

UTC Project Information	
Project Title	Commuter Mobility versus Work-zone Safety: An Empirical Study using Data Mining of Anonymous User Generated Trip Information
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Funding Source(s) and Amounts Provided (by each agency or organization)	University of Washington PacTrans \$35,000 Oregon State University \$35,000
Total Project Cost	\$70,000
Agency ID or Contract Number	69A3551747110
Start and End Dates	August 16, 2017 – August 15, 2019
Brief Description of Research Project	This research proposes the development of a decision support system (DSS) for state DOTs and contractors to determine the most effective traffic control and work zone operation plans by evaluating their efforts on the mobility of the traveling public. Work-zone information such as start and end times, number of lanes closed, and traffic control plans will be collected from the project plans and site visits. In this research mobility will be measured as the difference in travel times before and after the introduction of a work-zone along a particular route. This information will be obtained by periodic sampling of anonymized crowd-sourced data from publicly available mobile mapping services through their application programming interfaces (APIs).

<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	<p>The outcomes of this research are the creation of a decision-making framework that balances consideration of safety and mobility in the when selecting work-zone safety and channelizing devices. This framework can be adopted by any state DOT to evaluate available safety devices based on local specifications. The second outcome of this project was the collection of data that is specific to the Pacific Northwest region and which informed the prioritized ranking of available traffic control and channelization devices for use on work-zones. Data collected from both workers and commuters using separate surveys was used in the developed decision-making framework to enable this ranking.</p>
<p>Impacts/Benefits of Implementation (actual, or anticipated)</p>	<p>The primary benefit of this research is in providing practical recommendations for work-zone design that takes into account both the safety and mobility concerns of workers and traveling public respectively. A workflow is provided that enables the separate consideration of these aspects, prior to integrating them into a single index that can be used for ranking them. This is expected to decrease the amount of safety incidents that occur on the work-zone without unduly passing the burden on to commuters in terms of lost time due to ravel delay.</p> <p>A secondary benefit of the research is the creation of a workflow to use freely available crowd-sourced mapping data that is available through the front-end of proprietary commercial mapping applications. An image processing algorithm is provided to extract information from web-application and convert that into usable travel-related metrics for research purposes. This can enable future researchers to obtain large-scale traffic information rapidly.</p>
<p>Web Links</p> <ul style="list-style-type: none"> • Reports • Project Website 	<p>The report will be published on the PacTrans website.</p>