AASHTO TSP•2 - Emulsion Task Force (ETF) Virtual Meeting

August 18, 2020

Minutes

Attendees:

Colin Franco, Chris Lubbers, Larry Galehouse, Arlis Kadrmas, Gary Hicks, Jim Moulthrop, Darren Hazlett, Hassan Tabatabaee, Larry Tomkins, Scott Dmytrow, Jerry Geib, Stormy Brewster, Travis Walbeck, Mike Anderson, Russ Milan, Andrew Bickford, Andy Clayton, Jody Bachini, Barry Baughman, Ben Sade, Brian Pfeifer, Steve Buckner, Colin Durante, CJ Dubois, Eric Reimschissel, Gerry Reinke, Guy Sisler, Dave Zhai, Hussein Bahia, Jack Youtcheff, Jason Wielinski, JP Fort, Jeff Shoger, Nathan Awwad, Joe Brandenburg, Jon Pepyne, Kelly Morse, Kevin Carlson, Kevin McGlumphy, Mark Ishee, Marla Kilburg, Mike Voth, Rod Birdsall, Shelly Cowley, Stephanie Stewart, Scott Metcalf, Andrew Braham, Andrew Hanz, John Senger, Mike Hemsley, Codrin Daranga = 51 members and friends.

Minutes: December 3, 2019 meeting. Approval moved by Jason Wielinski, 2nd by Darren Hazlett.

Opening Remarks:

Colin Franco provided a short background on the ETF. The task force was formed in 2008 by Jim Sorenson. Beginning in 2015 the ETF moved under the umbrella of the AASHTO Transportation System Preservation-Technical Services Program (TSP·2). The ETF strives to fulfill the following tasks:

- Advance the Effort to Develop Performance Based Methods & Specification for Emulsions
- Encourage Adoption of Uniform National Standards
- Develop AASHTO Standards for all the Emulsion Treatments that include:
    - Materials Specs
    - Test Methods
    - Design Practices
    - Construction Guide Specs
- Develop QA protocols and standards for all Emulsion Treatments

Presently the ETF comprises 27 members and 50 friends., There are 7 subcommittees and a special working group (SWG). The subcommittees are:

- Residue Recovery and Testing
- Spray/Mixture Treatment Construction Guide Specifications
- Supplier Certification and Quality Assurance for Construction Guide Specifications
- Research

- Rejuvenators
- Recycling Emulsions
- Messaging & Implementation

The ETF has achieved many accomplishments as shown in the following chart:

	AASHTO STANDARDS						
Emulsion Treatments	**M / MP**	**T / TP**	**R**	**W/ COMP**	**Comments**	**Construction Guide Specs**	**Best Practices**
Chip Seal	MP27-16		PP82-16			✓ NCHRP 14-37	
Micro Surfacing	MP28-17		PP83-16			✓ NCHRP 14-37	
Tack Coat	MP36-18		PP93-18			NCHRP 14-44	
Fog Seal	MP33-17		PP88-17			✓ NCHRP 14-37	
Scrub Seal	✓		PP91-18			NCHRP 14-44	
Sand Seal	MP34-18		PP90-18			PS 2020	
Slurry Seal	MP32-17		PP87-17			NCHRP 14-44	
Foam Asphalt Stabilization			PP38-18				
Bonded Surface Treatments (Nova Chip)	✓		✓	2018		PS 2020	
Cold Recycled Mixtures	MP31-17		PP86-17			NCHRP 9-62 / D-07 NCHRP 14-43	

Emulsion Binder Standards	**M / MP**	**T / TP**	**R**	**W/TRB**
Emulsified Asphalt	M140-16			
Cationic Emulsified Asphalt	M208-16			
Polymer-Modified Cationic Emulsified Asphalt	M316-16			
Emulsion/Surface Performance Grades (E/SPG)				NCHRP 9-63

Legend

M=Material Specs
T=Test Methods
R=Design Practices
P=Provisional
✓=Draft STD Submitted to COMP

Other accomplishments include:

- The Special Working Group developed a draft Emulsified Asphalt Performance Grade (EAPG) specification. It was based on the work of Amy Epps-Martin and Richard Kim, and is the basis for project NCHRP 9-63, "A Calibrated and Validated National Performance-Related Specification for Emulsified Asphalt Binder". The PI for the project is Mike Anderson from the Asphalt Institute.

