This is the midway point between annual meetings. In some ways it seems like we were in Grand Rapids last week, and before you know it we will be in Colorado. Kyle Lester, the staff at Colorado DOT, and AASHTO are working to host the next Annual Meeting, July 19-24, 2020, in Westminster, CO. The process for planning the meeting agenda will begin soon and advance thanks are due everyone for all that you will do towards making that meeting a success. The MaC is a member-driven committee and everyone benefits from your involvement.

Jon Wilcoxson announced at Grand Rapids that he will be relinquishing his role as our MaC Research Liaison. Jon has done a phenomenal job and we owe him our appreciation for all his work. Fortunately, Jon will remain a MaC member so this change in position is not a goodbye. Look for an article from Jon in this newsletter where he will introduce our new Research Liaison.

I am happy to report that, with Amir Hanna’s help, funding from NCHRP has been secured to complete the Maintenance Manual edits and corrections that were approved by the MaC last July. I know we all look forward to seeing that updated manual in an upcoming AASHTO publication catalog. To each one who reviewed and commented on the draft versions – thank you for a job well done.

Our Technical Service Programs are important partners that help advance the business of the MaC. Last year the MaC approved the triennial renewal of the Transportation System Preservation Technical Service Program (TSP2). Thank you to all who participated in that electronic balloting effort. The Equipment Management Technical Service Program (EMTSP) is due for its triennial review in 2020 and will be one of the items we cover in a General Session and the Business Meeting.

One of the things learned during the TSP2 electronic balloting was that the MaC’s official member roster is not up-to-date. In some instances, people designated as voting members for their agency were not shown as such on the official roster. In other cases, some members were not on the roster at all or had incomplete contact information listed. If you are not listed on the roster, or if your listing is incorrect, you are missing out on important Committee information and announcements, so I am asking for your help.

Go to the Maintenance Committee webpage at https://maintenance.transportation.org, click the “Member” link on the left side of the page and check your information. You can update your phone number, work title, email address, etc., through the “Member Login” at the top right of the screen. If you are not listed, or your designation of member/voting member is not correct, please contact our AASHTO liaison, Jameelah Hayes (jhayes@aashto.org), for guidance.

The success of our annual meetings is dependent on the involvement of our members, so please make every effort to attend. What you gain from the meeting will be valuable, what you bring to the meeting will be valuable to someone else. We have reached a quorum for the last two business meetings (thank you for making that happen) and I look forward to reaching that milestone again. If you are not able to attend in person this year, please designate a proxy or join the planned business meeting conference call. Your involvement is wanted, needed, and important.

The opportunity to serve as your Chair is an honor. You make a difference at both your home Agency and at the MaC in ways that benefit everyone who uses our transportation system.

As always, I will close with the five Focus Areas of the MaC:

1. Be committed to the fundamentals while embracing new technologies and processes,
2. Be recognized as the national leader in the Maintenance community,
3. Improve coordination between the 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.

George
Alabama DOT
2020 MaC Annual Meeting Update

Host State Representative: Kyle Lester, Colorado DOT

The 2020 annual meeting of the Maintenance Committee will be held July 19-24, 2020 at the Westin Westminster, in Colorado. Situated just 30 miles from the Denver International Airport, between Denver and Boulder, the Westin Westminster offers an exceptional venue for our meeting and access to the many things Colorado has to offer before and after the meeting.

Stay tuned for more information about registering for the meeting, the program, and technical tour.

Contact information:
Kyle Lester
Director of Operations and Maintenance
Colorado Department Transportation
kyle.lester@state.co.us
303-512-5218

Future AASHTO MaC Meetings:
2021 Maine

Research News

MaC Research Coordinator
Jon Wilcoxson, Kentucky Transportation Cabinet

At the 2019 Committee on Maintenance meeting in Grand Rapids, Michigan, I announced that I would be stepping down as Research Coordinator due to other commitments with my position at the Kentucky Transportation Cabinet. At the time, we solicited the committee for members interested in taking on the Research Coordinator responsibilities and I'm excited to say that we were able to find an outstanding individual to do just that. Kathy Ahlenius with Wyoming DOT began working with me to take over the job back in August and will become a familiar face to those of you on the Technical Working Groups very soon. Kathy has already submitted our research needs statements for 2019 through the NCHRP portal and will be soliciting the TWG chairs for responses to FHWA and NCHRP comments in the coming weeks. This year the committee submitted three research needs statements - Protecting Bridge Approaches During Flooding Events (Bridge TWG); Rumble and Mumble Strip Preservation Treatment Options (Pavement); and Guide to Maximize Vehicle and Equipment Surplus Values (Equipment).

