

UTC Project Information	
Project Title	Rural Bridge Safety: Evaluation of Atypically Large Farm Vehicles
University	University of Idaho
Principal Investigator	Ahmed Ibrahim
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Funding Source(s) and Amounts Provided (by each agency or organization)	University of Washington PacTrans \$45,000 University of Idaho \$45,000
Total Project Cost	\$90,000
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 Pacific Northwest region has no data on the assessment and recommendations on rural bridge design and safety subjected to Farm Vehicle (FV) loading. The proposed study will determine how different types of FVs with different characteristics distribute their loads on bridge superstructures. These will be realized through actual load testing, computer simulation, and statistical analysis. At least two bridges, one in ID and one in OR, will be physically tested, subject to a variety of FVs. The structural behavior of the bridges will be monitored using wireless sensors to assess the behavior of bridges' superstructures and the corresponding load distribution factors for girders under the critical loading conditions will be determined. The selected bridges will be representative of rural bridges problematic for FV traffic in the region. The field investigation of the proposed bridges will be used to validate computer models in order to explore a broad number of bridges under various FVs.</p>

<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	<p>The results of the proposed project are anticipated to be implemented in bridge design and highway safety manuals of Idaho Transportation Department. To promote the transfer of the project findings into professional design documents, the format of the final results will be consistent with the current standards of those respective documents. The PIs will organize a workshop to train local Highway Technical Assistance Council (LHTAC) personnel in the states within the region.</p>
<p>Impacts/Benefits of Implementation (actual, or anticipated)</p>	<p>The project results will have an impact on the design of bridges located in rural areas as it will provide the transportation/structural engineers with a methodology to assess the transportation safety along supply chain routes by documenting the rural bridge infrastructure and operational characteristics of FVs used in the Pacific Northwest region that carry commodities such as sugar beets, potatoes, manure, and grains. Therefore, developing live load distribution and load rating factors for rural and off-road bridges accompanied by a general performance measures to determine their safe load carrying capacity. Finally, determine comprehension levels of FV operators for the load ratings of rural bridges, the loads associated with FVs, and potential signage which could serve to mitigate possible bridge failures.</p>
<p>Web Links</p> <ul style="list-style-type: none"> • Reports • Project Website 	