

UTC Project Information	
Project Title	MPC-633 – A Feasibility Study for Establishing a Regional Road Track Pavement Testing Facility in Wyoming
University	University of Wyoming
Principal Investigator	Marwan Hafez, Ph.D. Khaled Ksaibati, Ph.D., P.E.
PI Contact Information	<p>Marwan Hafez, Ph.D. Postdoctoral Research Associate Wyoming Technology Transfer Center University of Wyoming Phone: (307) 761-2463 Email: mhafez@uwyo.edu ORCID: 0000-0002-0303-7867</p> <p>Khaled Ksaibati, Ph.D., P.E. Professor and Director of the Wyoming Technology Transfer Center University of Wyoming Phone: (307) 766-6230 Email: khaled@uwyo.edu ORCID: 0000-0002-9241-1792</p>
Funding Source(s) and Amounts Provided (by each agency or organization)	<p>USDOT, Office of the Assistant Secretary for Research and Technology \$68,628</p> <p>Wyoming Department of Transportation \$102,002</p>
Total Project Cost	\$170,630
Agency ID or Contract Number	69A3551747108
Start and End Dates	August 25, 2020 to July 31, 2024
Brief Description of Research Project	<p>Road testing provides a logical method to test pavement materials and structures under actual traffic loading and environmental conditions. Although different experiments of road testing track were conducted in several states, no road track testing facility was developed in the dry-freeze climatic region for regional research. The state of Wyoming presents a unique opportunity to be the home for a regional facility of road testing track. Wyoming's Interstate 80 provides approximately traffic loads of 2 million Equivalent Single Axle Load (ESAL) per year which can cause accumulated damage on test sections in a timely manner. This proposal identifies the feasibility of building the regional testing facility on Wyoming's I-80. The proposal will determine the benefit cost impact of the testing facility and identify potential experiments of cutting-edge investigations in pavement design, materials, construction, and management. The study will be divided into two phases where the first phase will focus only on the feasibility study to obtain sufficient relevant information for building and operating the regional testing facility. The results from this study are expected to</p>

	provide informed decisions for the implementation of pavement testing in the regional facility in the second phase.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	Based on the results of this feasibility study, constructing a new test track on I-80 in Wyoming is found to be feasible. It is highly recommended that WYDOT and other state DOTs realize that partnerships in accelerated pavement testing (APT) are the way forward, looking at the global economic situation. Partnerships are key to avoiding duplication of research topics. WYDOT needs to establish and nurture relationships with MnROAD, NCAT, other APTs, industry, and state DOTs. Through these relationships, WYDOT can discover pavement research areas and share ideas and resources for a successful program. It is recommended that WYDOT identify the operation costs of the proposed testing facility in a uniform shape. The funding must be secured from the involved agencies regardless of the expected partners. Having constant and stable funding for the operation would be very beneficial for long-term monitoring and for avoiding delays in operations.
Impacts/Benefits of Implementation (actual, not anticipated)	The proposed APT program test track is expected to improve the performance of pavements in the dry-freeze region cost-effectively and promote technology transfer. Once established, this unique facility will be the sole test track of its size in the dry-freeze region. APT facilities can effectively evaluate pavement marking materials, geotechnical experiments, electric road systems, connected and autonomous vehicle technology, truck platooning testing, drainage testing, and intelligent compaction technologies. Lessons learned related to site selection, partnership, test road design, staffing, contracting, instrumentation, implementation strategies, and funding help new facilities know where to begin the planning process after the conceptual stage.
Web Links <ul style="list-style-type: none"> • Reports • Project Website 	<ul style="list-style-type: none"> • MPC Final Report – A Feasibility Study for Establishing a Regional Road Track Pavement Testing Facility in Wyoming