I'd like to take this opportunity to thank the many members of the committee who have made this such a rewarding experience. As has often proven the case, I'm writing this article slightly after the deadline and am perhaps more prone to error than I might otherwise be, so I'll first apologize to anyone I may miss. Thank you to our Chair George Conner for his leadership and vision; to our Vice-Chairs, Jerry Hatcher and Steve Lund, who do so much of the work that keeps the committee moving forward; to Amir Hanna for his wisdom and advice; Jameelah Hayes and James Bryant for their guidance and support; Connie Yew and our FHWA liaisons for their indispensable support to the committee; and to Richard Nelson for his outstanding work with SICOP and his patience with my tardy newsletter submissions (like this one). I also want to express my deep appreciation to all of the TWG chairs and vice-chairs over the years who have tolerated my nagging with good humor and (usually) quick responses.

Although I'm stepping down from my leadership role, I do intend to remain on the committee. I will still be here to answer any research questions you have (or at least try to track down the answers), and plan to be available to assist the committee in other areas as the need arises. Again, thank you to everyone for all of your hard work and support. Have a great holiday season and a safe winter. I look forward to seeing you all in Colorado next summer.

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 2019 meeting in Grand Rapids, MI. The meeting included three breakout sessions for the Bridge Technical Working Group.

Daily attendance at the BTWG break-out sessions was as follows:
Monday – 42
Tuesday – 44
Wednesday – 27
The BTWG breakout sessions included reports from the four bridge preservation partnerships and updates from the FHWA BPETG, COBS T-9 and TSP2.

The BTWG breakout sessions also included the following TRB presentations:

• A New Protocol for Evaluating the Durability of Coatings Used for Reducing Corrosion of Steel Structures
• The Application of Machine Learning Techniques for the Analysis of NBI and Bridge Element Data

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 2020 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
  - Promote Bridge Maintenance participation and training for local agencies
  - Support the AASHTO TC3 program
  - Provide leadership to the TSP2 regional bridge preservation partnerships
  - Support 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 2020.
  - 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 2020.

  Proposed Research
  - Protecting Bridge Approaches During Flooding Events – Re-submittal (originally submitted 2017), Re-Submitted to NCHRP in October 2019, MaC voted no. 1 of all other TWG research statements submitted at the July 2019 meeting
  - Establish Guidelines for the Procurement of Nondestructive Testing and Evaluation for Concrete Bridge Components (originally submitted 2018) – Form a task force group to review. Resubmit as research project at 2020 MaC Annual Meeting.

• Best Practices for Steel Bridge Coating and Recoating Warranty Contract Requirements - submit as research project at 2020 MaC Annual Meeting.

  Proposed Research – Endorsements
  - Load Rating Examples and Changes to the AASHTO Manual for Bridge Evaluation for Concrete Segmental Post-Tensioned Box Girder Bridges - Lead and to be submitted by COBS, no. 1 out of 6 research statements proposed
  - Evaluating and implementing unmanned aerial systems (UAS) into bridge management methods through element-level data collection – Lead and to be submitted by COBS, no. 4 out of 6 research statements proposed.

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**Equipment TWG**

Chair: Tim Cunningham, Kansas DOT

Work continues in implementing the findings from the final 2011 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.

**Current Research Projects**

- NCHRP 20-7/Task 426, - Update to NCHRP 20-7/Task 309, Challenges and Opportunities: A Strategic Plan for Equipment Management Research Challenges and Opportunities. The research panel has been selected, RFP has been written and is under solicitation. This project will update the results of original 2011 project

- 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 received approval to AASHTO to adopt research guide and tool as an AASHTO 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 early winter 2020.

- 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; RFP has been written, solicited and awarded to the Research Foundation for the State University of New York. Phase 1 has been completed. However, due to employment reassignment of the Principle Investigator, there is going to be a NCHRP 13-06 – Phase 2, which will require another solicitation to provide the contracted work required for completing this project. The estimated project completion date is now November 2020.

- 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 estimated project completion date is February 2020.

- 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 award 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; the projects initiation has been deferred pending progress and completion of NCHRP Project 13-07. It is estimated that the project panel will develop the scope of work and resultant RFP by April 2020.

