

*Accidents that involve backing are workplace risks that street and highway departments can prevent by enforcing best practices and raising awareness through good training.*

## Practice safe backing

**ROAD CONSTRUCTION WORK ZONES**, and equipment yards and garages can be dangerous workplaces. Heavy equipment operates in close proximity to workers on foot in areas busy with activity and noise. Unsafe backing maneuvers in these environments can increase the risk of death or injury. A review by the U.S. Bureau of Labor Statistics of fatal workplace injuries at road construction sites from 2003 to 2010 found 443 that involved workers hit by a vehicle or moving equipment. Backing operations accounted for almost one third of those deaths.

They also leave hundreds injured every year and cost many thousands for repair and replacement of damaged equipment. Accidents that involve backing are workplace risks that street and highway departments can prevent by enforcing best practices and raising awareness through good training.

### Preventable

Risk management expert Ben Rank describes these accidents as “100 percent preventable.” Rank is a Loss Control Specialist with Cities and Villages Mutual Insurance Company (CVMIC), one of Wisconsin’s municipal pools.

“Going in reverse is not a natural maneuver because the blind spots, especially on larger vehicles, can be huge,” says Rank. “But some-

times there is no alternative but to back a vehicle during road projects or other municipal activities like fire and police operations.”

For that reason, he emphasizes three key principles for safe backing in risk-prevention training he does for CVMIC members.

**1. Avoid the need to back up:** Operators should park defensively and leave room to pull away going forward when leaving a jobsite instead of backing. Another option is to use a route or location that accomplishes the task while moving forward.

**2. Use a trained spotter:** If backing up is the only option, use a spotter with good technique and hand signals. Make sure they work from the driver’s side, stay visible, watch for obstructions and communicate with the driver. Establish a consistent standard throughout the agency that all operators and spotters understand.

**3. Get out and look:** When it is necessary to back up and there is no spotter around, Rank recommends the simple GOAL technique: *Get Out And Look*. Do a complete 360 of the vehicle and the area around it to assess possible blind spots, distances, height clearance and the presence of any activity or workers that could interfere with a safe backing operation.

### Helpful checklists

Additional tips on any checklist for equipment operators and work zone crews that need to develop safer backing practices include:

- Position mirrors for clear sightlines before operating the vehicle.
- Make sure backup alarm is working; if it is not or fails during maneuver, use a spotter.
- Keep driver’s window down to hear and be heard; also the passenger window when backing or driving in the vicinity of workers on foot.
- Turn off the radio or other distracting devices; give complete attention to the backing operation.
- Minimize the number of work activities done near moving equipment.
- Install signs in work areas that alert employees on foot about the location of moving vehicles.



Workers on foot must stay alert to backing maneuvers when there is heavy equipment operating in work zones.



### Key principles of safe backing

- Find alternatives to backing and avoid the maneuver.
- Use trained spotter whenever backing is the only option.
- Get out and look around vehicle for blind spots or activities that could interfere.

### Safe backing *continued*

- No riders in the back during the backing maneuver.
- Check for changing conditions in the area if the vehicle is stationary for more than two seconds.
- Sound the vehicle horn a designated number of times to signal a backing maneuver to all crew members.
- Back slowly, at a walking speed.
- Do not back more than 50 to 100 feet before stopping and rechecking the area for a clear zone.
- Follow more stringent guidelines in confined areas and for night work.



Warning signs and barriers designate a location where workers must listen and watch out for construction vehicles backing up.

*Training that regularly reinforces safe practices also prepares equipment operators, spotters and all workers to take preventive action.*

Training that regularly reinforces safe practices like these also prepares equipment operators, spotters and all workers to take preventive action.

Technology in the form of proximity sensors and truck-mounted cameras are helping improve safe operation of large vehicles in work zones, on snow routes and at fire scenes. But Rank cautions against relying on technology alone. Use these tools instead to supplement assistance from a spotter or a walk around the vehicle before backing up, he says.

### Enforce safe practices

According to the National Institute for Occupational Safety and Health (NIOSH), construction vehicles pose a substantial safety risk to the men and women that build and maintain the nation's road network. Like public works equipment yards and garages, work zones present local governments with a safety challenge. But by instituting and enforcing safe vehicle backing practices, public road agencies can and do prevent death, serious injury and substantial property damage. ●

### SOPs and technology

Rank recommends that public road agencies incorporate these rules into their standard operating procedures, much like fire and bus transit departments do. "Some of them have it in writing, for example, that no one ever does a backing maneuver without a spotter."



Training for everyone who does their job in a work zone should include how to prevent vehicle-backing accidents.

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### RESOURCES

Workplace safety and health topics on CDC site includes links to information on preventing worker injuries from vehicles and equipment in work zones.

Recent story in [Better Roads](#) reviews tips for managing safer work zones.