Greetings to the Mighty Mac! So much has happened this summer and fall. Our annual meeting in Charlotte was a great success – which is a direct result of the hard work of the North Carolina DOT, the Committee planning members and the AASHTO staff. Many thanks to each of you. Several of our member states have been greatly impacted by hurricanes and their aftermath. North Carolina and South Carolina are still recovering from Hurricane Florence. Florida faced the full fury of Hurricane Michael and is facing a tremendous recovery process. Several other states have been impacted by extreme weather events. Please know that your Maintenance family has your back – always.

The 2019 Meeting will be held in Michigan – much appreciation to Steve Cook and everyone at Michigan DOT for hosting. However, a successful meeting is not guaranteed just because of awesome hosts – it requires A LOT of planning and hard work. Now is the time for the TWGs to start thinking about what you want to accomplish next summer and what needs to be done between now and then. To everyone that is and will be involved – thank you!

During the Charlotte meeting, the MaC conducted its first ever TSP triennial review. Rick Nelson shared SICOP’s accomplishments over the past three years and laid out the vision and plan for the next three. An electronic ballot was sent to the MaC voting members in August and I am happy to report that the committee voted to renew SICOP as a TSP. Congratulations, SICOP! During the 2019 meeting, we will conduct a triennial review of TSP2. Your input during that review will be very important and is appreciated.

At the AASHTO Annual Meeting last September, I had an opportunity to share with the Council on Highways and Streets the outcome of the SICOP triennial review as well as the Equipment TWG resolution to establish a fifth equipment performance measure. Most importantly, everyone there now understands that Maintenance Committee is properly known as the “Mighty MaC”.

Afterwards, Carlos “Mr. AASHTO” Braceras asked me to let you know that the MaC remains near and dear to his heart, and that he is very proud of the work you are doing. Although my opinions don’t carry the same weight as Carlos, I echo what he said.

I can’t end this message without a reminder of the MaC’s Focus Areas, which are:

1. Be committed to the fundamentals while embracing new technologies and processes,
2. Be recognized as the national leader in the Maintenance community,
3. Better coordination between MaC and its Technical Service Programs (TSPs),
4. Improve participation and attendance by MaC member agencies,
5. Be more engaged with other AASHTO communities that have influence on maintenance practices and processes.

This past summer, we reached an important milestone regarding Focus Area #4 – we had a quorum (and more) at the Business Meeting in Charlotte! Our business meetings are so much more productive and effective when we are able to timely make decisions and take official votes. For those who spent the week attending the meeting and arranged your return travel so you could be present for the business meeting, thank you. For those who had to return early but made arrangements for someone else to have your proxy, thank you. For those who were not able to join us in Charlotte but designated someone as your proxy, thank you. And for those who made special arrangements to join the business meeting remotely, thank you – especially you who live in the Pacific time zone! All of you made reaching this important milestone possible. I look forward to repeating that accomplishment in Michigan.

I have said this before but is no less true. I am grateful for the opportunity to serve as your Chair and am honored to be associated with such a great group of people. Thank you for everything you do –

George Conner
Alabama DOT
2018 MaC Annual Meeting Update

Host State Representative: Steve Cook, Michigan DOT

We have confirmed the dates. Michigan is excited about hosting the annual conference in downtown Grand Rapids on July 13 through July 18, 2019. The conference planning team is actively preparing for the summer meeting and is working with AASHTO to make the annual MaC Conference a success. We look forward to seeing everyone in Grand Rapids!

View this link for a short video on what to expect and help plan your trip to Michigan. https://youtu.be/GrZ9h9keKuH

The Michigan Department of Transportation (MDOT) designs, constructs, operates and maintains the state's surface transportation system. With a staff of more than 2400 transportation professionals, MDOT serves as the steward of a statewide multimodal transportation network. This consists of a 9,669-mile highway system with 11,169 bridges of which 4,488 are on the state highway trunkline. MDOT also administers other state and federal transportation programs for aviation, intercity passenger services, rail, local public transit services, including our newest program called Transportation Systems Management and Operations (TSMO). For more information see our website at www.michigan.gov/mdot

North Carolina Disaster Recovery Application Deployment

By: Emily McGraw, North Carolina DOT

At the 2018 annual Maintenance Committee in Charlotte, North Carolina presented information to the Roadway/Roadside TWG and the Maintenance Operations TWG about an application they were developing to assist in documenting damage and determining preliminary damage assessments after a storm. Historically, NCDOT utilized spreadsheets, cameras and GPS devices in order to capture the data required by federal agencies for reimbursement purposes.

During Hurricane Florence, NCDOT was able to deploy this new technology and is pleased with how the application is working. ASSIST (Application for Site-Specific Information Storage and Tracking) is an application developed on the ESRI Survey 123 platform. Personnel assessing damage can download the application on their smart phone or tablet devise. In the field, inspectors use this application, which consists of an online form, to populate information needed for the damaged sites. On site, inspectors are able to attach pictures taken with the device and all information is then is geo-located to a point on a map. This information is available in real time and provides executive management ground truth information in a much quicker timeframe.