**Proposed Research Projects**

During the 2019 AASHTO Mac Meeting, the Equipment Technical Working Group (TWG) reworked and resubmitted the research problem statement listed below:

Research Problem Statement – “Guide to Maximize Vehicle and Equipment Surplus Values”. 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. Status: TBD

**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) 99th Annual Meeting will be held January 12–16, 2020.

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**Maintenance Operations TWG**

Chair: Brad Darr, North Dakota DOT

The Maintenance Operations Technical Workgroup had a full agenda during the annual Maintenance Committee meeting in Grand Rapids, MI.

Presentations addressed topics including; Winter Weather Maintenance Operations and Traffic Safety Implications, Leveraging Telematics and Weather data to study the productivity of Roadside Mowing and had a good discussion on the Hot topics affecting DOTS relating to Maintenance Operations.

We received updates from Clear Roads, No Boundaries, and Aurora pooled fund projects and TRB representatives. Maintenance Operations received an update regarding the three- year Strategic plan for the Snow and Ice Cooperative Program Pooled Fund (SICOP). Also, an update was received from FHWA initiatives on their related initiatives.

We continue to support the EDC initiatives including; Weather Savvy EDC-4, Weather Responsive Management Strategies EDC-5. The Maintenance Operations TWG plans to continue to communicate and liaison with the AASHTO Committee on Transportation System Operations (CTSO) regarding autonomous vehicles. Several TWG representatives attended the CTSO Community of Practice on Road Weather Management Workshop / Peer Exchange held in Salt Lake City, UT last June.

Regarding research, the TWG worked on a Research problem statement “Develop a guidebook for the use of non-chemical methods for removing snow and ice from roadways reducing the reliance on deicing chemicals particularly during low temperatures.” This did not rate high at the committee level, however, it was revised and submitted without the Maintenance committee endorsement. Thanks to everyone that contributed.
The TWG still has a goal of exploring national/regional snow and ice performance measures implementation workshops.

Since the last Maintenance Manager we have collaborated with SICOP to create a series of webinars showcasing the use of technology to achieve the maintenance mission. Three State Showcase webinars have been presented and more will follow.

We are always on the look out for future meeting topics or success stories to share with our colleagues by webinar, so if you are aware of any or would like to share your experiences as part of our webinar series please connect Brad Darr, North Dakota Department of Transportation, 701-328-4443, bdarr@nd.gov.

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**Pavement TWG**

Chair: Anita Bush, Nevada DOT

The Pavement Technical Workgroup had a very productive meeting and a full agenda during the annual Maintenance Committee meeting in Grand Rapids, MI. We had a great turnout, thank you for attending our breakout sessions.

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 was on November 14th, 2019. The following list contains the proposed new pavement preservation standards:

2. Currently going through initial queries with AASHTO Publications – will be sent to Technical Subcommittee ballot after Mid-Year Meeting in Fall of 2019.
4. Currently going through initial queries with AASHTO Publications – will be sent to Technical Subcommittee ballot after Mid-Year Meeting in Fall of 2019.
6. Currently going through initial queries with AASHTO Publications – will be sent to Technical Subcommittee ballot after Mid-Year Meeting in Fall of 2019.
8. Currently going through initial queries with AASHTO Publications – will be sent to Technical Subcommittee ballot after Mid-Year Meeting in Fall of 2019.

The Pavement TWG Action Plan for 2019/2020 includes the following:

**SAFETY**

Support efforts to quantify the contributions of pavement preservation to safety programs. Develop a webinar on friction programs (TN, TX and others)

**ASSET MANAGEMENT**

Support efforts to quantify the contributions of pavement preservation/maintenance to risk-based asset management programs.

**ENVIRONMENT**

Volunteer for panel members for NCHRP Recycling projects. Develop a webinar on high friction surfaces.

**WORK FORCE**

Support the development of Contractor and Agency Pavement Preservation Treatments Certificate Programs.

Support TC3 and other groups in the development of various training and certification programs.

**COMMUNICATION**

Quarterly updates to PTWG members and friends and webinars for completed research

NCHRP 14-37: Guide Specifications for the Construction of Chip Seals, Microsurfacing and Fog Seals

http://onlinelibrary.trb.org/onlinelibrary/nchrp/docs/NCHRP14-38_FR.pdf

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

**Rumble and Mumble Strip Preservation Treatment Options** – The objective of this research is to develop a guide to maintain and preserve rumble and mumble strips that last as long as the main line pavement where they were installed.

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!
Roadway/Roadside TWG
Chair: Erany Robinson-Perry, Georgia DOT

Many thanks to the Michigan DOT for the wonderful job hosting the 2019 AASHTO COM meeting in Grand Rapids, MI. The Roadway/Roadsides TWG’s breakout sessions were well attended at the COM meeting and provided for several opportunities for informative, interactive discussions between the moderator, speakers and audience.