Ongoing work includes:

- Addressing comments of new Construction Guide specifications for the AASHTO COMP TS 5b
- Addressing comments of new Quality Assurance Guides for AASHTO COMP TS 5c
- Developing best practice documents for chip and micro surfacing

Remaining work includes:

1. Develop Construction Guides and Quality Assurance procedures for:
    a. Cold In-place Recycling NCHRP 14-43
    b. Sand Seals NCHRP 14-44
    c. Scrub Seals NCHRP 14-44
    d. Ultra-thin Bonded Wearing Course

2. Develop specifications for agriculturally based asphalt rejuvenators and petroleum-based asphalt rejuvenators.
3. Encourage state DOTs and local agencies to use the new AASHTO -
    a. Pavement Preservation Standard Specifications
    b. Construction Guides and Quality Assurance procedures
    c. Test Methods
4. Work with state DOTs and local agencies to host demonstration projects where treatments are constructed using the new AASHTO specifications. This initiative will be in coordination will NCHRP project 20-44(26). The title of this project is, "Implementing Guide Specifications for the Construction of Chip Seals and Micro Surfacing," but also includes fog seals. The implementation plan tasks include:
    a. Information Dissemination
    b. Outreach
    c. Training
    d. Demonstrations
    e. Final Report

ETF Website Review

Larry Galehouse provided an overview of the ETF website. The website link is: http://tsp2-etf.org The site is the home for all ETF working specifications, asphalt treatment checklists, meeting minutes, past presentations, past agendas, and information on NCHRP 20-44(26). A member only page is password protected and contains AASHTO approved specifications. The AASHTO approved specifications are copyrighted and CANNOT be distributed.

AASHTO Committee on Materials & Pavements Updates

TS 2a: Brian Pfeifer summarized the activities of the virtual AASHTO COMP TS 2a meeting held on August 3rd. The tech section is coordinating changes to AASHTO T 59 Standard Method of Test for Emulsified Asphalts and AASHTO T 72 Standard Method of Test for Saybolt Viscosity.

Brian stated there are 2 new provisional standards. They are Materials for Cold Recycled Mixtures with Emulsified Asphalt (MP 31-17) and Emulsified Asphalt Content of Cold Recycled Mixture Designs (PP 86-17). The tech session is working on temperature measuring

Colin Franco commented on a NCHRP Research Needs Statement (RNS) for residue recovery. Darren Hazlett said the RNS was submitted to COMP TS 2a but sent in too late to be voted on.

Kelly Morse stated that Illinois DOT is working with Heritage Research Group (HRG) by applying a modified AASHTO T 164 asphalt extraction for micro surfacing. Preliminary results are

promising although issues such as sampling procedure, sample size, sample container and other concerns remain. Larry Tomkins announced that the International Slurry Surfacing Association (ISSA) has an 18 to 24-month contract with NCAT to develop a procedure to measure the asphalt content in micro surfacing. A request was made to coordinate future procedure development efforts between NCAT, HRG, and Illinois DOT.

TS 5b: Ben Sade reported that 147 labs are now accredited for emulsion testing. Due to COVID-19 travel is suspended and labs will be desk top audited and reviewed online.

TS 5c: Colin Franco has submitted a Chip Seal Quality Assurance Guide Specification and a Slurry Systems Quality Assurance Guide Specification to the tech section. Revisions are currently being made to address comments. A future task of the ETF will be to develop a QA specification for EVERY treatment. Once the QA Guides are approved, they can be used as a template for future treatments.

ISSA Incentives and Disincentives

Eric Reimschissel and Rex Eberly presented a proposal to the ISSA Board for comment. The Board has agreed to move forward with developing Incentives and Disincentives that work for contractors, suppliers, and agencies. The project has been turned over to the ISSA Technical Committee a couple of months ago for discussion. Larry Tomkins explained that ISSA is still in the starting stage. A draft spreadsheet was shared during this meeting. The draft was limited to micro surfacing and chip seal was not included.