To date, NCDOT has identified more than 3500 damaged sites. Below is a picture of the statewide damaged sites as well as a highlight of one damaged site.
Research News
MaC Research Coordinator
Jon Wilcoxson, Kentucky DOT

In September, the Equipment Technical Working Group submitted two Scan Tour projects for consideration. These included Equipment Asset Preservation and Protection Techniques and Equipment Management Organizational Approaches. Selected scan topics may be carried out through site visits to specific locations, a peer exchange, or conducted by a group of transportation professionals with expertise in the topic area.

The committee also submitted five NCHRP research problem statements were submitted for consideration in October. The Pavement Technical Working Group submitted three proposals, including Guidelines for Incorporating Maintenance Costs into a Transportation Asset Management Plan, Benefit Cost Analysis of Chip Seal Binder Alternatives, and Guide Construction Specifications for Cold In-Place Recycling (CIR) and Cold Central Plant Recycling (CCPR). The Equipment Working Group submitted a proposal on Strategies to Maximize Vehicle and Equipment Resale Values to Optimize Fleet Total Cost of Ownership, while the Bridge Technical Working Group submitted Guidelines for the Procurement of Nondestructive Testing and Evaluation and Structural Health Monitoring Based on Best Practices.

Maintenance Manual Update
At the annual meeting a proposed new edition of the AASHTO Manual on the Maintenance of Roadways and Bridges prepared under NCHRP Project 20-07 (380) was discussed. Twenty four states and the District of Columbia provided comments. The Manual is under consideration for adoption as the new AASHTO Manual.

Bridge TWG
Chair: Jeff Milton, Virginia DOT

The Bridge Technical Working Group (BTWG) of the AASHTO Committee on Maintenance (MaC) had very productive break-out sessions during the 2018 meeting in Charlotte, NC. The meeting included three official breakout sessions for the Bridge Technical Working Group.

Daily attendance at the BTWG break-out sessions was as follows:
- Monday – 45
- Tuesday – 38
- Wednesday – 27

The Work Plan for the BTWG includes activities in the Six Strategic Focus Areas: Safety, Asset Management, Environmental, Workforce Development, Communication, and Research.

The BTWG work plan for 2019 follows:

Safety -
- Promote safety and reliability of bridge preservation practices, and support other TWGs CAV initiatives

Asset Management -
- Support member agencies in the implementation of the FHWA Rules for bridge and pavement condition and for asset management systems
- Participate in the TSP2 National Bridge Management System working group

Environmental -
- Promote sustainability while performing bridge maintenance and preservation activities

Workforce Development -
- Prioritize FHWA Bridge Preservation Expert Task Group efforts

Communication -
- Promote communications concerning bridge maintenance and preservation with local agencies
- Develop a strategy to better communicate bridge condition information to the media (ENR, Roads and Bridges, ARTBA, etc.)

Research -
- NCHRP Project 12-100 “Guidelines for Maintaining Small Movement Bridge Expansion Joints” is complete and the Committee on Maintenance voted in 2017 to publish the report as an AASHTO Document – The Bridge TWG has a committee that is reviewing this document so that it can be published as an AASHTO guideline in 2019.
- NCHRP Project 14-29 – “Assessing, Coding, and Marking of Highway Bridges in Emergency Situations” is complete and the Committee on Maintenance voted in 2017 to publish the report as an AASHTO Document – The Bridge TWG has a committee that is reviewing this document so that it can be published as an AASHTO guideline in 2019.

Proposed Research


Other News

In 2017 the Committee on Maintenance re-endorsed the proposed research titled “Effective Use of Duplex Coating Systems to improve Steel Bridge Structure Durability”. This problem statement was re-submitted to NCHRP on October 13, 2017. This project was selected for FY19 funding – NCHRP Project 12-117. AASHTO Maintenance Manual for Roadways and Bridges has been updated under NCHRP Project 20-07/Task 380.

Members of the BTWG have provided support to the FHWA Bridge Preservation Expert Task Group (BPETG). The BPETG updated the Bridge Preservation Guide and is in the process of preparing pocket guides for Thin Polymer Deck Overlays, Bridge Cleaning, Coatings, and Joints.
We have had a change to the leadership team of the Equipment Technical Working Group. Doug Burke, Ohio DOT, has been appointed to join Lisa Kunzman as Vice Chair replacing the retired Bruce Erickson from Oregon.

Work continues in implementing the findings from the final report of Research Project 20-07/Task 309, Challenges and Opportunities: A Strategic Plan for Equipment Management Research to identify and prioritize additional research projects. New research priorities will be identified and re-prioritized with remaining priorities by the membership at the 2018 Joint National AASHTO-EMTSP National Equipment Fleet Management Conference and Equipment Tradeshow.

Current Research Projects
NCHRP 20-7/Task 309, Challenges and Opportunities: A Strategic Plan for Equipment Management Research – The research panel has been selected and work to develop a research project statement will begin soon. This project will update the results of project 20-07/Task 309 identifying a Strategic Plan for Equipment Management Research

NCHRP Project 13-04 – Guide for the Development of Highway Operations Equipment Replacement Lifecycle Criteria is now complete. Dye Management Group completed the project report in October 2018. TRB as published the work as NCHRP Project Report 879. The Equipment TWG will be requesting AASHTO to adopt research guide, tool and publication.

