UTC Project Information	
Project Title	MPC-671 – Development of Dynamic Modulus Parameters from Single Point Tests
University	University of Utah
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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 $40,000 Utah Department of Transportation $50,000
Total Project Cost	$90,000
Agency ID or Contract Number	69A3551747108
Start and End Dates	September 24, 2021 to July 31, 2024
Brief Description of Research Project	This research seeks to develop a relation between quality-control/quality-acceptance material tests that have been developed to control cracking (bending beam rheometer for mixtures at low temperatures, and the IDEAL CT at intermediate temperatures) and the dynamic modulus, E*, master curve. The master curve values are used as input to the pavement design software but, due to difficulty in determining the dynamic modulus, national averages are often used rather than specific local material properties. This work will result in a relation between the material properties and the structural design of pavements which will allow for cost optimization and improvement of pavement mixes to minimize cracking (a major maintenance issue).
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	The implementation of research outcomes will occur once models that predict the dynamic modulus of asphalt mixtures have been developed. With these models, quality-control tests will be incorporated into the pavement structural design process.
Impacts/Benefits of Implementation (actual, not anticipated)	The benefits of implementing this work will be the ability to design pavements based on local materials thus allowing for life-cycle analysis.
Web Links • Reports • Project Website	• MPC Research Report – Development of Dynamic Modulus Parameters from Single Point Tests • Journal Article – Physicochemical Characterization of Short and Long-Term Aged Asphalt Mixtures for Low-Temperature Performance

	• Technical Paper – Practicality of Driven Parameters of Semicircular Bending Test at Intermediate Temperature • Research Article – Methods to Evaluate Intermediate Temperature Properties of Asphalt Mixtures by the Semi-circular Bending Test • Research Article – A Long-Term Field Study of the Ability to Predict Thermal Cracking of Asphalt Mixtures Tested by the Bending Beam Rheometer • UDOT Report – Balanced Asphalt Concrete Mix Performance in Utah, Phase V: Field Evaluation for Intermediate and Low-Temperature Cracking • UDOT Report – Balanced Asphalt Concrete Mix Performance in Utah, Phase IV: Cracking Indices for Asphalt Mixtures