The ETF needs a lead person for the chip seal incentives and disincentives. Several states have specifications that have some incentives and disincentives for preservation treatments.

NCHRP 9-63 (EA-PG) Update

Mike Anderson, Asphalt Institute, reported on NCHRP project 9-63 , titled "A Calibrated and Validated National Performance-Related Specification for Emulsified Asphalt Binder". The objective is to develop a national performance-related material specification for emulsified asphalt binder for use with chip seals and slurry systems. Mike is the principle investigator and Adriana Vargas is the lead for NCAT. The research followed the draft specification developed by the ETF special working group (SWG) based on the work of Amy Epps-Martin and Richard Kim.

A NCHRP panel meeting was held back in February and Phase 1 has been completed. Currently, there are several technical issues that are issues including:

- The high variability in round robin testing among the 5 labs involved.
- Review of AASHTO R 78 (Standard Practice for Recovering Residue from Emulsified Asphalt Using Low-Temperature Evaporative Techniques) procedure A and procedure B, by using Vacuum Recovery ASTM D7944-15 and AASHTO T 59 (Standard Method of Test

for Emulsified Asphalts) Section 7 (Emulsified Asphalt Residue by Evaporation) using high temperature. The conclusion is Procedure B is best.

- Using Black Space diagrams to plot of G* versus Phase Angle to predict cracking.
- The use of Glover-Rowe parameter to evaluate low-temperature performance. However, the effect of polymers, SBR and SBS, may give different results. Potentially there may not be a polymer test in the final specification and instead use PG+ testing separately.
- The use of MSCR testing is being considered.

Phase 2 will involve conducting three tests at the Asphalt Institute and NCAT labs. An emulsion residue recovery and testing plan has been developed for the labs. Mike is working with NCAT to conduct the tests on the same days. All PAV testing to simulate long term aging is being performed at the Asphalt Institute. Currently the research will involve investigating 16 field projects.

Discussion ensued about high and low temperature testing and how best address aging.

ETF – Subcommittee Progress Updates

Residue Recovery and Testing: Arlis Kadrmas reported that slow setting draw down puddling may cause issues. He has been doing a lot of lab work and noticed that if polymers were added, there were issues with moisture retention. He discussed the test related problems using Method A and B and prefers method A. France used Method A and their information would be worth looking into.

Spray/Mixture Treatment Construction Guide Specifications: Gary Hicks has submitted chip seals and fog seals to AASHTO COMP TS 5b for review. He is currently addressing comments from the tech section. Gary reported the NCHRP 14-44 (Guide Specifications for the Construction of Slurry Seals, Scrub Seals, and Tack Coats) has been awarded to the University of Arkansas. Andrew Braham is the P.I.

Jim Moulthrop has submitted the construction guide for micro surfacing to AASHTO COMP TS 5b for review. He is currently addressing comments from the tech section. Both the micro surfacing, chip seal, and fog seal construction guide originated from NCHRP project 14-37.

Supplier Certification and Quality Assurance for Construction Guide Specifications: Colin Franco reported the status earlier during the meeting. Comments from AASHTO COMP TS 5c are currently being address by Colin and Larry Galehouse.

Research: Darren Hazlett stated that a research needs statement for asphalt emulsion recovery has been submitted to AASHTO. A new research needs statement is needed for rejuvenators. Colin Franco mentioned the importance of state agency support for research to be selected.

Rejuvenators: Hassan Tabatabaee told the participants that gaps exist in performance-based specifications for spray applied rejuvenators. A proposed research needs statement was developed for rejuvenators estimating a 24-month duration and a cost of $450,000. The proposal was not selected.

Hassan stated that recently ASTM published D4552 "Standard Classification for Hot-Mix Recycling Agents". This is not a performance specification.

Messaging & Implementation: Larry Tomkins explained that the Subcommittee wants to show how the new AASHTO specifications can have an impact on a project. Implementing the new standards for materials, design, and construction will greatly influence performance. Kudos were given to Russ Milan for spearheading a chip seal and a micro surfacing demonstration project in Michigan. He asked everyone to find a project to use the AASHTO Construction Guides.

