

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 *	AFH50
Committee Name *	Standing Committee on Concrete Pavement Construction and Rehabilitation
- Date(s) reviewed	1/2018, 1/2019, 1/2020
- Change, if proposed***	No change proposed.
- No. of official members approving change/total number of members **	NA
Committee Scope *	This committee is concerned with all factors relating to the construction and rehabilitation of concrete pavements.
- Date(s) reviewed	2018, 2019, 2020
- Change, if proposed ***	No change proposed.
- No. of official members approving change/total number of members **	NA

* 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

PART 2: Committee Accomplishments

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		15	11	20
Number of Visitors in Attendance at Annual Meeting		20	21	37
Number of Papers Reviewed		4	11	8
Total Number in Attendance at Mid-Year Meeting	28	18	17	

2.2

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

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

We have a mid-year meeting that is conducted with AFD50. There are no sessions, but there are informal presentations.

2.3

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

2017 Midyear Meeting, Pittsburgh, PA:

- 125th Anniversary – The First Concrete Street in the United States: Bellefontaine, Ohio – (Mark Pardi – Ohio ACPA)
- Update on Florida’s Mainline Paving (Roger Schmitt – Florida Concrete & Products Association)
- Concrete Overlays (Julie Vandebossche – University of Pittsburgh)
- Development of a new pavement design tool: Pavement Designer.org (Eric Ferrebee – ACPA)
- FHWA Concrete Pavement Related Activities (Shiraz Tayabji – ARA)

2018 Annual Meeting:

- Successful Approaches for the Use of Unmanned Aerial Systems by Surface Transportation Agencies (Emanuel Banks, Arkansas Highway Department)
- Non-Contact Ultrasonic and Imaging to Predict Sawcut Timing for Concrete Pavements (Quang Tran)

2018 Midyear Meeting, Madison, WI

- Wisconsin DOT Concrete Research, Evaluation of the Effects of Deicers on Concrete Durability (Danny Xiao)
- FHWA Concrete Pavement Updates (TBD, FHWA and Shiraz Tayabji)
- Overview: 13th International Symposium on Concrete Pavements (Manik Barman)
- SPS-2 Update (Steve Tritsch)
- RNS – Critical Stresses and LRFD (Rich Rogers & Georgene Geary)

2019 Annual Meeting:

Evening meeting. We did not have presentations. There was a podium session just before our meeting.

2019 Midyear Meeting, Orlando, FL:

- Designing Long-Life Concrete Pavements that Cost Less (Rich Rogers)
- FHWA Concrete Pavement Updates (Tom Yu)
- Florida DOT Concrete Pavement Test Road (Jamie Greene, Florida DOT)
- In-depth Analysis of Concrete Pavement Cracking (Georgene Geary)

2020 Annual Meeting:

- History of Concrete Paving (Eric Ferrebee, ACPA, Technical Services Engineer)
- Wisconsin's Road to PEM Implementation and Other Innovations (Barry Paye, WISDOT, Chief Materials Engineer)
- FRP Dowels (Brad Zaun, Master Dowel, Director of Sales)

Annual meeting also includes updates by representatives from AASHTO, FHWA, the National Concrete Pavement Technology Center (CP Tech Center), National Road Research Alliance, American Concrete Pavement Association, and the Roller-Compacted Concrete Pavement Research Council. These updates include current research needs the organizations are addressing or are aware of, publications that have been made available, and an overall review of what is in store over the next year for that organization and how that relates to this committee. Sometimes there are a few slides to share, but, for the most part, these updates are verbal and captured in meeting minutes.

2.4

Provide titles of new research need statements (RNS) posted in TRB's RNS database (by year):

2018:

- Review of Best Practices in Design, Construction, and Performance of Roller-Compacted Concrete Pavement (By Matt Singel)
 - <https://rns.trb.org/details/dproject.aspx?n=43221>

2020:

- Bonding in Multi-lift RCC Construction was uploaded to the TRB RNS database
 - <https://rns.trb.org/details/dproject.aspx?n=43217>
- High-Early Strength Concrete for Pavement (Shreenath Rao - resubmitted by Shabbir Hossain)
 - <https://rns.trb.org/details/dproject.aspx?n=43219>

Discussion:

Our last TSP identified a lacking ability to populate the data base with new RNS statements. It was our goal to improve on our poor performance. It had always been this committee's ambition to promote the CP Road Map by developing RNS that align with what the CP Road Map identified as real research, critical needs based on direct input from states representatives. Unfortunately, we were not able to really align any RNS with CP Road Map needs over the last three years. Alternatively, we developed a list of what the group identified as potential topics and put together a small team of people to flesh out the RNS details for specific ideas the group thought would be the most relevant and important. This list was reviewed regularly over the last three years. Ultimately, three ideas were fully developed. Of those three, two were submitted as

synthesis topics as identified in the next section, Although the ideas were developed almost annually and reviewed regularly, they were not uploaded to the data base until recently.

