Traffic Speed Deflectometer Devices Pooled Fund Study TPF-5(385)
Technical Advisory Committee Meeting
January 16, 2019, 2-5PM Eastern Time
Conference Room 303, The Walter E. Washington Convention Center, Washington DC
Meeting Minutes

The meeting was called to order at approximately 2:10PM and those in attendance gave self-introductions. Brian Diefenderfer, lead state coordinator, introduced himself and the project principal investigators, Gerardo Flintsch and Samer Katicha, both with Virginia Tech Transportation Institute.

1) Transfers vs. Commitments

The project financial information was reviewed with the meeting attendees. Brian focused particularly on the differences between transfers and commitments. As of the preparation of these minutes (1/29/19), the project has commitments of $2,230,000 but transfers of only $374,000. Brian encouraged participating agencies to work towards making the actual transfers once the commitments are registered. An attached project funding page shows the details for each agency.

2) Review data already collected

Excerpts from the data collected using the ARRB TSD in Virginia were shared. A total of 571 miles of local and primary routes were tested. The excerpts showed the types of data that can be collected with the ARRB TSD system and Brian offered some potential implications for pavement and other asset management.

The state agencies agreed that collected data could be viewed by all participating agencies via a single log-in to the ARRB web viewing system. ARRB is working to develop log in credentials for the pooled fund study members. This info will be shared as it becomes available.

3) Route selection help

Agencies looking to have testing conducted in the near future (Spring and Summer 2019) should work to identify their desired testing routes. Agencies should identify approximately 200 lane miles per day of testing. It is advisable to identify additional routes in case they can be collected. More data can be collected if sites are continuous and/or in close proximity to each other. The final route selection will be an iterative process between the agency and the vendor.

4) Inclusion of additional test devices (e.g., Dynatest RAPTOR)

Several agencies have expressed interest in having both the ARRB TSD and the Dynatest RAPTOR to assess their pavements. The pooled fund study was originally established having the TSD as the only test equipment and so funding levels are based on that assumption. If agencies wish to add the RAPTOR device, additional funding or a corresponding reduction of TSD-collected mileage is required. Details are still being worked out so pricing for data collection by the RAPTOR is not yet available. Please contact Brian (brian.diefenderfer@vdot.virginia.gov) if you would like to have testing by both devices.

5) Testing schedule

The attached testing schedule page shows the anticipated schedule. If an agency would like to modify their “appointment slot”, please contact Brian.

6) Discussion and prioritization of potential research questions

Gerardo led a discussion on the prioritization of potential research questions that the pooled fund study could address by virtue of the large dataset that will be collected during the project. The following topics were disscussed:

1) Define protocols for quality assurance, operational conditions, data processing and structural index (including temperature correction etc.).
2) How pavement structural data from TSDDs can best be incorporated in network level pavement management.
3) Determining the potential for pavement structural data from TSDDs for project level assessments.
4) Combining multiple data streams (ride quality, rutting, transverse profile, cracking, deflection, etc.) to optimize pavement assessments and treatment selections.
5) Best ways to define the value of including pavement structural data from TSDDs into pavement management decision processes (network and project level).

The project team will write a paragraph or two on each topic and distribute them electronically to the TAC members for ranking.

7) Next TAC meetings

The project team anticipates preparing quarterly progress reports each quarter. These will be posted on the pooled fund study project website (https://www.pooledfund.org/Details/Study/637). There will be a mid-year meeting (either electronic or in-person) and another meeting at the next TRB. The project team will send out a poll to identify dates for the next mid-year meeting.

8) Adjourn

The meeting adjourned at approximately 4:15PM. The project team thanks the agencies for their interest and participation in the study.