NCHRP Project 13-05 – Guidelines for the Development of Highway Operations Equipment Utilization Measurement and Management is ongoing. The project panel has been staffed; RFP has been written, solicited and awarded to Washington State University. Project start date was June 01, 2015. Revised project completion date is December 31, 2018.

NCHRP Project 13-06, FY 2017 – Development of an Automated Tool to Assist in the Formulation and Maintenance of Long Range Equipment Replacement Plans. The project panel has been staffed; and proposals are currently under consideration.

NCHRP Project 13-07, FY 2018 – Guidelines to Calculate Total Cost of Ownership for Fleet Operations. The project panel has been staffed; RFP has been written, solicited and awarded to The Cadmus Group, LLC. The projected project completion date is August 31, 2019.

NCHRP Project 05-24, FY 2018 – Guidelines for the Selection and Application of Vehicle and Equipment Warning Light Configurations, Color, and Markings. The project panel has been staffed; RFP written; solicited and awarded to Texas A&M Transportation Institute. The projected project completion date is Nov. 30, 2020.

NCHRP Project 13-08 - Guideline for Decision Making for Repair vs. Replacement of Highway Maintenance Equipment. The project has been approved; NCHRP is expected to begin staffing the project panel to develop RFP scope of work in early 2019.

Proposed Research Projects
During the 2018 AASHTO Mac meeting the Equipment Technical Working Group (TWG) developed and submitted one (1) research project statement and two (2) applications for a proposed scan tours. The research project statement and scan tour proposals were given initial MaC endorsement and are currently submitted for further review and vetting for funding. The proposed research project statement and scan tour proposals with current known status are listed below:

- Research Project Statement - Strategies to Maximize Vehicle and Equipment Resale Values to Optimize Fleet Total Cost of Ownership. State DOTs purchase needed vehicles and equipment at competitive prices from the manufacturers or distributors, but many lack the expertise and incentives to maximize resale values. The primary objectives of the research project would be to develop guidelines for state DOT fleet management organizations to use when disposing and marketing surplus used fleet assets. The end-product would promote increased sales values to reduce fleet total cost of ownership.

- Proposal for Scan Tour – Equipment Asset Preservation and Protection Techniques – The background and purpose of the scan is to assist and educate State DOT equipment managers, who are tasked with identifying preventative maintenance practices to prevent premature deterioration. Fleet Managers are being asked questions like, what are the best protectant coatings, how do different methods of storing equipment affect fleet longevity, and do certain preventative maintenance practices or processes work better than another? Which fleets have implemented successful washing programs and how? What are the best practices for preparing fleet equipment for off season storage? There would be significant value to State DOT’s to identify which methods have been the most successful.

- Proposal for Scan Tour – Innovations in Equipment Management Organizational Approaches at State Transportation Agencies – The background and purpose of the scan is that State DOTs continually seek to improve Equipment Management (EM) efficiency and effectiveness by seeking insight, innovations, and resources from other similar organizations. There are substantial opportunities to share and leverage effective organizational and EM best practices nationwide. The objective of the scan is to accelerate dissemination and adoption of proven organizational and EM processes, initiatives and innovations. The information and guidance created in the final scan report is expected to increase the information available for successful EM implementations and to accelerate dissemination of critical strategies.

Collaboration with TRB
Various members of the Equipment TWG have been involved with preparing, reviewing and arranging for papers on relevant equipment management topics to be presented at the Transportation Research Board (TRB) 98th Annual Meeting will be held January 13–17, 2019.
The Maintenance Operations Technical Workgroup had a full agenda during the annual Maintenance Committee meeting in Charlotte, NC.

Presentations addressed topics including; Winter Weather Maintenance, Autonomous Vehicles and Potential Impacts on DOT Maintenance Operations, Autonomous Attenuators, an Associate’s Degree Program in CDOT addressing Maintenance Worker Management and Florida’s Preparation and Response with Hurricane Irma.

The TWG received updates from Clear Roads, Aurora and TRB representatives. Maintenance Operations received an update regarding the triennial review of the Snow and Ice Cooperative Program Pooled Fund (SICOP).

Looking forward into the new working year, concerning safety, the TWG supports the EDC initiatives including; Weather Savvy Roads (EDC-4) and Weather Responsive Management Strategies (EDC-5). The TWG lent support for the Bridge TWG’s report on Emergency Markings. The Maintenance Operations TWG continues to communicate and liaison with the AASHTO Committee on Transportation System Operations regarding autonomous vehicles.

Research News

After an unsuccessful attempt to gain approval for a domestic scan to study maintenance facility design best practices the TWG members are looking to encourage the Clear Roads Pool Fund program to fund a project to look at this issue.

With the completion of NCHRP Project F14-34, Guide for Performance Measures in Snow and Ice Control Operations the TWG proposes to explore national/regional snow and ice performance measures implementation workshops.

