

Validating Collection Methods for and Quantification of Travel Time Delay Through Work Zones Across Vermont

PROJECT TITLE

Validating Collection Methods for and Quantification of Travel Time Delay Through Work Zones Across Vermont

STUDY TIMELINE

June 2023 – June 2024

INVESTIGATORS

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KEYWORDS

Work zone capacity, work zone speed impacts, work zone delay, travel time delay, value of travel time, travel time reliability

FUNDING

VTRC023-604
\$140,000



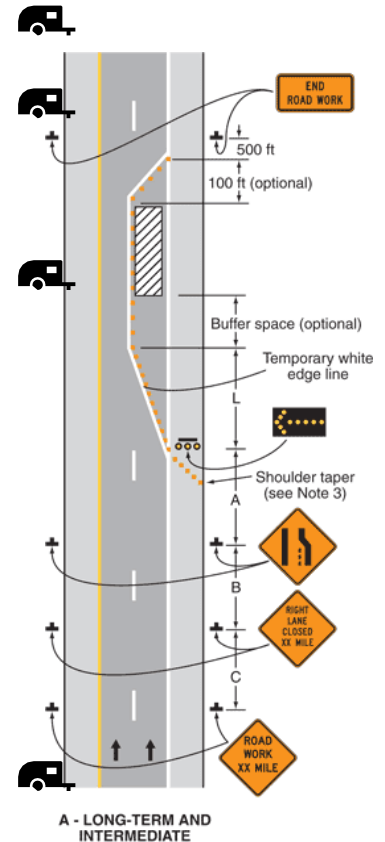
More information about the VTrans Research Program, including additional Fact Sheets, can be found at:
<http://vtrans.vermont.gov/planning/research>

Introduction or Problem Statement

Although the Vermont Standard Specifications for Construction identify an acceptable delay in work zones of less than 10 minutes per operation and less than 15 minutes cumulatively for a project maintaining one-way traffic, it is recognized that these thresholds have been set without consideration for context, procedures for measuring delay, or methods for mitigating delay. The objectives of this project are to validate the effectiveness of various types of travel-time delay measurement methods and quantify the delays incurred across a variety of work zones in Vermont. These objectives aim to recommend changes to the current and future VTrans construction specifications and updates to the VTrans Work Zone Safety and Mobility Guidance regarding a standard operating procedure for collection of data and measurement of delay to ensure compliance with the specification.

Methodology or Action Taken

The initial phase of the project reviewed the work zone safety and mobility practices in Vermont and researched best practices from other state DOTs for both standards of allowable travel time delay and methods for quantifying delay in work zones. This information was used to help identify delay measurement methods to test via mobile traffic monitoring platforms (MTMPs).



Assembly of the MTMPs was initiated while the team gathered information on potential candidate projects for measuring travel time delay in the field based on project significance levels, project timelines, and feasibility of sites for the MTMP deployments.

The team anticipates deployment of the MTMPs in candidate work zones through the Fall 2023 and into Spring construction season in 2024. Data gathered will be post-processed to establish a travel-time delay calculation procedure. Methods of data collection and delay measures will be evaluated based on measures of effectiveness (MOEs) identified in the literature review.

Conclusions or Next Steps

The project team is working on final assembly and testing of the MTMPs for deployment at candidate test sites. This data collection phase is expected to span the Fall construction season and resume in the Spring of 2024.

Potential Impacts and VTrans Benefits

This research will serve to directly inform the criteria for context-sensitive, maximum-acceptable travel time delays through work zones in Vermont and identify viable methods and procedures for quantifying delay through work zones in support of the established Work Zone Safety and Mobility Policy goals. The findings of this project will be used by the VTrans WZTC to make recommendations for changes to the current and future VTrans construction specifications and to make future updates to the VTrans Work Zone Safety and Mobility Guidance document. Ultimately, the anticipated benefits of this research will be a practical implementation of the travel-time delay standards for work zones in Vermont, which will serve to increase mobility and improve VTrans' level of service to the travelling public.
