TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): ____IOWA DOT_____

INSTRUCTIONS:

Project Managers and/or research project investigators should complete a quarterly progress report for each calendar quarter during which the projects are active. Please provide a project schedule status of the research activities tied to each task that is defined in the proposal; a percentage completion of each task; a concise discussion (2 or 3 sentences) of the current status, including accomplishments and problems encountered, if any. List all tasks, even if no work was done during this period.

Transportation Pooled Fund Program Project # *TPF-5(183)*	**Transportation Pooled Fund Program - Report Period:** Quarter 1 (January 1 – March 31, 2015) Quarter 2 (April 1 – June 30, 2015) X Quarter 3 (July 1 – September 30, 2015) Quarter 4 (October 1 – December 31, 2015)

Project Title: Improving the Foundation Layers for Concrete Pavement		
Project Manager: Brian Worrel	**Phone:** 239-1471	**E-mail:** brian.worrel@dot.iowa.gov
Project Investigator: David White	**Phone:** 294-1463	**E-mail:** djwhite@iastate.edu

Lead Agency Project ID: RT 0314	**Other Project ID (i.e., contract #):** Addendum 352	**Project Start Date:** 3/16/09
Original Project End Date: 3/15/14	**Current Project End Date:** 3/15/20**16**	**Number of Extensions:** On-going pooled fund project

Project schedule status:

☐ On schedule X On revised schedule ☐ Ahead of schedule ☐ Behind schedule

Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Total Percentage of Work Completed
$875,000	$730,350.26	97

Quarterly Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Completed This Quarter
$45,186.52		1

Project Description:

The objective of this research is to improve the construction methods, economic analysis and selection of materials, in-situ testing and evaluation, and development of performance-related specifications for the pavement foundation layers. The outcome of this study will be conclusive findings that make pavement foundations more durable, uniform, constructible, and economical. Although the focus of this research will be PCC concrete pavement foundations, the results will likely have applicability to ACC pavement foundations and, potentially, unpaved roads. All aspects of the foundation layers will be investigated including thickness, material properties, permeability, modulus/stiffness, strength, volumetric stability and durability. Forensic and in-situ testing plans will be conceived to incorporate measurements using existing and emerging technologies (e.g. intelligent compaction) to evaluate performance related parameters as opposed to just index or indirectly related parameter values. Field investigations will be conducted in each participating state. The results of the study will be compatible with each state's pavement design methodology and capable for use with the Mechanistic-Empirical Pavement Design Guide (MEPDG). Evaluating pavement foundation design input parameters at each site will provide a link between what is actually constructed and what is assumed during design. There are many inputs to the pavement design related to foundation layers and this project will provide improved guidelines for each of these. The study will benefit greatly from maximizing the wide range of field conditions possible within the framework of a pooled fund study.

Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):

The main research activity during this quarter involved updating the field project reports shown in the table below as part of the Sub Tasks 1.5, 1.7, 3.1, 3.2, 3.4. The process of internal review was provided in the earlier QPRs. In brief, the research team authors finishes the first draft and a technical editor reviews and updates the report followed by revisions by the authors, and the report is submitted back to the technical editor for final review. Then the report is uploaded to an FTP site for TAC review. All reports are targeted to be finished by early next quarter.

Report	First Draft by Authors	Technical Editor Review	Updates by Authors	Technical Editor Final Review	Upload to FTP site for TAC
Non-Uniformity Analysis Report	Done	Done	Done	Done	
MEPDG Sensitivity Analysis Report	Done	Done	Done	Done	
Wisconsin US10 Report	Done	Done	Done	Done	
Michigan I96 Report	Done	Done	Done	In Progress	
Iowa I29 Report	Done	Done	Done	Done	
Pennsylvania US422 Report	Done	Done	Done	Done	
Michigan I94 Report	Done	Done	Done	In Progress	
Iowa Urbandale Drive Field Study Report	Done	Done	Done	In Progress	
Iowa US34\ Report	Done	Done	In Progress	In Progress	
Iowa US30 Report	In Progress				

A web meeting with TAC members was held on August 18, 2015. Meeting minutes are attached to this QPR. The TAC has been updated on the status on the deliverables of the project (reports and manual). The project team and TAC members have collectively decided on developing several electronic deliverables (EPUBS and PDF) for the project in collaboration with Transportation Curriculum Coordination Council (TCCC).. A face-to-face meeting with TAC members is scheduled for December 9, 2015.