The Roadway/Roadsides TWG leadership is currently planning for our break-out sessions at the 2020 COM meeting. We expect to include several technical presentations on recently completed NCHRP research projects that we feel will be of great interest to attendees. We will have one session dedicated to an open interactive discussion with the audience on current roadway/roadsides related issues or concerns. We will seek feedback from attendees on possible solutions or current practices that are being used to address these issues.

For those that typically attend our TWG sessions, we are very interested in hearing from you BEFORE the meeting if you have research problem statement and resolution suggestions. Please submit any ideas or needs you have to R/R TWG leadership.

2019 Highest Priority Work Plan Activities

- Organize and moderate webinars with a focus on presentations of recently completed research.
- Support the No Boundaries Pooled Fund – Implementing Maintenance Innovations from State to State.
- Review roadway/roadsides related TRB/NCHRP completed research projects and seek ways to create awareness and support implementation of best practices.
- Support the NHI Maintenance Leadership Academy.
- Encampment Clean Up - create awareness and support implementation of best practices.

The R/R TWG Leadership Team is looking forward to seeing you at the COM meeting this July!

EMTSP
Coordinator: National Center for Pavement Preservation
Chair: Tim Cunningham, Kansas DOT

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

- Year-to-date FY 2020 State DOT annual voluntary contributions to EMTSP are in alignment with contributions for this time of year with those of previous fiscal years. The EMTSP Oversight Panel would like to express their appreciation to those states that have elected to support this valuable program. Thank you!

- The third EMTSP Web-based training module - Establishing Equipment Complements and Sizing of State Equipment Fleets, is available on the AASHTO TC3 website.
  - The course content promotes an understanding of these management concepts and is recommended for 3.0 PDHs. The topics of Equipment Complements, and Fleet Sizing are closely aligned with performance management. The target audience for this training includes fleet managers, analysts, and other senior level fleet and agency professionals; however, the content is applicable to fleet employees at all levels within the agency. This course covers various theoretical approaches and technical information on establishing a program for the proactive development of core equipment fleet complements and the overall optimization of fleet size. This course contains six modules. They are:
    1. Basic Concepts and Fundamentals;
    2. Understanding your Agency;
    3. Identification of Critical Assets;
    4. Determining the Current Condition of Fleet Assets;
    5. Strategic Operations, Maintenance, and Capital Improvement; and
    6. Long-Term Funding Strategies.

- 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.

- This and all the EMTSP developed Web Based Training courses are provided on the TC3 website for FREE to anyone who registers for the training utilizing their “public employee” email address regardless of whether your State contributes to the TC3 technical program.

- A fourth EMTSP Web-based training module - Utilization Management Concepts for State DOT Equipment Fleets, has been approved by the EMTSP Education Committee and the EMTSP Oversight Panel. The work is currently at the approved for TC3 contractor undergoing web development. The projected release date is January 2020.


- The sixth Web-based Training module - State Procurement and Disposal - Concepts for State DOT
The winter maintenance professionals on 5 continents. Our podcast is broad range of topics have been listened to over 3,500 times by maintenance. A total of 28 episode are available for listening on a Ops, with interesting interviews by experts in the field of winter SICOP Talks Winter Ops website.

If you missed the webinar recordings are available through the •••

The 2019 EMTSP Regional Partnerships Meeting cycle has been completed. They completed meetings were as follows:

- Additional information about current, future and past regional and national conference meetings, trade shows, and presentations given are found at www.emtsp.org

If your State has not yet sent in your voluntary contribution to the EMTSP program, please consider sending it in soon so that we may continue to enhance this important program. If you are not sure if your State has contributed, you can find a link to the invoices and the year to date receipts on the www.emtsp.org home page.

SICOP

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

The Winter Maintenance Policy Coordinating Committee, SICOPs steering and oversight committee, recently added a new member liaison with the American Meteorological Society’s ITS and Road Weather Committee. Including this new liaison will insure that the coordination component of SICOPs mission will be more robust and thorough. Amanda Siems-Anderson, of the National Center for Atmospheric Research Research Applications Laboratory will represent the AMS on the WMPCC.

SICOP has been working with the Maintenance Operations TWG to spread the word and showcase the use of technology in achieving the maintenance mission through a series of webinars offered approximately every 3 months. Six presentations have been made to date and we want to recognize the presenters for sharing their agencies innovations.