It is this committee's goal for the next three years to continue to review the running list of ideas that was developed over the last three years on the basis of relevance and importance. In addition, we will work closely with the CP Tech Center representatives to identify additional RNS that state representatives identify as needs through the NCC.

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

2.5

Provide title(s) of RNS submitted for funding consideration:

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

2.6

Provide titles of synthesis topics submitted (by year):

2018: Review of Best Practices in Design, Construction, and Performance of Roller-Compacted Concrete Pavement (By Matt Singel)

2019: High-Early Strength Concrete for Pavement (Shreenath Rao)

2020: High-Early Strength Concrete for Pavement (Shreenath Rao - resubmitted by Shabbir Hossain)

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

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.

We just had our rotation. The new roster brings in new faces eager to do their part and liasons that will help with development of RNS ideas. The committee increased female, DOT, Federal, academia and international representation. We decreased our consultant membership and filled our Young Members slots. An increase in DOT, academia, and Young Member representation should help with the ability to flesh out RNS and better success at funding.

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)

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).*

This committee has identified three over-arching factors that will potentially influence short-term and long-term concrete pavement construction and rehabilitation practices from which will stem additional critical issues not yet identified and that will result in research and tech transfer needs.

1. Wide-spread implementation of specifications that will focus more on the performance of concrete pavements rather than on prescriptive requirements and implementation of new, innovative testing procedures (or incorporation of alternative test methods maybe not so innovative) to support performance-based specifications

The idea of performance-based specifications has been a topic of discussion among pavement folks for a long time. Over the last six years, however, there has been movement in industry towards Performance Engineered Mixtures (PEM) that emphasizes engineering mix designs for optimization and testing for performance with new innovative methods. As a result, specifications – specifically construction specifications – have changed to account for the implementation of these new test methods and mix design approaches because they aim to replace prescriptive-type specifications. As more PEM measures become standard, they will continue to affect the way pavements are designed and constructed. This committee will work to provide tech transfer opportunities for construction implementation experiences. It will also help identify any research needs or gaps as PEM becomes more and more mainstream. This committee will coordinate efforts with the Concrete Materials Section on this issue.

2. Increased emphasis on the use of concrete pavements as a cost-effective solution to longevity and resilience;

Over the last decade, the world has seen many tragic, devastating weather-related events including numerous tornados, flooding, and seismic events. The ability for pavements to continue to perform in some capacity during and after these events becomes an important, even vital, link in the ability to mobilize supplies and support to any region that experiences these kinds of events. This committee will continue to focus on the construction, rehabilitation, and preservation of concrete pavements during weather-related crisis.

3. A greater focus on the use of intelligent construction techniques to provide a safer, more efficient work environment -
 - a. continuous construction with minimal manpower,
 - b. rapid construction under traffic and in other hazardous conditions.

As we move into a new decade of performance-based specifications with testing aimed at increased cost-effective concrete pavement options for longevity, it only makes sense that the push for more intelligent construction methods becomes prevalent. The incorporation of artificial intelligence, drones, and other autonomous construction tools will affect how concrete pavements are constructed and rehabilitated. This committee will do its best to stay at the forefront of new developments and how they affect construction, needed research, and tech transfer opportunities to relay implementation and guidance. With the recent setting of the Emerging Design and Construction Committee, this committee will collaborate with the Construction Management and Bridge Construction Committees, who are already very active in implementing intelligent construction techniques.

This committee previously identified several critical, cross-cutting issues that are reviewed and addressed at every annual meeting. It is anticipated that as these issues become less relevant, they will be removed from the list. Also, it is anticipated that new issues will be added that stem from the factors mentioned above.

- States' experiences with different types of dowel bars and how they are performing:

State DOT Members of this committee have voiced a need for this research and have also voiced a need for guidance on how to specify their use and acceptance. Members of this committee who work closely with contractors implementing these new technologies, however, advise that this need will require time and evaluation of performance in order to develop any kind of guidance. In the short-term, this committee will continue to review this issue with members on an annual basis. Discussions will revolve around known experiences and implementations. For the long-term, it is anticipated that a synthesis topic will be developed first to identify a state-of-the-practice and to develop a summary of what guidance was provided and how efficient that guidance proved to be by state/owner agencies and contractors. Based on results from the synthesis, the committee will then work to develop more detailed content for an RNS to be submitted for funding. The committee will create a small group of members and friends that have experience and interest in this issue to help with synthesis and RNS. This group will reach out to other TRB Committees accordingly.

- RCC pavements :

This committee has developed a Subcommittee dedicated to the needs of RCC pavements. In the short-term, it is anticipated that this subcommittee meet at annual meetings where it will discuss research needs and develop RNS. This subcommittee will also develop at least one full session or a Workshop to provide technical transfer on this subject. It is anticipated that in the long-term, this subcommittee will continue to stay active if RCC continues to remain a viable pavement option within industry, participation by members is maintained, and there are research/tech transfer needs as identified by its members.

