

Update on NAPA/FHWA HMA Workshops

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Regional Workshops

- ▶ NAPA and FHWA sponsored
- ▶ Meetings held with Northeast, Southeast, North Central and Rocky Mountain User Producer Groups
 - Rocky Mountain scheduled for April 2005.

Purpose

- ▶ Learn the state of the art in hot mix asphalt.
- ▶ What can we do better?
- ▶ What changes have been made?
- ▶ How have problems been addressed?
- ▶ How is Superpave implementation going?
- ▶ Ultimately, produce a best practices document for HMA and Superpave

Participants

- ▶ One representative of each state DOT in the region
- ▶ Two representatives of industry in each state – typically contractors, some execs
- ▶ Guests welcome to share in exchange
- ▶ Dale Decker, Kent Hansen, Rebecca McDaniel, Dave Newcomb, John Bukowski, John D'Angelo

What Participants Hope to Gain

- ▶ Learn from others in their region
- ▶ Discuss common problems
- ▶ Synergy among states
- ▶ Work towards convergence
- ▶ Examine regional and national issues
- ▶ Achieve consistency
- ▶ *Make better mixes*

Topics Covered

- ▶ Materials
 - Aggregates
 - Binder
- ▶ Production and Field Issues
 - Construction
 - Trucking
 - QC/QA
- ▶ Mix Design

Issues/Comments from Northeast

- ▶ Many current issues not new to Superpave; seeing more because of renewed focus
- ▶ Aggregate processing, availability, variability, quarry balancing
- ▶ Superpave as a mix quality system, not just mix design system
- ▶ More attention on aggregates and volumetrics

More from the Northeast

- ▶ Durability is a concern – more binder
- ▶ Tending towards finer mixes
- ▶ Mix design – some have lowered, others are considering lowering, design air voids to get more binder (3.5%)
- ▶ Some permeability issues and longitudinal joint problems
- ▶ Need simple performance test to resolve some issues

More from the Northeast

- ▶ Half allow grade bumping
- ▶ Generally not accepting of “blind” specs
 - many specify type of modifier or use PG plus
- ▶ Tender mixes and delayed set with some binder grades

More from the Northeast

- ▶ Learned how to deal with Tender Zone (temps, rollers, patterns)
- ▶ Lift thicknesses 3:1 or 4:1
- ▶ QC field tech should run the job
- ▶ Communication is more important
- ▶ Know more about their mixes than ever before

Issues/Comments from Southeast

- ▶ Still a lot of Marshall mixes in some states
- ▶ Some issues with flat and elongated and fine aggregate angularity
- ▶ Resource availability/use of marginal or local materials is a concern
- ▶ Aggregate variability, QC
- ▶ Aggregate degradation and dust problems

More from the Southeast

- ▶ Almost every state is PG+
- ▶ Use mixing and compactions temps from supplier, usually
- ▶ General agreement that agitated vertical tanks are best for modified binders
- ▶ Extensive use of lime and antistrips
- ▶ Need to pay more attention to detail

More from the Southeast

- ▶ Use of RAP varies widely – some using half what they used to, others using a lot, some fractionating, some states do not allow
- ▶ States generally disregarding Nini except as info for contractors
- ▶ Moisture in mix

More from the Southeast

- ▶ Have learned from early density/permeability problems
- ▶ Many tools to deal with compaction issues
- ▶ Lift thicknesses critical
- ▶ Tarping and MTV help keep temp
- ▶ Train the paving crew
- ▶ Trial batches help fine tune designs

More from the Southeast

- ▶ Also concerned that mixes are too dry
- ▶ Also tending towards finer mixes
 - Permeability, durability, smoothness issues
- ▶ Some changes in gyration levels
- ▶ Some states have minimum binder contents
- ▶ Rutting improved, some raveling and cracking
- ▶ Know the product much better than before

The North Central

- ▶ Still some Marshall mixes in use, but Superpave is “standard”
- ▶ Aggregate variability is a concern – variation in specific gravity, absorption within and between ledges
 - Big impact on VMA
- ▶ Use of more angular sands
- ▶ Agg supply can be a challenge in some areas

More from the North Central

- ▶ Flat and elongated not a big problem
- ▶ Most states are not using restricted zone except as a reference
 - Some never adopted RZ (ex. WI)
 - Some still using in some way (ex. MI, IL)
- ▶ About half the states have certified agg producers

North Central

- ▶ Why can't we do with hot mix what the Combined State Binder Group has done with binder?
- ▶ Too many binder grades in use
 - Up to ten grades in a state
 - Multiple grades on a project (more than 2-3)
 - Educate designers on use of grades
- ▶ Mixing and compaction temps vary

North Central

- ▶ Contractors have added bins, vertical storage tanks for binder
- ▶ Use of Superpave by locals, commercial work is growing
- ▶ RAP use is growing in general back to near previous usage with some changes
 - Reduced use in some states

North Central

- ▶ Contractors have scenarios to deal with compaction issues
 - Need to adjust rollers and patterns
 - Pneumatics, vibratories, steel wheel and oscillatory all have uses
 - Lift thicknesses important, range generally from 3:1 to 4:1

North Central

- ▶ Some states have adopted “new” AASHTO compaction levels, others use old
- ▶ Starting to implement PWL
- ▶ Overall, performance is improved
 - Ride, cracking, rutting improved
 - Some concern in some areas with durability

Overall Impressions So Far

- ▶ More attention to detail
- ▶ Focus on mixes draws attention to pre-existing conditions
- ▶ Concerns about durability, aggregate availability in some areas
- ▶ Have largely learned how to deal with compaction, density and permeability issues

Overall Impressions

- ▶ We know more about our mixes and what affects them than ever before
- ▶ We still have more to learn
- ▶ North Central region is leading
 - Much more experience
 - More positive attitude

Product of these Workshops

- ▶ Best Practices document to be prepared following final meeting in April 2005
- ▶ Report should be available by early summer

Training in 2005

- ▶ Binder course, March 2-3
- ▶ Mix Design for Experienced Designers, March 30-31
- ▶ Nebraska Binder and Mix Design Training, February 22-25
- ▶ Customized courses available on request

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