

## SUBCOMMITTEE ON MATERIALS (SOM)

Mid-Year Web Meeting  
Thursday, January 26, 2017  
1:00 pm – 3:00 pm EST

### TECHNICAL SECTION (TS) 2c ASPHALT-AGGREGATE MIXTURES

#### I. Call to Order and Opening Remarks

Allen Myers/KY gave opening remarks.

- A. Introduce new vice chair, Rick Bradbury (Maine)
- B. Express gratitude to former vice chair, Matthew Corrigan (FHWA)

#### II. Roll Call – Please e-mail Tracy Barnhart from AASHTO re:source (tbarnhart@ashtoresource.org) to register your attendance of this meeting.

#### III. Approval of 2016 Technical Section 2c Minutes (ATTACHMENT 1) Motion: ND, Second: PA

#### IV. Old Business

- A. Review of 2016 SOM Ballot 16-03 (Rolling Ballot 3, November 2016-January 2017) (ATTACHMENTS 2, 3, AND 4)

- 1. AASHTO R 67, Sampling Asphalt Mixtures after Compaction (Obtaining Cores) (Item 25) – 43 affirmative/0 negative/8 not returned (SOM concurrent) and 27 affirmative/1 negative/6 not returned (TS concurrent)

Negative from Pennsylvania:

*In Section 5.1.1, Note 2, the first sentence of Note 2 is acceptable. However, the second sentence of Note 2 indicates that rapid cooling of mixtures with additives "may affect the core samples and any test results obtained from these samples" without giving any examples or specifics of which additives or how the core or test results could be affected. The user of this standard with this Note 2 as written has no clear guidance of what to watch out for if using a mixture with any type of additive. I don't think the second sentence should be included. Suggest if a second sentence is needed, it should state something like "Rapid cooling of mixtures with additives affecting the stiffness of the mixture, compaction of the mixture, or temperature of the mixture for compaction, may take longer to rapidly cool or may need to be cooled to a lower temperature than the same mixture without the additive to ensure no damage or distortion occurs to the core sample during the operations of core drilling, core separation from the underlying pavement, or core retrieval."*

Tim Ramirez/PA spoke about this. Kansas had previously posed these comments as a question. Tim looked at this as a potential avenue for contractors or producers to challenge test results. A representative from Kansas wasn't on the call to comment. Scott Andrus/UT indicated they

frequently use ice or dry ice to cool things down, but they haven't done any comparison tests and haven't had any issues. Brett Trautman/MO indicated his contractors are looking for any out, but they haven't had to cool mixtures. Pamela Marks/ONT agrees with keeping the first sentence and deleting the second sentence. Allen's preference is to remove the Note entirely or work on the second sentence. Jim Trepanier/IL also agrees with removing the Note. Negative has been found persuasive. R 67 will not be changed at this time.

Comments from Ohio. No further discussion.

2. AASHTO R 79, Vacuum Drying Compacted Asphalt Specimens (Item 26) – 43 affirmative/0 negative/8 not returned (SOM concurrent) and 27 affirmative/1 negative/6 not returned (TS concurrent)

Negative from Pennsylvania:

*In Section 5.11, the requirement is poorly written and does not provide the user sufficient information to determine if the mass determinations are different as the mass values from consecutive drying cycles are to be equal (as written, the user has to determine that the consecutive mass determinations have to be exactly equal) without any type of +/- tolerance and without any guidance in Sections 5.9 or 5.11 as to the number of decimal places the mass determinations are to be determined and recorded to. This is reason for the negative.*

This was an attempt to modify the procedure to require two drying cycles to ensure the specimen was dry. Tim Ramirez/PA spoke about this. PA recommends that there be some sort of tolerance between drying cycles. Lyndi Blackburn/AL will check with her laboratory to see what they do. Kenny Stuart/OK said they normally have to run two cycles and the numbers are typically very close but not equal. Allen indicated there were other changes made to R 79. Negative found persuasive. Editorial changes will be made, but R 79 will be re-balloted this fall for more significant changes.