The Pavement Technical Workgroup had a very productive meeting and a full agenda during the annual Maintenance Committee meeting in Charlotte, NC. We had a great turnout, thank you for attending our breakout sessions. During the business meeting, our administrative resolution to "Encourage the Implementation of a Pavement Preservation Certification Program for Member Departments and Contractors in Asphalt and Concrete Pavement Preservation" was passed. We have successfully nominated NCHRP Report 820, titled “Framework for a Pavement Maintenance Data Base System” for AASHTO publication.

We are continuing to work with the Committee on Pavement and Materials Tech Section 5b (COMP TS 5b) on the Construction Guide Specifications for Pavement Preservation Treatments. The mid-year teleconference for this working group will be on November 15th, 2018.

The Pavement TWG Action Plan can be found at the following link


We have re-submitted the following research needs for the NCHRP selection process:

- **Benefit Cost Analysis of Chip Seal Considering Binder Alternatives** - A guide to conduct cost-benefit analysis of chip seals considering binder alternatives
- **Guide Construction Specifications for Cold In-Place Recycling (CIR) and Cold Central Plant Recycling** - The objective of this project is to produce an AASHTO Construction Guide Specification for the application of cold in-place recycling and cold central plant recycling
- **Guidelines for Incorporating Maintenance Costs into a TAMP** - Provide the process to incorporate maintenance data in the TAMP, using available pavement and bridge maintenance data and evaluate the use of available information to incorporate other roadside assets (such as guardrails and culverts) into a TAMP

We are looking forward to working with you on our Action Plan and thank you for your continued support. Wishing all of you a Happy Holiday Season!

The Roadway/Roadside TWG

Chair: Erany Robinson-Perry, Georgia DOT

Thank you to Emily McGraw and many other North Carolina DOT staff for a great job hosting the 2018 AASHTO COM meeting in Charlotte, NC. The Roadway/Roadsides TWG’s breakout sessions averaged 60 people in attendance. The breakout sessions included a presentation given by a national expert related to roadside safety hardware. These sessions generated much discussion which led to the development of a related research need problem statement.

We will be conducting a webinar in the near future and are seeking possible roadway/roadsides related presentation topics. If you would like to present or know of a possible topic, please contact Erany Robinson at erobinson@dot.ga.gov.

**2017 Work Plan Accomplishments**

**Safety**
- Technical presentation on MASH Implementation
- Technical presentation on Temporary Rumble Strips

**Asset Management**
- Technical presentation regarding Prioritizing and Managing Ancillary Assets for Asset Management
- Webinar presentation in January 2018 on Maintenance Management Systems Implementation by Michigan and Virginia DOTs
Environmental
- Technical presentation regarding Merging Roadside Management and Pollinator Conservation

Workforce Development
- Technical presentation regarding the NHI Maintenance Leadership Academy and the Target Audience
- Webinar presentation held in January 2018 providing an update of the NHI Maintenance Leadership Academy

Communication
- Organize and moderate webinars with a focus on presentations of recently completed research
- Support of the NHI Maintenance Leadership Academy
- Support national efforts that preserve and enhance pollinator habitat

Research
- Review roadway/roadsides related TRB/NCHRP completed research projects and seek ways to create awareness and support implementation of best practices.

2018 Highest Priority Work Plan Activities
Safety
- Follow up on the development and implementation of MASH compliant roadside safety hardware.

Asset Management
- Provide additional guidance related to TAMP implementation.
- GIS in Maintenance Operations.

Environmental
- Propose research for proper disposal/recycling options for lightly contaminated soils from roadsides and ditches

Workforce Development
- Continue support of the NHI Maintenance Leadership Academy.
- Support and promote Transportation Curriculum Coordination Council (TCCC) training program.

Communication
- Review roadway/roadsides related TRB/NCHRP completed research projects and seek ways to create awareness and support implementation of best practices

Research
- Continue to develop approved research proposals into completed Research Statements for submittal by the appropriate deadline.
- Solicit research ideas throughout the fall and winter and bring completed research statements to the 2019 AASHTO MaC meeting.

The EMTSP Oversight Panel continues their management of the program. Recent accomplishments include the following:

Changes in EMTSP Oversight Panel include:
- Greg Hansen, Washington DOT, appointed as a new member of the EMTSP Oversight Panel replacing the retired Bruce Erickson, Oregon DOT, representing the Western region
- Danny Keene, Arkansas DOT, appointed as a new member of the EMTSP Oversight Panel replacing the retired John White, South Carolina DOT, representing the Southeast region

Year-to-date FY 2018 State DOT annual contributions to EMTSP are aligned with contributions for this time of year with that of previous fiscal years

The second EMTSP Web-based training module - *Bench Marking and Best Practices for State Equipment Fleet Management*, is also now available on the AASHTO TC3 website.

