

## TRIENNIAL STRATEGIC PLAN (TSP)

**Evaluation Period: February 1, 2017 to January 31, 2020**

*Please note that rows and boxes below expand as you enter the information*

### PART 1: Committee Name and Scope

*This is an opportunity to review the officially approved name and scope that are posted on the TRB website and consider any necessary changes. If changes are needed, include the proposed scope statement and/or name and justification for the changes.*

**NOTE: A proposed committee name and/or scope change must have the approval of 2/3 of the official members of the committee. The balloting done at a committee meeting that has less than 2/3 of the members in attendance must be augmented with e-mail balloting of the members not in attendance.**

Committee Code *	AKC60 (AFH60)
Committee Name *	Standing Committee on Asphalt Pavement Construction and Rehabilitation
- Date(s) reviewed	January 16, 2019, January 13, 2020
- Change, if proposed***	Not Applicable
- No. of official members approving change/total number of members **	Not Applicable
Committee Scope *	This committee is concerned with the construction, rehabilitation and recycling of asphalt pavements. Areas of interest include: construction methods and procedures, in-place recycling techniques, plant production issues which impact construction operations, and paving equipment.
- Date(s) reviewed	January 16, 2019, January 13, 2020
- Change, if proposed ***	Not Applicable
- No. of official members approving change/total number of members **	Not Applicable

\* Show current, as it currently appears in the [TRB Online Directory](#)

\*\* Includes Chair, Standing Committee Members, Emeritus Members, and Young Members

\*\*\* Show proposed, or Not Applicable

**Original Committee Name:** N/A

**Original Scope:** N/A

**Modified Name:** N/A

**Modified Scope:** N/A

**PART 2: Committee History**

NOTE: We have provided much of the information you need for boxes 2.2, 2.4, and 2.7 below and in attachments A, B, and C. We ask that you provide the remaining information.

**2.1**

Year	2017	2018	2019	2020
Number of Members in Attendance at Annual Meeting				22
Number of Visitors in Attendance at Annual Meeting				25
Number of Papers Reviewed		13	16	13
Total Number in Attendance at Mid-Year Meeting	N/A	N/A	N/A	

**2.2**

Sessions and workshops sponsored/co-sponsored at the Mid-Year meeting, including name of co-sponsoring committee(s) if applicable (by year):

**NOTE: Sessions and workshops sponsored/co-sponsored at the Annual Meeting are listed in Attachment A. List below all sessions and workshops sponsored/co-sponsored at Mid-Year meeting, including name of co-sponsoring committee(s) if applicable (by year).**

The mid-year meeting was used to address committee business and prepare for the annual meeting. There were no sessions or workshops at the mid-year meeting.

**2.3**

**Provide** title(s) and presenter(s) for informal presentations made at Annual Meeting and Mid-Year Committee meetings:

2018

- National Asphalt Pavement Association (NAPA/FHWA) Initiative: “Advancement of Innovative Asphalt Technology Information” by Audrey Copeland

2019

- “Alaska Experience with Rolling Density Measurement,” by Amanda Gilliland, Knik Construction Co.
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2020

- “MnDOT DPS Research, Case Study and PFS Update,” Kyle Hoegh & Shongtao Dai
  - <https://www.pooledfund.org/Browse/org?code=25>
- “Intelligent Compaction Research Update,” Amanda Gilliland, Transtec Group Inc.

**2.4**

**Provide** titles of new research need statements (RNS) posted in TRB’s RNS database (by year): None

2017

- 

2018

- 

2019

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NOTE: Attachment B shows all statements currently posted in TRB's RNS database.

## 2.5

**Provide** title(s) of RNS submitted for funding consideration: None

NOTE: If funded, include research project title/number and name of funding organization(s).

## 2.6

**Provide** titles of synthesis topics submitted (by year):

1.

NOTE: **List** any synthesis topic(s) funded in a research program.

