West Region Update
Southeastern Asphalt User-Producer Group
Ryan Barbork, P.E.

West Region States Update

<table>
<thead>
<tr>
<th></th>
<th>Mix (Tons)</th>
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<tbody>
<tr>
<td></td>
<td>2017</td>
</tr>
<tr>
<td>Arkansas</td>
<td>2.5 M</td>
</tr>
<tr>
<td>Louisiana</td>
<td>---</td>
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<tr>
<td>Mississippi</td>
<td>4.7 M</td>
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<tr>
<td>Oklahoma</td>
<td>2.0 M</td>
</tr>
<tr>
<td>Texas</td>
<td>16.6 M**</td>
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</tbody>
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*4.2M including commercial
**FY2018 and FY2019

2020 Forecast

Is the level of asphalt work set to increase, decrease, or hold steady in 2020?
- Arkansas
  - Increase
- Louisiana
  - Hopefully remain steady
- Mississippi
  - Slight increase
- Oklahoma
  - Steady
- Texas
  - Steady/Slight increase

Funding

What is the state of the DOT Funding for 2020?
- Arkansas
  - ACT 416 allocated funds from gas and diesel sales tax, increased registration fees on electric and hybrid vehicles and casino revenues. Revenue of $95 M per year by 2023 is expected and will be utilized for maintenance and rehabilitation (not new construction).
- Louisiana
  - GARVEE bonds, attempted to pass a gas tax and was not successful, further attempts are expected
- Mississippi
  - Implementation of state lottery and a portion of the funds collected
- Oklahoma
  - Oil economy dependent, currently strong and growing
- Texas
  - Propositions 1 and 7
  - Additional $70 Billion over 10 years
Specification Changes and Updates

- **Arkansas**
  - Recently changed air voids to 4.0% for all mixes (previously 4.5% on PG64-22 and PG70-22 mixes)
- **Louisiana**
  - Pilot for non-destructive density for pay
  - Revised spec changes from September 2018
- **Mississippi**
  - Lot determination
    - Old Method – Divide up lots by tonnage from previous day
    - New Method – Each lot will be 400 tons
- **Oklahoma**
  - REOB, PPA limitations
    - ΔTc implementation
      - Balanced Mix Design, IDEAL CT / NFlex
- **Texas**
  - Significant changes to dense grade and Superpave specifications
    - SS3076 – Dense-Graded Hot-Mix Asphalt
    - SS3077 – Superpave Mixtures

Recycled Materials

- **Arkansas**
  - Use of recycled materials is no longer allowed in PG76-22 mixes
- **Louisiana**
  - None since most recent spec changes
  - Increase RAP 5% if screened on 1” and inclusion of performance testing (SCB/LWT)
- **Mississippi**
  - No changes
- **Oklahoma**
  - No changes
- **Texas**
  - Superpave – Reduced recycled binder ratio from 0.20 to 0.15 for surface mixes
  - Dense-Graded – Reduced recycled binder ratio from 0.20 to 0.15 for surface mixes
  - Change verbiage regarding RAS

Asphalt Binder Quality

- **Arkansas**
  - No issues with binder supply and no documented issues with binder quality
- **Louisiana**
  - Compatibility issues with plant blended CRM modifiers
  - Potential compatibility issues with aggregates/antistrip
- **Mississippi**
  - Good quality and good supply
- **Oklahoma**
  - Unfortunately it appears yes
- **Texas**
  - No issues with binder supply
  - Some issues with binder quality
  - Added limit for REOB and PPA (XRF analysis)
  - Sampling contract
  - Storing of asphalt samples
  - Barcode method (expect full implementation by January 2020)

MSCR and Other Binder Testing

- **Arkansas**
  - M320
- **Louisiana**
  - M320
- **Mississippi**
  - Specifies binder by M320 and grade bumps for increased traffic (PG67-22 for high traffic and PG67-22 for all other roads)
- **Oklahoma**
  - Yes
- **Texas**
  - M320

Are you experiencing any trends in asphalt binder supply or overall binder quality in your state?