- The course content promotes an understanding these management concepts and is recommended for 2.5 PDHs.
- The topic of benchmarking is closely aligned with performance management. Most agencies have a strategic plan from which they make decisions on how to allocate resources and pursue their long-range strategy. This five lesson course discusses how to create a group of performance metrics to track based upon what is important in an agency’s long-range strategy. This course also covers topics such as developing performance metric targets, measurement techniques, internal and external benchmarking, performance gaps, limitations of benchmarking, and benchmarking best practices. The target audience for this training includes maintenance supervisors, managers, and engineers that manage a fleet for their organization.
- To locate go to the EMTSP Home Page, find the tab category named “TRAINING” then select “EMTSP Web-Based Training which will provide information about the course.

The third EMTSP Web-based training module - *Establishing Equipment Complements and Sizing of State Equipment Fleets*, has been completed and approved by the EMTSP Education Committee and Oversight Panel. The work is now resides with the TC3 contractor for web development and should be available by late December 2018.

A fourth EMTSP Web-based training module - *Utilization Management Concepts for State DOT Equipment Fleets*, is now in development and should be approved for TC3 contractor development in early 2019.

The 2018 AASHTO- EMTSP National Fleet Management Conference and Equipment Tradeshow was hosted by the State of Connecticut and the Connecticut DOT. The event dates were July 29 through August 2, 2018 at the Hartford Downtown Marriott and Connecticut Convention Center.

Event highlights included the following:
- Total Attendees - 281
- States Represented – 41
- Speakers -33
- Vendors Participating – 61

The EMTSP Regional Partnerships are now planning their respective 2019 Regional Partnership Meetings. Most available information about these events is as follows:
Tim Harrawood discussed the importance of calibration in measurement. Larry Scofield discussed rigid pavement patching techniques and demonstrated for both flexible and rigid preservation treatments. Another highlight of this partnership meeting was field demonstrations.

Four executive leaders were George Conner (Alabama), Paul Degges (Tennessee) and James Williams (Mississippi). Looney (Kentucky), Paul Degges (Tennessee) and James Williams (Mississippi).

The Southeast Pavement Preservation Partnership featured a panel discussion with four executive leaders from member agencies achieving their agency’s goals for infrastructure condition. The panel discussion with four executive leaders from member agencies achieving their agency’s goals for infrastructure condition.

Highlights of every partnership meeting is the state reports from each attending agency. The final preservation partnership meeting is scheduled for November in Madison, Wisconsin. One of the highlights of every partnership meeting is the state reports from each attending agency. The final preservation partnership meeting is scheduled for November in Madison, Wisconsin.

The Rocky Mountain West Preservation Partnership meeting was held in Portland, Oregon and the theme of the meeting was on improving quality. Most speakers tied their presentation to the theme, and the state reports also focused on quality initiatives. One of the sessions focused on construction quality and included presentations on maintaining quality standards.

Work continues with the EMTSP National Performance Measurement Working Group and Michigan DOT in compiling and posting each state DOT fleet’s available performance measures on the EMTSP website.

If your state has not yet remitted the voluntary contribution for EMTSP, you are encouraged you to do so in order for this valuable program to continue and expand its accomplishments, which serve the needs of highway agency equipment fleet professionals.

**SICOP**

**SICOP** Coordinator: Rick Nelson
Chair: Steve Lund, Minnesota DOT

During the annual meeting of the Maintenance Committee SICOP presented its triennial review and the ballot to continue the program for the next 3 years was successful. Now the work really begins on the 7 strategic issues laid out in out strategic plan. As many of you probably know, SICOP created several training modules centered around RWIS and anti-icing technologies. Recently, SICOP, in cooperation with TC3 made these winter operations training modules available through the TC3 program platform at no cost. Check out this training opportunity at their website: https://store.transportation.org/Trainings/?/C_WO

One of the primary missions of SICOP is to promote winter maintenance technologies and one way we accomplish this through our podcast, SICOP Talks Winter Ops. Each episode runs 20-40 minutes and can be listened to on demand. Since we started this project a little over a year ago we have posted 15 episodes on a variety of topics ranging from sustainability to use of liquid deicers to route optimization and just crossed the 1,600 download mark. A special thanks go out to the experts who graciously agreed to be on the podcast it could not be successful without them. You can find SICOP Talks Winter Ops on Apple Podcasts, Google Play, Spotify, and Stitcher, and the SICOP website https://sicop.transportation.org/stwo/ Stay tuned for more episodes and topics in the future.

July marked the beginning of the next fiscal year and the call for support of the technical service programs. Without the voluntary contributions of member states the work of the Technical Service Programs like SICOP couldn’t continue. During last fiscal year 35 states participated in SICOP. If you have any questions regarding SICOP or voluntary contributions please contact Rick Nelson at RNelson@aashto.org

**TSP2**

Coordinator: National Center for Pavement Preservation, MSU
Chair: George Conner, Alabama DOT

2018 has been a busy year for TSP2 with 4 regional pavement preservation partnership meetings and a national bridge preservation conference. The pavement preservation partnership meetings were hosted by Mississippi DOT, Oregon DOT, and Connecticut DOT. The final preservation partnership meeting is scheduled for November in Madison, Wisconsin. One of the highlights of every partnership meeting is the state reports from each attending agency.

