
FHWA/NAPA Workshops and NCSC Update

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AMAP Survey

- Association of Modified Asphalt Producers survey in 2004
 - 34 states have tweaked the PG binder specifications
 - What is the situation with Superpave mix design?
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2004-2005 Workshops

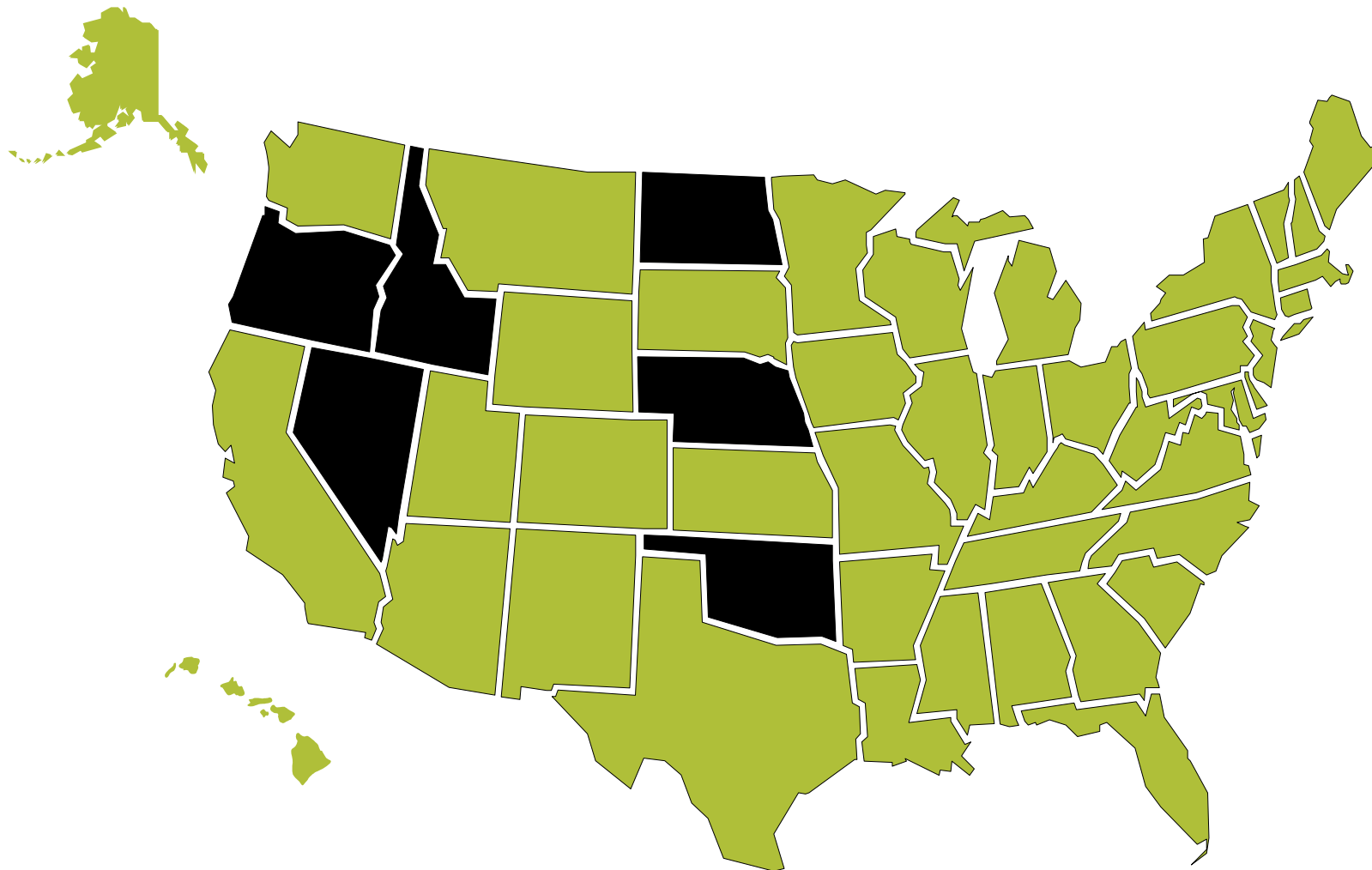
- Sponsored by FHWA and NAPA
 - Four regional Workshops
 - New Hampshire (NEAUPG)
 - Louisiana (SEAPUG)
 - Indiana (NCAUPG)
 - Colorado (RMAUPG)
 - Questionnaire sent prior to workshops.
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Purpose

- What is the state of the practice in HMA?
- What changes have been made to the Superpave system?
- What is working and what isn't?