- **Arkansas**
  - No issues with binder supply and no documented issues with binder quality
- **Louisiana**
  - Compatibility issues with plant blended CRM modifiers
- **Mississippi**
  - Good quality and good supply
- **Oklahoma**
  - Unfortunately it appears yes
- **Texas**
  - No issues with binder supply
  - Some issues with binder quality
  - Added limit for REOB and PPA (XRF analysis)
  - Sampling contract
  - Storing of asphalt samples
  - Barcode method (expect full implementation by January 2020)
MSCR and Other Binder Testing
Are you planning to implement AASHTO M332 in the future and will you use the X1 curve in the specification?
- Arkansas
  - No
- Louisiana
  - Implemented for polymer modified binders
  - Yes for 76-22m and PG76-22m
- Mississippi
  - No
- No
- Oklahoma
  - Yes
- Yes
- Texas
  - Partial implementation – replace elastic recovery test with % recovery of MSCR
  - No

Pavement Durability
Is pavement durability (cracking and raveling) an issue in your state and to what degree?
- Arkansas
  - Yes
  - 25-50%
- Louisiana
  - Yes
- Mississippi
  - Somewhat; raveling in OGFC
  - 10-25%
- Oklahoma
  - Yes
  - 10-25%
- Texas
  - Yes
  - 10-25%

Asphalt Binder Quality
Do you have plans for implementation of the ΔTc parameter into your specifications and what are the proposed aging requirements?
- Arkansas
  - Not at this time
- Louisiana
  - Currently evaluating
- Mississippi
  - No
- Oklahoma
  - Yes -5°C, 20 hour cure
- Texas
  - Present in our BMD specification -6°C, 20 hour PAV
  - Perform on forensics
  - Investigating alternate 4mm DSR

Ground Tire Rubber
Do you allow or specify use of ground tire rubber (GTR) to produce modified asphalt binders or mixtures, if so, recipe or performance, and what is the most common type of GTR used?
- Arkansas
  - No
- Louisiana
  - Yes, mesh size; cryogenic and ambient allowed; PG+; MSCR, and wet plant blended
- Mississippi
  - No
- Oklahoma
  - Yes, performance, and both terminal blend and dry process
- Texas
  - Yes, performance, and both terminal blend and dry process
**Balanced Mix Design (BMD)**

Have you implemented or plan on implementing a BMD Method and if so, where are you in your implementation process and which tests are you considering?

- **Arkansas**  
  Not at this time, have a research project looking at possible cracking tests to implement in the future

- **Louisiana**  
  - Yes implemented in 2016, SCB Jc (ASTM D8044) and Hamburg LWT
  - Not yet, research projects are on-going to determine the best course of action, Hamburg/APA and IDEAL-CT

- **Mississippi**  
  - Yes, several pilot projects, intent to implement in 2021, Hamburg, IDEAL-CT/NFlex

- **Texas**  
  - Yes, Currently utilizing SS3074 to construct approximately 12 Test Projects across the state with several test sections  
    - Hamburg, IDEAL-RT, Overlay, IDEAL-CT  
    - Potential implementation in 2022

**Pavement Design**

Do you use or plan on using the MEPDG and where are you in the implementation process?

- **Arkansas**  
  - Possibly in the future  
  - Still in the research phase

- **Louisiana**  
  - Evaluating

- **Mississippi**  
  - Research is on-going  
  - Still doing testing using the AMPT to build our library of current mixes

- **Oklahoma**  
  - Yes  
  - ??

- **Texas**  
  - Not at the moment (FPS 21)  
  - Currently evaluating TAME

**Non-Tracking Materials**

Do you allow specialized non-tracking materials to be used for tack and underseal on paving projects and what is your experience?

- **Arkansas**  
  - Yes, limited experience. We have a SP and use it at the contractor's request.

- **Louisiana**  
  - Yes, if applied correctly. Contractors and Area DOT like using them, hot applied has shown best tracking resistance but present safety concerns

- **Mississippi**  
  - Yes, good experience so far. Most is used for OGFC

- **Oklahoma**  
  - Yes, good

- **Texas**  
  - Yes, they are allowed in all HMA Items in our Standard Specification
    - SS3084 Bonding Course and SS3085 Underseal Course
    - Material Producer List/Tex-249-F/New Spec Informational Only
    - Good if applied correctly

**Cold Mix**

Are specialized cold mix products allowed and what is your experience with these types of products?

- **Arkansas**  
  - Yes  
  - We use them for maintenance contracts and at contractor’s request

- **Louisiana**  
  - Allowed for maintenance work

- **Mississippi**  
  - No

- **Oklahoma**  
  - Yes  
  - Division level decisions and work

- **Texas**  
  - Yes, DMS9202 and DMS9203  
  - SCM, ASPPM, and NVM most common  
  - Recently added NVM – No hydrocarbon volatile content allowed  
  - Good performance

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Footer Text: December 2, 2019
Additional Comments

- Louisiana
  - Developing a 4.75 mm mixture design for spec.
  - Potential alternatives for moisture sensitivity testing.
  - Potential alternatives for long term mixture aging to reduce mix design time (crack testing)

Thank you

- Thank you to all the states that participate in this survey
  - Arkansas
  - Louisiana
  - Mississippi
  - Oklahoma
  - Texas

Questions/Contacts

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