near the roadway. In some cases, conditions can reduce a motorist's ability to see and avoid firefighters and apparatus. Some examples include weather, time of day, scene lighting (i.e., area lighting and optical warning devices, traffic speed and volume), and road configuration (i.e., hills, curves and other obstructions that limit visibility). These hazards are not limited to the fire service alone. Other emergency service providers such as



law enforcement officers, paramedics, and vehicle recovery personnel are also exposed to these hazards."

Of the six firefighters who died in struck-by incidents in 2002, three were killed as they assisted on the scene of motor vehicle crashes, one on the scene of a vehicle fire, one on the scene of a wildland fire, and one during training near a roadway.[3] The Emergency Responder Safety Institute (ERSI), founded by the Cumberland Valley Volunteer Firemen's Association (CVVFA), sponsors a website that tracks news reports of responder deaths and injuries at www.responder-safety.com. NIOSH's Firefighter Fatality Investigation and Prevention Program (www.dcd.gov/niosh/fire/) conducts independent investigations of firefighter line of duty deaths, and the program's web site includes reports of investigations of traffic-incident-related firefighter deaths.

Law Enforcement

According to the Federal Bureau of Investigation (FBI), traffic crashes claim the lives of more law enforcement personnel than any other cause of death in the line of duty, including shootings. Being struck by vehicles is the number two cause of accidental law enforcement officer death (behind vehicle crashes).[4] The majority of officers killed in struck-by incidents are killed when assisting at traffic incident scenes, but a significant number also are struck during traffic stops. In 2004, 28 officers died in crashes, including 10 who were struck and killed by passing vehicles while they worked outside their patrol cars.[5]

	Number of workers killed in struck by incidents (2004)
Firefighters	4
Police and sheriff's patrol officers	11
Highway maintenance workers	11

Figure 2. OSHA data on fatal occupational injuries from transportation incidents tracks the annual number of struck-by deaths for some responder occupations, but not all. The struck-by deaths are not necessarily at traffic incidents; they might occur anywhere, at any time.[7]

Even more officers are injured each year, some very seriously. A check of the "Officer Down Memorial Page" (http://odmp.org) in September 2006 revealed that among the five officers that the web site reported killed by struck-by incidents in the first nine months of 2006 was Lt. Herman W. Brooks of the DeRidder Police Department in Louisiana, who died on February 17, 2006 of injuries he sustained 8 1/2 years earlier when he was struck by a vehicle while assisting at the scene of an automobile crash. Another officer had signaled the vehicle to change lanes, but the driver did not follow the instructions and Lt. Brooks was thrown head first into the path of another moving vehicle. He sustained massive head injuries and spent the last 8 1/2 years of his life on life support.

The International Association of Chiefs of Police (IACP) offers the "Your Vest Won't Stop This Bullet"[6] roll call training video; posters; the *Highway Safety Desk Book*; the *Manual of Police Traffic Services Policies and Procedures*; Staff Study 2004; and Staff Study 2006 to increase officer safety during all roadside contacts, including traffic stops, collision investigations, traffic direction, and assisting motorists with disabled vehicles. The IACP educational package emphasizes the importance of high-visibility apparel and headgear, location safety, safe vehicle and officer positioning, safe trunk packing, and safe placement of aftermarket equipment and replacement parts.

Towing and Recovery Industry

According to the Towing and Recovery Association of America (TRAA), during the first three months of 2006, five TRAA towers were killed at traffic incident scenes. Data on towing indus-

try occupational fatalities is not well tracked, as incident reporting categories lump together incidents involving towing trailers (such as boat or pull-along trailers) with incidents involving towing professionals. Although data is anecdotal, the towing industry is increasingly concerned about incident scene safety, and the towing industry has made responder safety one of its key focus areas. In September 2006, the International Towing and Recovery Hall of Fame and Museum in Chattanooga, TN unveiled the "Wall of the Fallen," a memorial that displays the names of towers across the world who have died in the line of service. The museum also has started a Survivor Fund for the families of those killed in service. (www.internationaltowingmuseum.org/wallofthefallen.htm)

Highway Agency Responders

Data on highway workers killed at traffic incidents currently is not separated from overall statistics. (Figure 2) However, the highway industry has a strong focus on reducing worker deaths and injuries at highway construction work zones, where NIOSH estimates struck-by deaths (including workers struck by a passing vehicle, or mobile equipment) accounted for half of the 844 worker deaths between 1996 and 2002. In 2001, NIOSH published *Building Safer Work Zones: Measures to Prevent Worker Injuries from Vehicles and Equipment,* which covers safety strategies ranging from contract award processes to high-visibility apparel at work sites.