- Webinar #1 featured Brad Darr, ND DOT, Garage and Route Optimization Project and Emily McGraw, NC DOT, North Carolina Hurricanes Mathew to Florence; Damage assessment application.
- Webinar #2 featured Joe Thompson, NYS DOT, The NYS DOT Winter Maintenance App and Todd Cook, SC DOT, South Carolinas utilization of liquids in winter maintenance operations.
- Webinar #3 featured Natalie Roark and Travis Teter, MO DOT, Missouri DOT TMA Flagger Project, and Russ Buchholz, ND DOT, North Dakota’s utilization of unmanned aircraft systems for maintenance operations.

If you missed the webinar recordings are available through the SICOP Talks Winter Ops website.

SICOP continues to produce our podcast, SICOP Talks Winter Ops, with interesting interviews by experts in the field of winter maintenance. A total of 28 episode are available for listening on a broad range of topics have been listened to over 3,500 times by winter maintenance professionals on 5 continents. Our podcast is available on Apple Podcasts, GooglePlay, Stitcher, and our website http://www.sicoptalkswinterops.com.

We are always interested in ideas for webinars and podcast interviews. Send your thoughts to SICOP Coordinator Rick Nelson or any one on the WMPCC and we’ll do our best to get them included in the program.

SICOP continues to work with the planning committee for the 2020 International Road Weather and Winter Maintenance Conference and Peer Exchange. This event is the result of collaboration between SICOP, Aurora, Clear Roads, TRB Road Weather, and TRB Winter Maintenance to combine the National Winter Maintenance Peer Exchange and the quadrennial TRM Winter conference into a single gathering. Similar to past peer exchanges, there will be opportunities for one delegate from each state to obtain travel support to this event. You can read more about this event in the TRB section of the newsletter.

This summer SICOP collaborated with AASHTOs Committee on Transportation System Operations (CTSO) Community of Practice on Road Weather (CoP-RWM) to survey states as determine the top road weather management strategies of interest. These survey results were used to help set the program for a workshop/peer exchange held in Salt Lake City, UT last June sponsored by the CTSO and the National Operations Center of Excellence at Salt Lake City, UT.
Excellence. Several SICOP member states participated in this workshop and helped set an agenda for future work on priority action items.

SICOP recently began utilizing AASHTOs email distribution list system to send winter maintenance news and information. While we want to be sure all of our member states are included in the list, being a member state isn’t a requirement. If you want to stay in the know with respect to winter maintenance and SICOP offsets the cost of the receptions, breaks and meals. The Pavement Partnerships have voted to contribute to upcoming preservation sections at NCAT and MnROAD for a five-year period.

Each of the partnerships has technical working groups that meet via conference calls during the year. Each partnership has 3 or more working groups. The pavement groups include project database, research, cost effectiveness, specifications, communication, data group, certification, and integration of preservation in Pavement Management Systems. Bridge groups include scour, beam end treatments, bridge washing, research, bridge preservation activities matrix, systematic preventive maintenance programs, asset management, deterioration modeling, bridge preservation performance measures, structural health monitoring, and website development.

There are also national working groups in the bridge preservation area. These include bridge deck chloride testing, local agency outreach, bridge preservation and BMS, innovative technology demonstrations, bridge preservation social media, bridge deck preservation, bridge preservation coatings, and preservation construction quality. Each of these groups has telephone conference calls, often with a technical presentation. Each also has written goals and action items to achieve the goals.

In the coming three years, TSP2 expects to develop and implement a database of pavement preservation treatments and quantities and costs, to focus research task groups using the updated Pavement Preservation Research Roadmap, to maintain our help desk and training efforts to assure proper use of preservation treatments, and to facilitate the discussion and disseminate the results regarding bridge treatment performance measures and modeling. NCPP will continue to provide the national TSP2

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

TSP2 had a busy year in 2019: holding 4 pavement preservation partnership meetings, 4 bridge preservation partnership meetings, and submitting its Triennial Report to the Committee on Maintenance.

Both the written and an oral presentation were made outlining the past three years of TSP2 activities as well as plans for the coming three years. With 47 or 48 states contributing each year to the voluntary program, TSP2 remains a highly supported technical service program. TSP2 continuation was balloted following the annual meeting of the Committee on Maintenance and all responses were affirmative. The goals of the program are to encourage the exchange of preservation information, expand the implementation of preservation practices, increase the knowledge base and improve the effectiveness of preservation practices.

The program is built around four regional partnerships, each of which meet annually unless it is the year of a national preservation conference. The partnerships, meeting locations, and attendance is shown in the table below. Attendance at every meeting has increased over the 2017 levels.