None

## 2.7

**Membership Make-up: Please see Attachment C provided by TRB for summary details.**

**NOTE: Comment on demographics, balance or lack of balance of membership. Provide an action plan to address any deficiencies. See attachment C for summary details.**

The committee membership demographics are summarized below. The committee is well balanced geographically across the US regions and internationally, as well as across government, academic and industry members. All young member slots are filled and meeting participation is good. Areas of deficiency are in female and minority participation.

- Female members = 15%
- Minority members = 9%
- International members = 9%
- Young members = 12%
- Federal government = 6%
- State government = 12%
- Academia = 21%
- Consultants = 30%
- Friends of the Committee = over 200

A committee rotation will occur in Spring 2020. The action plan to decrease deficiencies below will be followed and special consideration will be given to potential members that fulfill the goals and have an interest in service vacant Communications Coordinator and Secretary roles.

### **Action plan to address deficiencies**

2020 Committee membership rotation goals:

- Nine members will rotate off, including all with term limits.
- Increase female and non-white members.
- Fill all DOT slots with preference given to members that serve the AASHTO COC and COMP.
- Fill all young member slots.
- Increase International membership.

- Members that serve on 1 other TRB committee will be sought that are on committees that relate to this committees cross-cutting issues presented in Part 3.

## 2.8

Provide any of the following:

**Any special publications, such as TR circular, and conference proceedings**

**Sponsored or co-sponsored specialty conferences, symposia, workshops, webinars or other joint efforts with other TRB committees, other TRB entities, or other organizations (i.e. AASHTO, FHWA, State DOTs, ASTM, ASCE, and/or other modes of transportation)**

1.

### **PART 3: Committee Future Outlook Statement and Committee Three-Year Plan (Limit 1,500 words total)**

#### **Committee Future Outlook Statement**

*The committee future outlook statement should include a discussion of the primary factors and influences that will shape the transportation community and topic(s) within the committee's scope over the short- (one to three years) and long-term (four to seven years). This statement should include:*

- *identification of emerging, critical, and cross-cutting issues **within the committee scope** (these issues could have been identified by the committee, Section, Group, Technical Activities Council, TRB Executive Committee, or other transportation committees and organizations);*
- *identification of emerging, critical, and cross-cutting issues **outside the committee scope** that provide opportunities for liaison and collaborative efforts (these issues could also come from a wide range of sources).*

A portion of the 2020 committee meeting was spent on the Triennial Strategic Plan. Each member/friend providing input on the future outlook. Four key issues were identified that follow along with associated examples.

**This future outlook statement is aimed at addressing issues that will allow for sustainability and resiliency of asphalt pavement construction and rehabilitation into the future. It involves addressing the following current and emerging critical and cross-cutting technical concerns:**

**1. *Concerns regarding emerging technologies and how to address the associated challenges to capture the benefits to asphalt pavement construction and rehabilitation***

- Intelligent construction technologies (ITC) including intelligent compaction (IC), density profiling systems (DPS), thermal profiling systems (TPS), electronic ticketing, and other new technologies need further development to facilitate asphalt pavement construction and rehabilitation improvements.
- Various systems for transportation including Building Information Modeling Systems (BIMS) are available that could support BIM for pavements. Application to 3-D paving and ITCs is needed with focus on having equipment that can use BIMS (load designs and control to construct them). Guidelines for use and data management recommendations are needed.
- IC provides for improved mat coverage during construction. However, it necessitates improvements in data management to organize, store, analyze, and communicate results of various equipment measurements. For the benefits to be fully realized, data management practices must be updated.
- Thermal mapping and other IC technology provide powerful information, but is also easily misused. Improved understanding of the potential and limitations of emerging technologies is needed.
- Asphalt plant automation is becoming more prevalent. There are issues with variability and issues with human error in preparation of materials that need to be resolved.
- E-ticketing and GPS based truck management software are available and used. How can this be leveraged to improve quality?
- Density profiling systems (DPS) have potential for real time continuous measurements of pavement compaction which need further development.