KEY STRATEGIES FOR RESPONDER SAFETY

Key Strategies for "Responder Safety" that seem to have broad support include:

- Standardized (but not mandated) Responder Safety Operational Procedures
- Accredited Traffic Safety and Traffic Control Training for Responders
- Responder Safety Policies and Legislation
- Driver Training and Awareness Programs

Standardized Responder Safety Operational Procedures

TIM stakeholders seem to agree that widespread understanding and acceptance of standardized responder safety operational procedures for traffic incidents is a good strategy for reducing responder injuries and death. Mandated procedures may not be universally supported, however; there is concern among some stakeholders about retaining sufficient flexibility and control of their own response procedures to ensure safe, effective achievement of their mission. Recommended standard operating procedures (SOPs) for emergency operations at roadway incidents would cover issues such as:

- Traffic control at traffic incident scenes, including (but not limited to) 24/7 staffing for traffic control functions; vehicle positioning upon arrival (to protect responders); and safe procedures for reopening highways. Procedures should be scalable to incidents of varying size and location. (Current issues related to the *Manual on Uniform Traffic Control Devices* (MUTCD) are discussed below under "Key Responder Safety Issues.")
- High-visibility reflective apparel as standard safety equipment for all responders operating in or near moving traffic. (Current issues related to standards for high-visibility reflective apparel are discussed below under "Key Responder Safety Issues.")
- Incident Command System (ICS) operations as they relate to traffic control duties. Emergency responders performing traffic control duties must understand their scope of authority in relation to other responders (i.e., police vs. fire) and other agencies (i.e. departments of transportation). Laws differ as to the traffic control authorities of responders. For example, in some jurisdictions fire officials have the authority to control traffic at incident scenes; in others, law enforcement has this authority; in still other cases this authority is shared among fire, law enforcement, and/or transportation.

- On-scene traffic safety management, which is the responsibility of the Incident Commander unless otherwise delegated, but which often is overlooked. Incident Command principles call for deployment of designated safety officers at major incident scenes, but in some cases these officers may not focus on the traffic safety aspects of their duties.
- The use of adjunct warning lights or audible devices while responding to, or operating at, emergency scenes. (Current issues related to use of warning lights or audible devices are discussed below under "Key Responder Safety Issues.")

Accredited Traffic Safety and Traffic Control Training for Responders

In its 1999 *White Paper*,[8] CVVA stated:

"Emergency responders are frequently called upon to operate near moving traffic, performing functions ranging from traffic diversion around collision or accident scenes, to aiding stranded motorists, to attending to victims in vehicles directly adjacent to moving traffic. Responders must be familiar with how to safely conduct all these functions because of the constant uncertainty regarding the situations they may face. For example, a police officer arriving at an accident scene may be required to attend to victims, or a firefighter may be called upon to control traffic to enable other rescuers to reach a scene. Because of the multitude of factors to be considered, emergency responders must have appropriate training."

The *White Paper* went on to recommend that, at a minimum, all emergency responders should receive basic awareness training in traffic safety and traffic control, and responders who are

more likely to routinely perform traffic direction should receive focused training in traffic control. The CVVFA *White Paper* also recommended that incident commanders "be better trained to appreciate the task of, hazards implicit in, and training needed to safely perform traffic direction and control."

Based on the results of listening sessions conducted by NTIMC in the summer of 2006, the idea of multidisciplinary training programs for traffic incident responders, to include training in traffic safety and traffic control, is gaining currency among stakeholders. The TIM training would be considered advanced, specialized training that would be in addition to the basic training currently required for each discipline. (See the NUG Technical Paper on "Safe, Quick Clearance" for further discussion of TIM training and certification.)

