
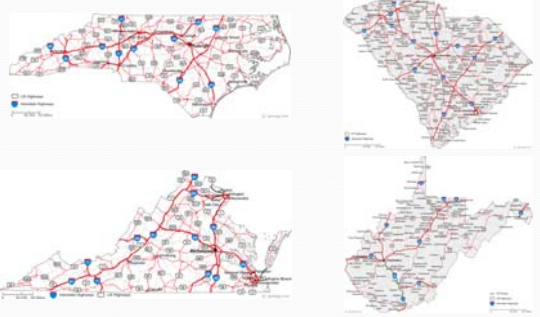


Eastern Region Update 2015

Matthew Campbell
West Virginia Department of Highways.
Fort Magruder Conference Center - Williamsburg, VA
Nov. 16-19, 2015




Eastern Region

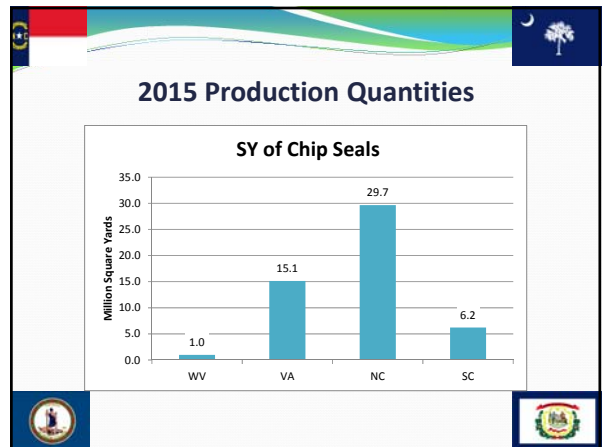
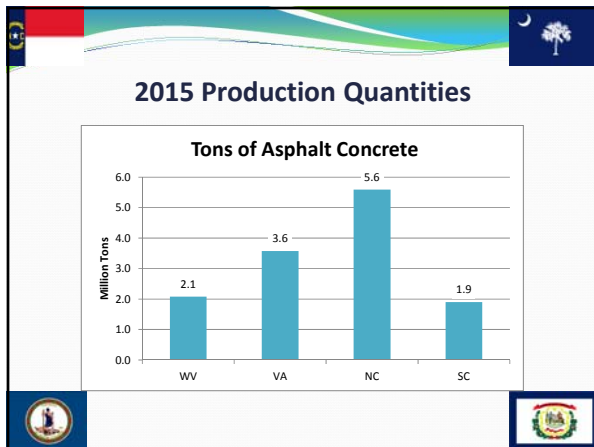


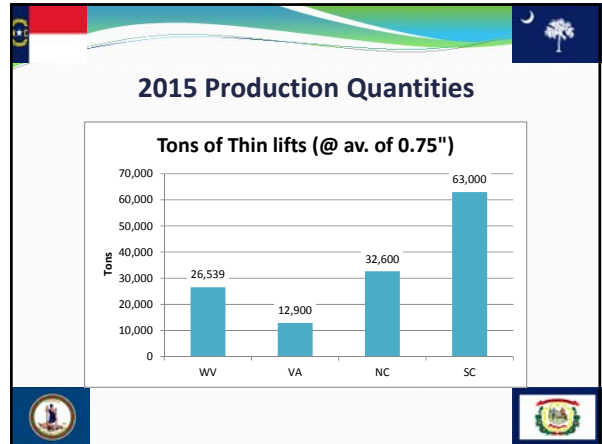
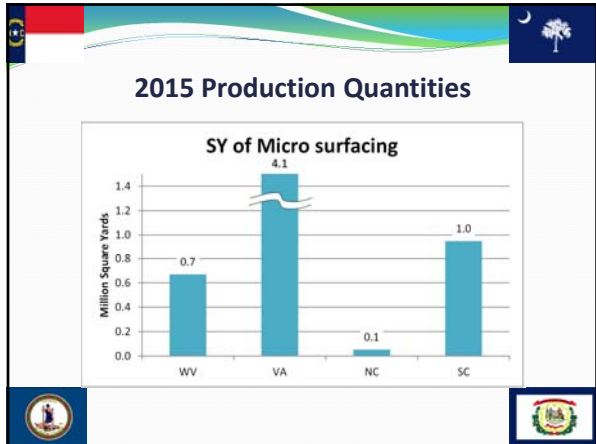
QUESTIONNAIRE

- Our group put together a survey on a variety of topics that we felt were interesting for all of the states within our region.
- Consisted of about 25 questions, covering five different categories.
- Sent out link to Survey Monkey questionnaire on October 19th