**2. *Concerns regarding construction quality items.***

- Performance related specifications, smoothness specifications, and recycling can provide benefits to asphalt pavement construction and rehabilitation. Guidance should be provided on how to best realize these benefits.
- Details in specifications regarding QC need to be addressed. Quality of data and PWL specifications, or new specifications could be further developed and implemented. Specifics of writing these specifications should be considered.
- Quality assurance could be improved. Weaknesses in specifications should be evaluated in light of availability of new technology to address limitations related to limited data.

- Plant quantities need to be verifiable, especially for recycled materials. Guidance would be useful how to do this.
- Smoothness specifications are evolving. Other pavement surface characteristics (texture) should be taken into account in smoothness specifications and performance measures.
- Longitudinal joints performance remains an issue. Better means of measuring the density than what is commonly specified. Alternative joint construction technologies and sealing methods should be evaluated. Focus should be on how to preserve longitudinal joints after construction.
- Successful practices for making revisions to specifications should be communicated. Practices of how the contractor interprets the risk and places that into the bid in revised specifications would help agencies to understand and provide valuable guidance.
- Looking at standardization of specifications. There are many different specifications across the nation. Some of this is necessary to address the various needs of different states, but much of this could be standardized to allow for more efficient implementation of specifications by contractors.

**3. *Concerns regarding mix design and production procedures for cold in place recycling.***

- Improvements in mix design technology are needed to harmonize tests and curing conditions for foaming and emulsion. The committee should facilitate guidelines for matching mix designs with what occurs in the field.
- Selection of cold recycling techniques should be based on benefits and limitations. Paving crews have less experience with newer technologies that are often referred to as being similar to HMA paving. CIR mix design and production best practices need to be summarized and communicated.
- There are issues related to plant production and recycling that should be addressed with guidelines. Some plants are modified to accommodate high recycled products and others are specially designed to accommodate it. Plant production variables like silo storage affect aging, but with limited guidelines exist. Answers to questions such as, “Do short term aging procedures in the lab actually reflect what is happening at the plant?” should be addressed.

**4. *Concerns regarding technology transfer – how do we get what we know to the people in the field doing the work.***

- Resources and training are needed for current and emerging technologies. The industry is trying to understand how to leverage technologies to aid in asphalt construction and rehabilitation, as well as effectively transferring research to industry application.
- The committee needs to facilitate simplifying information for effectively communicating with the people doing the work. Flow charts and sheets that can be implemented at the operator level.
- Specific critical activities need to be refreshed like inspection training for the newer younger workforce. Technology doesn’t replace practice-based knowledge. Transfer of traditional inspection advantages to implementation of new technology can be challenging.
- Implementation of research findings often does not get transferred down to the construction level. This should be explored.
- There is a need for workforce recruitment and development to support the highway construction industry. Coordinate with the National Asphalt Pavement Association workforce development committee.

**Emerging, critical, and cross-cutting issues identified outside the committee scope included:**

- Many emerging and currently under evaluation intelligent construction technologies (ICT) will require use and management of significant amounts of data.
- The significant amounts of ICT data generated will have to be integrated in analysis, reporting and acceptance and payment related software and formats.
- The same data will be valuable to pavement management, maintenance management, and asset management systems.

**Committee Three-Year Plan**

The committee plan is a short, focused statement of where the committee wants to go and how to get there. The committee plan may include, but is not limited to: **projects, activities and products** that the committee will undertake during the next three years to address the emerging, critical, and cross-cutting issues identified above;

- How the current or proposed changed membership composition will respond to issues identified above;
- strategies to encourage significant involvement by the committee's Young Members, state DOT members, and other key constituents, both during committee meetings and at other times;
- committee's communication activities, and efforts to provide assistance and technology transfer to the transportation community;
- research – for the TRB committees, “research” is a very broad concept that can begin with providing the user perspective on research needs, writing research needs statements, tracking research, understanding the funding available for research in their topic area, developing case studies, lessons learned, disseminating research, technology transfer, and other activities that will advance the state of the practice. Potential research activities are:
  - research directions, results, and needs or gaps;
  - plan for maintaining and augmenting the Research Need Statements (RNS) database;
  - efforts to address research implementation and user needs, and ways to identify research use and implementation.