<table>
<thead>
<tr>
<th>Location</th>
<th>Southeast</th>
<th>Northeast</th>
<th>Midwest</th>
<th>West</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pavement 2019</td>
<td>Charleston, WV</td>
<td>Harrisburg, PA</td>
<td>Springfield, IL</td>
<td>Park City, UT</td>
</tr>
<tr>
<td>Attendance</td>
<td>168</td>
<td>123</td>
<td>155</td>
<td>96</td>
</tr>
<tr>
<td>Bridge 2019</td>
<td>Baton Rouge, LA</td>
<td>Burlington, VT</td>
<td>Bismarck, ND</td>
<td>Reno, NV</td>
</tr>
<tr>
<td>Bridge Attendance</td>
<td>260</td>
<td>183</td>
<td>194</td>
<td>155</td>
</tr>
</tbody>
</table>

Support from industry comes through national and regional sponsorships. The bridge partnerships have 42 national sponsors, while pavement partnerships have 18. Both groups have similar numbers of regional sponsors. The participation of industry through sponsorships has allowed partnerships to fund member travel to other partnership meetings or to the Committee on Maintenance annual meeting. Some partnerships use the funds to increase the agency participation from 2 attendees per agency to 3. The sponsorship funds aid in keeping registration fees low and reduce the cost of the receptions, breaks and meals. The Pavement Partnerships have voted to contribute to upcoming preservation sections at NCAT and MnROAD for a five-year period.

We are half-way through the fiscal year and SICOP depends on your states yearly voluntary contribution of $4,000 to sustain our work throughout the year. Without the voluntary contributions of member states the work of the Technical Service Programs like SICOP couldn’t continue. If you have any questions regarding SICOP or voluntary contributions please contact Rick Nelson at RNelson@aashto.org

Crafco demonstrated special products for larger defects during the field demonstrations at the Midwest Pavement Preservation Excellence.

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certification in pavement preservation for chip seals, micro surfacing and slurry seals, and crack sealing. TSP2 also supports the continued work of the Emulsion Task Force, which is developing AASHTO standards and construction guidance for asphalt emulsion based treatments.

Planning and development of the technical program is underway for the next National Pavement Preservation Conference, to be held in Indianapolis, Indiana, May 17 to 21, 2021. The meeting will include meetings of each of the pavement preservation partnerships, technical presentation on a wide range of pavement preservation topics, and field demonstrations. Keynote speakers for the event are Carlos Braceras and Tom DeCoster.

Ed Welch is retiring from his position as a bridge technical specialist at NCPP at the end of 2019. We wish him a long and healthy second retirement and thank him for his efforts on behalf of all the bridge partnerships. Chris Keagan will be replacing Ed and we welcome him to the NCPP family.

From the FHWA
FHWA Liaison: Connie Yew: FHWA-HQ Office of Infrastructure

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

**Maintenance**

An update to the Maintenance Leadership Academy (Modules A to F) FHWA National Highway Institute (NHI) Course #134063 is being conducted. The update to the last 3 modules (A to C) will be piloted early 2020: Jan 20 – Mar 10, 2020 Couer D’Alene, ID, Jan 23 – May 14, 2020 North Augusta, SC, and Feb 3 – Apr 2, 2020 Austin, TX. Contact NHI for further information.

**Unmanned Aerial Systems (UAS) – James Gray, FHWA Office of Infrastructure.**

FHWA EDC-5 UAS Deployment Team is actively working on efforts to accelerate the adoption of UAS in the fields of Structural Inspection, Construction Inspection, and Emergency Response. FHWA will:

- Bring States together to build UAS programs collaboratively through peer exchanges
- Share resources and the state of the practice through webinars and corresponding Tech Briefs
- Host Regional and Local Workshops to bring together key UAS practitioners
- Develop informational videos to host on the FHWA YouTube channel
- Introduce UAS as a practical tool through college curriculum
- FHWA has published multiple Tech Briefs and brought together published research on a centralized UAS website

**Project Bundling – Romeo Garcia, Office of Infrastructure**

FHWA has published a Bridge Bundling Guidebook, a how-to manual to lead you through 10 steps for developing an effective bundling program. Although the guide focuses on bridges, it can be broadly applied to develop bundles that maximize agency resources on all types of projects, such as safety, pavements, and traffic operations. Topics covered include project delivery methods, funding and financing, coalition building, and risk assessment. The guide includes readily useable tools to assist in delivering bundled projects, including selection criteria, sample...
contract documents, and case studies. To learn more about bundling, visit the Project Bundling web page.


