

*The purpose of this Safety Alert is to: 1) Highlight an industry's occupational health risks; 2) Share case studies of recent occupational fatalities; and 3) Provide guidance on how to prevent similar incidents.*

## Working in Roadways Exposes Workers to Hazards of Moving Vehicles and Equipment

### Three Recent Incidents Led to the Deaths of Four Workers in Massachusetts

#### BACKGROUND

Work zones bring different types of workers together, leading to unique safety and health considerations. For example, a work zone may have utility workers, roadway construction workers, highway maintenance workers, and/or landscapers working alongside traffic detail police officers supporting traffic control. Other roadway work may have emergency and incident response personnel and towing company workers. Many of those workers face the hazard of working near moving motor vehicle traffic or mobile equipment. In the last 10 years, the Massachusetts Fatality Assessment and Control Evaluation (FACE) Project recorded 67 worker fatalities that involved workers being struck by moving motor vehicles or equipment. Of these, 19 were killed on the job in work zones. In the last year, there have been three tragic incidents resulting in the deaths of four workers.

#### Recent Fatalities of People Working in Roadways in Massachusetts

##### 1. Traffic detail officer and utility worker struck by oncoming vehicle

On December 6, 2023, a utility crew was working on the shoulder of a local road, with a traffic detail officer directing traffic through a lane shift around the work zone. A passing pickup truck veered into the work zone and struck the traffic detail officer before crashing into a utility truck, striking a utility worker who was standing to the side of the truck. Both the traffic detail officer and the utility worker died.

##### 2. Traffic detail officer struck by mini-excavator

On April 26, 2024, a traffic detail officer was assisting an 18-wheel tractor-trailer making a turn through a construction work zone area, when a mini-excavator changed direction into reverse and struck and killed the officer.

##### 3. Highway maintenance foreman struck while clearing crash debris from roadway

On July 27, 2024, a passing vehicle struck a highway maintenance foreman as he was cleaning up debris from a prior motor vehicle crash. His work truck was parked in the median and partially in the left travel lane. The work truck had flashing lights and an illuminated arrow sign to direct traffic out of the left lane. The foreman was working in the roadway when he was struck and killed.

## **RECOMMENDATIONS FOR EMPLOYERS: PREVENTING INJURIES AND FATALITIES IN ROADWAY WORK**

To prevent injuries and fatalities among workers in roadways, including traffic detail officers, it is crucial for each of their employers to collaborate and develop a plan to ensure everyone's safety. At a minimum, employers must ensure traffic control and roadway work sites are set up in accordance with the [Manual on Uniform Traffic Control Devices \(MUTCD\)](#) from the U.S. Department of Transportation. The local jurisdiction may have additional procedures to follow that are more protective. Also, roadway work that includes incident response activities has special considerations and unique traffic control characteristics and needs. Additional best practice resources are highlighted in the reference section. Here, we have highlighted some key responsibilities and prevention recommendations from the MUTCD, National Institute for Occupational Safety and Health (NIOSH), and Occupational Safety and Health Administration (OSHA) for employers of workers in roadways and employers of traffic detail officers.

### **HOW CAN EMPLOYERS OF TRAFFIC DETAIL OFFICERS WORKING IN ROADWAYS PREVENT INCIDENTS?**

- 1. Train traffic detail officers on the hazards present at work zones.**
  - ▶ Be positioned outside the construction area.
  - ▶ Require that the contractor provide them with a briefing on the construction area's internal traffic control plan and contractor's tasks in the work zone.
  - ▶ Be aware of any moving equipment in their vicinity.
  - ▶ Confirm with the contractor any hand signals, eye contact, and communication methods used with equipment operators prior to approaching the construction area.
- 2. Provide traffic detail officers with high-visibility vests that are at least an ANSI class 2 and other personal protective equipment (PPE), and ensure officers wear them during daylight and night work zone assignments.**

### **HOW CAN ALL OTHER EMPLOYERS OF PEOPLE WORKING IN ROADWAYS PREVENT INCIDENTS?**

- 1. Conduct a hazard assessment for the work site and develop a work zone plan.**
- 2. For incident response activities, provide police car or fire truck flashing lights to indicate lane closure. Use physical barriers, such as an attenuator truck or fire truck to protect workers who are on foot in a roadway.**
- 3. For planned construction, incorporate ways to improve worker safety when developing the traffic control plan.**
  - ▶ Close the road completely and reroute traffic where feasible.
  - ▶ Organize ways to minimize operations that include backing maneuvers of equipment to reduce the risk of run-over incidents.
  - ▶ Use physical traffic barriers, such as Jersey barriers and traffic attenuators, to protect workers from motor vehicle traffic.