What are the current best practices in HMA?
Focus on Superpave.

Who Attended?



Binders

- PG binders are the norm in most of the country
 - Most states (34) have implemented pluses
 - Not comfortable with blind specs
 - Want assurance they are getting what they want or what they used to use successfully
 - Want to ensure they *do not* get some products
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Binder Pluses

- Specifying particular modifier (SBS, SBR or SB common) – even addition rate
 - Specifying type of modification (polymer or elastomer)
 - Disallowing acid modification – especially a concern in North Central and Rocky Mountain regions
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Binder Pluses

- Added tests or modified criteria
 - PG 67 grade
 - Elastic recovery, toughness and tenacity, force ductility
 - Phase angle requirements (maximum)
 - Test temperature (25° for intermediate)
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Aggregates

- Some requirements not implemented
 - Some satisfied with previous performance
 - Fine Agg Angularity
 - Changes in limits for various traffic levels
 - Concern - is it getting us what we want?
 - Some also limit natural sand content with or instead of FAA
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Mix Design and QC

- Gyrotory angle – internal or external
 - Compaction to Nmax or Ndes
 - Old and new gyration levels
 - Use of RAP varies
 - Addition of loaded wheel tests
 - Many different but interrelated “tweaks” in mix design and in factors controlled
 - Minimum binder contents
 - Changes in design VMA and air voids
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Plant Production

- Common theme – need for consistency and attention to details
 - Good QC people are very important
 - Adequate training and staffing needed
 - Authority to implement changes
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Field Issues

- Compaction and permeability were early problems, now largely resolved through
 - experience,
 - changes in lift thickness,
 - more use of fine mixes,
 - changes in rolling patterns and equipment
 - awareness of the problem
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Performance

- Overall positive performance
 - Large percentage indicate improved performance, some unchanged, a few worse
 - Rutting virtually eliminated
 - Greatly reduced thermal cracking
 - Concern about permeability, joint density and durability
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Modifications Needed

- ***Truly simple performance test***
 - Timely feedback on performance
 - Standardizing internal angle calibration
 - Increased use of fine mixes
 - Reduced permeability
 - Complete the move to end result specs
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*We know our mixes
better than ever before!*

Conclusions

- Common theme – need for consistency and attention to details
 - QC people are very important – training and authority
 - There are at least as many “pluses” to the mix specifications as there are to binder
 - Changes made and reasons for them vary widely
 - Time will tell which are effective
 - But performance is generally better
 - *We have learned a great deal through the process of implementation*
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Update on North Central Superpave Center

- Research
 - Training
 - Communication
 - New Initiatives
 - Program Review September 2005
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Research Areas

- Friction and Surface Texture
 - Tire-Pavement Noise
 - Reclaimed Asphalt Pavement
 - Other waste materials (Shingles and Crumb Rubber)
 - Testing – Ignition Oven, Binder Characterization (MP1a), $|E^*|$ Testing
 - NCAT Track – correlations with APT, Phase III
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2006 Training

- Hands On Binder Training Course, February 8-9
 - Mix Design, February 22-23
 - Indianapolis, Indiana
 - Customized training available on request
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Communication

- Web Site Update in progress
 - <http://bridge.ecn.purdue.edu/~spave/>
 - Expanding and improving searchable database
 - Newsletter
 - New issue in development
 - Phasing in electronic version for Southeast
 - Currently maintaining paper and electronic version for North Central
 - Presentations
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Program Review

- Met with participating states in September
 - Reviewed strengths and weaknesses of NCSC
 - Developed plan for moving ahead
 - Marketing plan under development to promote center
 - You should be hearing more from us soon!
 - Suggestions welcome and encouraged
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Questions?
Comments?

Thanks!