**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(233)* | | **Transportation Pooled Fund Program - Report Period:**  Quarter 1 (January 1 – March 31, 2013)  Quarter 2 (April 1 – June 30, 2013)  Quarter 3 (July 1 – September 30, 2013)  x Quarter 4 (October 4 – December 31, 2013) | |
| **Project Title:**  Technology Transfer Intelligent Compaction Consortium (TTICC) | | | |
| **Project Manager: Phone: E-mail:**  Steve Megivern 239-1936 stephen.megivern@iowa.dot.gov | | | |
| **Project Investigator: Phone: E-mail:**  David White 294-1463 djwhite@iastate.edu  Pavana Vennapusa 294-2395 pavanv@iastate.edu | | | |
| **Lead Agency Project ID:**  RT 0347 | **Other Project ID (i.e., contract #):**  Addendum 385 | | **Project Start Date:**  8/6/10 |
| **Original Project End Date:**  3/15/14 | **Current Project End Date:**  06/30/2014 | | **Number of Extensions:**  Ongoing pooled fund; interim budgets |

Project schedule status:

x On schedule □ 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** |
| $249,000 | $165,020.18 | ongoing |
|  |  |  |

***Quarterly*** Project Statistics:

|  |  |  |
| --- | --- | --- |
| **Total Project Expenses**  **This Quarter** | **Total Amount of Funds**  **Expended This Quarter** | **Percentage of Work Completed**  **This Quarter** |
| $6,565.42 |  |  |

**Project Description:**

Increasingly, state departments of transportation (DOTs) are challenged to design and build longer life pavements that result in a higher level of user satisfaction for the public. One of the strategies for achieving longer life pavements is to use innovative technologies and practices. In order to foster new technologies and practices, experts from state DOTs, Federal Highway Administration (FHWA), academia and industry must collaborate to identify and examine new and emerging technologies and systems. The purpose of this pooled fund project is to identify, support, facilitate and fund intelligent compaction research and technology transfer initiatives.

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

* Two new draft case histories have been finalized during this quarter. To date, 12 tech briefs have been completed and posted on the CEER TTICC webpage and three will be added to the website early next quarter.
* Significant progress has been made on the IC101 video content. Worked closely with Demonstratives, Inc., to update animations and compile interviews. A preliminary draft version of the video is to be prepared by early next quarter for presentation at TRB.
* A web meeting was conducted with TAC on 11/26/2013. Meeting agenda and minutes from the meeting are attached to this QPR. As part of the meeting, the IC101 video script and a few animations were reviewed. Two new IC papers recently submitted by the ISU research team (one in GeoCongress 2014 and one in TRB) are discussed with the TAC.
* ISU research team compiled a list of demonstration/research and pilot projects (with specifications) conducted in the US by the state and federal agencies. A total of 125 projects have been identified from 2002 to 2013. The TTICC website is currently being updated with this information with the goal of showing an interactive map with the project locations and differentiating the locations by HMA or earthwork projects, demonstrations or pilot projects, and links to specifications, project reports, tech briefs, magazine articles, or any other relevant information available from each project. CEER will be working with InTrans Publications group to develop the interactive map.
* The CAT CS74 roller obtained under a loan agreement was used by a contractor on an earthwork embankment construction project in Des Moines, Iowa.

**Anticipated work next quarter:**

* IC101 video completion by early next quarter.
* Distribute the video using USBs, CDs, and post it on CEER-YouTube channel.
* Update CEER-TTICC webpage to highlight video content and interactive project locations map.
* 3 additional Case Histories.
* ISU will look into the possibility of getting an HMA roller for loan to the TTICC states.
* Web meeting in January to plan future workshop agenda and location.

**Significant Results:**

* Finalizing two new case histories.
* Using the CAT roller on Hwy 65 project near Des Moines, Iowa.
* Finalizing IC101 video script and content.
* Compiling IC projects list.

**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).**

The final budget details for the IC 101 video will be developed in the next quarter. The TTICC group is still working on setting up the 2014 meeting. Once these details are set, the budget can be updated.