Random questions discussed during the meeting:

1) Q: How much testing occurs each day?
   A: Generally, testing occurs during daylight hours
2) Q: What temperature range is acceptable for testing?
   A: Generally, the same as for FWD testing. FHWA will provide some research papers on temperature correction that will be shared on the pooled fund study project page. This only covers daily temperature changes, seasonal effects are another level of complexity.
3) Q: What is the anticipated frequency of successive rounds of testing with TSDDs?
   A: Based on experience with TSDDs elsewhere and previous FWD testing, likely every 4 to 5 years.
4) Q: Can TSDD testing be completed on concrete surfaced or composite pavements?
   A: Yes, but of course the ranges describing acceptable versus unacceptable will vary. ARRB has suggested that they have observed differences in deflection at joints for concrete pavements but still need to verify the cause.
5) Q: Can TSDD testing be used for project-level assessments?
   A: Tentatively, yes, but significantly more work is needed beginning with developing the operational protocols.
6) Q: How can the benefit of structural testing with TSDDs be developed?
   A: Likely starting with similar benefits observed from structural testing with FWDs. In addition, a paper on this topic by Gespard and Elseifi based on testing in Louisiana was presented during the TRB meeting.
7) Q: How does the TSD identify surface distresses, is it similar to agency protocols?
   A: ARRB will share an operational guideline on how these measurements are collected.

Attachments

1) Project schedule
2) Project funding
3) TAC meeting presentation
4) TAC meeting list of attendees

TPF-5(385) - Pavement Structural Evaluation with Traffic Speed Deflection Devices (TSDDs)

Agency	Technical Contact	Testing Status	Anticipated Schedule	Completed Testing Dates	Completed Mileage	Device
Completed 2019						
Virginia	Brian Diefenderfer	Completed	Nov 2018 week 2	Nov 6 - 9, 2018	570	TSD
Kansas	Rick Miller	Completed	Nov 2018 week 3-4	Nov. 14 - 19, 2018	312	TSD
Early 2019						
Texas	Jenny Li	Scheduled	January			
New Mexico	Jeff Mann	Scoping	February			
FHWA	Nadarajah Sivaneswaran	Identifying routes	March			
Arizona			March			
California	Zongren Wang		March			
Nevada	Jessica Schmalzer		March			
Arkansas	Elisha Wright-Kehner	Scoping	May			
Tennessee	Mark Woods	Scoping	May			
Oklahoma	Angel Gonzalez/David Ooten	Scoping	May			
Kentucky	Clark Graves		May			
Summer 2019						
Indiana	Tommy Nantung	Have routes	June			
Pennsylvania	Janice Arellano	Scoping	June			
Illinois	Chuck Wienrank	Scoping	June			
Vermont	Reid Kiniry	Identifying routes	June/July			
Idaho	Ned Parrish/Jim Poorbaugh	Scoping	July			
Minnesota	Shongtao Dai	Scoping	July			
New York			August			
Massachusetts			August			
Fall 2019						
Louisiana / LTRC	Chris Fillastre / Kevin Gespard	Scoping	September			
South Carolina	Dahae Kim	Scoping	September			
North Carolina	Clark Morrison		September			
Georgia	Ian Rish	Scoping	September			
Mississippi	Cindy Smith	Scoping	September			
Others						
West Virginia	Travis Walbeck					
Michigan						

Agency	Technical Contact	Commitments	Transfers
Arizona		$ -	$ -
Arkansas	Elisha Wright-Kehner	$ -	$ -
California	Zongren Wang	$ -	$ -
FHWA	Nadarajah Sivaneswaran	$ 150,000	$ 100,000
Georgia	Ian Rish	$ 150,000	$ -
Idaho	Ned Parrish/Jim Poorbaugh	$ 660,000	$ -
Illinois	Chuck Wienrank	$ 135,000	$ -
Indiana	Tommy Nantung	$ 135,000	$ 45,000
Kansas	Rick Miller	$ 45,000	$ 45,000
Kentucky	Clark Graves	$ -	$ -
Louisiana / LTRC	Chris Fillastre / Kevin Gespard	$ 135,000	$ -
Massachusetts		$ -	$ -
Michigan	Andre Clover	$ -	$ -
Minnesota	Shongtao Dai	$ -	$ -
Mississippi	Cindy Smith	$ 135,000	$ -
Nevada	Jessica Schmalzer	$ -	$ -
New Mexico	Jeff Mann	$ -	$ -
New York		$ -	$ -
North Carolina	Clark Morrison	$ 135,000	$ -
Oklahoma	Angel Gonzalez/David Ooten	$ 45,000	$ -
Pennsylvania	Janice Arellano	$ 135,000	$ 45,000
South Carolina	Dahae Kim	$ -	$ -
Tennessee	Mark Woods	$ -	$ -
Texas	Jenny Li	$ 135,000	$ -
Vermont	Reid Kiniry	$ 100,000	$ 30,000
Virginia	Brian Diefenderfer	$ 135,000	$ 109,000
West Virginia	Travis Walbeck	$ -	$ -
		$ 2,230,000	**$ 374,000**

VTRC Virginia Transportation Research Council

We bring innovation to transportation.