Existing resources that form a foundation for development of more comprehensive TIM training and certification programs in traffic safety and traffic control include:

- "Managing Traffic Incidents and Roadway Emergencies," a workshop on traffic incident management, is currently available from the FHWA's National Highway Institute. The workshop is recommended for mid-level management and on-scene supervisory-level personnel from law enforcement, fire and rescue, emergency communications, transportation, towing and recovery, traffic reporting media, and other agencies or organizations involved in resolving traffic incidents.
- "Emergency Traffic Control for Emergency Responders," a new course offered by the American Traffic Safety Services Association (ATSSA), is aimed a police and fire rescue personnel who are involved in traffic control, either responding to an incident or enforcing traffic control in work zones. This four-hour course covers the concepts of temporary traffic control presented in the *Manual on Uniform Traffic Control Devices* (MUTCD) Section 6.I, a Federal standard.
- Downloadable Responder Safety Training Presentations available at www.respondersafety.com/training.php, including Safety Benchmarks; Intermediate Incidents; Minor Incidents; and Definitions of Roadway Incident Terms.
- Emergency Responder Safety Institute (ERSI) roadway incident training for fire and EMS personnel.
- Fire Department Instructors Conference traffic safety courses.
- Volunteer Fire Insurance Services (VFIS) "Highway Safety" training program (workshop and supporting materials).
- "10 Cones of Highway Safety" DVD produced by VFIS and distributed free by Respondersafety.com.
- "Emergency Vehicle Safety Program" produced jointly by the

International Association of Fire Chiefs (IAFC) and the International Association of Fire Fighters (IAFF), which Includes a section on "Roadway Scene Safety" and can be accessed at www.iaff.org/evsp/.

Responder Safety Policies and Legislation

State and local policies and legislation are an important element of any initiative to enhance responder safety. For example:

- Slow Down and Move Over laws require drivers to slow down and move over for emergency vehicles stopped on the side of the highway. At this writing, 33 states had Slow Down and Move Over laws, with fines that averaged $170 and ranged from $50 in Colorado to as high as $500 in Georgia and Washington. (Current issues related to the Slow Down and Move Over laws are discussed below under "Key Responder Safety Issues.")
- Policies requiring preplanning of traffic control and traffic diversion strategies for likely incident scenarios on the transportation network are important techniques for reducing the likelihood of secondary incidents, because preplanning enables responders to implement effective scene traffic management more quickly.
- Policies supporting multi-agency and multi-jurisdictional training exercises permit responders to develop appropriate mutual aid agreements, to evaluate the effectiveness of planning, and to make needed modifications.

Driver Training and Awareness Programs

Emergency responders feel strongly that motorist education and awareness are key elements in responder safety programs. During the NTIMC-sponsored NUG listening sessions in the 2006, stakeholders called comments included:

- "We should educate the public to drive more safely at incident sites."
- "Driver education programs should include information on responder Safety. AARP's and AAA's courses also should include responder safety elements."
- "We should work with the national coalition of driver education teachers to encourage fire, EMS and law enforcement speakers to visit classes and discuss responder safety."
- "We should coordinate public education initiatives with the insurance industry, trucking industry, and the safety industry. We should reach out more to insurance industry, AAA, and AAA Foundation for Highway Safety."
- "Prevention topics include driver fatigue, motorist information, public and driver education, graduated driver licensing, aggressive driving, and driver education regarding sharing the road with commercial vehicles."

KEY RESPONDER SAFETY ISSUES

Summarized below are current issues related to responder safety that will require additional dialogue among the TIM stakeholders for resolution.

MUTCD Section 6-I

The *Manual on Uniform Traffic Control Devices* (MUTCD), published by the FHWA, defines the standards used by road managers nationwide to install and maintain traffic control devices on all streets and highways. Non-compliance with mandatory MUTCD provisions on Federal-aid projects may lead to Federal sanctions. Now that most states no longer have sovereign immunity, tort liability in lawsuits is another possible penalty for non-compliance, especially in situations where a crash has occurred that might be attributed to inadequate, inappropriate, or non-compliant traffic control devices.

MUTCD Part 6 covers "Temporary Traffic Control," and Chapter 6.I addresses "Control of Traffic through Traffic Incident Management Areas."[9] The current version of Chapter 6.I provides examples of signs used in Traffic Incident Management Areas, and guidance on managing traffic incidents of varying magnitude, and on use of emergency-vehicle lighting.