Editorial comments:

- 1) *In Section 5.9, suggest revising from "Determine and record the specimen mass." to "Determine and record the specimen mass to the nearest 0.1 g." as Section 4.3 requires a weighing device meeting Class G 2 of M 231.*
- 2) *In Section 5.11, 2nd sentence, suggest revising from "Determine and record the specimen mass." to "Determine and record the specimen mass to the nearest 0.1 g."*
- 3) *In Section 5.11, 3rd sentence, suggest revising from "If the mass determinations are different, repeat" to "If the mass determinations are different by more than 0.3 g, repeat" or specify some other appropriate mass difference other than 0.3 g.*

Comments from Ohio and Tennessee.

3. AASHTO T 275, Bulk Specific Gravity ( $G_{mb}$ ) of Compacted Hot Mix Asphalt (HMA) Using Paraffin-Coated Specimens (Item 27) – 43 affirmative/0 negative/8 not returned (SOM concurrent) and 28 affirmative/0 negative/6 not returned (TS concurrent)

Comments from Mississippi, Missouri, Ohio, Pennsylvania, and Texas.

Comment from Mississippi:

*In Mississippi, we have not seen significant differences in oven dried as opposed to vacuum dried results. However, good practice is to be consistent with test procedures especially when the test results are being used for acceptance and pay. My recommendation would be*

to add a simple note stating that it is good practice to be consistent in the drying method for a given project when using the results for acceptance and pay.

Mississippi was not on the call. No comments from those on the call. Allen will consider the comment.

4. AASHTO T 324, Hamburg Wheel-Track Testing of Compacted Hot Mix Asphalt (HMA) (Item 28) – 43 affirmative/0 negative/8 not returned (SOM concurrent) and 27 affirmative/1 negative/6 not returned (TS concurrent)

Negative from Pennsylvania **(ATTACHMENT 5)**:

1) In Section 5.1, the requirements for the width of the steel wheel "47 +/- 0.5 mm (1.85 +/- 0.02 in.)" do not indicate if this is the outside edge of the steel wheel or the width of the contact surface on the steel wheel. If the requirements are for the width of the contact surface of the steel wheel, the requirement of "47 +/- 0.5 mm (1.85 +/- 0.02 in.)" is too tight for the current steel wheels our laboratory has for our PTI APA Jr. machine. See the attached Excel file with measurements of our steel wheels for both the Width-Outside and for the Width of the contact surface. Our steel wheels have a beveled edge on each side of the steel wheel so the width of the contact surface of the steel wheel is slightly less than the total width of the steel wheel.

2) In Section A4.2, it indicates to "Determine the maximum width of the edge of the wheel" which is not very clear. Is the "edge" the width of the contact surface that the steel wheel makes with the sample or is the "edge" the outside edge of the steel wheel (widest part of steel wheel or total width of the steel wheel)?

3) In Section 8.2, it indicates to "Secure the molds into the mounting tray by hand-tightening the bolts of the edge plate". For our machine, our "edge plate" does not have bolts if we are interpreting what the "edge plate" is referring to.

3) These items are reason for negative as these requirements need to be clear for everyone to ensure existing equipment is being correctly inspected to verify it meets these requirements.

Scott Andrus/UT explained what has happened so far with this standard, with the assistance of Howard Anderson. Easier recommendations from the research study were incorporated. PA voted negative on the width tolerance of the wheel. Their machine would not be in spec with proposed changes. T 324 does not say anything about the contact width. It only mentions the wheel width. Scott said all of the other comments are fairly editorial in nature and can be handled easily, with the exception of the wheel width issue. PA has participated in the UT round robin and results were in line with everyone else. APA may have just missed this tolerance. Matt Corrigan/FHWA gave additional input regarding the research study. He recommends that we pause for now and reconfirm what was conducted as part of the FHWA study. Negative was found persuasive. We could do a Tech Section ballot with the other changes first to keep things moving. Editorial changes will be published.

*Affirmative with editorial comments:*

1) In Section 5.6, 3rd line, should the language be "placed in a stainless steel tray" or "placed on a stainless steel tray"? For our machine, I believe "placed on a stainless steel tray" would be more accurate.

