

UTC Project Information	
Project Title	Improving the Safety Left-Turn Operations at Signalized Intersections for High-Risk
University	University of Idaho
Principal Investigator	Ahmed Abdel Rahim
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Funding Source(s) and Amounts Provided (by each agency or organization)	University of Washington PacTrans \$50,000 University of Idaho \$50,000
Total Project Cost	\$100,000
Agency ID or Contract Number	DTRT13-G-UTC40
Start and End Dates	December 16, 2016 – January 31, 2018
Brief Description of Research Project	<p>The project investigates signalized intersection left-turn related crashes to identify operation alternatives that have the potential of improving the safety of signalized intersection operations for all users. Idaho crash data along with the geometric, control, and operational characteristics of different signalized intersections in Idaho were used to assess the potential crash reduction benefits of different operational measures and intersection treatments. The results of the project showed that there was no significant difference in left-turn crashes between intersections that use a flashing yellow arrow and intersections that use a doghouse left-turn signal display. The study results suggest that there is a need for more emphasis on left-turn permitted operations at signalized intersections in teen driver education programs, as teen drivers represent the most vulnerable group. Protected-only left-turn operations at signalized intersections on routes and neighborhoods with a high mature driver population can eliminate significant portion of mature drivers' left-turn related crashes. Protected-only left-turn operations at signalized intersections during inclement weather conditions can eliminate a significant portion of the 8% of the crashes that occur during inclement weather.</p>

<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	<p>The results of this research are used by Idaho Transportation Department (ITD) and Local transportation agencies to improve the safety of left-turn operations at signalized intersection approaches. Several measures are being considered:</p> <ul style="list-style-type: none"> • Guidelines to driver education instructors in the state to emphasis more on permitted-left turn operations in their courses • Guidelines to agencies to move to permitted-only left-turn operations at intersections with high left-turn related crashes • When permitted, change the operation of left-turn to protected only during inclement weather conditions
<p>Impacts/Benefits of Implementation (actual, or anticipated)</p>	<p>The anticipated benefits of research outcome implementation are safer and efficient left-turn operations at signalized intersection approached and improved safety for the high risk groups: namely younger driver and mature drivers. The anticipated outcome also include safer signalized intersection left-turn operations during inclement weather conditions.</p>
<p>Web Links</p> <ul style="list-style-type: none"> • Reports • Project Website 	