**TAC committee:**



**AGENDA**

**TTICC Web Meeting: TPF-5(233)**

Date: November 26, 2013 (10:00 to 11:30 am Central)

1. Sign-in to web meeting and establish phone connection (please mute your phone)
2. Welcome and Introductions
3. Review TTICC TPF-5(233) Scope of Work (quick refresher) and April 2013 notes.
4. State DOT updates on IC related activities and plans (Note: CAT IC roller “for free” headed to GaDOT project early 2014 - Seaboard Construction Company. Used on Iowa DOT project in summer/Fall 2013 – McAninch Corp…see Better Roads article)
5. Discuss 2014 meetings (in person, on-line, @ IC project, industry involvement, etc.)
6. Review updated IC case history summaries and other publications (GeoCongress 2014, TRb 2013,). <http://www.ceer.iastate.edu/research/project/project.cfm?projectID=-598919230>
7. Review IC 101 script. Provide feedback and any edits by Dec. 3rd @ 5pm. Discuss modifications to budget due to increased detail and length of video.
8. Recent IC project findings: Iowa DOT Phase II – tech briefs and new video. <http://www.ceer.iastate.edu/research/project/project.cfm?projectID=-275497063>
9. Final thoughts and follow-up action items

**TTICC Web Meeting Minutes**

**November 26, 2013 (updated minutes Dec. 4, 2013)**

**Participants:**

1. Adam Ross (AR) – Kentucky DOT
2. Al Casteel (AC) – Georgia DOT
3. Barry Paye (BP) – Wisconsin DOT
4. Bill Stone (BS) – Missouri DOT
5. Daniel Clark (DC) – PennDOT
6. David Hunsucker (DH) – KTC/Kentucky DOT
7. David White (DW) – CEER/ISU
8. Edward Hoppe (EH) – Virginia DOT
9. Georgene Geary (GG) – Georgia DOT
10. Ian Rish (IR) – Georgia DOT
11. Kevin McClain (KM) – Missouri DOT
12. Mark Dunn (MD) – Iowa DOT
13. Melissa Serio (MS) – Iowa DOT
14. Steve Megivern (SM) – IaDOT
15. Pavana Vennapusa (PV) – CEER/ISU

**Discussion Items:**

*State DOT Updates*

**Iowa DOT (MD)**: We have used IC on two phases of the Boone County research project (1) during foundation stabilization last year (2012) and (2) during paving this year (2013). Also used CS74 IC loaner from CAT on an interchange project in DSM (I-80/US65) by McAninch for subgrade construction.

**Iowa DOT (MS)**: We did not sit down with the contractor to get feedback from the I-80/US65 project, however, it seems like they made use of it.

**CEER/ISU (DW)**: A *Roads and Bridges Article* was written by McAninch on the I-80/US65 project. The roller operator seemed pretty positive in their perspective.

**Georgia DOT (AC):** We are looking at a project starting in January, and may also consider another small project. IC will be being used on subgrade and base only. IC was required as part of the specification. Georgia is not ready for IC use on HMA. Software for data analysis and viewing is an issue and must be looked at. We have used FHWA’s “Veda” software, but has not been a very user friendly software.

**CEER/ISU (DW)**: Please consider providing us with pictures and any information available on these project, so we can help pull together a technology transfer summary.

**Wisconsin DOT (BP):** Not a lot of progress here regarding use of IC.

**KTC (DH):** We gathered information on the free roller and passed the information along to upper management. I have been preaching the benefits of using the technology with my supervisor and KTC. It is important to have good foundation. We have generic specifications ready and I’ll continue to push the KTC to act and implement. We would like to get something setup on a subgrade/subbase project next year.

**KTC (AR):** DH and AR will touch base and discuss on how to move forward.

**CEER/ISU (DW)**: I’ll be setting up a project with TVA in Kentucky early part of next year and would be happy to keep you posted, if interested. AR and DH are interested.

**Missouri DOT (BS)**: Asphalt paving association was interested in setting up a project for proof of concept to work with asphalt contractors. NAPA was not interested in using compaction measurements, but were interested in coverage and pass count information. Worked with Trimble to get some quotes to setup a one week to two-week demo, with a retrofit system. Trimble is providing rental service. Logistics did not work to make this happen this year. We are planning for next year. We are also working on getting some workshops through the FHWA EDC effort to get contractors involved/trained.

**CEER/ISU (DW)**: How is retrofit paid for?

**Missouri DOT (BS)**: It will be paid through research dollars. About $3,000 per week. Did not want to purchase it. We have quarterly meetings with AGC and I have been participating in grading meetings to try and get this involved in grading projects as well.

**Virginia DOT (EH)**: We sent a word out about the CAT roller availability. VDOT was interested, but could not fit it in a project this year. Will try for next year. Will be interested to know Georgia’s experience.

**CEER/ISU (DW)**: I have been talking to another manufacturer to see if a HMA roller can be made available. I will keep you posted, but let me know if you are interested.

