

TPF-5(299) Technical Advisory Committee (TAC) and Friends Meeting Minutes

Friday, November 4, 2016

8 am–3 pm PST (TAC only meeting 3-5 pm)

8 am–8:10 am Opening – Andrews, MDSHA, Chairman – self introductions and focus on developing RNS's and prioritizing next projects for PF to undertake.

8:15–8:30 am Pooled Fund Study web presence/activities over the past year/potential other sources of funding – Mergenmeier, FHWA - public Sharepoint site has all presentations from this meeting and RNS documents:

<https://collaboration.fhwa.dot.gov/dot/fhwa/tpf5299/default.aspx>

If you have not signed up for access to the Sharepoint site, here is the process to register: Navigate here: <https://collaboration.fhwa.dot.gov/default.aspx>

Click on Register, then select Potential Non DOT Users.

Fill out form, and click to "Request an Account"

This request will be approved in most cases in less than 1 day and you will be notified that you have been approved.

Develop RNS's for submittal to other funding sources such as NCHRP and FHWA.

8:30–8:45 am New project approved by TAC to undertake: Developing RFP for Calibration and Verification of Transverse Pavement Profile Measurements, Mergenmeier, FHWA; Expected advertisement is November 23, 2016.

Objective: develop calibration/verification methods and procedures to evaluate the precision and accuracy of transverse pavement profile measurements that are collected at the prevailing speed limit.

One of the first tasks is to document all applications of transverse pavement profile related information used for pavement engineering/management decision making. Define data quality requirements to meet these applications.

8:45–10:25 am Pooled Fund Study Project Update: Development of Standard Data Format for 2-Dimensional and 3-Dimensional (2D/3D) Pavement Image Data that is used to determine Pavement Surface Condition and Profiles, Wang, Oklahoma State University, - presentation is on Sharepoint site in the 2016 November Meeting folder. Provide comments on the 3 draft reports (which are on the Sharepoint site in the Data Format folder) ASAP to Mergenmeier, FHWA. Discussion on reason to require a standard data format, some of the reasons are as follows:

- research new information that can be extracted from the 2d/3d digital image of the pavement surface
- improve analysis algorithms

- automated field data collection quality control processes - during data collection ensure collection is functioning properly to reduce need to go out and collect data a second time (automated flags)
- reprocess data when new/different algorithms are developed
- new sensor/algorithm 2d/3d digital image technology will be developed and with the standard data format it will be facilitated into existing image analysis algorithms
- analysis algorithms can be applied to 2d/3d digital images from different sources
- supports the structure of the AASHTO standards separating collection from analysis (similar as longitudinal profile)
- required for development of verification protocols in the AASHTO standards
- required for standard viewer software
- efficiently sharing of data between user, software tools, and electronic platforms
- promote demand for technology of 2d/3d data collection

10:25-10:45 am break

10:45-11:40 am WSDOT Preliminary Analysis of the Automated Crack Rating, Li, WSDOT; WSDOT has collected three years of higher resolution 3D data since 2014. Currently, WSDOT is comparing the automated crack rating to the manual rating results using the 2015 images (mainly on chip seals). This presentation will summarize the findings, the image quality, cracking definitions of the auto-rating and the future expectations. Presentation is on Sharepoint site.

11:40 am-noon Are We There Yet?, Miller, KS DOT; Are we there yet is a question often asked from the back seat on a family trip. Usually it is said with some attitude and really means I am tired of this journey. However, in the journey to develop appropriate standards for pavement surface condition assessment, the answer is "we are not there yet". That is, we still have many decisions about what data we need, how to collect it, how to verify that it is suited for our purposes, etc. This presentation will bring forward considerations to help make these decisions and to guide us as we develop research and other plans to get us there. Presentation is on Sharepoint site and many of the ideas were discussed in the RNS development discussion held in the afternoon.

noon-1 pm lunch (on your own)

1-2:45 pm Research Needs Statements (RNS) – update existing six RNS's, develop new, prioritize for funding (at least top 3); other activities that we need to do that may not be RNS, Sharepoint site in the 2016 Research Needs Statements folder has existing RNS's, Wright-Kehner, ARDOT - overview and discussion of existing RNS to ensure objectives were appropriate (slight modification made to a few), agreed all were relevant and should remain in consideration.

