

Drivers Speed Change for Work Zones Features on Four Lane Divided Highways

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Work zones provide challenging and hazardous conditions not only for vehicle drivers, but also for highway workers who are injured or killed by errant vehicles. Over, 96,000 work zone crashes occurred in 2015 which equates to a work zone crash every 5.4 minutes. Several factors have been noted as contributing to work zone crashes. Driver factors have not been as well studied as other factors. This study utilized the SHRP2, Roadway Information Database (511 data) to identify potential work-zones. The research team manually coded the locations of work zone features starting from first work-zone sign to the end of work-zone. The change in speed from a point upstream of the legibility distance of each work zone feature was compared to the speed just past the feature. Driver distraction and eye glance were also included. A linear mixed effects model was used to predict drivers' change in speed in the work zone. Speed feedback signs, lane end sign, and changeable message signs were found to be effective in reducing driver speed before the merge point. Non-forward related glance was seen to increase driver speed inside the work zone. Work zone speed limit signs were seen to be more effective within half mile inside a work zone. Presence of Work Zone Signs were more effective when the cones were placed as channelizing device inside the work zone. Vertical panels as channelizing device were used to decrease driver speed more effectively compared to concrete and cones.

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