UTC Project Information	
Project Title	MPC-632 – Improving Design and Construction of Transportation Infrastructure through Bedrock Characterization
University	University of Wyoming
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Funding Source(s) and Amounts Provided (by each agency or organization)	USDOT, Office of the Assistant Secretary for Research and Technology $50,000 Wyoming Department of Transportation $75,000
Total Project Cost	$125,000
Agency ID or Contract Number	69A3551747108
Start and End Dates	August 25, 2020 to July 31, 2022
Brief Description of Research Project	Tertiary bedrock formations are commonly encountered during the design and construction of transportation infrastructure in Wyoming. The engineering properties of these bedrocks are highly variable due to the geological processes to which they have been subjected including deposition, cementation, weathering and erosion. Furthermore, comprehensive experimental investigations on these bedrocks are rarely performed in the past due to the absence of advanced rock testing equipment, and hence their strength and deformation behaviors are not well understood. However, our transportation infrastructure, such as bridges, slopes and roadways, is either constructed on or associated with these bedrock formations in Wyoming. The overall objective of the proposed research is to understand the strength and deformation behaviors of Wyoming bedrocks in order to improve the resilience of our transportation infrastructure to disaster. The research objectives will be achieved by completing six major tasks: literature review, assessment of WYDOT electronic database and rock inventory, geotechnical investigation and rock sampling, laboratory rock testing, data analysis and correlation development, and outcomes recommendations and reporting. The research will yield many beneficial outcomes pertinent to design and construction of transportation infrastructure.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	The bedrock properties will be used in future design of transportation infrastructures to improve the design efficiency and alleviate any construction challenges. Furthermore, prediction equations can be implemented to predict engineering properties without spending resources to perform complicated and expensive experiments.

Impacts/Benefits of Implementation (actual, not anticipated)	The research recommendations provide a set of engineering properties of most bedrock encountered in Wyoming by WYDOT. These measured properties will improve the design efficiency and increase reliability of our transportation infrastructure. Furthermore, cost associated with site investigation and laboratory testing will be reduced.
Web Links • Reports • Project Website	• MPC Research Report – Improving Design and Construction of Transportation Infrastructure through Bedrock Characterization