The MUTCD is revised every five years. NTIMC advocates the involvement of the public safety community in the development of the 2008 edition of the MUTCD, and especially in Chapter 6.1. The NTIMC has been actively engaged in providing comments and resolving the concerns of public safety organizations regarding proposed revisions to the MUTCD. The Coalition endorsed the definition of buffer zones when

placing vehicles at a highway incident scene, and has suggested that both lateral and longitudinal buffer zones be encouraged to protect the incident scene, responders, and victims.

NTIMC also strongly advocates MUTCD recognition of the pending ANSI/ISEA standard on high-visibility apparel for public safety personnel (see below).

High-Visibility Apparel Standard

NTIMC promotes use of high-visibility apparel by traffic incident responders. NTIMC believes there should be a public safety vest capable of visually signaling public safety officers' presence by contrasting the color and brightness of the vest against the ambient background of their work environment and incorporating, as well, the requirements of its users. Firefighters need a vest that will fit over their turnout gear; emergency medical technicians and police officers need side access to reach equipment such as scissors, pistols, handcuffs, and walkie-talkies; and they all may need break-away shoulders, adjustable waists, pen/penlight openings, and badge and microphone tabs. IACP's

Richard Ashton explained the history of NTIMC's involvement in the high-visibility safety vest issue in an article recently published by Responder Safety.com[10] and quoted below:

"Under the NTIMC umbrella, representatives of the Cumberland Valley Volunteer Firemen's Association's Emergency Responder Safety Institute, the I-95 Corridor Coalition, the American Traffic Safety Services Association, and the IACP Highway Safety Committee's Law Enforcement Stops and Safety Subcommittee (LESSS) met in October 2005, with the International Safety Equipment Association (ISEA) and outlined their vision for the conspicuity of public safety officers, as well as their needs. ISEA invited those representatives to present at its High Visibility Group meeting in November 2005, the issues facing the public safety community.

Once the ISEA's High Visibility Group heard NTIMC's presentation, it voted immediately and unanimously to develop a standard, which will be designated ANSI/ISEA 207-200x when it is released later this year, to ensure public safety officers' conspicuity, day and night, under all lighting conditions via fluorescent and retroreflective materials. ANSI/ISEA 207-200x will be a voluntary industry consensus standard specifying the requirements for public safety vests. The standard will include performance criteria for the properties of the background materials, color, retroreflectivity, minimum areas of coverage, suggested configuration, and specific features required. The requirements also will include standards against which an independent, accredited third-party laboratory will be able to test and certify a garment, so a manufacturer of a public safety vest ultimately can verify that an item sold to a public safety agency complies with all of the requirements established in the ANSI/ISEA 207-200x standard."

On Oct. 4, 2006, ISEA submitted the standard to ANSI for final approval, but the version of the standard adopted by ISEA omits the break-away feature of the vest, which NTIMC believes is crucial to responder safety.

Ashton's web article also covers a related pending FHWA rule:

"In a related development, the Federal Highway Administration (FHWA) sought public comment between April 24, 2006, and June 23, 2006, on a proposed Worker Visibility rule that the Secretary of Transportation is required to promulgate under current Federal highway legislation. FHWA acknowledged the multiple roles and responsibilities of law enforcement officers on the public right-of-way of Federal-aid highways and specifically noted its desire to fully assess the impact on safety and security of law enforcement officers should high-visibility garments be required for use in all situations.

The regulation, as proposed, would include a two-year compliance period from the effective date of the final rule and would read, 'All [law enforcement officers] within the right-of-way of a Federal-aid highway who are exposed either to traffic (vehicles using the highway for purposes of travel) or to construction equipment within the work area shall wear high-visibility safety apparel.'

The members of the IACP Highway Safety Committee (HSC) and LESS discussed FHWA's proposal at their Midyear Meetings in June 2006, recognizing its positive intent 'to improve the visibility of all workers on or in close proximity to Federal-aid highways in all

circumstances including, but not limited to, . . . traffic incident management,' but nevertheless emphasized to FHWA that police officers being required to wear high-visibility safety apparel at all times on Federal-aid highways realistically could jeopardize officers' safety in certain circumstances such as traffic stops or criminal activity. As of this writing the Final Rule is in review at FHWA and will likely be published in late 2006.

An officer who is not wearing high-visibility safety apparel, but who nevertheless makes a traffic stop and is struck by a passing vehicle could experience Workers' Compensation or Occupational Safety and Health Act (OSHA) issues, as could the supervisor who arrives at a crash scene only to be struck by a vehicle before s/he can even retrieve high-visibility safety apparel from his vehicle's trunk.

