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| UTC Project Information |
| Project Title | MPC-701 – Relation between Dynamic Modulus of Asphalt Material and Its Cracking Tolerance |
| University | University of Utah |
| Principal Investigator | Pedro Romero, Ph.D., P.E. |
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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$40,000Utah Department of Transportation$50,000 |
| Total Project Cost | $90,000 |
| Agency ID or Contract Number | 69A3551747108 |
| Start and End Dates | October 13, 2022 to July 31, 2024 |
| Brief Description of Research Project | This project seeks to develop a relation by which the characteristics of the dynamic modulus of asphalt materials could be selected from a single point value such as the cracking tolerance index. The dynamic modulus is one of the primary inputs for pavement design using AASHTOWare Pavement ME®; however, obtaining those values is time consuming and requires extensive resources. Therefore, such values are often not measured and averages or default values are used instead. Not using actual values results in over/underprediction of performance and limits the capabilities of the designs. Relating the results from simpler tests that are currently used as part of the material’s quality control process will allow the incorporation of local material properties into the mechanistic pavement designs resulting in more economical designs and the incorporation of life-cycle analysis. |
| Describe Implementation of Research Outcomes (or why not implemented)Place Any Photos Here | Based on this work, highway agencies can use the results from the IDEAL CT test for the design of pavements. The IDEAL CT test, while not perfect, can be run in a reasonable amount of time and provide the necessary inputs for the AASHTOWare Pavement ME design process. |
| Impacts/Benefits of Implementation(actual, not anticipated) | Using project-specific material properties allows for more robust pavement designs and the ability to optimize resources based on realistic life-cycle analysis. |
| Web Links* Reports
* Project Website
 | * MPC Final Report – [Relation Between the Dynamic Modulus of Asphalt Materials and Its Cracking Tolerance Index](https://www.ugpti.org/resources/reports/details.php?id=1172)
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