Production Quantities





Reclaimed Asphalt Pavement

Usage and QC processes

- ### MAX. ALLOWABLE % RAP (WITHOUT A BINDER ADJUSTMENT)
- **North Carolina**
 - 30% on A & B level mixes
 - 20% on C & D level mixes
 - **South Carolina**
 - 35%

- ### MAX. ALLOWABLE % RAP (WITHOUT A BINDER ADJUSTMENT)
- **Virginia**
 - Depends on the type of binders used.
 - PG 64S-22, up to 30%
 - PG 64H-22 (70-22), up to 25%
 - Base mixture, up to 35% with PG 64S-22
 - **West Virginia**
 - 25% in Base mixes
 - 15% in Surface mixes

- ### What binder grade(s) are used to allow higher RAP percentages
- **North Carolina**
 - PG 58-28
 - PG 64-22 when bumping down from a 70-22
 - **South Carolina**
 - 64-22

What binder grade(s) are used to allow higher RAP percentages

- **Virginia**
 - PG 64S-22 for more than 25% RAP
- **West Virginia**
 - Standard grade with blending charts and binder adjustments

How are binder “bumps” used for allowing higher RAP

- **North Carolina**
 - Automatic bump down from Standard grade at 21-30% RAP
 - Above 30% requires binder tests to determine virgin grade
- **South Carolina**
 - No binder bumps

How are binder “bumps” used for allowing higher RAP


- **Virginia**
 - Mix with PG 64H-22 (70-22) should use PG 64S-22 with RAP higher than 25%
- **West Virginia**
 - 16%-25% allowable with one full binder grade drop

Do you require preprocessing or fractionating of RAP

- **North Carolina**
 - Max. size of 1”
 - fractionating required above 30%
- **South Carolina**
 - Optional; Only 10%-20% allowed without fractionating
- **Virginia**
 - Preprocessed to ensure the max size is 2”
- **West Virginia**
 - Require fractionating between 15%-25%

Maintenance, Preservation, & Recycling

What methods has your state used to lower cost for maintenance, preservation, or reducing overall pavement costs?



- **North Carolina**
 - In 2014, NC General Assembly established and funded a new Pavement Preservation Program
 - 80% of funds must be let to contract by 2017-2018 fiscal year
- **South Carolina**
 - Use of RAP and RAS, natural sands, and encourage use of quarry dry screenings in thin lifts.

- **Virginia**
 - Using recycled materials including RAP, CCPR, CIPR, FDR, and HIPR.
 - Using preservation and maintenance techniques including slurry seal, chip seal, micro surfacing, fog seal, thin asphalt overlay, etc.
- **West Virginia**
 - Multiple preservation techniques
 - Micro, cape seals, CIR, thin lifts, sand mixes, etc.

What tactics/techniques is your state seeing most effective on low volume roads?




- **North Carolina**
 - Crack seal & various surface treatments (micro, etc.)
- **South Carolina**
 - Single treatment with lightweight aggregate and HMA Thin Lifts

- **Virginia**
 - It is difficult to choose only one. Chip seals have worked well, however other techniques have been effective too.
- **West Virginia**
 - Micro surfacing on low distressed roads
 - CIR on moderately distressed roads


What kind of sampling, testing, & acceptance is being performed on micro surfacing, chip seals, and thin lifts?




- **North Carolina**
 - All emulsions & aggregates on source approval
 - Thin lifts tested like normal mixes
- **South Carolina**
 - **Micro surfacing**
 - Screenings and Emulsion
 - **Chip Seals**
 - Coarse Aggregate and Emulsion
 - **Thin Lifts**
 - PG binder and gradation

- **Virginia**
 - **Micro surfacing**
 - Testing for the residue asphalt content
 - **Thin lift**
 - Contractor tests a sample every 500 tons. Accepted based on gradation and asphalt content.
 - Also requires a one year warranty
- **West Virginia**
 - Source approval of materials
 - Density and verification of application rates during construction

What recycling methods has your state used (CCPR, CIR, HIR, FDR, others) and which do use plan to use?



- **North Carolina**
 - FDR & CIR are most common and still used on a limited basis.
 - But all have been used at times.
- **South Carolina**
 - FDR with cement. They have two in house maintenance crews and outsource the rest.
 - FDR is very popular. Looking into CIR/CCPR with asphalt for other rehab projects.

