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# Traffic Collisions and Vehicle Fire Response

## 407.1 PURPOSE AND SCOPE

This document provides procedures for department personnel responding to motor vehicle collisions and vehicle fires.

Corresponding policies:

- Emergency Response
- Fireground Accountability
- High-Visibility Safety Vests
- Incident Management
- Staging
- Roadway Incident Safety

## 407.2 FIRST FIVE MINUTES

The first-arriving fire department unit should:

- Contact dispatch and provide the following information:
  - Unit on-scene
  - Initial scene size-up
  - Unit command Incident Command (IC)
- Confirm that at least one responding unit has foam capability.

The IC should:

- Establish the department accountability system for all personnel on scene.
- Perform or direct another member to perform a 360 assessment to identify:
  - Hazardous materials (HAZMAT) placards.
  - Badges or labels indicating hybrid, electric, or alternative fuel vehicles such as:
    - Electric vehicle (EV)
    - Hybrid
    - High Voltage
    - Zero Emission
    - Compressed natural gas ("CNG" in blue diamond, passenger side rear)
    - Liquid natural gas ("LNG" in black diamond on fuel tank and/or rear of vehicle)
    - Liquid Propane Gas ("LPG" in blue diamond, rear of vehicle)
    - Liquid/compressed hydrogen ("H2" in blue diamond, rear of vehicle)

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- Overhead wires or other involved utility equipment.
- Leaking or venting motor fuel, liquid propane (LP) or compressed natural gas (CNG), or other HAZMAT conditions.
- Lithium-ion batteries off-gassing or showing signs of thermal runaway.
- Vehicle stability.
- Total number of victims and initial triage.
- Fallen utility lines.
- Any other conditions that could interfere with extrication operations or create an immediately dangerous to life and health environment.
- If a commercial vehicle is involved, reasonable efforts to locate the driver should be made to determine what is being carried and the presence of hazardous materials.
- If any of the following indicators or conditions are present, develop an initial incident action plan and respond in accordance with the DOT Emergency Action Guide, alternative fuels emergency field guide used by the department, and the Hazardous Materials Initial Incident Response Procedure:
  - A HAZMAT placard, material safety data sheet or notice
  - A visible HAZMAT
  - Presence of leaking motor fuel
  - Leaking or venting LP or CNG tanks
  - Badges or other indicators that the vehicle is alternative fuel, electric, or hybrid
  - Lithium-ion batteries off-gassing or showing signs of thermal runaway
- If it reasonably appears hazardous materials are present, including leaking or venting motor fuel, LP, or CNG, suppression operations should not begin until the IC or the Incident Safety Officer approves.
- Call for any additional resources required.

### **407.3 PROCEDURES**

#### **407.3.1 RESOURCE DEPLOYMENT**

Resources deployed during response to a traffic collision or vehicle fire should use the following procedures:

- (a) Apparatus
  1. When practicable, the roadway should be closed to all traffic. When road closure cannot be accomplished, apparatus should be placed according to the Traffic Incident Management System and Roadway Incidents Procedure.

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### (b) Personnel

1. Personnel should be in personal protective equipment (PPE) that is appropriate for the on-scene hazards unless otherwise advised by the IC.
  - (a) For a vehicle fire, PPE should include a self-contained breathing apparatus (SCBA).
  - (b) High-visibility garments approved for roadway use should be worn by all personnel when not directly engaged in fire suppression activities.

### **407.3.2 OPERATIONS**

If the vehicle is alternative, electric, or hybrid, carry out all operations according to the alternative fuel vehicle emergency field guide used by the department.

Traffic collision and vehicle fire response may involve the following operations:

#### (a) Vehicle disabling and immobilization.

1. When practicable and reasonable, the vehicle should be disabled:
  - (a) Place vehicle in park and turn off ignition.
  - (b) Disconnect the 12-volt battery
  - (c) If the key is located, remove from the ignition. If equipped with a keyless start, move the key at least 20 feet from the vehicle to prevent unintended engagement of any proximity functions.
2. When practicable and reasonable, the vehicle should be immobilized:
  - (a) Approach the vehicle at an angle to avoid bumpers and other parts launched by high pressure systems and tires that may explode.
  - (b) Chock the wheels.
  - (c) Set the parking brake.
  - (d) Place vehicle in park transmission in park.

#### (b) Traffic collision with injuries

1. Standard EMS protocols for patient treatment and transport should be followed.
2. Responders should avoid placing themselves between the patient and any undeployed airbags that may be located within the vehicle passenger compartment.
3. Personnel should be aware of and look for cracked or overheated high voltage batteries as they can release toxic materials and fumes.

#### (c) Vehicle Fire

1. A water supply should be established before beginning operations. At least one 1¾-inch hoseline should be deployed.
2. Personnel should approach the vehicle from the side or at an angle to avoid bumpers and other parts launched by high-pressure systems and exploding tires.

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3. EVs may contain lithium-ion batteries, which are prone to thermal runaway. In cases of thermal runaway involving a battery that cannot be removed from a vehicle, personnel should use copious amounts of water to cool adjacent batteries, enclosures, and exposures to allow time for the battery to burn out. Some batteries may take several hours, or even days, to fully burn out.
  4. Batteries that can be removed safely from a vehicle should be submerged in water or placed in a containment device designed for that purpose.
  5. Fires involving lithium-ion batteries or mobility devices where there is not runaway should be extinguished by using copious amounts of water.
  6. Due to the danger of reignition, full PPE including SCBA with facepiece should be worn at all times when working around lithium-ion that have been involved in fire or exposed to high temperatures.<sup>[1]</sup>
- (d) Extrication
1. If extrication is required, personnel should refer to the Vehicle Extrication Operations Procedure.

### 407.4 UNIVERSAL PRACTICES

1. All department vehicles should have a current alternative fuel emergency field guide stored with the DOT Emergency Response Guidebook (ERG). This guide should be used to develop an initial incident action plan and for ongoing operations.
2. The scene should be surveyed with a thermal imaging camera (TIC) to determine the location of any victims. For example, victims may have been ejected from a vehicle, landing away from the crash scene or hidden by trees and brush.
3. When practicable, scene preservation practices should be used to preserve evidence in case law enforcement determines a criminal investigation is required. Personnel should disturb only what is necessary to complete rescue and fire suppression operations. For example, liquor bottles or drug paraphernalia found in a vehicle should be left undisturbed or moved only to complete operations.
4. The IC should take reasonable steps to ensure that adequate gross decontamination is performed before releasing units from any scene where personnel were exposed to potentially harmful substances including:
  - Smoke.
  - Soot.
  - Body fluids.
  - Hazardous materials.

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### 407.5 PROCEDURE DECISION TREE