2) In Section 6.2, revise from "HMA" to "Asphalt Mixture".

3) In Section 6.3, revise from "HMA" to "Asphalt Mixture".

4) In Section 6.3.1, revise from "HMA" to "asphalt mixture".

5) In Section 6.4, revise from "HMA" to "Asphalt Mixture".

6) In Section 8.1, it indicates to "rigidly mount the 300 mm (12 in.), 250 mm (10 in.), or slab

*specimens in the mounting trays", but in Section 6.3.2.1 it indicates to "Compact slab specimens 320 mm (12.5 in.) long and 260 mm (10.25 in.) wide". Shouldn't these two sections have the same dimensions for the slab specimen? In addition, the language in Section 8.1 does not seem correct, shouldn't it be worded "rigidly mount the 300 mm (12 in.) long and 250 mm (10 in.) wide slab specimens in the mounting trays"?*

*7) In Section 8.1, 6th line, it indicates "The plaster underneath the specimen must not exceed 2 mm (0.08 in.)". This requirement may limit a significant amount of field cores from being tested in the current polyethylene molds if core thickness is less than 1.5 inch.*

*8) In Section 8.2, next to last sentence, it also states "The plaster underneath the specimen must not exceed 2 mm (0.08 in.) in thickness" which may limit use of field cores at thicknesses below 1.5 in.*

*9) In Section 8.2, "hand tightening the bolts of the edge plate" seems to be specific to certain models of the Hamburg testing machine. Our model does not have bolts on the mounting tray for the Hamburg test.*

Comments from Kansas, Missouri, North Carolina, and Ohio.

5. AASHTO T 362, Quantitative Determination of the Percentage of Lime in Hot Mix Asphalt (HMA) (Item 29) – 43 affirmative/0 negative/8 not returned (SOM concurrent) and 28 affirmative/0 negative/6 not returned (TS concurrent)

Comments from Ohio and Pennsylvania.

This was recently promoted to a full test method after being provisional for year. Editorial comments will be incorporated.

6. AASHTO TP 114, Determining the Interlayer Shear Strength (ISS) of Asphalt Pavement Layers (Item 30) – 43 affirmative/0 negative/8 not returned (SOM concurrent) and 28 affirmative/0 negative/6 not returned (TS concurrent)

Comments from Pennsylvania:

*1) In Section 8.1, revise from "laboratory-compacted HMA" to "laboratory-compacted asphalt mixture" and revise from "HMA pavements" to either "asphalt pavements" or "asphalt mixture pavements".*

*2) In Section 8.2.2, last line, revise from 'acquire additional core" to "acquire an additional core".*

*3) In Section 8.3.1, next to last line, it indicates to compact the top layer of the SGC specimen to "an air void content of 6.0 +/- 1.0 percent", but how is this to be determined since you have the bottom layer, the tack coat, and now a top layer? This requirement could only be determined after the fact by sawing off the top layer and determining the air voids or determined on the whole compacted SGC specimen consisting of the bottom layer, tack coat, and the top layer. If this is a stringent requirement, it may be best to suggest how to determine the top compacted layer of the SGC specimen meets this criteria.*

Tim Ramirez/PA spoke on this. Allen will consult with Dr. Mohammed about the intent of the requirement in 3). TP 114 will be published with the changes that were balloted.

7. AASHTO TP XYZ, Evaluation of Oxidation Level of Asphalt Mixtures by a Portable Infrared Spectrometer (Item 31) – 43 affirmative/0 negative/8 not returned (SOM concurrent) and 27 affirmative/1 negative/6 not returned (TS concurrent)

This has been balloted through the Tech Section several times.

Negative from Ohio:

Delmar Salomon/PPS has been in contact with Eric from Ohio. Ohio has withdrawn their negative. The other comments are editorial. Several clarification comments were received for Sections 6 and 8. Draft 10 with changes highlighted has been forwarded.