- **Virginia**
 - Allows all of them
 - Going to try using more CCPR and FDR
- **West Virginia**
 - Are using CIR and FDR
 - Want to try CCPR in the future

Specification Updates

Asphalt mixtures, preservation processes, tack coat, binders, payment methods (i.e. TN, SqYd, PWL, etc.), Performance, others

Specification Updates

North Carolina

- **Asphalt mixtures, production, or placement?**
 - Lower limits on RAS
 - Max. 20% binder replacement from RAS & 40% from RAP/RAS in surface mixes
 - Max. 23% binder replacement from RAS & 45% from RAP/RAS in intermediate and base mixes
- **Preservation or recycling processes?**
 - A new preservation program that identifies 18 treatment types for both AC and PCC pavements
- **Tack coat?**
 - None

Specification Updates

North Carolina

- **Binders?**
 - Continue to monitor softer grades for REOB
- **Payment methods (i.e.. TN, SqYd, PWL, etc.)**
 - None
- **Others?**
 - Performance specification for Mixture Design

Specification Updates

South Carolina

- **Asphalt mixtures, production, or placement?**
 - N/A
- **Preservation or recycling processes?**
 - FDR
- **Tack coat?**
 - AI Workshop in November, Best Practices guide developed along with SCAPA

Specification Updates

South Carolina

- **Binders?**
 - None, M320 plus "V" grade on PG 76-22
- **Payment methods (i.e.. TN, SqYd, PWL, etc.)**
 - TN, SY, and PWL for HMA
- **Others?**
 - N/A

Specification Updates

Virginia

- **Asphalt mixtures, production, or placement?**
 - Will reduce the number of gyrations for the surface mixes from 65 to 50, to have more asphalt binders, hopefully!
- **Preservation or recycling processes?**
 - Will accept RAP as a shoulder material
- **Tack coat?**
 - requires non tracking tack from May ~ October.
 - Tack coat will be a separate pay item and the sprayed rate will be measured

Specification Updates

Virginia

- **Binders?**
 - N/A
- **Payment methods (i.e.. TN, SqYd, PWL, etc.)**
 - Tack coat will be measured and paid (by gallons) as a separate pay item in FY16 season
- **Others?**
 - Moisture Susceptibility and Permeability testing for Design

Specification Updates

West Virginia

- **Asphalt mixtures, production, or placement?**
 - Requiring each project to have a certified Asphalt Field Technician
- **Preservation or recycling processes?**
 - Added preservation to main program budget
 - Added SAMI seal specification
- **Tack coat?**
 - Adding Tack Coat Distributor Calibration requirements

Specification Updates

West Virginia

- **Binders?**
 - Currently switching to MSCR grading system
- **Payment methods (i.e.. TN, SqYd, PWL, etc.)**
 - PWL
 - 4 projects in 2014
 - 12 projects in 2015
- **Others?**
 - None

Tack Coat Questions

Has your state hosted the AI/FHWA Tack Coat Workshop?

- **North Carolina**
 - Yes. Nov 5, 2015
- **South Carolina**
 - Yes. Nov 3, 2015
- **Virginia**
 - Yes
- **West Virginia**
 - Yes

Does your state require/allow non-tracking tack (if so, do you have a specification)

- **North Carolina**
 - Allowed as an option, but can be required by Special Provision
 - Specification in place
- **South Carolina**
 - Yes, permitted not required.
 - No specification

Does your state require/allow non-tracking tack (if so, do you have a specification)

- **Virginia**
 - Yes. Allowed for all paving season and required between May and October
 - Specification in place
- **West Virginia**
 - Yes
 - No specification (Hopefully, coming soon)

How does your state verify in-place application rates of tack coat?



- **North Carolina**
 - No set method, only for research purposes
- **South Carolina**
 - No verification
 - Computed in field by field inspector
 - Biggest issue is ensuring proper coverage and waiting for tack to break.

- **Virginia**
 - Tack application rate will be measured next year (FY16) paving season with the new specification
 - Will use the tank gauge measurement and the plate method
- **West Virginia**
 - Still in the research phase.
 - Several methods have been used
 - Aluminum sign
 - ASTM D2995

Does your state collect bond strength data, if so what method(s) do you use

- **North Carolina**
 - Research and forensic investigations only
 - Shear tester
- **South Carolina**
 - Yes
 - LISST Device: 0.1"/min, 10 PSI of lateral pressure, 100 PSI min.

Does your state collect bond strength data, if so what method(s) do you use

- **Virginia**
 - Only when there is an issue.
 - Shear testing and tension testing
- **West Virginia**
 - Yes
 - "In house" designed shear strength device

Contacts

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<p><u>South Carolina</u> Cliff Selkinghaus <i>Asphalt Materials Manager</i> selkinghcb@scdot.gov</p>	<p><u>West Virginia</u> Travis Walbeck <i>Pavement Engineer</i> travis.b.walbeck@wv.gov</p>