

0-7049: Improving and Communicating Speed Management Practices

Background

Posted speed limits (PSLs) are a highly complex issue involving engineering, human factors, and political and societal concerns. On a national level, recent research and calls to change how speed limit are set, especially for city streets, have generated extensive discussion of future speed-limit-setting procedures.

What the Researchers Did

Within this Texas Department of Transportation (TxDOT) project, the research team conducted dialogs with TxDOT districts to learn about the practices and procedures being used, developed a number of products designed to increase the understanding of operating speed and of PSLs, and performed new research into operating speed relationships with roadway characteristics. The developed communication products include videos (one for engineers and one for the public), a pamphlet for public distribution (Figures 1 and 2), answers to common questions about speed and speed limits, and a workshop on state and national speed-limit-setting practices.

What They Found

Review of the literature along with this study's evaluations confirmed that an increase in the PSL is typically associated with a smaller magnitude increase in operating speed and that higher operating speeds are associated with higher PSLs. Freeway geometric factors, including left and right shoulder widths and distance to downstream and upstream ramps by ramp type (entrance or exit), had a significant impact on operating speed.

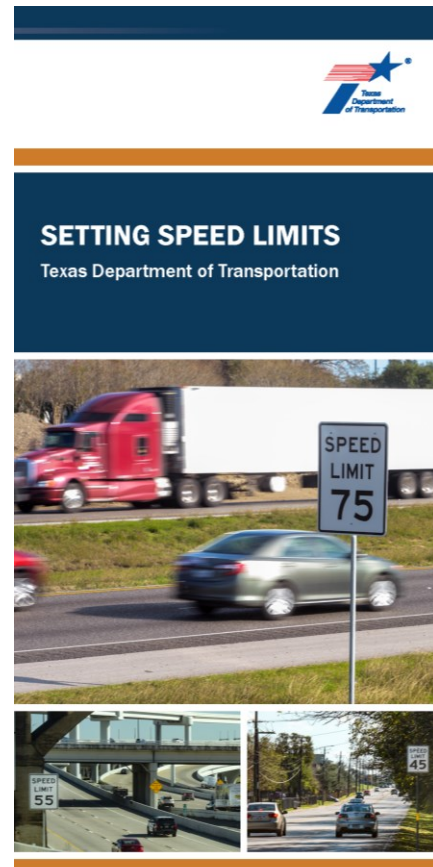


Figure 1. Excerpt of Pamphlet Cover.

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An evaluation of speeds on a sample of Texas non-access-controlled highways used speed study data collected by TxDOT and the research team within the past 20 years. For all development levels, speeds increased with outside shoulder width and overall roadway width. Suburban roadway factors resulting in reduced operating speed included driveway/access point density, signal density, presence of sidewalk, and higher traffic volumes or truck percentages.

Whether operating speeds are increasing over time was explored using both the freeway and non-access-controlled speed datasets. For both datasets, after controlling for changes in development and PSLs, an increase in average operating speed was not observed. The decrease in the number of citations written in Tarrant County was found to be associated with an increase in freeway operating speeds.

What This Means

Improved communication materials available to both the public and the stakeholders and decision makers for speed limits will encourage a more

informed dialog about speed limits, speed-limit-setting procedures, and other speed-related issues—including safety. The results from the survey of state speed management practices and the workshop developed during the research effort aim to improve consistency in both statewide speed-limit-setting procedures and the deployment of speed management devices. Finally, findings from the research regarding the factors that most affect driver speed selection in higher speeds driving environments inform the profession on potential means to influence driver behavior.



Figure 2. Inside of Pamphlet.

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