- Timing, selection, and application of pavement preservation techniques:

This committee will review this issue annually at the TRB meeting. In addition, the committee will work with the CP Tech center to identify any states' needs as they pertain to this topic. For the next three years, the committee will try to put together a small group of members and friends that have interest and experience in this topic. They will work

with the CRC to develop RNS. In addition, tech transfer needs will be identified, and sessions, workshops and webinars will be developed. The goal will be to develop 1 RNS or synthesis topic and 1 tech transfer event on this topic in the next three years. This group will reach out to other TRB Committees, such as AKT20 Pavement Preservation Committee accordingly.

- **Rapid-setting concrete:**

This issue has been discussed regularly for the last three years and remains an issue based on committee feedback. The Committee CRC worked with a small group to put together a RNS on a topic related to this issue. This RNS will get submitted for funding and we will review our progress at the annual meetings. We will also look for alternative funding if not chosen by AASHTO and NCHRP.

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.*

Projects, activities and products

Over the next three years the committee will focus on cultivating the relationship with the CP Tech Center and the NCC states. It will continue to stay in-tune with the other concrete committees when developing sessions and workshops. It will develop, submit and POST relevant RNS; the goal will be to enter at least one new RNS per year unless there is a clear need for more.

The committee will flesh out at least one RNS or one synthesis topic every year that will come from the critical issues mentioned in the previous section or from discussions with members and friends. We will work to push one RNS and one synthesis topic forward for funding every year. If a RNS or synthesis topic is rejected, we will work to identify why and how we can improve our chances next year, and we will submit a second time. From there, it will depend on whether or not the topic is still relevant to the committee as to what happens next.

The committee will also organize at least one invited session and one paper session per year. This, however, will really depend on papers received and current hot topics/needs for tech transfer as discussed by the group at annual and mid-year meetings. The committee will continue to work with other committees to cosponsor cross-cutting topics. This will include the other committees within our section, Concrete Pavement Design Committee, the Pavement Preservation Committee and the Concrete Materials Section.

The committee will consider converting a session into a webinar. The committee is currently scheduled to have a Webinar in 2021. It is the second part to a two-part series that we are putting together with the Concrete Pavement Design Committee. The committee will look to convert the proceedings into a webinar series as a follow up.

This committee will have at least one focused, well developed call for papers, which is currently planned for 2022.

Membership

As discussed above, this committee tries to maintain a diverse group of folks. Rotation occurred last year and effort was placed on increasing membership of all groups with the exception of consultants. The new membership will allow for a direct connection to the CP Tech Center and CP Road Map, to the Federal Highway Pavements program initiatives, and includes DOT representatives active in AASHTO and NCC. In addition, we have continued to build representative voices from industry that will be able to supply a contractor's and Engineer's point of view, and we have new international voices that will help shed light on international interests, concerns, and implementations.

Strategy

The committee's strategy for encouraging participation will include annual and mid-year discussions aimed specifically at RNS idea development. The committee will meet regularly with the CP Tech Center to coordinate RNS developed through NCC and the CP Road Map. NCC meets twice a year. The idea will be to share and compare RNS ideas from this committee with those developed from NCC meetings and to identify RNS that are not being funded through pooled fund efforts, but are still identified as important. This committee will then put together a team to flesh out RNS for those nonfunded, but important topics. The goal will be to get these ideas to our AASHTO representatives to push forward for NCHRP funding with the hopes of increased success since the RNS will have multiple states backing the need.

While this committee has typically had in-person mid-year meetings to support our strategy for RNS development, we may supplement those activities with additional webinars that are geared specifically to the development and fleshing out of RNS for the database. This year, amid the Covid-19 pandemic, we will have a mid-year webinar instead of meeting in-person. We hope to still somehow coordinate a joint webinar in some way with AFD50.

Communication

This committee will strive to improve the committee-specific website to include updated meeting minutes, presentations, and RNS ideas. In addition, it will continue cross-cutting coordination efforts with other committees for sessions and workshops to promote technology transfer.

Research

The plan to ensure that this committee stays aware of relevant RNS ideas, gaps, and funding opportunities will center on its ability to maintain the relationships it is building and nurturing with agencies such as the CP Tech Center, NCC, and FHWA. In addition, the Committee Research Coordinator will work to maintain a RNS idea database and will work with the Chair to ensure the RNS database is up-to-date and that a new RNS is added as planned. The Committee Communications

Coordinator will maintain the website to reflect updates to the RNS database and any RNS ideas that are developed through TRB meetings and additional outside meetings as described under the Strategy section. The hope will be that while the TRB RNS database has all of the fleshed-out ideas, ideas for other RNS listed from brainstorming during meetings will still be accessible by members, friends, and other committees to view and possibly build off of.