*Voting Negative until the below are addressed. Have no problem with the test standard as is and will vote affirmative once editorial items are taken care of. Comments below are from PDF pages 41 to 48 of "2c SOM Ballot 3."*

*Someone should be reading through standards before getting to this level and check for errors.*

*5.2.2 and 6.3.2: I don't see English and metric units.*

*2.1: Should R67 be added to this?*

*4.3: Should recycled asphalt shingles (RAS) be included?*

*6.1.2: Section 6 is Sampling and Specimen Fabrication Procedures so it does not make sense to mention actual testing in this section.*

*Figure 2: Should be Figure 1 since it's mentioned first in 6.1.2. Also, clarity of this Figure isn't great.*

*6.1.4: Would prefer this to say: "Repeat steps 6.1.1 through 6.1.3 to test five stainless steel pipes with three repetitions each." Remove "with three repetitions" and change "test" to "obtain" if you remove section 6.1.2 from above.*

*6.2.1: Are you sieving the loose asphalt mix sample or are you only making a mix with aggregates meeting the sieve requirements? Confusing language unless you reference Figure 1.*

*6.2.2: Should this be "warm" as mentioned in 6.1.2?*

*6.2.3: Same comments as 6.1.2 above.*

*6.2.4: Should be Steps 6.2.1 to 6.2.3 and would be same comments as 6.1.4 above.*

*6.3.4: Same comments as 6.2.2 above.*

*6.3.5: Same comments as 6.1.2 above.*

*6.3.6: Should be steps 6.3.3 through 6.3.5 and would be same comments as 6.1.4 above.*

*6.4: Should stop after 6.4.2. Testing is covered in Section 7 as mentioned.*

*6.4: Any concerns with distance from longitudinal joints with specialized material being used as sealers/adhesives? Example: Rubberized tacks, PG binders, and joint adhesives have been used in Ohio on longitudinal joints and will being too close to the joints impact the results of the infrared spectrum?*

*Section 6 in general: Can cores or gyratory/Marshall pills be tested?*

After section 7.5: Figure numbers are wrong. They are listed as Figure 2 and 3, but should be Figure 3 and 4.

8.1: Should be Section 6 not 5. 5 is apparatus.

8.2: Should be Section 7 not 6. 6 is Sampling and Specimen Fabrication Procedures.

Section 8 needs to be more descriptive and include how many times each pipe or in-place surface should be tested (three tests at each) with 5 total pipes/locations.

9.1.1: Figure 5 is labeled as Figure 4 on Page 46.

9.1.3: The "A" in Equation 1 is italicized but in the Figure it's not.

9.2.1: Figure 6 is labeled as Figure 5 on Page 47.

9.2.1: Don't agree with the next to last sentence. The mean of the plant and pavement are well within a standard deviation from the mean of the JMF values.

9.2: In the sections leading up to this, there was mention of doing three replicate tests on each of the five samples. Which of the three tests do we use or do we average those?

9.2: In Section 4.2, it is mentioned that tests can be done every six months or other suitable frequency. How are we supposed to use those results when looking at the plant or in-place pavement at time of placement? Is a higher or lower value expected for OxS?

10.1: You say standard deviation is std, which is fine. However, nowhere before or after this is std in place of standard deviation. Should just remove the "(std)."

11.1.3: Also all three results for each test of the five samples?

Comments from Arkansas, Georgia, Missouri, and Pennsylvania.

8. AASHTO M 156, Requirements for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures (Item 1) – 30 affirmative/0 negative/4 not returned

Comments from Pennsylvania. Allen will review and incorporate the comments as appropriate.

9. AASHTO T 331, Bulk Specific Gravity ( $G_{mb}$ ) and Density of Compacted Hot Mix Asphalt (HMA) Using Automatic Vacuum Sealing Method (Item 2) – 30 affirmative/0 negative/4 not returned

Comments from Pennsylvania. Allen will review and incorporate the comments as appropriate. Will be reconfirmed with a 2017 date.

10. AASHTO TP 82, Bulk Specific Gravity ( $G_{mb}$ ) of Compacted Bituminous Mixtures Using Water Displacement Measured by Pressure Sensor (Item 3) – 30 affirmative/0 negative/4 not returned

Comments from Ohio, Oklahoma, and Pennsylvania. Allen will review and incorporate the comments as appropriate.