**The committee plans to support sustainable and resilient asphalt pavement construction and rehabilitation by helping the transportation industry address these emerging, critical and cross-cutting issues with the following short-term (next 3 years) activities:**

1. Continue to host TRB Sessions and Workshops addressing emerging and critical issues. High ranking topics include: moving intelligent construction technologies (ICT) from concept/demonstration to construction quality control (QC); accelerating e-ticketing use; development of cold recycling design and construction standards; and knowledge transfer that identifies construction quality issues and trains on fundamentals coupled with ICT use to addressing them. One each of lectern, poster, and invited sessions will be planned annually based on paper reviews and committee meetings. Workshops will continue to be planned with AKC60 sponsorship and co-sponsorship.
2. Workshops and invited sessions are excellent sources for knowledge transfer beyond annual meeting participants via TRB eCirculars and Webinars. This will be a consideration during invited session and workshop planning followed up on post annual meetings. Short-term focus will be placed on eCirculars since once completed webinars can be organized.
3. Preparation of Syntheses and Research Needs Statement (RNS) proposals on unaddressed critical issues related to asphalt pavement quality that occur during materials production and construction operations. Syntheses can lead to RNS development. Priority topics include: asphalt plant materials handling and production verification; quantifying benefits of optimized trucking operations; the need for AASHTO standard mix design and construction standards for cold recycling; and construction operations and inspection fundamentals training.
4. Collaborate with the AASHTO Committee on Construction (COC) and Committee on Materials and Pavements (COMP) to identifying research needs, develop RNS and obtain NCHRP funding support.
5. Continue to have presentations during annual committee meetings with balanced agency, industry and academic presenters to expose early experiences/finding on critical issues the committee can support development of.
6. Hold virtual mid-year committee meetings to help plan annual meeting activities, review planned actions, and determine if annual committee meeting planned actions need to be revised.
7. During the 2020 committee rotation leverage the diversity and strengths of committee members to promote AKC60 activities with other committees and to identify cross-cutting activities the committee should pursue. Many members serve on another TRB committee, and committees beyond TRB. Members will be identified as Committee Liaisons with other committees they serve. A Committee Liaison report will be added to the AKC60 committee meetings agenda.

8. Identify a Committee Communications Coordinator (CCC) and Committee Secretary (CS) to collaborate with the Committee Research Coordinator (CRC) on organization and communication. This will include updating/maintaining the committee website; RNS database; and annual reviews of existing RNS for updates or deletion.
9. Encourage young member engagement by offering opportunities to present at committee meetings, to assistance organizing and facilitating workshops, and presiding over podium, invited and poster sessions.

**The committee plans to support sustainable and resilient asphalt pavement construction and rehabilitation by helping the transportation industry address these emerging, critical and cross-cutting issues with the following long-term activities:**

1. Leverage the interactions of committee liaisons to identify opportunities for collaboration with other TRB committees on cross-cutting issues in synchronicity with the committee CRC, CCC and CS.
2. Identify committee members with several years of remaining service that actively participate on the AASHTO COC and AASHTO COMP to help identify research needs and gain support for funding of proposed RNS.
3. Encourage agency and industry association members to bring issues forward at committee meetings and through committee presentations to create awareness of and develop actions that can lead to addressing them.
4. Actively review the committee TSP at annual/mid-year meetings and update it accordingly.
5. Maintain the committee records and website to facilitate smooth future chair and member transitions.