

# 2016 UDOT RESEARCH PROBLEM STATEMENT

\*\*\* Problem statement deadline is March 14, 2016. Submit statements to Tom Hales at [tahales@utah.gov](mailto:tahales@utah.gov). \*\*\*

**Title:** Performance Tests for Asphalt Emulsions

**No. (office use):** 16.01.12

**Submitted By:** Roy Ulibarri & Howard Anderson

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**UDOT Champion (suggested):** Roy Ulibarri

**Select One Subject Area**

Materials/Pavements

Maintenance

Traffic Mgmt/Safety

Preconstruction

Planning

Public Transportation

**1. Describe the problem to be addressed.**

UDOT has used chip seals and cold-in-place recycling (CIR) techniques on many asphalt pavement projects. However, we don't have performance tests for the asphalt emulsions that are part of these processes. This can lead to problems in the field when loss of chips or early rutting of CIR pavement occurs under traffic.

**2. Explain why this research is important.**

For example, with CIR engineered emulsions, our current specification uses an approved product list. We need a performance test to get away from this approach, allow for more industry competition, and have more certainty of success for projects involving emulsions.

**3. List the research objective(s):**

1. Evaluate the potential for the Pneumatic Adhesion Tension Testing Instrument (PATTI) to be used for an emulsion performance test.
2. Evaluate the potential for CME Transportation Engineering Group's cone penetration viscosity test (demulsifying test) as an emulsion performance test.

**4. List the major tasks:**

1. UDOT provides a literature search and/or survey and the results, including information from the Rocky Mountain Asphalt User/Producer Group.
2. Set up the equipment for the tests. This would involve a consultant lab in collaboration with the UDOT Central Asphalt Lab.
3. Run the tests and gather data using different emulsions.

**5. List the expected results:**

1. Proposed specification parameters.
2. Written report for each of the two types of tests.

**6. Describe how this research will be implemented.**

The UDOT Central Asphalt Lab will work to further evaluate the specification limits and implement these with a special provision and/or a test section.

**7. Requested from UDOT:** \$50,000  
(or UTA for Public Transportation)

**Other/Matching Funds:** \$

**Total Cost:** \$50,000

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

Approximately 18 months, start to finish, including the emulsion-availability season.