Comment from Oklahoma:

*If specimen is not dense enough and would absorb more than 2.0% water by AASHTO T 166's 4 minute weighing in water, how would the results be valid? How would one know if AASHTO T 331 the vacuum sealing method even be needed in that case? Maybe the mix ETG has data on these issues?*

Allen will refer the comment to the Task Force. Scott Seiter/OK spoke about this. If anyone has one of these devices, let Matt Corrigan/FHWA know.

11. AASHTO TP 115, Determining the Quality of Tack Coat Adhesion to the Surface of an Asphalt Pavement in the Field or Laboratory (Item 4) – 30 affirmative/0 negative/4 not returned

Comments from Ohio, Pennsylvania, and Texas.

## B. Task Force Reports

1. Task Force 2c-2008-02
  - a. Rich Barezinsky, Chair (Kansas), Matthew Corrigan (FHWA), Oak Metcalfe (Montana), and Tim Ramirez (Pennsylvania)
  - b. Provide recommendations for amplitude and frequency for mechanical agitation devices in AASHTO T 209, *Theoretical Maximum Specific Gravity ( $G_{mm}$ ) and Density of Hot Mix Asphalt (HMA)*
    - i. NCHRP 20-07 research submittal, *Develop criteria that establish the amount of energy required to maintain fully-animated particles of loose asphalt within the test procedure AASHTO T 209*, selected for funding in September 2015 (NCHRP 20-07, Task 391)
  - c. Task force awaiting results of research project for incorporation into AASHTO T 209 as appropriate
  - d. Status of Task 391 project? Matt Corrigan/FHWA indicated that contractual work was delayed, estimated completion date is end of calendar year 2017.
2. Task Force 2c-2010-01
  - a. Matthew Corrigan, Chair (FHWA) and Jim Bibler (Gilson Company)
  - b. Incorporate comments from 2009 SOM ballot into AASHTO TP 82, *Bulk Specific Gravity ( $G_{mb}$ ) of Compacted Bituminous Mixtures Using Water Displacement Measured by Pressure Sensor*. Provide more details on water displacement measurement equipment.
  - c. Consider subsequent comments and questions regarding TP 82
  - d. Any additional members or activity? Still looking for others to get involved.
3. Task Force 2c-2012-01
  - a. Scott Andrus, Chair (Utah), Bill Schiebel (Colorado), Matthew Corrigan (FHWA), Oak Metcalfe (Montana), Tim Ramirez (Pennsylvania), and Darren Hazlett (Texas)
  - b. Implement findings from NCHRP 20-07, Task 361, study into AASHTO T 324, *Hamburg Wheel-Track Testing of Compacted Hot Mix Asphalt (HMA)*
  - c. Generally maintain AASHTO T 324 to reflect latest features and ideas
  - d. Update from Scott Andrus (Utah) T 324 was discussed earlier – it was on the ballot. Joe/WA asked if they could participate on the T 324 task force. Scott welcomed him.
4. Task Force 2c-2015-01
  - a. Garth Newman, Chair (Idaho), Mike San Angelo (Alaska), Matthew Corrigan (FHWA), Rick Bradbury (Maine), James Williams (Mississippi), Oak Metcalfe (Montana), Tim Ramirez (Pennsylvania), and Kurt Williams (Washington)
  - b. Address negative votes and incorporate comments as appropriate from 2014 SOM ballot into AASHTO T 209, *Theoretical Maximum Specific Gravity ( $G_{mm}$ ) and Density of Hot Mix Asphalt (HMA)*
  - c. Suggestions from Richard Giessel (Alaska)
    - i. Clarify application of vacuum in method summary
    - ii. Improve figure depicting arrangement of testing apparatus

- iii. Modify and add notes concerning removal of water vapor
- d. Update on progress? Matt Corrigan/FHWA is not aware of any activity since the last meeting. Allen is hoping to give an update at the meeting in Phoenix.

