

UTC Project Information	
Project Title	MPC-472 – Developing an Optimization Model for Managing County Paved Roads
University	University of Wyoming
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Agency ID or Contract Number	DTRT13-G-UTC38
Project Cost	\$87,497
Start and End Dates	September 30, 2013 to September 30, 2018
Project Duration	September 30, 2013 to September 30, 2018
Brief Description of Research Project	<p>Any Pavement Management System (PMS) consists of two basic components: a comprehensive database and a set of tools or methods that can assist decision makers in establishing cost effective strategies for evaluating and maintaining pavements. The comprehensive database should contain current and historical information on pavement condition, structure, and traffic. The set of tools or optimization techniques will determine existing and future pavement conditions, predict financial needs, as well as identify and prioritize pavement preservation projects. In 2014, WYDOT and the State Transportation Innovation Council (STIC) funded a research project to develop a comprehensive database for county paved roads. As part of that study, a comprehensive data collection effort was conducted by the Wyoming T2/LTAP center to collect roadway inventory data, traffic counts, roadway widths, pavement condition data and roadway thickness. This proposal seeks to develop the second component of PMS which includes developing a set of tools to optimize the conditions of county paved roads.</p>
Describe Implementation of Research Outcomes (or why not implemented)	Specific PSI models should be developed to reflect the local considerations of county roads. These models avoid the misrepresentation of pavement conditions on county roads to be in

<p>Place Any Photos Here</p>	<p>very poor conditions compared to state highways in the state. However, when comparing the condition of county roads to the state’s highway system, the state model should be used for funding request.</p> <p>Innovative applications of pavement condition data collection should be considered to reduce the costs if data collection process. Smartphones accelerator data can be used to predict the international roughness index (IRI) with high certainty compared to the values collected by automated road profile equipment.</p> <p>In order to secure an appropriate funding from the Wyoming Legislatures to implement a statewide county PMS, it is recommended that the proposed risk-based pavement management model be implemented. This model is based on the current conditions of the road maximizing the expected average PSI and ADT with minimum risk associated with the future maintenance cost.</p>
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	<ul style="list-style-type: none"> • Developing more representative pavement serviceability models. • Providing a better description of the pavement condition for county roads according to the local perspective. • Establishing a reliable road roughness measurements using smartphones as a cost effective solution. • Help law makers assign appropriate maintenance funding to preserve the condition of county roads network in the state.
<p>Web Links</p> <ul style="list-style-type: none"> • Reports • Project Website 	<p>https://www.ugpti.org/resources/reports/details.php?id=975</p>