

# High Impact

*A Project from the First 10 Years of NORA*



## Prevention of Vehicle and Mobile Equipment-related Injury

### The Challenge:

Highway and street construction workers (SIC 1611) and other workers on highway construction sites are at risk of death or serious injury when working near passing motorists, construction vehicles, and equipment. From 1992-2000, 910 worker fatalities occurred in work zones; 91% (N=826) were vehicle- or equipment-related. Of the 797 cases for which vehicle type was known, 490 (61%) were associated with a construction vehicle, 256 (32%) with a traffic vehicle, and 51 (6%) with both. Pedestrian workers were as likely to be struck by a construction vehicle (n=258) as by a passing traffic vehicle (n=250). 📌

## Approach:

Project staff planned and facilitated out a 3-day workshop in December 1998. The 60 attendees represented key stakeholders, including the Federal Highway Administration, National Safety Council, Deere & Company, International Brotherhood of Teamsters, 3M, Jefferson Group, OSHA, National Highway Traffic Safety Administration, International Union of Operating Engineers, Reflex-ite, Laborers= Health and Safety Fund of North America, and Industrial Safety Equipment Association. Workshop preparations included conceptualizing topic areas (safety of pedestrian workers, safety of equipment operators, planning for safe work, and night work), obtaining a contracted literature review, and developing “white papers” to serve as background for discussions at the workshop. Scientific and technical literature was synthesized with input received at the workshop to develop the 2001 NIOSH document Building Safer Highway Work Zones. Public comment was obtained through a Federal Register notice and direct requests to stakeholders.

## Results:

The primary product of this research was a NIOSH document, Building Safer Highway Work Zones, which addresses a broad range of interventions to prevent worker deaths and injuries associated with vehicles and equipment. Some injury prevention approaches discussed in the document are directly related to construction operations (e.g., work zone layout, flagger safety, illumination of the work space, and use of temporary traffic control devices), while others focus on management practices that can affect worker safety (e.g., incorporating safety elements into the bidding process, pre-planning for traffic control inside the work space, and coordination between multiple contractors on the same site). The document also offers case studies suitable for worker training sessions or safety talks.

## Impact:

A primary impact of this work is greater recognition, particularly among the government and construction industry groups that build and oversee the Nation’s roads, that construction vehicles pose a substantial safety risk to pedestrian workers. At this project’s inception, the Manual on Uniform Traffic Control Devices (MUTCD), the federal guideline for temporary traffic control, required that only flaggers wear high-visibility clothing. A measure that all workers in work zones wear high-visibility clothing appeared in Building Safer Highway Work Zones and in later comments on proposed rulemakings. The 2003 MUTCD revision incorporated this NIOSH measure. Building Safer Highway Work Zones continues to be a resource for the highway construction industry and has been reprinted a number of times, with almost 19,000 copies distributed to date. A number of commercial insurers distribute it to clients engaged in highway construction, and it has been adapted into training modules geared to highway workers.■

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For complete description of this project and others see the CD Rom “A Compendium of NORA Research Projects and Impacts, 1996-2005” located at [www.cdc.gov/niosh](http://www.cdc.gov/niosh).

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