Texas A&M Transportation Institute

PROJECT SUMMARY

Texas Department of Transportation

0-7046: Developing Guide Signing for Long-Term Work Zones

Background

Freeway work zone guide signs on long-term construction projects sometimes lack uniformity in design and placement. Research was needed to identify problems and recommend solutions for improving these signs and help motorists better navigate their path through freeway work zones.

What the Researchers Did

The researchers surveyed Texas Department of Transportation (TxDOT) construction project managers to understand the state of the practice for design and placement of work zone guide signs in long-term construction projects. In addition, the researchers performed work zone positive guidance assessments to document issues with work zone guide signs. The following research questions were developed:

- What are the impacts of using temporary lane guidance signs (with arrows) placed on the roadside for lane assignment?
- What are effective strategies for signing exit lane drops in work zones?
- What are the differences in driver responses between using signs with black legend on orange background versus white legend on green background?
- What are the impacts of combining the exit number with other information on advance guide and exit direction signs (i.e., all information on one sign instead of using a plaque)?
- What are the differences in driver responses between using mixed-case (upper and lower) letters versus all capital letters on exit signs?

Alternative signs were developed and evaluated using an online survey of Texas drivers. Figure 1 shows an example sign.

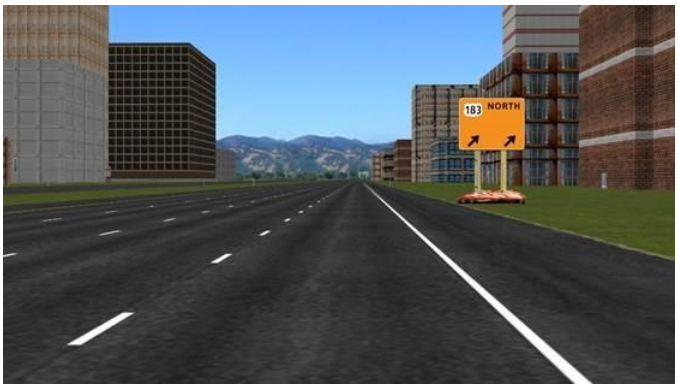

Figure 1. An Example of a Sign Image Used in the Online Survey.

What They Found

The research outcomes led to the following guidance and recommendations:

- Designers should avoid splitting information on temporary lane guidance signs at interchanges. Drivers need to have all arrows (one for each lane) displayed in order to be able to make accurate decisions about whether or not they need to change lanes.

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- EXIT ONLY plaques on temporary lane guidance signs do not significantly enhance driver understanding of the signs used in this study. However, the use of EXIT ONLY plaques may be important for interchanges with option lanes, but those signs were not tested.
- The use of a separate exit number plaque on advance guide signs did not have an impact on driver understanding of the sign when compared to a similar sign with the exit number embedded. However, there is evidence that not having sufficient time to view and process all the information shown (e.g., if the sign legend is too small or if too much information is shown) leads to increased uncertainty about whether or not the driver should exit.
- The *Texas Manual on Uniform Traffic Control Devices* provides minimum letter and numeral sizes for advance guide and exit direction signs. If the information that needs to be conveyed on a sign does not fit, the information can be split and displayed on two separate signs. However, those signs should be placed such that the driver has sufficient time between signs to process the information on each sign before encountering another sign.
- No specific recommendations on exit gore sign colors can be provided based on the results of this research. Current practices appear to be consistent with motorist perceptions of the reasons for the use of orange exit gore signs.
- Designers should continue to use Highway Series fonts (not Clearview) for work zone guide sign legends. To clarify, additional policy guidance from TxDOT may be needed for those engaged in roadway plan preparation.

What This Means

Consistency in design and placement of work zone guide signs will help motorists better navigate their path through freeway work zones.

For More Information

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