C. Standards Pending Revision

1. AASHTO T 195, *Determining Degree of Particle Coating of Asphalt Mixtures*
  - a. Issues discovered by Ontario and Oregon during 2015 reconfirmation ballot
  - b. Georgene Geary, consultant, has revised T195 **(ATTACHMENT 6)**
  - c. Ready for future TS 2c ballot? Georgene Geary has addressed the comments from Ontario and Oregon. Allen thanked Georgene for her work.
2. AASHTO T 269, *Percent Air Voids in Compacted Dense and Open Asphalt Mixtures*
  - a. Asphalt Institute-suggested changes to air voids nomenclature
  - b. Change from  $V_a$  to  $P_a$  will be performed editorially
3. Montana suggestion to reference AASHTO R 79 (*Vacuum Drying Compacted Asphalt Specimens*) rather than ASTM D7227 (*Standard Practice for Rapid Drying of Compacted Asphalt Specimens Using Vacuum Drying Apparatus*) in AASHTO T 166 [*Bulk Specific Gravity ( $G_{mb}$ ) of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface-Dry Specimens*]
  - a. Change will be performed editorially
4. Reference AASHTO R 79 rather than ASTM D7227 in AASHTO T 331 [*Bulk Specific Gravity ( $G_{mb}$ ) and Density of Compacted Hot Mix Asphalt (HMA) Using Automatic Vacuum Sealing Method*]
  - a. Item identified during review of AASHTO T 166 discussed above
  - b. Change will be performed editorially
5. All AASHTO standards related to measuring or calculating specific gravity
  - a. Issue resulting from FHWA negative vote on AASHTO T 166 [*Bulk Specific Gravity ( $G_{mb}$ ) of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface-Dry Specimens*] as presented on 2015 SOM ballot
  - b. Add “gas-free distilled water” to Apparatus section
  - c. Concern about availability of distilled water in remote laboratories
  - d. Richard Giessel (Alaska) provided guidance for using non-distilled water and correction factors
  - e. Discussion at 2016 TS 2c meeting did not produce consensus
  - f. Awaiting recommendations from Western Alliance for Quality Transportation Construction (WAQTC) for future technical section ballot
  - g. Update on progress? WAQTC was not on the call to give an update. Matt Corrigan/FHWA said most standards refer to gas-free distilled water.

D. Previous Correspondence

1. Tennessee-suggested practice for preparing pavement cores for asphalt binder content or gradation testing
  - a. Include in AASHTO R 67, *Sampling Asphalt Mixtures after Compaction (Obtaining Cores)*?
  - b. Tennessee developed survey to query SOM for existing practices
  - c. Survey distributed in August 2016
  - d. Update on progress? Brian Egan/TN said they are still putting a summary together and will have something by the summer meeting.

V. New Business

- A. AASHTO re:source issue

1. Inquiry from Brian Johnson from AASHTO re:source regarding AASHTO T 209, *Theoretical Maximum Specific Gravity ( $G_{mm}$ ) and Density of Hot Mix Asphalt (HMA)* **(ATTACHMENT 7)**
  - a. Precision estimates in T 209 do not specify nominal-maximum aggregate size
  - b. Precision estimates in T 209 are probably not accurate for 37.5-mm nominal-maximum mixtures
  - c. Should T 209 identify nominal-maximum aggregate sizes to which precision estimates apply?
  - d. Should TS 2c attempt to define precision estimates for 37.5-mm nominal-maximum mixtures in T 209?

Allen said we probably need an abbreviated research study on this. Allen will discuss this further with Brian Johnson/AASHTO re:source and it may be brought up at this summer's meeting.

**VI. Open Discussion**

Georgene Geary is going to work on T 168 (Sampling Asphalt Mixes). It should be an "R" standard rather than a "T" standard. Hoping to have this ready for TS ballot prior to the summer meeting.

**VII. Adjourn**

Meeting adjourned at 2:41 p.m.

