

Why the focus on work zone safety?

ACCORDING TO the Iowa Department of Transportation (Iowa DOT), annual traffic on Iowa's roads has increased more than 55 percent since 1980.

Increased traffic, especially on aging roads such as many of those in Iowa, leads to increased wear and tear of pavements. Iowa's transportation agencies have shifted their focus from constructing new roads to maintaining and repairing existing ones, resulting in an increased number of highway work zones.

Although the number of work zones is increasing, drivers continue to be unprepared for the dangers in work zones, leading to numerous crashes. In 1997 alone, the Iowa DOT recorded 10 fatalities, 150 personal injury crashes, and 195 property damage crashes in work zones across the state.

Many drivers are not aware that, traveling at 60 miles per hour, a vehicle will travel 1,000 feet (a probable distance between a warning sign and a work zone) in less than 11.5 seconds. Serious

consequences may result when drivers fail to reduce speed immediately upon the warning.

Motorists are also unaware of the increased risks once a queue has formed. According to "Capacity of Freeway Work Zone Lane Closures" by Tom Maze, former director of the Center for Transportation Research and Education, backward-moving queues can build at speeds as high as 30 to 40 miles per hour, catching approaching drivers unaware and increasing the risk of crashes. For example, a queue moving at 35 miles per hour toward a vehicle approaching at 65 miles per hour would result in an overall approach speed of 100 miles per hour, a rate that exceeds drivers' expectations.

Transportation agencies can help educate the traveling public about the importance of driving safely through work zones. In addition, they can create work zones that are easy for motorists to understand and navigate, using devices that are effective, easy to install and dismantle, and crashworthy. •

The importance of NCHRP Report 350

THE FEDERAL HIGHWAY ADMINISTRATION (FHWA) requires that the "crashworthiness" of all roadside hardware, which could be anything from breakaway utility poles to work zone devices, be demonstrated before such devices are used on the National Highway System (NHS). Devices are crashworthy if, in a collision, they do not cause undue damage to motorists, road workers, or vehicles.

"Undue damage" is a fairly vague definition. Therefore, to help agencies determine which products are in fact crashworthy, the FHWA has adopted testing guidelines set forth in the National Cooperative Highway Research Program (NCHRP) Report 350. Only products that have been tested and meet NCHRP-350 guidelines can be used on the NHS.

Although devices used on non-NHS roadways (which include most of the roads managed by Iowa's cities and counties) do not have to meet NCHRP-350 standards, voluntary compliance by city and county transportation agencies could benefit motorists in their jurisdictions. This may be particularly true for work zone devices.

The use of NCHRP 350-compliant devices in local work zones should reduce injury and damages when work zone crashes occur. But perhaps even more important, the use of such devices in local work zones may help reduce the number of crashes.

Helping motorists recognize work zones early and navigate them safely is the key to reducing work zone crashes. Using *consistent* devices in *consistent* ways in all work zones on all roadway networks—NHS and otherwise—helps drivers readily identify work zones and quickly understand their particular layouts and requirements.

For more information on NCHRP 350, and to identify products that have met NCHRP-350 standards, see the FHWA's website, safety.fhwa.dot.gov/roadside/.

Additional information on NCHRP Report 350's application to work zone safety products is available from the National Work Zone Safety Clearinghouse, wzsafety.tamu.edu/files/nchrp350.stm. •