- ▶ Include a protected and safe location, that is not in the construction area, for the traffic detail officer in the traffic control plan.
  - ▶ Provide advance warning signs and cones to define the construction area. Periodically check to make sure signs and other traffic control devices are still properly in place as construction work progresses and roadway configuration changes.
- 4. Develop and implement internal traffic control plans, depending on the size and scope of the work zone project.**
    - ▶ Create an internal traffic control plan for medium and large projects showing where equipment and vehicles will be positioned and where they will be moving within the work zone.
    - ▶ Include on-site equipment, such as excavators, and other vehicles that will be entering the work zone, such as dump trucks, in the internal traffic control plan.
  - 5. The contractor must have a pre-shift job briefing with the traffic detail officer to review the traffic control plan for motorists and internal traffic control plan for the construction area to inform them of any moving equipment at the site.**
  - 6. Train all workers on the hazards of working in a work zone and how to work next to motor vehicle traffic.**
  - 7. Make sure all workers in the work zone are aware of their surroundings, including equipment, materials, and other workers that may be in the zone. Equipment operators should always be focused on and looking in the direction of travel.**
    - ▶ Assign a spotter when equipment is backing up and ensure back-up alarms are functioning properly.
    - ▶ Train workers and equipment operators on the blind spots of equipment. NIOSH has [blind area diagrams](#) on various construction equipment's visibility.
    - ▶ Train workers on foot and equipment operators in appropriate communication methods, such as hand signals and maintaining visual contact, to be used when workers on foot are in the same area as equipment.
  - 8. Ensure all workers and spotters always wear high-visibility clothing, such as ANSI Class 2 or 3 vests or jackets. Class 3 is best when traffic speeds are greater than 50 mph or if weather or other site conditions affect visibility. High-visibility pants provide additional visibility at night. Make sure workers wear these garments and other required personal protective equipment (PPE), such as head protection.**

## MORE INFORMATION

### National Resources:

- [U.S. DOT Manual on Uniform Traffic Control Devices \(MUTCD\) 11<sup>th</sup> Edition \(mutcd.fhwa.dot.gov\)](http://mutcd.fhwa.dot.gov)
  - [MUTCD 11<sup>th</sup> Edition: Part 6 Temporary Traffic Control \(mutcd.fhwa.dot.gov\)](http://mutcd.fhwa.dot.gov)
- [U.S. DOT Internal Traffic Control Plans for Work Zones Fact Sheet \(ops.fhwa.dot.gov\)](http://ops.fhwa.dot.gov)
- [ARTBA Guidance Developing Internal Traffic Control Plans \(ITCPs\) for Work Zones \(workzonesafety.org\)](http://workzonesafety.org)
- [ARTBA Internal Traffic Control Planning Instructor Guide \(osha.gov\)](http://osha.gov)
- [NIOSH Building Safer Highway Work Zones: Measures to Prevent Worker Injuries From Vehicles and Equipment \(cdc.gov\)](http://cdc.gov)
- [NIOSH Construction Equipment Visibility \(cdc.gov\)](http://cdc.gov)
- [NIOSH State FACE Reports: Highway Work Zones \(cdc.gov\)](http://cdc.gov)
- [OSHA Inspection and Citation Guidance for Roadway and Highway Construction Work Zones \(osha.gov\)](http://osha.gov)
- [ResponderSafety \(respondersafety.com\)](http://respondersafety.com)

### Massachusetts-Specific Resources:

- [MassDOT Massachusetts Amendments to the 2009 Manual on Uniform Traffic Control Devices \(mass.gov\)](http://mass.gov)
- [Mass Highway Chapter 17 Work Zone Management \(mass.gov\)](http://mass.gov)
- [Massachusetts Department of Labor Standards Executive Order #511 Work Zone Safety \(mass.gov\)](http://mass.gov)
- [MassDOT Massachusetts Traffic Incident Management Responder Training \(mass.gov\)](http://mass.gov)
- [NIOSH MA FACE Reports \(cdc.gov\)](http://cdc.gov)

**If you need help starting a health and safety program, find resources from the Massachusetts Department of Labor Standards:**

[On-Site Consultation Program \(mass.gov\)](http://mass.gov)



*This narrative was developed to alert employers of a tragic incident. Developed by MA State Fatality Assessment and Control Evaluation (FACE) program in the Occupational Health Surveillance Program (OHSP) at the MA Department of Public Health. The FACE program is supported by a grant from the National Institute for Occupational Safety and Health (NIOSH). For more information, visit [www.mass.gov/fatal-work-related-injuries](http://www.mass.gov/fatal-work-related-injuries). Please email [MA.FACE@mass.gov](mailto:MA.FACE@mass.gov) if you have any questions.*