

# 2020 UDOT RESEARCH PROBLEM STATEMENT

**Problem Statement deadline is March 16, 2020. Submit statements to [UTRAC@utah.gov](mailto:UTRAC@utah.gov)**

*All submitted problem statements become the property of UDOT and authors are not guaranteed a contract for related work.*

**Title:** Multi Laboratory Testing of IDEAL-CT

**No. (Office Use):** 20.01.08

**Written By:** Pedro Romero    **Organization:** University of Utah    **Email:** pedro.romero@utah.edu    **Phone:** 801-587-7725

**Submitted By UDOT Employee:**    **Email:**    **Phone:**

**UDOT Champion (if different):** Howard Anderson    **Email:** handerson@utah.gov    **Phone:**

**Select ONE Subject Group**     Materials/Pavements     Maintenance     Traffic Mgmt/Safety     Structures/Geotech  
 Planning     Aeronautics     Public Transportation     Other

**1. Write a brief research project objective:**

Develop within- and between-laboratory variability statement for the IDEAL -CT test in support of its adoption as a specification for intermediated temperature testing

**2. Explain the problem and why this research is important: (*Importance reflects 50% of the statement score*)**

Adoption of an intermediate cracking tests is the final leg of the performance related specifications being adopted by UDOT. As part of adopting the test, it is necessary to understand the within and between variability of the test. Even though the test is becoming popular with state agencies, including UDOT, there is no adopted national specification for the IDEAL-CT, therefore before the test is adopted it is necessary to understand its variability. Furthermore, some asphalt producers are starting to use the test for mix design, thus it is important that a proper variability study be conducted.

**3. Describe how the research results will be implemented and benefit Utah: (*Implementation reflects 50% of the statement score*)**

Within- and between-laboratory variability of the test will be evaluated using UDOT, University, consultants, and asphalt producers so that the results of the test, based on Utah asphalt mixtures is understood. Knowing the variability, UDOT can implement the test as part of their pavement quality efforts.

**4. List the major research tasks:**

Literature Search  
Collect plant produced mixture from at least two suppliers  
Compact samples and test them at different labs (University, Consultant, and UDOT, plus asphalt supplier)  
Analyze data  
Report on findings

**5. List the expected research deliverables (reports, manual, specification, design method, training, video, etc.):**

Report showing the within- and between-laboratory variability of the IDEAL CT test.

**6. Requested from UDOT:** \$40,000

**Other/Matching Funds:** \$10,000

**Total**

**Cost:** \$50,000

**Briefly explain funding sources:** UTRAC plus National Transportation Center

**7. Outline the proposed schedule, including start and major event dates:**

Funding Available: Summer, 2020  
Literature Search: Fall 2020  
Testing Summer and Fall 2020  
Comparison and Analysis Spring 2021  
Final Report Summer 2021