FHWA Mixtures and Construction Expert Task Group Meeting September 2015

Warm Mix Asphalt

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

- 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)

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

- 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

9-48: Field versus Laboratory Volumetrics and Mechanical Properties

- 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

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

North Carolina State University (May 2016)

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**
- **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)

20-07/TASK 382:LONGER PAVEMENT LIFE FROM INCREASED IN-PLACE DENSITY OF ASPHALT PAVEMENTS

- **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**
- **457: Implementation of the AASHTO Mechanistic-Empirical Pavement Design Guide and Software**

Recent Syntheses 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)

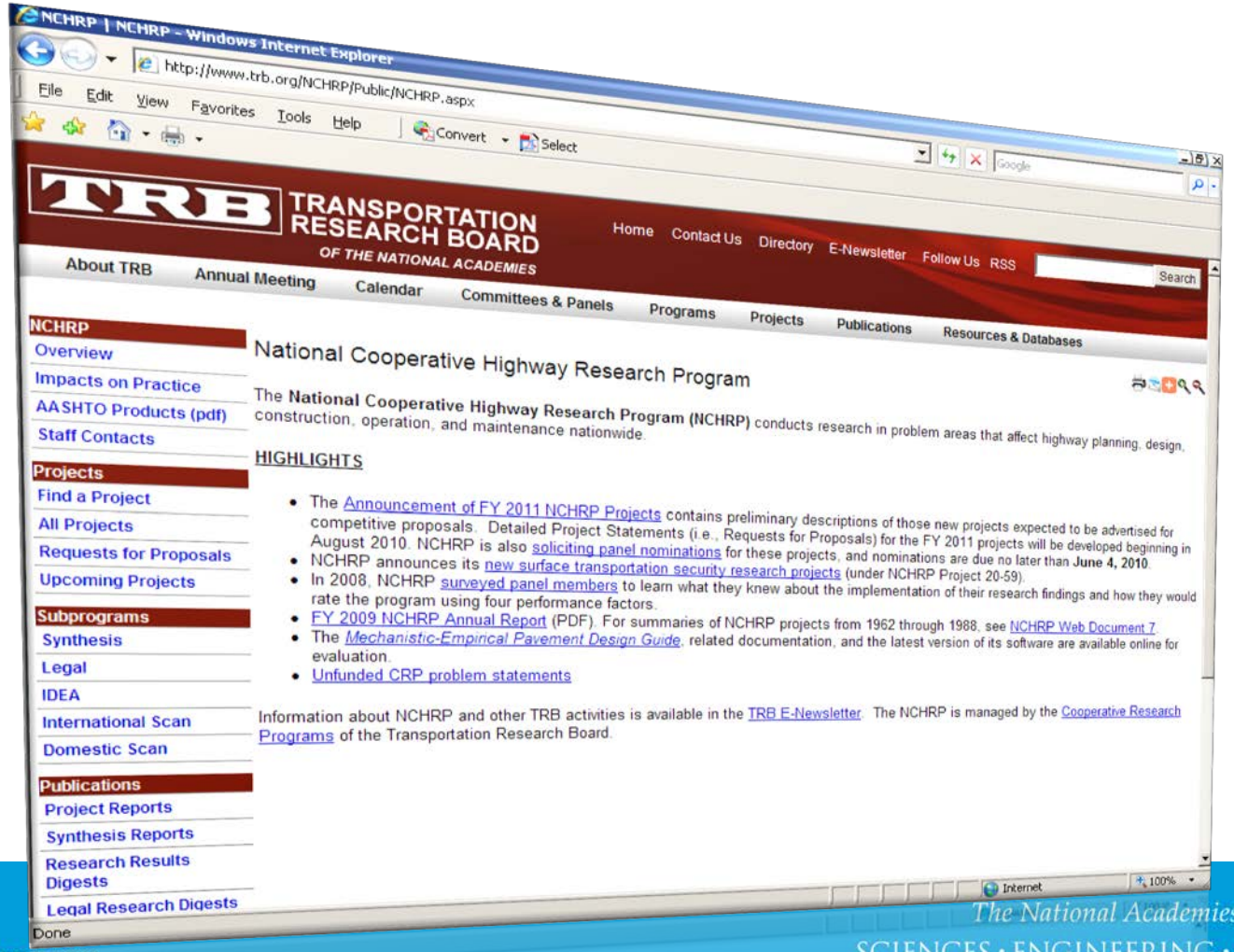
- Targeted publications: Research Makes a Difference, Impacts on Practice, Paths to Practice, NCHRP Research in Brief
- State DOT CEO and specialist staff briefings
- Subject matter compilations
- Targeted report distribution
- Tracking impacts and benefits of completed research
- Webinar support

20-44: Accelerating the Application of NCHRP Research Results

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!