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.

<table>
<thead>
<tr>
<th>Transportation Pooled Fund Program Project #</th>
<th>Transportation Pooled Fund Program - Report Period:</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPF-5(183)</td>
<td>Quarter 1 (January 1 – March 31, 2018)</td>
</tr>
<tr>
<td></td>
<td>Quarter 2 (April 1 – June 30, 2018)</td>
</tr>
<tr>
<td></td>
<td>Quarter 3 (July 1 – September 30, 2018)</td>
</tr>
<tr>
<td></td>
<td>XQuarter 4 (October 1 – December 31, 2018)</td>
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</tbody>
</table>

**Project Title:**
Improving the Foundation Layers for Concrete Pavement

<table>
<thead>
<tr>
<th>Project Manager:</th>
<th>Phone:</th>
<th>E-mail:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brian Worrel</td>
<td>239-1471</td>
<td><a href="mailto:brian.worrel@dot.iowa.gov">brian.worrel@dot.iowa.gov</a></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Project Investigator:</th>
<th>Phone:</th>
<th>E-mail:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peter Taylor (David White)</td>
<td>294-3781</td>
<td><a href="mailto:ptaylor@iastate.edu">ptaylor@iastate.edu</a></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Lead Agency Project ID:</th>
<th>Other Project ID (i.e., contract #):</th>
<th>Project Start Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>RT 0314</td>
<td>Addendum 352</td>
<td>3/16/09</td>
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<table>
<thead>
<tr>
<th>Original Project End Date:</th>
<th>Current Project End Date:</th>
<th>Number of Extensions:</th>
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<tbody>
<tr>
<td>3/15/14</td>
<td>12/31/2018</td>
<td>On-going pooled fund project</td>
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</tbody>
</table>

Project schedule status:

- [ ] On schedule
- [ ] On revised schedule
- [ ] Ahead of schedule
- [X] Behind schedule

Overall Project Statistics:

<table>
<thead>
<tr>
<th>Total Project Budget</th>
<th>Total Cost to Date for Project</th>
<th>Total Percentage of Work Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>$875,000</td>
<td>$869,238.50</td>
<td>98</td>
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</table>

Quarterly Project Statistics:

<table>
<thead>
<tr>
<th>Total Project Expenses This Quarter</th>
<th>Total Amount of Funds Expended This Quarter</th>
<th>Percentage of Work Completed This Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
**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.):**

- A team meeting including Chris Brakke and Todd Hanson from the Iowa DOT was held November 2.
- A list of deliverables is attached. They are available in a CyBox.

**Anticipated work next quarter:**

- Despite the contract ending, we will honor our commitments to complete the project.
- A final report will be submitted.
- A web-based TAC meeting will be held
- A webinar will be held.

**Significant Results:**

**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:

- Brian Worrel Iowa DOT
- Todd Hanson Iowa DOT
- Kevin Meryman Iowa DOT
- Mark Grazioli Michigan DOT
- Mehdi Parvini California DOT
- Brian Williams Missouri DOT
- Georgene Geary Georgia DOT
- Jim Brennan Kansas DOT
- Wan Chen Texas DOT
- David White, Researcher
- Peter Taylor, CP Tech Center
- Tom Cackler, Woodland Consulting
List of Deliverables

Other Final Technical Reports – available on CyBox


Technical Papers


**Thesis/Dissertations**


