

# **NCHRP UPDATE**

**September 2014**



## ***9-49: Performance of WMA Technologies: Stage I- Moisture Susceptibility***

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- Do WMA technologies adversely affect the moisture susceptibility of asphalt pavements?
- Guidelines for identifying and limiting moisture susceptibility.
- **Project final report will be published in early 2014.**

***TTI (Completed)***



## ***9-49A: Performance of WMA Technologies: Stage II- Long-Term Field Performance***

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- **Identify the material and engineering properties of WMA pavements that are significant determinants of their long-term (> 4 years) field performance.**
- **New projects: IA, LA, MT, TN, TX (2011-12).**
- **Existing projects: CO, IL, LA, MD, MO, MN, NE, NV, OH, PA, SC, TN, TX, VA, WA (2005-10)**
- **May 2013 24-month analysis report reviewed by panel.**

***Washington State University (July 2016)***

## ***9-52: Short-Term Laboratory Conditioning of Asphalt Mixtures***

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- **Develop procedures and associated criteria for short-term laboratory conditioning of asphalt mixtures that simulate (1) plant mixing and processing to the point of loading in the transport truck and (2) the initial period of field performance.**

***Texas Transportation Institute (November 2014)***

## ***9-53: Properties of Foamed Asphalt for Warm Mix Asphalt Applications***

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- **Determine key properties of foamed asphalt binders that significantly influence the performance of asphalt mixtures.**
- **Develop laboratory protocols for foaming of asphalt binders and laboratory mixing procedures.**

***Texas Transportation Institute (December 2014)***



## ***9-54: Long-Term Aging of Asphalt Mixtures for Performance Testing and Prediction***

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**Develop and validate a laboratory procedure to simulate long-term aging of asphalt mixtures for performance testing and prediction.**

***North Carolina State University (May 2016)***



## ***9-55: Recycled Asphalt Shingles in Asphalt Mixtures with Warm Mix Asphalt Technologies***

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**Develop a design and evaluation procedure for acceptable performance of asphalt mixtures incorporating WMA technologies and RAS, with and without RAP, for project-specific service conditions.**

***National Center for Asphalt Technology (Sept 2016)***



# MATERIALS AND MIX DESIGN



## ***9-48: Field versus Laboratory Volumetrics and Mechanical Properties***

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- **Determine sources of variability for volumetric and mechanical properties of dense-graded asphalt mixtures between (1) laboratory mixed and compacted, (2) plant mixed and laboratory compacted, and (3) plant mixed and field compacted.**
- **Meta-analysis of extensive data sets from literature inconclusive. Controlled laboratory experiment underway.**

***Louisiana Transportation Research Center (December 2013)***



# FY 2015 PROJECTS

**9-58 *The Effects of Recycling Agents on Asphalt Mixtures with High RAS and RAP Binder Ratios (\$1,500,000)-  
Awarded***

**9-59 *Binder Fatigue, Fracture, and Healing and its Contribution to Hot-Mix Asphalt Fatigue Performance (\$750,000)-RFP issued***

**1-55 *Porous Friction Course Design and Maintenance (\$300,000)***

**NCHRP Synthesis 20-05/Topic 46-03 *Performance-Based Specifications (PBS) for Asphalt Mixtures (\$40,000)***

**NCHRP Synthesis 20-05/Topic 46-05 *Use of Recycled Asphalt Pavement and Shingles (\$40,000)***



***Thanks!***