TPF-5 (504) Project kick-off meeting

Date: Thursday, 6 January 2023

Time: 10:00 AM to 12:00 PM (CTS)

Attending	Amber Blanchard (MnDOT), Shongtao Dai (MnDOT), Thomas Calhoon (MNDOT), Jeff Brunner (MnDOT), **Eyoab Zegeye (MNDOT**), **Stephen Cooper (FHWA**), Monica Jurado (FHWA), Ian Rish (GADOT), Lee Sanglck (TXDOT), **Jia Xiaoyang (TNDOT),** Barghanabny Peyman (TXDOT), Leif Halverson (MNDOT), Rick Miller (KDOT), Bill Owen (Caltrans), Tom Yu (FHWA), **Ruben Carrasco (TXDOT**), Ali Morovatdar (WIDOT), **Griffin Sullivan (MDOT)**, Patricia Sergeson (FHWA), Brian Diefenderfer (VDOT)
Not Attending	**John Donahue (MODOT), Brian Hill (ILDOT),** John Senger (ILDOT)

Meeting notes:

- All member agencies, except for MO and IL DOTS, were represented in the meeting. John Donahue (MODOT) informed the project PI that he could not attend and has no issues moving forward with the proposed project charter.

- Before the meeting, Mark Woods (TNDOT) informed the PI he was no longer working for TNDOT and hence no longer part of the TPF-5(504) panel. Xiaoyang Jia is now representing TNDOT in the pool fun study. Welcome.

- Before the start of the meeting, Rick Miller (KDOT) shared with the PI that even though his state is interested in the study, they were not still able to join the pool fund due to a lack of researcher(s) that could commit to the study. Hence, he inquired whether having himself or other yet-to-be-committed agencies in the meeting makes sense. His question was addressed at the beginning as follows: MnDOT recognizes that not all participant states desire or have the resources to develop and perform one or multiple project task items. The agencies can decide the level of participation that works for them. They can choose to serve on the Technical Advisory Committee overseeing project progress while sharing data and knowledge from their state offices. Or they can commit to actively developing some of the task items. Technical contribution is also important for the success of the project and the implementation of the tools developed in this study. So Rick and others yet-to-be-committed states, your participation and input are appreciated. I hope you find convincing arguments for your state to commit along the way.

- After the meeting: Brian Hill (MnDOT) informed Eyoab he wasn't able to attend the meeting due to conflict and send an exhaustive review of the proposal and some suggestions. Thank you, Brian. I will address your questions and comments

- Jeff Brunner (MNDOT) gave the opening statement and shared his confidence that this pool fund study will achieve the stated project goals.

- Amber Blanchard (MnDOT), the new director of the Road And Materials Research Office, who stopped by the meeting to say hello, also echoed Jeff's opening statement and her support for this initiative.

- Dai Shongtao (MnDOT) provided a background for the study. He discussed the other research efforts that preceded the pool fund study (i.e., SHRP R06D and Implementation Study), how the 3D-GPR was identified as the best tool for probing subsurface stripping and moisture-related damages, and the significance of the engineering needs we plan to address in the current study.

- Leif Halverson (MNDOT) provides a quick update from the administrative perspective. He indicates the accounting office is getting close to executing the FIMS contract, which will enable the transfer of MNDOT from the partner states to MnDOT. Since this will be an essential milestone for starting the project activity, Jeff suggested another meeting between the MnDOT accounting and research offices (relevant to this study).

- Eyoab Zegeye (MnDOT) led an iterative presentation in which he laid out the framework for the project and discussed each task item (10000 ft view). The pool fund study is now mainly composed of mid and southern states. He hopes to see a state from the east and west coasts to address all the stripping mechanisms and nuisances fully. The pool fund study, in addition to pursuing the stated technical goals, will serve as user group for sharing knowledge and best practices. Eyoab also indicated that the most critical task would be TASK 1. This task has been allocated sufficient time (3 months) to work out the details of each of the remaining task items and to identify good-fit subject matter experts willing to perform tasks. MnDOT's Road Doctor program will actively work to realize multiple tasks and to assign other tasks to the responsible identified through this pool fund study (i.e., RFO or direct hires). The partner states are welcome to express their interest in any of these tasks or to recommend vendors or experts that may be helpful to the study. The following questions were brought up during the presentation:

    - *Question on equipment availabilities*

- Ruben: Texas has a 3DGPR unit but have yet to use it much. They can make it available for study. I believe AARB collected some data in Texas as well.
- Eyoab: We had success integrating 3D-GPR in our existing project scoping efforts. We would happily share some of the key successes and challenges with you. Please let us know; we can schedule a separate meeting
- Bill: California has a 3DR unit, and I regularly use it for multiple purposes. Out-of-state availability is minimal, but they could identify CA sections for the study.
- Ian: Georgia would have 3DR data from the TSD testing they have done, but they don't have their own unit.
- Rick: Kansas has 250 miles of 3DR data, but they worked with AARB to get that data.
- Jia: Tennessee goes through a vendor for their 3DR data collection. We have a vendor that help us with on-call testing program. So far, they are working on one project using 3D-GPR to structural information
- Brian from Virginia said he would speak with others in a research group meeting on Monday (1/30/23) to see what they think about joining the pool fund.
- Monica (FHWA) confirmed that her office will provide IE/SASW data collection and processing support
- All states have FWD capabilities, but equipment availability will depend on when and where it is needed.
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- *Exchange with Ian Rish of Georgia on data analysis:*
  - Ian: If a state provides raw TSD and 3DR files will MnDOT perform the analysis for them if that state is a participant in the pool fund study?
  - Eyoab: The state partners are asked to identify two road projects (2-10 lane miles) with known stripping issues to be considered in the TPF-5(504) pool fund study. If 3D-GPR data is not available for these roads, the pool fund will arrange for the testing of these roads. Suppose the state has already obtained the 3D-GPR data from the TSD pool fund. In that case, the 3D-GPR and TSD data pertaining only to the roads selected in this study will be analyzed by MnDOT or by an organization identified in the stripping pool fund study. The state will be responsible for providing the data on the roads selected for the stripping study. Nevertheless, the tools or applications developed in this study will be shared with states to run more analyses on other projects.

- Ian: we have done Hamburg testing on cores to support the diagnosis of stripping. We have got project-level and network-level 3DR data. Also, GA has some personnel stuff going on that has delayed their decision to join the pool fund study.
- Eyoab: It would be nice to include in this study roads that were designed using Hamburg and other moisture resistance screening tools.

- *Exchange with Stephen Cooper of FHWA on Rain event considerations:*
  - Stephen: Will we look at the temporal proximity of the testing and rain events?
  - Eyoab: We will collect weather data, but may be challenging to schedule the test around the occurrence of rain events
  - Dai: We can try this in MN first because the water in the stripped areas may help with detection. We can try in the spring rainy season.

- *Question: Does any of the states have lab or field compaction capabilities?*
  - Brian (Virginia) likes the idea of a signature database. However, the biggest slab they can create is 2'x2'. University of Nevada – Reno has field compaction capabilities that may be able to do bigger slabs (contact Adam). Brian would be happy to help with developing Task 3.

- *Exchange on building the artificially stripped sections*
  - For task 4 (construction of artificially stripped sections) , Stephen wonders if we need to wait for the next MnROAD construction cycle. Jeff indicated that wouldn't be necessary. We have lots of areas we can do this. We have similar other project needs that may be combined. We need to figure out a test spot with the MnROAD folks.
  - Brian: Does it matter if the artificial stripped areas are created using RAP or uncoated aggregates?
  - Ian: I would imagine variations of different types of low AC vs completely gone bond?!
  - Eyoab/Dai: To simulate stripping, we could use uncompacted AC, RAP, less binder, or other options like the one you suggested. We must investigate this further as a group and identify the material best simulating stripping. I realize not everyone has the time to be involved in all the detail-oriented discussion, if you would like to be involved in the design of the sections, let us know:
  - Brian: Yes, I am interested
  - Stephen recommends including Mike Heinzmann in the task 4 discussion.

        - Eyoab: Thank you Steve. We will seek opportunities for Mike and other subject matter experts to participates in this

    - *Exchange on promotion and marketing*
        - For task 11, Steve says the more tech promotion we do, the more states will want to participate. For the in-person work group meeting that is in the fall, Stephen suggests we plan it around the same time as the DPS work group meeting so we can get overlap and some interest from the east coast and west coast parties. We could add a field demonstration during that week.
        - Steve also suggested that for task 10, part of the user group discussion could be examining what gaps exist in this effort, and then that info could be shared with TRB committees for further research.

    - *Exchange on user-friendly accessible applications*
        - Eyoab stressed the importance of developing applications and standards that are verified, validated and widely agreed upon but also easily accessible to state engineers. We should avoid macros and executables requiring coding and programming expertise. Instead, we aim for user-friendly stand-alone applications or embed the algorithms developed in this study in commercially available software applications. Jeff says that MNIT may make the software part more challenging. Brian says they have worked with AARB for the software, which has gone well. He agrees that software that comes out of the pool fund study needs to be publicly available.

- Approval of the project charter. All the present voting agency members and MoDOT approved the charter and schedule.

Action items:

- As soon as the MnDOT accounting office and FHWA give the okay, start the project. The final schedule of the meeting and regular updates (outlined in the project charter) will be disseminated.