**Penn DOT (DC)**: We are looking forward to a project in District 3 in north-central Pennsylvania. The project involves approximately 6.5 miles of 4-lane interstate highway I-180 for 180,000 SY of asphalt paving for milling and resurfacing with Superpave HMA/WMA base, binder and wearing courses and a SMA HMA/WMA RPS wearing course. It’s a uniform site with clear conditions (no trees) that could cause GPS issues. This will start in 2014. We are looking forward to moving on and getting some work accomplished. We are interested only in HMA at this point and will look into soils after HMA.

**CEER/ISU (DW)**: We have a project with some IC Data on SR22 in Blairsville and we can pull a tech brief together for you to share with your folks.

**Iowa DOT (MS)**: Question for Gerogia DOT – How many CuYd project is it on the grading project? Response: The project is about 3-4 miles long and will only be used on the final subgrade and base layers.

*Schedule for a Face to Face Meeting Next Year*

**Time:** Late March to Early April is good for everyone. CEER will follow-up with possible dates.

**Location:** On an active project site? Any DOT interested in hosting the meeting?

**CEER/ISU (DW)**: There would an active project south of Atlanta (close to Florida).

**Georgia DOT (AC)**: It will be a hit and miss project because of the staging on this project.

**Virginia DOT (EH):** It will be tough to workout logistics to do this meeting on an active project.

**CEER/ISU (DW)**: If folks are interested in doing this meeting near an active project site, maybe we can do an in-house meeting followed by a field day?

**Missouri DOT (BS)**: Can piggy back with another meeting (FHWA/Transtec) that will be happening in Late Feb/March. Just started talking about it.

**Penn DOT (DC)**: We are interested, but need to check with upper management. I’ll get back to you.

**CEER/ISU (DW):** I am following other researchers who are working on IC research and it might be good to call them in to present at this meeting.

**Georgia DOT (AC):** The main issue am having is with data analysis and software. How to pull data from different manufactures and look at the data.

**CEER/ISU (DW):** It is indeed an important issue….we generate a lot of information and not many good ways to look at it. This is not a manufacturer problem in my mind, it is the user problem and I know that there are some folks working hard on this issue. By the end of 2014, there should be some options available.

*Tech Briefs (CEER/ISU – DW):*

Fifteen tech briefs are completed (12 of them are now posted on the CEER website and the remaining will be posted soon). <http://ceer.iastate.edu/research/project/project.cfm?projectID=-598919230>

We are currently working on three more and will add SR22 PA project to it as well. We have been thinking to make an interactive map to show these tech brief locations.

*GeoCongress 2014 and TRB paper (CEER/ISU – DW):*

A paper on IC implementation road map has been accepted for GeoCongress 2014 meeting in Atlanta. It’s a product of a findings from TTICC workshop meetings.

Boone County Expo research is now published in TRB. The paper is interesting as it shows relationships between stiffness measurements and IC measurements.

*IC101 Video (CEER/ISU – DW):*

1. Presented 17 scenes as a slide show – will share with the team to review voice over descriptions and content.
2. We initially thought it will be a 5-min video. But after reviewing the content we have, we think this will end up being about a 15-min video.
3. Q. Will there be reference to [www.intelligentcompaction.com](http://www.intelligentcompaction.com) in the video?
   1. Yes – as part of the Tested Technology scene.
4. Q. What is significance of colors in the map showing demo projects? It might be confusing to show multiple colors.
   1. Will make a note and fix the graphic. This is for illustration purposes only for the animator to use.

*Closing Comments:*

**Iowa DOT (MS)**: Interactive Map is a good idea to show the tech briefs. Also having specs linked, where available, can also be very helpful. MS will help obtain the specs for Iowa projects.

**Georgia DOT (AS):** Software is our main problem. This must be addressed.

**Missouri DOT (BS):** We will keep you posted on our next workshop and the possibility of inviting you here. I like what I see in the video. Do we have a timeline? Need to get this to folks to promote it.

**CEER/ISU (DW):** It took much longer than we thought and a lot of work to get to where we are at now, but we are getting close.

**Virginia DOT (EH):** I like the idea of positing construction specs along with the tech briefs. Provides lot of good information.

**Pennsylvania DOT (DC):** I like the Roads and Bridges article and the GeoCongress conference paper. I’ll find out about more information about hosting the next workshop here and will update you on our next IC project. I heard that Rhode Island is looking at doing more projects next year as well (they have a spec). Having a database of specs on TTICC website will be very helpful. There are some differences between each state and it is good to know how each state is approach this. How will the video be shared? CD will be good so that we can get this in hands of people who will eventually use it.

**Iowa DOT (SM):** I like what I see in the video.

**KTC (DH):** I like the video. Echo DC comment on getting it on a DVD to get it in people hands. Will touch base with AR to discuss our next steps.