The HSC's response stressed that the diverse responsibilities of police officers separate them from all others who work on highways; that their safety is better assured in non-traffic-related situations occurring on highways, such as high-risk felony stops and checks of suspicious persons/vehicles, by furtiveness as opposed to conspicuousness; and that police officers should be required to wear high-visibility safety apparel on Federal-aid highways only when they are engaged in 'traffic incident management,' i.e., in such traditional duties as traffic direction, traffic incident resolution (crash investigations, roadway closures, and highway obstructions), and work-zone assignments."

Use of Warning Lights or Audible Devices

Emergency vehicle lighting and audible devices are often distracting and confusing to road users, especially at night. Road users approaching the traffic incident from the opposite direction on a divided facility are often distracted by emergency-vehicle lighting, and slow their vehicles to look at the traffic incident, posing a hazard to responders, themselves, and others traveling in their direction. If good traffic control is established through placement of advanced warning signs and traffic control devices to divert or detour traffic, then public safety agencies can perform their tasks on scene with minimal emergency-vehicle lighting. The MUTCD guidance[11] states:

"Public safety agencies should examine their policies on use of emergency-vehicle lighting, especially after a traffic incident scene is secured, with the intent of reducing the use of this lighting as much as possible while not endangering those at the scene. Special consideration should be given to reducing or extinguishing forward-facing emergency vehicle lighting, especially on divided roadways, to reduce distractions to oncoming road users.

CVVFA's responder safety *White Paper*[12] identifies other issues related to safe use of warning lights and audible devices, including:

"…how to ensure: (1) operator competency, including familiarity with the scope of legal authority to use such devices; (2) adequate vehicle visibility when such devices are deployed; and (3) proper vehicle positioning when responding to, or operating at emergency scenes. Individuals who use warning devices on their private vehicles, and the fire, police, or other department with which the individual is affiliated, should be aware of any implications these devices may have on their insurance coverage."

Slow Down / Move Over Laws

Emergency responders are the key proponents of Slow Down/Move Over laws. Inclusion of all responders can be an issue. For example, the Towing and Recovery Association of America (TRAA) is advocating inclusion of towers in Slow Down/Move Over legislation, and reports that a summer 2006 survey revealed that only 14 of 33 Slow Down/Move Over laws then in place mentioned towers.

Increasing public awareness of move-over laws is a key issue. Because these laws are relatively new, many drivers are not aware that they are expected to slow down and move over when they come upon an emergency scene. The use of changeable message signs to advise motorists to slow down and move over when approaching an incident scene is one solution. Some proponents have called for increased nationwide uniformity of Slow Down/Move Over laws so that drivers will have a better understanding of the law they travel across state lines.

Enforcement of Slow Down/Move Over laws can be challenging. Most often fines are imposed for violations that occur in relation to a secondary incident.

European Models for National Unified Goals and Uniform Traffic Incident Management Procedures

While there is general consensus that more uniform multidisciplinary traffic incident management procedures should be developed and implemented, reaching consensus on the procedures themselves is likely to be less easy.

A 2005 FHWA/AASHTO/NCHRP scan of traffic incident response practices in Europe revealed that The Netherlands, England, and Germany have a comprehensive and multi-disciplinary national commitment to responder safety. Public and private organizations, including road service/auto-clubs, public safety agencies, highway agencies, and towing organizations in these countries have agreed upon standardized procedures and practices to increase responder safety and promote efficient scene clearance. Two of the countries have developed specific programmatic approaches or materials that could be adapted for use in the United States.

In The Netherlands, for example, all responders carry traffic cones, and the first responder to arrive on scene places the cones before attending to victims or vehicles. In the United States, this would represent a major cultural shift. Proponents argue that if responder safety is to be a first priority, establishing a safe work zone for responders needs to be the first priority at incident scenes. On the other hand, requiring emergency responders to carry and use traffic cones is likely to be problematical. As one participant in the NTIMC listening sessions stated, "Putting out cones is not my job."

An NCHRP project has been funded, but is not yet under way, to develop consensus recommendations regarding how to adapt European policies and procedures as a tool in establishing such programs on a local, state, and regional (e.g. corridor-based) basis, which would remain consistent across the nation.

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