Name	Email Address	Agency
Anderson, Howard		UT DOT
Andrus, Scott	<a href="mailto:scottandrus@utah.gov">scottandrus@utah.gov</a>	UT DOT
Aschenbrener, Timothy	<a href="mailto:timothy.aschenbrener@dot.gov">timothy.aschenbrener@dot.gov</a>	FHWA
Bailey, Bill	<a href="mailto:Bill.Bailey@VDOT.Virginia.gov">Bill.Bailey@VDOT.Virginia.gov</a>	VA DOT
Barnhart, Tracy	<a href="mailto:tbarnhart@ashtoresource.org">tbarnhart@ashtoresource.org</a>	AASHTO re:source
Blackburn, Lyndi	<a href="mailto:blackburnl@dot.state.al.us">blackburnl@dot.state.al.us</a>	AL DOT
Boisvert, Denis	<a href="mailto:Denis.Boisvert@dot.nh.gov">Denis.Boisvert@dot.nh.gov</a>	NH DOT
Burch, Paul	<a href="mailto:PBurch@azdot.gov">PBurch@azdot.gov</a>	AZ DOT
Byrne, Michael	<a href="mailto:michael.byrne@dot.ri.gov">michael.byrne@dot.ri.gov</a>	RI DOT
Corrigan, Matthew	<a href="mailto:Matthew.Corrigan@dot.gov">Matthew.Corrigan@dot.gov</a>	FHWA
Davis, Steve	<a href="mailto:DavisSJ@wsdot.wa.gov">DavisSJ@wsdot.wa.gov</a>	WA DOT
Doran, Michael	<a href="mailto:Michael.Doran@tn.gov">Michael.Doran@tn.gov</a>	TN DOT
Dusseault, Chuck	<a href="mailto:Chuck.Dusseault@dot.nh.gov">Chuck.Dusseault@dot.nh.gov</a>	NH DOT
Egan, Brian		TN DOT
Gilmore, Jasmine	<a href="mailto:jgilmore@ashtoresource.org">jgilmore@ashtoresource.org</a>	AASHTO re:source
Horner, Ron	<a href="mailto:rhorer@nd.gov">rhorer@nd.gov</a>	ND DOT
Marks, Pamela	<a href="mailto:Pamela.Marks@ontario.ca">Pamela.Marks@ontario.ca</a>	Ministry of Transportation Ontario
Mensching, David	<a href="mailto:david.mensching@dot.gov">david.mensching@dot.gov</a>	FHWA
Myers, Allen	<a href="mailto:Allen.Myers@ky.gov">Allen.Myers@ky.gov</a>	KY DOT
Pfeifer, Brian		IL DOT
Ramirez, Timothy	<a href="mailto:TRAMIREZ@pa.gov">TRAMIREZ@pa.gov</a>	PA DOT
Salomon, Delmar	<a href="mailto:delmar@technopave.com">delmar@technopave.com</a>	Pavement Preservation Systems LLC
Sandoval-Gil, Jesus		AZ DOT
Santi, Mike	<a href="mailto:mike.santi@itd.idaho.gov">mike.santi@itd.idaho.gov</a>	ID DOT
Seiter, Scott		OK DOT
Short, Temple	<a href="mailto:ShortTK@scdot.org">ShortTK@scdot.org</a>	SC DOT
Stuart, Kenny		OK DOT
Tedford, Darin	<a href="mailto:dtedford@dot.state.nv.us">dtedford@dot.state.nv.us</a>	NV DOT
Trautman, Brett	<a href="mailto:Brett.Trautman@modot.mo.gov">Brett.Trautman@modot.mo.gov</a>	MO DOT
Trepanier, James	<a href="mailto:James.Trepanier@illinois.gov">James.Trepanier@illinois.gov</a>	IL DOT
Voelkel, Robert	<a href="mailto:RVoelkel@sha.state.md.us">RVoelkel@sha.state.md.us</a>	MD DOT
Webb, David	<a href="mailto:David.Webb@dot.state.fl.us">David.Webb@dot.state.fl.us</a>	FL DOT
Wilson, Craig		AZ DOT
Zehr, Tom		IL DOT
Zwanka, Merrill		SC DOT

## Comments