The Southeast Pavement Preservation Partnership featured a panel discussion with four executive leaders from member agencies talking about the importance of pavement preservation to achieving their agency’s goals for infrastructure condition. The four executive leaders were George Conner (Alabama), Paul Looney (Kentucky), Paul Degges (Tennessee) and James Williams (Mississippi).

Another highlight of this partnership meeting was field demonstrations for both flexible and rigid pavement treatments. Larry Scofield discussed rigid pavement patching techniques and Tim Harrawood discussed the importance of calibration in achieving quality. Heath Patterson with Mississippi DOT did an outstanding job of arranging the demonstrations and the efforts of each participating company were greatly appreciated.

The Northeast Pavement Preservation Partnership meeting was held in Mystic, Connecticut. In one session, Thomas Van, with FHWA, discussed the performance measures for pavements. A panel discussion of three states discussing how they were addressing the performance measures indicated that all are reporting the federal measures, but using their pre-existing state measures for decision making.

The Rocky Mountain West Preservation Partnership meeting was held in Portland, Oregon and the theme of the meeting was on improving quality. Most speakers tied their presentation to the theme, and the state reports also focused on quality initiatives. One of the sessions focused on construction quality and included...
presentations by Greg Sharp, Scott Shuler, Gary Hicks and Jim Moulthrop, covering crack sealing and filling, chip seals and micro surfacing.

Some of the pavement preservation locations have been selected for 2019.

<table>
<thead>
<tr>
<th>Area</th>
<th>Month</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEPPP</td>
<td>March 25-27</td>
<td>Charleston, WV</td>
</tr>
<tr>
<td>NEPPP</td>
<td>April 9-11</td>
<td>Harrisburg, PA</td>
</tr>
<tr>
<td>MWPPP</td>
<td></td>
<td>Illinois (not Chicago), not finalized.</td>
</tr>
<tr>
<td>RMWPPP</td>
<td></td>
<td>Not finalized.</td>
</tr>
</tbody>
</table>

More than 600 attendees filled the general sessions at the National Bridge Preservation Conference, held in Orlando, Florida. One of the favorite sessions consisted on presentations of the four best papers from the preceding year’s regional partnership meetings. The technical committee included presentations from all aspects of bridge preservation, so there was content for every interest area. Each regional partnership met as part of the national conference. In addition, the TSP2 Oversight Panel met on Sunday, prior to the national conference.

The national meeting also featured outdoor demonstrations of many bridge preservation products and techniques. Despite rain threatening from the outset, every company had time to conduct one or two (or more) demonstrations. Among the many demonstrations were joint sealant materials, joint replacements, patching materials, coatings, and deck overlays, just to mention a few. The rain finally arrived, ending the demonstrations with thunder, lightning, and rain followed by a rainbow.

Next year’s bridge preservation partnership meetings include:

<table>
<thead>
<tr>
<th>Area</th>
<th>Month</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEBPP</td>
<td>April 16-18</td>
<td>Baton Rouge, La</td>
</tr>
<tr>
<td>WBPP</td>
<td>May 14-16</td>
<td>Reno, NV</td>
</tr>
<tr>
<td>NEBPP</td>
<td>Sept. 9-11</td>
<td>Burlington, VT</td>
</tr>
<tr>
<td>MWBPP</td>
<td>Oct 15-17</td>
<td>Bismarck, ND</td>
</tr>
</tbody>
</table>

---

### From the FHWA

**FHWA Liaison:** Connie Yew: FHWA-HQ Office of Infrastructure

The Federal Highway Administration (FHWA) construction and maintenance activities are highlighted below.

#### e-Construction and Partnering

Through round four of Every Day Counts (EDC-4), the FHWA is promoting the integrated practice of e-Construction and Construction Partnering (eCP) joined together to help deliver transportation improvements smarter and faster. Each practice is standalone, though; their joint application is complimentary and creates synergies that lead to the overarching goal of improved project delivery. The FHWA is currently moving several activities forward to expand the use of eCP technologies and practices.

These efforts include:


- **Peer Exchanges** – TechBriefs highlighting key takeaways and lessons learned at each peer exchange can be accessed at: [https://www.fhwa.dot.gov/construction/econstruction](https://www.fhwa.dot.gov/construction/econstruction).

- **Educational Videos** – Four YouTube videos targeting middle & high school students, technical & trade schools, and college students for education, and attracting students to a transportation or highway engineering career.

- **Regional eCP Demonstration Workshop** – The Pennsylvania DOT will be hosting an eCP workshop to demonstrate the applications and benefits of eCP integrated and practiced together.

- **Technical Documents** – Technical documents consisting of case studies highlighting best practices and ‘How-to’ guidance for eCP technologies and practices.

