FHWA Mixtures and Construction Expert Task Group Meeting
September 2015
Warm Mix Asphalt
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)

To date, still no significant differences between the properties and field performance of WMA and HMA.

Washington State University (July 2016)
Foaming behavior influenced by crude oil slate, refinery production date, and polymer modification.

Mix design method determine optimum asphalt content based on coatability and workability.

Best coatability and workability at 1-2% water content.

NCHRP Report 807.

Texas A&M Transportation Institute
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 (Sept 2016)
Materials and Mix Design
Process-based factors were only significant between laboratory-mixed specimens and plant-produced specimens for air voids (stockpile moisture) and binder content and P200 (return of baghouse fines).

No significant effects on differences among specimen types for VMA, VFA, $G_{mm}$, and $G_{sb}$.

No significant impact on the differences of mechanistic properties among the three specimen types.

Draft final report in review.

*Louisiana Transportation Research Center (December 2015)*
9-52: **Short-Term Laboratory Conditioning of Asphalt Mixtures**

- Effects of plant mixing and processing to the point of loading in the transport truck: 2 h aging at 275°F for HMA or 240°F for WMA.
- 5 d at 85°C simulates 1-2 y initial service.
- WMA = HMA in 17 to 30 m.
- Proposed changes to AASHTO R 30.
- NCHRP Report 815, to be published.

*Texas A&M Transportation Institute*
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.

5d at 85°C equivalent to about 1-2y field aging.

North Carolina State University (May 2016)
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)
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

Panel meets 5-6 November.
Pavements
1-54: GUIDELINES FOR LIMITING DAMAGE TO FLEXIBLE AND COMPOSITE PAVEMENTS DUE TO THE PRESENCE OF WATER

- For the practicing engineer.
- Considers pavement structure, roadway geometry, regional climate, materials, construction and maintenance practices.
- Print and software products.

Applied Pavement Technology, Inc. (August 2016)
Summarize the current state of knowledge of in-place density of asphalt pavements as well as the current practices of agencies regarding how in-place density is measured and specified.

Dale S. Decker, LLC (September 2015)
20-05: Synthesis of Information Related to Highway Problems

- Search out and synthesize useful knowledge from all available sources and prepare concise, documented reports on specific topics.

- Provide a compendium of the best knowledge available on practical measures found to be the most successful in resolving specific problems.
Recent Syntheses of Highway Practice

- 456: Non-Nuclear Methods for Compaction Control of Unbound Materials
RECENT SYNTHESSES OF HIGHWAY PRACTICE

- 463: Pavement Patching Practices
- 464: Thin Asphalt Concrete Overlays
- 456: Non-Nuclear Methods for Compaction Control of Unbound Materials
20-44: Accelerating the Application of NCHRP Research Results

- Increase budget for Project 20-44 (FY 2016, $2.0M).
- Form Project 20-44 panel to review funding requests from research project panels.
- Provide implementation specialist on NCHRP staff.
20-44: Accelerating the Application of NCHRP Research Results

Dissemination (FY 2016, $0.5M)

- Targeted publications: Research Makes a Difference, Impacts on Practice, Paths to Practice, NCHRP Research in Brief
- State DOT CEO and specialist staff briefings
- Subject matter compilations
- Targeted report distribution
- Tracking impacts and benefits of completed research
- Webinar support
Development Assistance Program (FY 2016, $1.5M)

- Workshops and training programs
- Demonstration projects
- Pilot projects
- Field validation
- 1st article products
- Manufacturer support
HTTP://WWW.TRB.ORG/NCHRP
Thanks!