FHWA Mixtures and Construction Expert Task Group Meeting

April 2016

FY 2017 PROJECTS

- **Project 9-61: Short and Long-term Aging Methods to Accurately Reflect Binder Aging in Different Asphalt Applications** ($750,000)
- **Project 9-62: Quality Assurance and Specifications for In-Place Recycled Pavements Constructed Using Asphalt-Based Recycling Agents** ($750,000)

PROJECTS NEARING COMPLETION

- **9-49A: Performance of WMA Technologies: Stage II--Long-Term Field Performance** (Washington State University)
- **9-56: Identifying Influences on and Minimizing the Variability of Ignition Furnace Correction Factors** (NCAT)
- **20-07/Task 382: Longer Pavement Life from Increased In-Place Density of Asphalt Pavements** (Decker)

RECENT PUBLICATIONS

- **NCHRP Reports:**
  - ***818: Comparing the Volumetric and Mechanical Properties of Laboratory and Field Specimens of Asphalt Concrete (Project 9-48)***
  - ***815: Short-Term Laboratory Conditioning of Asphalt Mixtures (Project 9-52)***

RECENT PUBLICATIONS

- **NCHRP Reports:**
  - ***817: Validation of Guidelines for Evaluating the Moisture Susceptibility of WMA Technologies (Project 9-49B)***
  - ***807: Properties of Foamed Asphalt for Warm Mix Asphalt Applications (Project 9-53)***
  - ***Web-Only Document 219: Hamburg Wheel-Track Test Equipment Requirements and Improvements to AASHTO T 324 (Project 20-07/Task 361)***

PROPOSED AASHTO STANDARDS

- Recommended Practice That Addresses The Cause And Magnitude Of Variability Within And Among The Three Specimen Types (i.e., LL, PL, and PF). (*Project 9-48*)
- Recommended Practice on Measuring the Effects of Asphalt Plant Mixing and Processing on Binder Absorption by Aggregate and Asphalt Mixture Characteristics (*Project 9-52*)

PROPOSED AASHTO STANDARDS

- Revisions to AASHTO R 30, Standard Practice for Mixture Conditioning of Hot Mix Asphalt (HMA) (*Project 9-52*)
- Revisions to AASHTO R 35, Superpave Volumetric Design for Hot Mix Asphalt (HMA) (*Projects 9-49 and 9-49B*)
- Test for Determining the Expansion and Collapse of Foamed Binder by Using the Laser Distance Measurement Device (*Project 9-53*)

