



Strategies for Improved Driver Behavior Within Work Zones

Problem Description

Work zone (WZ) has long been identified as a potential contributor to traffic fatalities and delays. Despite significant technological advancements that have improved WZ operations, societal concerns about safety and mobility near WZs persist, and Tennessee highways are no exception. The gravity of the problem and the critical nature of instituting solutions to reduce WZ fatalities is evident from the most recent year's WZ crash statistics (2021) of Tennessee, where 3,784 crashes were reported, out of which 12.5% of crashes involved a distracted driver. However, knowledge is scarce on what control/enforcement measures should be implemented, their associated benefits, and drivers' attitude towards these measures. Furthermore, there is insufficient evidence on how the design and positioning of control/enforcement measures influence driver behavior.

Research Objectives

The objectives of this study include the following:

- Derive performance measures to assess the effectiveness of control/enforcement devices
- Identify the effectiveness of targeted law enforcement strategies on driver behavior, both short-term and long-term effects, to achieve lasting changes in driver behavior
- Examine the application of automated and alternative law enforcement techniques and technology in WZs where space is limited for safely pulling drivers over
- Develop a detailed guideline for the WZ pilot study
- Explore the use and effectiveness of new or existing technologies in providing information to drivers and different pavements marking, sign types, and placement types
- Recommend guidelines for ranking the WZs in a transport network based on the urgency of deploying control/enforcement strategies

Potential Implementation and Expected Benefits

The project deliverables have the potential to improve WZ traffic management strategies and safety both in Tennessee and nationally, and they can directly benefit TDOT in the following facets: Advanced Tools and Performance Measures for WZ Classification and Ranking; Transportation Network Level Safety and Mobility Enhancement; Guideline for Deploying Enforcement/Control Measures; Cost Saving; Efficiency Gain; Safety Improvements; Improved Procedure and Processes; Customer Service Improvement; Time Saving; Decreased WZ Crashes, Injuries, and Deaths; Safer WZs for TDOT Staff & Workers; Improved Driver Behavior; Increased Attention & Decreased Speed. Additionally, avenues for improving currently implemented WZ resources will be provided to TDOT.

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PRINCIPAL INVESTIGATOR:

Dr. Sabya Mishra
University of Memphis

TDOT LEAD STAFF:

Jason Quicksall
Roadway Design

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