Existing RNS's

- 1. Calibration and verification of pavement surface images (collection)
- 2. Calibration and verification of pavement surface image analysis (needs revisions/updating, similar to original May 2014 RNS)
- 3. Determining Cracking Ground Truth for Use in Vendor Selection Process for Automated, Three-Dimensional Pavement Crack Data Collection Systems and Services (\$100k)
- 4. Assessment of Jointed Concrete Pavement Faulting Collection and Analysis (\$100k)
- 5. Methodology to Determine Requirements and Specifications for Pavement Condition Data
- 6. Pavement Rutting Condition Measurement and Analysis Methodologies (\$100k)

TAC/Friends brainstormed new RNS's for consideration to develop into RNS's and for funding consideration (the following titles are concepts and not meant to be the final title). Please use the NCHRP RNS format template in the Sharepoint site in the 2016 Research Needs Statement folder for the format.

- 7. Future "ProVal Viewer" – team to develop into RNS (draft RNS is in Sharepoint site for your consideration): Mathison, Miller, Rufino-Feldman, Wang, Choubane
- 8. What do we want from the Transverse Profile (analysis) – team to develop into RNS: Ferris, Miller, Wix, McGhee, Andrews, Richardson
- 9. Assess how well data being collected fits predicted (forward) model and how well collected matched (past) predicted (physical location, GPS lat/long. confirm year to year collection) – team to develop into RNS: Tsai, Choubane, Mathison, Smith
- 10. Data Quality Management Plan (e.g. update PennDOT plan), QA effort (FHWA Practical Guide for Quality Management of Pavement Condition Data Collection), reference sites, blind sites, . . . – team to develop into RNS: Van Sickle, Wright-Kehner, Rufino-Feldman, George, Ningyuan, Richardson, Rodriguez (FHWA)
- 11. Texture, raveling, segregation, friction, resolution, first activity is if 3d can be used for texture data collection/analysis? – team to develop into RNS: Li, Tsai, Miller, Huang, Ningyuan

Once all the RNS's were identified each of the individual TAC/Friend present at the meeting was requested to select the 5 RNS concepts they believe should be considered as priority for funding now. For organization each of the RNS's were assigned a number. Here are the results of the voting:

RNS/Concept Number	Number of Votes
3	19
5	16
1	14
2	13

4	13
6	12
10	12
11	11
8	8
7	7
9	4

The voting priority was provided to the TAC to assist the TAC in selection of projects to be funded now.

Other actions: Develop “Road Map” to guide/monitor the Pooled Fund Study efforts – team to develop: Daleiden, Huft, Andrews, Choubane. Attached to the meeting minutes (included in the SharePoint site, 2016 November Meeting folder) is a report that documents an October 2000 meeting – “Continuous Improvement of Pavement Management Data – A Roadmap for the Implementation of the AASHTO Provisional Standards on Pavement Management Data Collection”. I trust you will find it interesting and note the attendees on pages 8 and 9.

2:45-3 pm Next meetings/webinar face to face meeting at RPUG, Assess value of meeting in conjunction with RPUG; Mergenmeier, FHWA. TAC/Friends agreed meeting face to face in conjunction with RPUG provides significant value to the PF.

3 pm TAC/Friends Meeting End

**Action items from meeting:**

Task 2016-1: Develop “Road Map” to guide/monitor the Pooled Fund Study efforts – team to develop: Daleiden, Huft, Andrews, Choubane. Due February 15, 2017

Please use the NCHRP RNS format template in the Sharepoint site in the 2016 Research Needs Statement folder for the format.

Task 2016-7. Future “ProVal Viewer” – team to develop into RNS: Mathison, Miller, Rufino-Feldman, Wang, Choubane. Due February 15, 2017

Task 2016-8. What do we want from the Transverse Profile (analysis) – team to develop into RNS: Ferris, Miller, Wix, McGhee, Richardson, Andrews. Due March 1, 2017

Task 2016-9. Assess how well data being collected fits predicted (forward) model and how well collected matched (past) predicted (physical location, GPS lat/long. confirm year to year collection) – team to develop into RNS: Tsai, Choubane, Mathison, Smith. Due March 1, 2017

Task 2016-10. Data Quality Management Plan (e.g. update PennDOT plan), QA effort (FHWA Practical Guide for Quality Management of Pavement Condition Data Collection), reference sites, blind sites, . . . – team to develop into RNS: Van Sickle, Wright-Kehner, Rufino-Feldman, George, Ningyuan, Richardson, Rodriguez (FHWA) (e-mail address [Luis.Rodriguez@dot.gov](mailto:Luis.Rodriguez@dot.gov)). Due February 15, 2017

Task 2016-11. Texture, raveling, segregation, friction, resolution, first activity is if 3d can be used for texture data collection/analysis? – team to develop into RNS: Li, Tsai, Miller, Huang, Ningyuan. Due March 1, 2017