Manual of Practice: The research management team continues meeting internally to develop the publication details for the Manual.

Anticipated work next quarter:

- Complete all field project reports and send for TAC to review.
- Continue working on the "Manual of Practice" – target to finish 90% draft by end of next quarter.
- TAC face to face meeting in Ames, Iowa on December 9, 2015.

Significant Results:

- MI I-94 report.
- IA Urbandale Drive report.
- PA US422 report.

Circumstance affecting project or budget (Describe any challenges encountered or anticipated that might affect the completion of the project within the time, scope, and fiscal constraints set forth in the agreement, along with recommended solutions to those problems).

TAC committee:

First	Last	Organization	Email
Pooled Fund Members			
Mehdi	Parvini*	California DOT	mehdi_parvini@dot.ca.gov
Brian	Worrel	Iowa DOT	brian.worrel@dot.iowa.gov
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Steve	Megivern*	Iowa DOT	stephen.megivern@dot.iowa.gov
Kevin	Merryman	Iowa DOT	kevin.merryman@dot.iowa.gov
Mark	Grazioli*	Michigan DOT	graziolim@michigan.gov
John	Staton	Michigan DOT	statonj@michigan.gov
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Lydia	Peddicord*	Pennsylvania DOT	lpeddicord@state.pa.us
Jeff	Horsfall*	Wisconsin DOT	jeffrey.horsfall@dot.state.wi.us
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Gina	Ahlstrom	FHWA	Gina.Ahlstrom@dot.gov
*Primary state contact			
Research Team			
Tom	Cackler	Woodland Consulting	tcackler.wci@prairieinet.net
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David	White	CEER/ISU	djwhite@iastate.edu

TPF-5(183) Improving the Foundation Layers for Concrete Pavements
TAC Web Meeting August 18, 2015

Pooled Fund TAC Members attending:
California DOT: Mehdi Parvini
Iowa DOT: Brian Worrel (Pooled Fund administrator, Iowa DOT)
Steve Megivern
Kevin Merryman
Chris Brakke
Michigan DOT: Mark Grazioli
Pennsylvania DOT: Josh Freeman
Lydia Peddicord
Wisconsin DOT: Jeff Horsefall

ISU Research Team Members/Guests
David White
Pavana Vennapusa
Tom Cackler
Marcia Brink
Barry Christopher
Andrew Dawson
Christie Anderson

- Update on project status
  - The research team is re-examining FWD data from the first round, updating those reports
- Questions:
  - None
- Proposed change to electronic deliverables
  - Review original deliverables
    - State reports
    - Final report summarizing the information from the field and lab research
    - User friend manual has always been the goal
    - There still will be a printed manual, however, only 200-500 will be printed.
  - Propose electronic deliverables
    - EPUBS manual
      - Marcia Brink showed the differences between EPUBS and PDF.
      - EPUBS would make the manual user friendly for a tablet or phone
      - The text flows according to the size of the device being used; scrolling to read is not required.
      - Large Figures/diagrams may be more readable on a computer screen via PDF, which will also be available.
    - On-demand training modules TCCC (**Chris Anderson**)
      - TC3 courses are on-demand web-modules
      - The modules will be written and produced by the research team and TCCC after the manual is completed.
      - TCCC modules will not need funding from the TPF
    - Vote on proposed changes to deliverables
      - California: agree
      - Iowa: agree
      - Michigan: agree

        - Pennsylvania: agree
        - Wisconsin: agree
- Finalize schedule
    - Propose December TAC meeting to review and comment on 90% draft manual
        - When queried, some state reps preferred physical meeting
        - Several states were concerned about travel restrictions.
        - Doodle will be sent out for a physical meeting during the first 2 weeks of December.
        - The physical meeting can be broadcasted for those with conflicts or travel restrictions
    - Propose February web meeting for final review of the manual
    - Project completion date: March 15, 2016

- Adjourn