#### Pavement Preservation

This innovation is currently being implemented under the fourth round of Every Day Counts (EDC-4) through the following deployment activities:

1. **When & Where**
   - Peer-to-Peer Exchanges Involving 22 states (Completed)
   - (CO, NM, NV, TX, WA, AZ, KS, MN, AL, GA, KY, FL, SC, MO, MS, CT, WV, MD, IL, RI, NY, VA, FHWA Eastern Federal Lands)

2. **How**
   - Best Practice Guides (Completed - see links below)

   - Updating Pavement Preservation Checklists (Under Contract)

   - FHWA published a series of checklist dating back as far as 2002 to serve as guides for many states, local highway officials, and contractors over the years for applying pavement preservation checklist. The current series of checklists have become outdated. Through EDC-4 Pavement Preservation – How, FHWA is updating these very popular pavement preservation checklists for asphalt and concrete treatments and additional new treatments are being added. When completed this new generation of the pavement preservation checklist will be available on a smartphone app that will integrate updated materials from several other FHWA pavement preservation efforts. The checklist in this portable format will be able to add videos as well as updates on a frequent basis allowing the app to remain relevant over time and serve as a guide to future pavement preservation specialists in the years to
The highway industry is using UAS as a proven technology to view, operate and construct transportation infrastructure from a difference perspective. Some of the more common UAS data collection attachments include high definition cameras, Light Detection and Ranging (LiDAR), hyperspectral images, and radar. The FHWA UAS Working Group has formed to move forward on several activities such as:

- In February 2018, FHWA brought together lead States that have operational UAS programs, along with consultants, contractors, and other Federal Agencies, such as the Federal Aviation Administration. The focus of this National UAS Roundtable was to look for areas of common interest and to share knowledge nationally and among the private and public sectors. There is a report being prepared which will provide for a summary for UAS activities and capabilities nationally.

- FHWA is currently developing UAS operational Tech Briefs. These Tech Briefs will be short, but detailed, guides to help State DOTs or other Transportation Agencies add a new UAS operations to their available capabilities. The first round of Tech Briefs will be published over the next year and focus on, construction inspection, supplementing bridge inspection, and emergency response.

- FHWA is actively engaged on the NCHRP Domestic Scan, “Successful Approaches for the Use of Unmanned Aerial Systems by Surface Transportation Agencies.” This Domestic Scan will examine how agencies and their contractors are using UAS to facilitate for inspection, inventory, survey, and other operations and dealing with regulatory and other impediments to UAS deployment. The scan was held the week of April 9, 2018 bringing together over 30 subject matter experts from 15 States and FHWA. A complete report from this scan will be published by the end of the year.

- FHWA is leading a national effort to advance UAS use through the Every Day Counts program, which will solicit feedback from States through a series of summits and generate a two-year deployment plan for 2019 and 2020. The focus will be helping State, Local, Tribal, and Federal Land Management Agencies utilize UAS as part of their Construction, Structural Inspection, and Emergency Response activities.

- FHWA has worked to consolidate available applicable UAS research and operation documents into a new FHWA UAS website: [https://www.fhwa.dot.gov/uas/](https://www.fhwa.dot.gov/uas/).

### Maintenance Leadership Academy

The Maintenance Leadership Academy (MLA) provides an intensive training program to individuals who hold positions as State, district, and county maintenance supervisors. The Academy can help decrease the time it takes to acclimate new managers and provide an opportunity for career development. FHWA with it partners in industry are updating the different modules that form part of this intense course.

- The current update covers Module D, E, and F (Weather-related Events, Traffic, Environmental respectively). FHWA has plans to pilot these three modules during a regular NHI MLA session in November 2018 in Nashville, Tennessee.

- FHWA has started the planning process to update modules A, B, and C (Maintenance Administration, Pavement and Bridge Preservation, and Roadside Maintenance and Drainage respectively) as well. These modules will be completed and piloted in early 2020.

### Operation Road Weather Management

FHWA is promoting effective maintenance strategies under Round 5 of Every Day Counts (EDC-5). The name of the EDC innovation is Weather-Responsive Management Strategies (WRMS), and it builds upon the Integrating Mobile Observations solution promoted under Weather-Savvy Roads, which was part of EDC-4. In particular, it focuses on the use of vehicle-based technologies to provide safer, more efficient, and more sustainable transportation services under adverse weather conditions, including both traffic management and maintenance management. Maintenance management strategies will focus on snow and ice control, including more efficient and effective use of salt, however they can be applied to all types of maintenance needs (e.g., herbicide management). EDC-5 is kicking off with a series of summits in the fall of 2018. FHWA will then work with those states that decide to pursue WRMS over the two-year period from January 2019 – December 2020. More information is available here: [https://www.fhwa.dot.gov/innovation/everydaycounts/edc_5/weather_strategies.cfm](https://www.fhwa.dot.gov/innovation/everydaycounts/edc_5/weather_strategies.cfm)
Maintenance and preservation research work at TFHRC has been very active over the past year, and we expect publication of research results for many of our projects soon. Several projects that were highlighted in the last newsletter were awarded and have been underway since late last year:

**Pavement Maintenance Techniques: Best Practices**
This project involves developing a comprehensive best practices guide and an accompanying set of techbriefs that will provide guidance for the specified maintenance activities, techniques, and materials. The target audience for this effort is state and local highway maintenance managers and field crew leaders. As part of the project, apps will be developed so that the information may be viewed on mobile electronic devices. The work should be completed early 2019.