Traffic Speed Deflectometer Device Pooled Fund Study – TAC Meeting

TRB
January 16, 2019

Introductions

1. Project team members
   - Brian Diefenderfer, VTRC
   - Gerardo Flintsch, VTTI
   - Samer Katicha, VTTI
2. State agency reps
3. Industry partners

Agenda

1. Transfers vs commitments
2. Review collected data
3. Route selection help
4. Inclusion of additional test devices
5. Testing schedule
6. Discussion and prioritization of potential research questions
7. Next TAC meetings

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Transfers vs Commitments

- Commitments (like a pinky promise)
  - 13 agencies
  - $1.81 million
  - Need to have this in place prior to testing
- Transfer (the real deal)
  - PA, VT*, IN, KS, VA
  - Would like to have this in place prior to testing, but not a deal breaker (so long as industry partners are ok)

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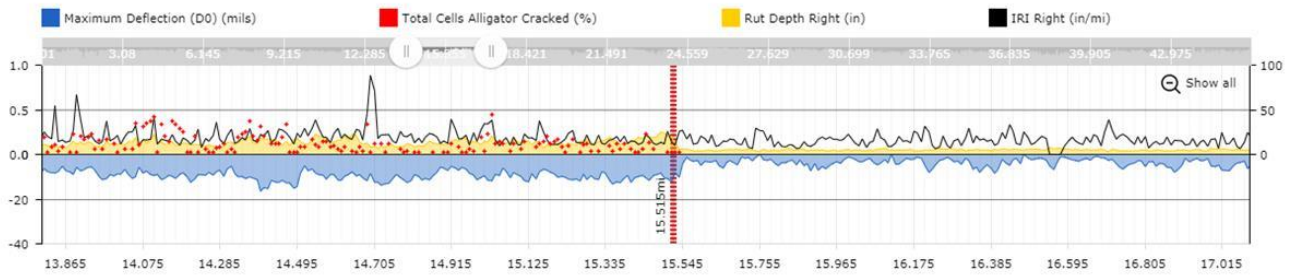
Collected Data

- Virginia, Nov 2017
  - A little more than 700 miles over 2.5 days
  - Continuous segments allowed for greater mileage
- Agencies working on routes
  - Texas, Indiana, Louisiana, FHWA, Kansas, others?

Virginia Example 1



Route Selection

- Project will complete testing as directed by agencies
  - Continuous segments allow for greater mileage
  - The PF will not be conducting concurrent FWD testing
- Let us know if we can help!

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Additional Device(s)

Additional Device(s)

- Interest from agencies?
- Availability to coordinate testing?
- Costs?

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Tentative Testing Schedule

- 2018 **no commitment*
  - Virginia, Kansas
- Earlier 2019
  - FHWA, Indiana, Louisiana, Texas, New Mexico*
- Mid-2019
  - Arkansas*, Oklahoma, Idaho, Tennessee*
- Later 2019
  - Georgia*, Illinois, Pennsylvania, South Carolina*, Mississippi*

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Prioritizing Research Questions

- Protocols for QA, operational conditions, data processing, and structural index (incl. temp correction), specifications
- Incorporating structural data into network pavement management
- Potential for project level assessment
- How should multiple data streams be combined to optimize assessment and treatment selection
- Define value of TSDD testing
- Others?

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Next Meetings

- Quarterly updates by email
- Mid-year web conference
- Face-to-face at TRB

TPF-5(385)

Pavement Structural Evaluation with Traffic Speed Deflection Devices (TSDDs)

First Meeting of the Technical Advisory Committee

January 16, 2016

Conference Room 303, The Walter E. Washington Convention Center

Signup Sheet

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