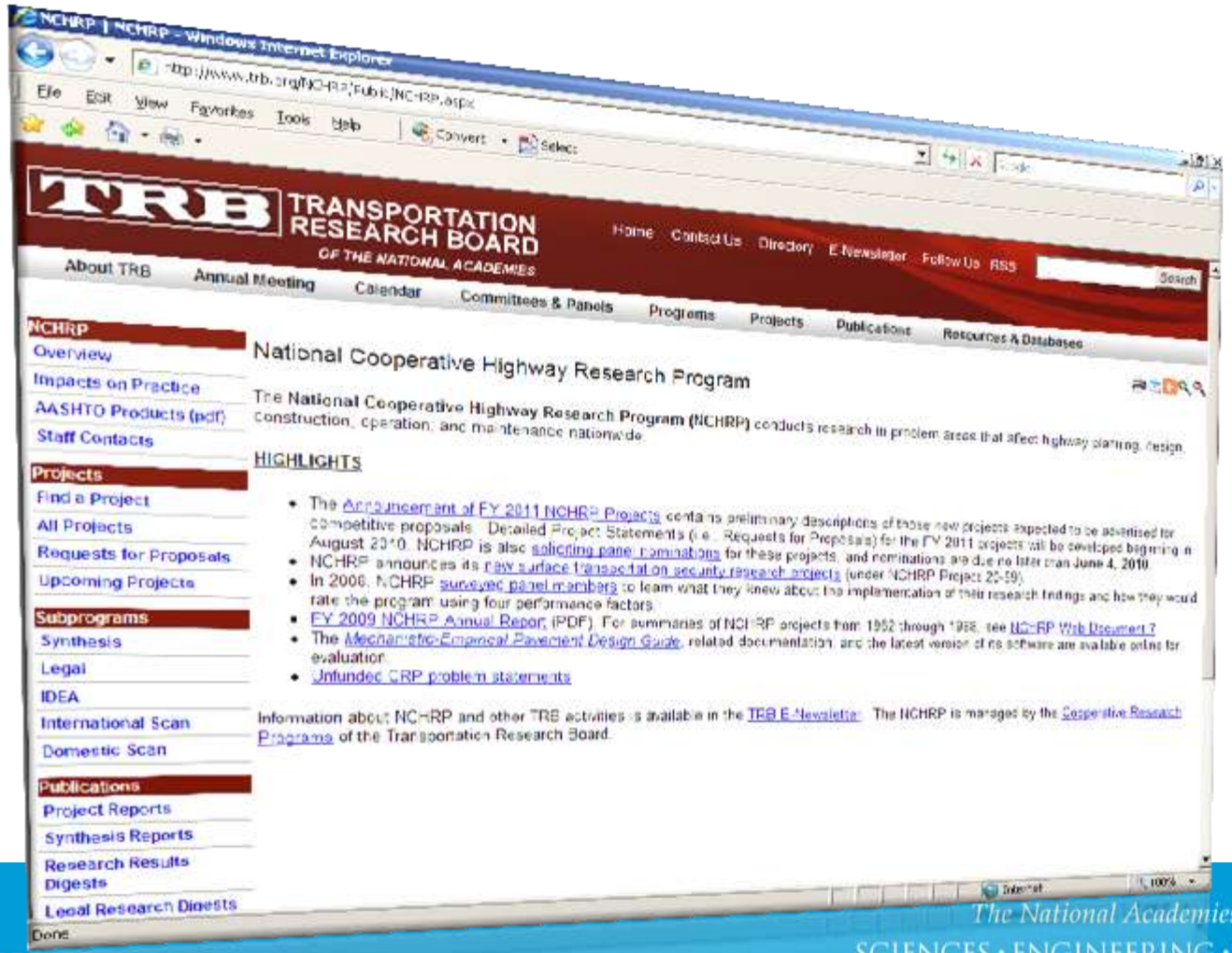
PROPOSED AASHTO STANDARDS

- Test for Determining the Size Distribution and Surface Area of Binder Foam Bubbles During the Foaming Process (*Project 9-53*)
- Tests for Evaluating the Workability and Coatability of Foamed Warm Mix Asphalt by a Laboratory Foaming Unit Using a Superpave Gyratory Compactor (*Project 9-53*)

PROPOSED AASHTO STANDARDS

- **Revisions to AASHTO T 324, Hamburg Wheel-Track Testing of Compacted Hot Mix Asphalt (HMA) (*Project 20-07/Task 361*)**

HTTP://WWW.TRB.ORG/NCHRP



Projects in Progress

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

- Laboratory procedure to simulate long-term aging of asphalt mixtures for performance testing and prediction.
- Correlate rheology and kinetics of binders aged in the laboratory and long term in the field, including ARC, MnRoad, FHWA-ALF, WesTrack, and LTPP SPS-1 and SPS-8.
- Dr. Richard Kim will present current results at this meeting.

North Carolina State University (August 2016)

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

- 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.
- Testing and analysis of field specimens in progress.

National Center for Asphalt Technology (July 2017)

9-57: Experimental Design for Field Validation of Laboratory Tests to Assess Cracking Resistance of Asphalt Mixtures

- Develop an experimental design for a field experiments to validate (a) laboratory-to-field relationships for selected fatigue tests and (b) criteria for assessing the cracking potential of asphalt mixtures.
- Project complete—final report published in mid 2016.
- Dr. Dave Newcomb will present key findings at this meeting.

9-59: Relating Asphalt Binder Fatigue Properties to Asphalt Mixture Fatigue Performance

- Determine asphalt binder properties that are significant indicators of the fatigue performance of asphalt mixtures.
- Identify or develop a practical, implementable binder test (or tests) to measure properties that are significant indicators of mixture fatigue performance.

Advanced Asphalt Technologies (October 2017)

9-60: THE IMPACTS ON PAVEMENT PERFORMANCE FROM CHANGES IN ASPHALT PRODUCTION

- Propose changes to the current PG asphalt binder specifications and test methods to remedy shortcomings related to incidents of premature failure of asphalt pavements
- FY 2016, $1.0M
- Contract in negotiation

20-07/Task 375: Improvements to the Dry Back Procedure of AASHTO T 209

- Determine the appropriate trigger measure and value, which necessitates use of Dry Back procedure in AASHTO T 209.

Pavement Systems, LLC (September 2016)

20-07/Task 391: Energy Criteria for Maintaining Fully Animated Particles of Loose Asphalt in AASHTO T 209 Testing

- Establish criteria for sample mechanical shaking in AASHTO T 209 that assures measurement of true G_{mm} values.
- Contract in negotiation.

HTTP://WWW.TRB.ORG/NCHRP