**Determining Agency Rules for Bridge Preservation: Develop A Decision Methodology**
The primary objective of this project is to develop a methodology, guidance, and an accompanying tool for analyzing data and determining agency preservation decision rules. This effort will be completed early 2019.

**Recycled Asphalt Pavement (RAP) Use in Pavement Preservation Surface Treatments**
The contractor has gathered data through interviews with agencies that are using RAP in their surface treatments. We should have interim deliverables for this project soon, and expect its completion this year.

**Determining Highway Asset and Data Inclusion in an Asset Management System**
This project developed a procedure that outlines the path forward to develop a flexible methodology to best determine the inclusion of highway assets and their data. FHWA has received all final deliverables for this project, and the documentation is presently going through our publication process.

For this year, we have a new research effort involving Automated Vehicles (AV) that spans several offices including infrastructure, safety, and operations. The title of this project is “AV Impacts to E Highw ay Infrastructu re.” The stated objectives of the project include:

1. To assess and understand the demands and potential impacts of AVs on our current infrastructure assets.
2. To assess and understand the potential needs and impacts of AVs on the future design of new infrastructure.

We held the kickoff meeting on 10/18/18. This work is scheduled to be completed in early 2020.

Any questions regarding this or any other research and development-related work at TFHRC may be directed to Morgan Kessler, PE, Morgan.Kessler@dot.gov.

---

**NCHRP Corner**
Amir N. Hanna, NCHRP

Research Problem Statements
Research Problem Statements for NCHRP FY 2020 are due by November 1, 2018. Problem statement will be accepted only from AASHTO committees, state departments of transportation, and FHWA.

NCHRP Research Reports

NCHRP Project 14-33, *Quantifying the Effects of Preservation Treatments on Pavement Performance*, has been published as NCHRP Research Report 858. This project developed a framework for quantifying the effects of preservation treatments together with a guide document to facilitate implementation. Hard copies may be obtained from TRB Bookstore.

NCHRP Project 14-34, *Performance Measures in Snow and Ice Control Operations*, was recently completed and will be published as NCHRP Research Report 889 (will be available in early February). The project developed a Guide for Performance Measures in Snow and Ice Control Operations.

Requests for Proposals
Requests for proposals have been posted on NCHRP web site for:

- NCHRP Project 12-117, Guidelines for Corrosion Protection of Steel Bridges Using Duplex Coating Systems (proposals close date: 12/11/2018), and
- NCHRP Project 6-18, Guide for Snow and Ice Control Operation (proposals close date: 12/12/2018).

A Request for Proposal will be posted shortly for:

- NCHRP Project 14-42, Determining State DOT Maintenance Program Implications of Connected and Automated Vehicles

For information on NCHRP research related to maintenance (reports, projects, problem statements, process, etc.), please contact Amir N. Hanna ahanna@nas.edu; 202/334-1432.
AASHTO Mac Leadership

Chair: George Conner, Alabama DOT
Vice Chair: Steve Lund, Minnesota DOT
Vice Chair/Editor: Jerry Hatcher, Tennessee DOT
Research Coordinator: Jon Wilcoxon, Kentucky DOT
FHWA Liaison: Connie Yew, FHWA-HQ
AASHTO Liaison: Jameelah Hayes
TRB Contact: James Bryant, DC
NCHRP Contact: Amir Hanna, DC

Technical Working Groups

Equipment
Chair: Tim Cunningham, Kansas DOT
Vice Chair: Lisa Kunzman, California DOT
Vice Chair: Doug Burke, Ohio DOT
Liaison: John Perry, FHWA-Idaho

Maintenance Operations
Chair: Brad Darr, North Dakota DOT
Vice Chair: Dale Doughty, Maine DOT
Vice Chair: Emily McGraw, North Carolina DOT
Liaison: Paul Pisano, FHWA-HQ

Bridge
Chair: Jeff Milton, Virginia DOT
Vice Chair: Steve Cook, Michigan DOT
Vice Chair: Dave Miller, Iowa DOT
Liaison: Morgan Kessler, FHWA-TFHRC

Technical Service Programs

SICOP-Winter Maintenance
Website: https://sicop.transportation.org
Coordinator: Rick Nelson
Chair: Steve Lund, Minnesota DOT

Equipment Management
Website: https://www.emtsp.org
Coordinator: National Center for Pavement Preservation
Chair: Tim Cunningham, Kansas DOT

Transportation System Preservation (TSP2)
Website: https://www.tsp2.org
Coordinator: National Center for Pavement Preservation
Chair: George Conner, Alabama DOT

Pavement
Chair: Anita Bush, Nevada DOT
Vice Chair: Scott Capps, North Carolina DOT
Vice Chair: Heath Patterson, Mississippi DOT
Liaison: Jason Dietz, FHWA-Resource Center

Roadway / Roadside
Chair: Erany Robinson-Perry, Georgia DOT
Vice Chair: David Cook, South Carolina DOT
Vice Chair: Pasco Bakotich, Washington State DOT
Liaison: William Beatty, FHWA-North Carolina