Since January 2019, the WRMS initiative under FHWA Every Day Counts Round 5 (EDC-5) program has been promoting the use of road weather data from mobile and connected vehicle technologies to support traffic and maintenance management strategies during inclement weather. Across the country, 22 transportation agencies are planning or currently implementing WRMS for a variety of events, including winter weather, flooding, dust storms, and wildfires. Examples of implementation activities include deploying data sharing technology in rural locations, adopting statewide snowplow route optimization, managing wildfire burn scar areas, and integrating mobile data for forecasting, decision-making, and performance management at Transportation Management Centers. FHWA has conducted - and continues to plan and offer - webinars, virtual trainings, in-person workshops, peer exchanges, and demonstration site visits. Several case studies and fact sheets are available for information and guidance purposes. For more information, see the Weather Response Management Strategies Resource Toolkit.

Turner-Fairbank Highway Research Center (TFHRC)

Morgan Kessler, FHWA-TFHRC

Maintenance and preservation research and development work continues at TFHRC, and we have several notable projects in the pipeline:

Pavement Maintenance Techniques: Best Practices
This project involves developing a comprehensive best practices field reference guide and an accompanying set of Techbriefs 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. Apps will be developed so that the information may be viewed on mobile electronic devices. We have recently received draft versions of the final products, and are reviewing them before accepting them for publication.

Determining Agency Rules for Bridge Preservation: Develop A Decision Methodology
The contractor conducted a webinar regarding the outcomes of the project. The link to the recording is here: Webinar on Bridge Preservation Actions. We are in receipt of the final draft deliverables for this effort, and expect publication in early 2020.

Recycled Asphalt Pavement (RAP) Use in Pavement Preservation Surface Treatments
An engaging and informative webinar was delivered on October 24th regarding the findings of this project. The video may be viewed here: FHWA Webinar: Recycled Asphalt Pavement Use in Pavement Preservation Surface Treatments.

The AV Impacts to Highway Infrastructure project is moving along well. As many readers are aware, we held an engaging workshop at the 2019 AASHTO Committee on Maintenance Annual Meeting in Grand Rapids, Michigan. This workshop had an attendance of approximately 150, and utilized interactive software that allowed participation via smartphones, tablets, and computers. We consider the workshop a success, and valuable data was gathered for the project. FHWA is excited to receive a final draft report over the next few weeks, and there will also be three webinars to be held early in 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.

TRB News
By: James Bryant, TRB

2020 International Road Weather and Winter Maintenance Conference & Peer Exchange
On September 21-23, 2020, the Transportation Research Board (TRB) Standing Committees on Winter Maintenance, and Road Weather will hold their quadrennial conference in collaboration with the National Winter Maintenance Peer Exchange co-sponsored by Aurora, Clear Roads, and SICOP in Atlanta, Georgia. The 2020 event will combine the best elements of the quadrennial TRB winter maintenance conference and the biennial National Winter Maintenance Peer Exchange. The event will provide a unique opportunity for practitioners, academia, and the private sector from around the world to network and learn first-hand what techniques and technologies are being developed and deployed in the world of road weather and winter maintenance. The conference organizers are looking for both practical and innovative presentations for the four technical tracks:

1. Application of Emerging Technologies to Winter Maintenance and Road Weather;
2. Performance Improvement of Winter Maintenance Organizations;
3. Resiliency to Extreme Weather Events and Emergency Operations; and
4. Weather-Responsive Transportation Management. The links for Conference Registration and the Call for Presentations are included below.
The Transportation Research Board (TRB) 99th Annual Meeting will be held January 12–16, 2020, at the Walter E. Washington Convention Center, in Washington, D.C. The information-packed program is expected to attract more than 13,000 transportation professionals from around the world. The meeting program will cover all transportation modes, with more than 5,000 presentations in nearly 800 sessions and workshops, addressing topics of interest to policy makers, administrators, practitioners, researchers, and representatives of government, industry, and academic institutions. A number of sessions and workshops will focus on the spotlight theme for the 2020 meeting: *A Century of Progress: Foundation for the Future*.

The session and presentation details from the 2020 meeting will be available on the TRB interactive program at the time this newsletter is released: [https://annualmeeting.mytrb.org/interactiveprogram](https://annualmeeting.mytrb.org/interactiveprogram)

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### NCHRP Corner

Amir N. Hanna, NCHRP

**Research Completed – In Publication**

**NCHRP Project 13-07, Guide to Calculating Ownership and Operating Costs of Department of Transportation Vehicle and Equipment Fleet** (The Cadmus Group, LLC). The project developed a guide for DOT fleet managers to calculate the fleet and equipment ownership and operations costs to support decision making.