Best Practices

Gary Hicks reported a good draft is nearly complete, although the quality assurance section needs additional work. Developing the Best Practices for slurry systems began around 2015. The document now has 83 pages and reviews are underway. There are 2 more treatments that Best Practices will soon be complete.

Agencies are frustrated with all the different documents available for preservation treatments. Treatment Best Practices will ultimately become the premier guidance documents available for all involved with asphalt pavement preservation treatments.

M&I Subcommittee Break-Out Session

Attendees:

Colin Franco, Larry Galehouse, Larry Tomkins, Scott Dmytrow, Jerry Geib, Stormy Brewster, Travis Walbeck, Arlis Kadrmas, Barry Baughman, Ben Sade, Steve Buckner, Colin Durante, Chris Lubbers, Eric Reimschissel, Nathan Awwad, Joe Brandenburg, Kelly Morse, Kevin McGlumphy, Mark Ishee, Rod Birdsall, Russ Milan, Shelly Cowley, Scott Metcalf, Mike Hemsley = 24 members and friends.

Larry Tomkins is the Chair of the M&I Steering Committee, that will guide the implementation of the new AASHTO specifications by state and local agencies.

Larry Galehouse is the P.I. for the NCHRP project 20-44(26) titled, "Implementing Guide Specifications for the Construction of Chip Seals and Micro Surfacing". Due to the pandemic and the recent retirement of several staff members the NAS Office of Contracts and Grants has caused a delay in processing the contract. Larry will contact the ETF once the contract is signed and work can begin.

Larry Tomkins has developed a task list that coincides with the deliverables of NCHRP 20-44.

The following is a summary of task group.

Messaging: Scott Dmytrow is the task group leader.

a. Materials can reference the new AASHTO specifications, but they cannot be distributed outside the ETF.
b. Working drafts of the specification are on the ETF website are okay to pass out.
c. Paul Fournier is under contract for writing news articles or other written needs. His hours are limited due to project funding.

Outreach: Jerry Geib is the task group leader.

a. A short presentation was made to the AASHTO COMP virtual meeting
b. A Speakers Bureau needs to be assembled.
c. A list of upcoming webinars needs to be created. Presentations should be included in agendas of national meetings and conferences. Presentations are already on the agenda of the regional pavement preservation partnerships, the 2021 National Pavement Preservation Conference and the 2021 Slurry Systems Workshop.
d. Outreach teams from the Speakers Bureau should comprise an agency person and one out-of-state ETF expert. Their responsibility is to present compelling reasons to adopt AASHTO specifications and consider a demonstration project.
e. The Outreach task group will work closely with the M&I Subcommittee to develop a suitable PowerPoint presentation.

Training: Stormy Brewster and Travis Walbeck are co-leaders of the task group.

a. Notes are available from the last conference call from the training task group. Discussion focused on best practices in the training.
b. Highlight the specification guides and show the differences from the agency's existing specification. The purpose is to increase agency awareness.
c. The task group can do training webinars through NCPP.
d. Use the check lists located on the ETF webpage.
e. Quality Assurance should be a BIG part of the training.

f. Need to capture the agency's current QA practices and develop a FAQ.

Demonstrations: Larry Tomkins is the task group leader.

a. Russ Milan and Larry Tomkins have each done a demonstration job using the AASHTO specifications.
b. There is a need to identify more jobs for 2021. The NCHRP 20-44 project will need treatments in each of 4 geographic climatic zones.
c. It is important to document agency specifications that are very similar to the new AASHTO specifications.
d. It is important to document preconstruction data and post construction data.
e. Russ Milan explained that his project was chip seal with a fog seal. The project was constructed by Strawser. The demo was a one-mile section with 100-200 ADT. Minor cracks were sealed 5-days prior to chip sealing. The pavement PCI was about 85 and in very good condition. The westbound lane used Michigan specification and the eastbound lane used the AASHTO specification. Both specifications had requirements very close to each other. The chip seal was fog sealed same day. Russ stated that he participated in two pre-construction meetings prior to the start of work. The chip spreader and distributor were both calibrated prior to beginning work.

   Larry Galehouse mentioned that the AASHTO specifications require the placement of a test strip prior to starting. How should this requirement be addressed at a demonstration project?

END