# Making Safe Work Zones


## WHAT'S AT STAKE?

Each year, many construction workers are killed in work zones. Their deaths could have been prevented. They were run over by motorists, backed over by construction vehicles and electrocuted by overhead power lines.

Roadway work zones are some of the busiest, and potentially most hazardous, work environments you can find, as workers perform tasks in close proximity to vehicles that are often traveling at high speeds.

## WHAT'S THE DANGER?

According to the Federal Highway Administration, 799 work zone fatalities took place in the U.S. in 2017, a two percent increase over 2016.

According to ASSE, transportation accidents have been the leading cause of on-the-job deaths in the United States every year since 1992. In 2007 alone, 835 deaths resulted from motor vehicle crashes in U.S. road construction work zones.

From distracted driving to a lack of awareness of the work being performed, to motorists traveling at excessive speeds, work zone incidents are caused by a variety of reasons. With all of this in mind, contractors, safety professionals, workers and others can take several steps to help prevent work zone incidents. In addition, emerging technologies can notify workers when a workplace intrusion has occurred.

## HOW TO PROTECT YOURSELF

### Work Zone Safety Tips

**Designate team leaders.** Hold a pre-job team meeting with the entire team, and use this time to determine who will lead communication on behalf of the traffic control team, the contractor and the controlling agency. This will ensure that all teams are on the same page before the project begins.

**Establish good relationships with the controlling public agency.** A strong relationship means you're communicating and everything works better, which makes

it safer. You would want to get on the road to set up as soon as you can, and the flexibility to start early begins with a good agency relationship. Set up “pre-warning signs” or “advanced warning signs” without breaking any regulations.

**Pre-marking the work zone.** This is especially valuable when setting up highway work zones. Have a job supervisor visit the work zone ahead of time and mark where signs and devices should be placed. This will make the setup process quicker and safer, leaving less room for error.

**Manage time** – before, during and after the project. Allow enough time to safely deploy and remove required lane closure equipment. Traffic control setup can, unfortunately, sometimes be an afterthought, and work is typically being done under a tight deadline. Setting up traffic control equipment takes time and planning, and while pre-marking the work zone will increase efficiency, this is still a time-intensive task that workers should not rush through. Mistakes can put workers and drivers in high risk for injury or death.

**Use communication devices.** Having the proper communication devices is critical because most work zones are noisy and workers may be setting up closures for several miles. Use radio devices that allow supervisors to provide the full traffic control team with instructions at the same time, despite outside noise and distance. Project managers can dial into the channel as well, and this will allow them to stay apprised of progress.

**There are THREE WAYS to help prevent workplace intrusions in the context of making a safe work zone.**

**1. Traffic Control Plan**

Protecting workers and motorists on roadways of any size requires an understanding of the regular traffic flow on a particular roadway and how construction activities will disrupt that flow. This forms the basis of the plan for how you will control traffic over the course of a construction project.

The project constructor should establish a traffic control plan for the entire work zone that addresses four key areas:

- **The advance warning area:** This is the section of the highway where road users are informed about the upcoming work zone or incident area.
- **The transition area:** In this section, road users are directed out of their normal path.
- **The activity area:** This area is where work activity occurs. It is made up of the work space, the traffic space and the buffer space.
- **The termination area:** In this area, users return to their normal path.

**2. Implement Protective Safety Measures**

Creating a protective barrier between motorists and workers is an essential step. This enables workers to perform their tasks safely while motorists move about the roadway. Based on the established traffic control plan, decision-makers must determine which barriers will best protect motorists and workers.

Positive protection measures need to be considered for each of these working conditions:

- Working zones that provide no means of escape (e.g., tunnels, bridges) from external motorized traffic intruding into the workspace
- Long duration work zones (e.g., two weeks or more) resulting in substantial employee exposure to motorized traffic
- Projects with high anticipated operating speeds (e.g., at least 45 mph or 72 km/h), especially when combined with high traffic volumes (more than 20,000 vehicles per day)
- Work operations that place employees within one-lane-width of travel lanes open to traffic
- Roadside hazards, such as drop-offs or unfinished bridge decks, that will remain in place overnight or longer

Protective measures take many forms, from electronic signage and arrow panels to rumble strips and pavement markings. Depending on the project, one or a combination of these methods may help improve safety. Safety professionals working with these hazards and exposures should determine the most appropriate controls for a particular project based on site-specific circumstances.

**3. Improve Worker Visibility**

For motorists to operate safely around workers on the roadway, they must be aware of their presence. A10.47 states that all workers, including emergency responders, within the right-of-way who are exposed either to traffic (vehicles using the highway for purposes of travel) or to work vehicles and construction equipment within the work zone wear high-visibility safety apparel that meets the Performance Class 2 or 3 performance requirements of ANSI/ISEA 207.

This type of apparel takes on added importance in any nighttime construction work when overall visibility is diminished. A10.47 also explains illumination requirements to develop an illumination plan for night work so that workers are clearly visible, and to help control glare in such working situations.

Along with PPE, flaggers often play a major role in alerting motorists to the presence of workers, as well as controlling traffic flow through the use of hand signals, signs or automated devices. A10.47 provides guidance on how to best employ and position flaggers as well as how to ensure they are visible and have an escape path should an intrusion occur.

## FINAL WORD

Most states have instituted new laws regarding work zones; penalties for speeding in these areas are double that of the normal penalties for speeding in a non-work zone stretch of road.