**NCHRP Project 20-83(03)A, Long-Range Strategic Issues Affecting Preservation, Maintenance, and Renewal of Highway Infrastructure**. The report will be published as Volume 7 of NCHRP Report 750 series, Strategic Issues Facing Transportation. The report focuses on the issues affecting preservation, maintenance and renewal (PMR) of highway infrastructure. The study placed emphasis on preparing for plausible futures rather than on predicting various future scenarios, and developed a pathway to guide transportation agencies in advancing the implementation of emerging PMR practices through a process involving awareness, advocacy, assessment, adoption, and action planning. The report contains two guides, one for practitioners and another for leadership, to help with the understanding, identification, application, and implementation of emerging PMR practices.

**Research in Progress**

**NCHRP Project 05-24, Guidelines for Vehicle and Equipment Color, Marking, and Lighting** (Texas A&M Transportation Institute). The project will develop guidelines, for consideration and adoption by AASHTO, for the selection and application of color, retroreflective markings, and lighting to vehicle and equipment that will effectively identify vehicles and equipment, and communicate their activities to the motoring public, and thus enhance safety.

**NCHRP Project 06-18, Guide for Snow and Ice Control Operations** (Texas A&M Transportation Institute). The project develop a guide that will serve as the primary source for guidance on all aspects of snow and ice control operations. The guide is intended for adoption/publication by AASHTO and will supersede the 1999 *AASHTO Guide for Snow and Ice Control*, and other guidance on snow and ice control operations.

**NCHRP Project 12-117, Guidelines for Corrosion Protection of Steel Bridges Using Duplex Coating Systems** (Elzly Technology Corporation). The project will (1) develop AASHTO guidelines for corrosion protection of using duplex coating systems for extending the service life of steel bridges that can be adopted by AASHTO and (2) plan and conduct a workshop to demonstrate the use of proposed guidelines to an audience of DOT staff and other stakeholders.

**NCHRP Project 13-05, Guide for Utilization Measurement and Management of Fleet Equipment** (Washington State University). The project will develop a guide for utilization measurement and management of fleet equipment used by state highway agencies, and include associated processes and electronic-based tools.

**NCHRP Project 14-40, Transforming Roadside Management and Technology Practices for the Benefit of Safety, Ecology, and Economy** (Texas A&M Transportation Institute). The research will identify and quantify the cost, safety, and environmental impacts of routine mowing compared with managed succession of vegetation for areas outside the clear zone and develop guidelines for recommended roadside vegetation management practices.

**NCHRP Project 14-41, Permanent Vegetation Control Treatments for Roadsides** (Texas A&M Transportation Institute). The project will produce up-to-date guidance for transportation agencies for selecting appropriate permanent vegetation controls that will be effective in preventing or significantly retarding the growth of unwanted vegetation around roadside appurtenances and along roadsides.

**Upcoming Projects**

**NCHRP Project 14-43, Construction Guide Specifications for Cold Central Plant Recycling and Cold In-Place Recycling**. The project will produce proposed AASHTO Construction Guide Specifications for the application of CCPR and CIR in the standard five-part AASHTO format with supporting commentary.

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Project 13-08, Guideline for Decision Making for Repair vs. Replacement of Highway Maintenance Equipment.

Requests for Proposals (posted on NCHRP web site)

NCHRP Project 14-44, Guide Specifications for the Construction of Slurry Seals, Scrub Seals, and Tack Coats (proposals close date: January 23, 2020). The project will develop recommended guide specifications for the construction of slurry seals, scrub seals, and tack coats as used in preservation treatments.

NCHRP Project 14-45, Guidelines for Response Planning, Assessment, and Rapid Restoration of Service of Bridges in Extreme Events (proposals close date: January 16, 2020). The project will develop guidelines for response planning, assessment, and rapid restoration of service of bridges in extreme events.


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: Jerry Hatcher, Tennessee DOT
Vice Chair/Editor: Kathy Ahlenius, Wyoming DOT
Research Coordination: John Perry, FHWA-Idaho

FHWA Liaison: Connie Yew, FHWA-HQ
AASHTO Liaison: Jameelah Hayes
TRB Contact: James Bryant
NCHRP Contact: Amir Hanna

Technical Working Groups

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Vice Chair: Doug Burke, Ohio DOT
Liaison: Antonio Nieves, FHWA-HQ

Bridge
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Liaison: David Johnson, FHWA-HQ

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

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