

## **RP 313 – Study of Idaho Degradation Test and Other Test Methods for Assessing Aggregate Quality**

### ○ Project Description:

The Idaho Degradation Test (IT-15) is a modified version of a degradation test from Washington State DOT (1959). This test is one of several tests used to qualify or disqualify aggregate sources and products. With time, the original research data and the criteria that established the Idaho Degradation Specification has been lost. This lack of data prevents ITD from full understanding the significance of the test results.

The IT-15 test has poorly defined procedures causing variability in results between individuals and labs. Presently, it is unknown if variations are inherent in the test procedure or attributable to differences in how the test is being performed by the individual testing firms. This test needs validation to gain a better understanding of the test method and its results as it relates to aggregate quality. As our current aggregate sources become depleted and a need for developing new sources arises, ITD needs to ensure that the specification is established on sound and current data to prevent low quality aggregate on the roadways while allowing for an appropriately conservative specification.

This study will be the first step to quantify the differences within the test, establish clear direction in how to process the aggregates for testing and compare results to other nationally recognized test procedures on the exact same material. The research will gather all existing documentation into one place and new data will be generated and categorized to create a dataset that can be expanded in the future. ITD will have updated data to support the Idaho Degradation Specification or potentially propose new or modified specifications.

### ○ The objectives of this project are:

1. To conduct a literature review on the development, implementation, and current state of practice of the Idaho Degradation Test, in addition to practices at other State DOTs and other aggregate quality tests that may serve to supplement or validate the Idaho Degradation Test
2. To establish an improved and well-defined test methodology.
3. To apply improved test methodology to aggregates from sources throughout Idaho and analyze data to assess the accuracy and reliability of the Idaho Degradation Test.
4. To provide recommendations for ITD to implement the outcomes of the research, including a well-documented Idaho Degradation Test method and any supplemental tests needed to assess aggregate quality.

### ○ Estimated Completion Date: May 24, 2024

### ○ Budget: \$80,000

### ○ Project Manager: Adrienne Woods, Environmental Planner and District Material Source Manager, 208-886-7841, [Adrienne.Woods@itd.idaho.gov](mailto:Adrienne.Woods@itd.idaho.gov)

### ○ Principal Investigator: Huachun (Dave) Zhai, Ph.D., P.E., CMQ/OE, 208-442-7742, [hzhai@idahoasphalt.com](mailto:hzhai@idahoasphalt.com)

### ○ Co- Principal Investigator: Yang Lu, Ph.D., P.E., 208-426-3783, [yanglufrank@boisestate.edu](mailto:yanglufrank@boisestate.edu)

### ○ TAC Members:

Chad Clawson, P.E., 208-334-8453, [Chad.Clawson@itd.idaho.gov](mailto:Chad.Clawson@itd.idaho.gov)

Dana Dietz, P.E., 208-334-8836, [Dana.Dietz@itd.idaho.gov](mailto:Dana.Dietz@itd.idaho.gov)

John Arambarri, P.E., 208-334-8099, [John.Arambarri@itd.idaho.gov](mailto:John.Arambarri@itd.idaho.gov)

Sam Carroll, 208-334-8139, [Sam.Carroll@itd.idaho.gov](mailto:Sam.Carroll@itd.idaho.gov)

Nicholas Stevens, 208-772-1211, [Nicholas.Stevens@itd.idaho.gov](mailto:Nicholas.Stevens@itd.idaho.gov)

Michael Martin, 208-754-5678, [Michael.Martin@itd.idaho.gov](mailto:Michael.Martin@itd.idaho.gov)

Jason Armstrong, 208-779-4219, [Jason.Armstrong@itd.idaho.gov](mailto:Jason.Armstrong@itd.idaho.gov)

### ○ FHWA Advisor: Kyle Holman, P.E., 208-617-2135, [Kyle.Holman@dot.gov](mailto:Kyle.Holman@dot.gov)