

ACCELERATED IMPLEMENTATION OF INTELLIGENT COMPACTION TECHNOLOGY FOR EMBANKMENT SUBGRADE SOILS, AGGREGATE BASE, AND ASPHALT PAVEMENT MATERIALS

7th Quarterly Progress Report – April 2009 to June 2009
Prepared by The Transtec Group, Inc.
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A. ACCOMPLISHMENTS/SIGNIFICANT FINDINGS BY TASK THIS QUARTER:

TASK 1 - Technical Working Group (TWG)

- This task is complete.

TASK 2 - Literature Review and Evaluation of Intelligent Compaction Equipment

- This task is ongoing. The first step of summary of literature is complete. A 100+ technical paper, specifications and reports were added. More updates are included as the project progresses. A very comprehensive bibliography on intelligent compaction – over 100+ technical papers, specifications, and reports was produced and posted, in chronological order, on the IC project website.
- Updated contents (e.g., IC library) are being also updated on the IC website (www.IntelligentCompaction.com) to facilitate knowledge transfer and information sharing. Further detailed, technical review is under way. The site was updated at a regularly basis.
- The research team also keeps close contacts with other IC-related research activities or technology transfer so that IC experiences can be shared: e.g. NCHRP Soil IC project, High-for-Life Asphalt analyzer, FHWA asphalt modeling to relate lab compaction to field compaction, WisDOT asphalt IC project (two field IC demo may be rolled into 2010 and incorporated with this IC project), Biaud Compaction Device (BCD) for in-situ testing, etc.

TASK 3 – Preparation of Interim Report and Work Plan Package

- This task is complete. The literature review will be updated continuously.

TASK 4 – Technical Working Group Initial Meeting

- This task is complete.

TASK 5 - Coordinated IC Field Demonstrations

- The leadership team conducted a meeting at TRB, in January 2009 review the work conducted in 2008 and planned for those for 2009 and beyond.
- Reports and other related information for the past IC demonstration have been posted:

- The final report for the KSDOT Soil IC demo was posted on the project webpage (<http://www.intelligentcompaction.com/index.php?q=node/128>).
 - The NYSDOT Soils/Subbase/HMA IC demonstration is complete and preliminary results are posted. (<http://www.intelligentcompaction.com/index.php?q=node/149>)
 - The MSDOT Stabilized Soils/HMA IC demonstration is complete and preliminary results are posted. (<http://www.intelligentcompaction.com/index.php?q=node/150>)
- The IC demos for 2009 are summarized as follows.

	NYSDOT	MSDOT	MD SHA	GADOT	INDOT
Target Dates	May 18 to 22	June 13 to 17	week of June 8, June 22, June 29, or July 6	Aug. 17-21	Sept.
Materials	I (III, IV)	V (IV)	IV (I, II)	IV	IV
Sites	US 129 Springville	US 84	US 340	Parking lot Clayton County	?
Roller(s)	CAT single Bomag single Sakai double	CAT single Case/Ammann Sakai double	Sakai double Bomag double	Sakai double	?

- Type I – Granular, non-cohesive subgrade soils
- Type II – Fine-grained, cohesive subgrade soils
- Type III – Aggregate base material
- Type IV – Asphalt pavement material
- Type V – Stabilized base pavement material

TASK 6 – Database Management Plan

- A comprehensive IC data management plan document is revised and being reviewed by the project team.
- A revised IC data storage specification was developed. It will be reviewed by all IC roller manufacturers.
- A research version of an IC data processing tool is under development and being revised. The research team also monitored similar development at Mn/DOT and ISU.

TASK 7 – Development of a Feasibility Report for an European Scan

- This task is eliminated from the original scope.

TASK 8 – Quality Control/Assurance Training and Assistance

- Quality control/assurance training and assistance has been continuing for Mn/DOT, TxDOT and KSDOT.
- TxDOT is planning to include IC into alternative bid documents for the 2009 construction season built upon the lessons learned by the research team from the TxDOT IC demo.
- MnDOT is working with a panel to finalize IC specifications for the 2009 construction projects.

- The research team is also assisting NYSDOT, MSDOT, MD SHA, and GA DOT on their special provisions on IC.

TASK 9 – Presentations

- The project team has planned for presentations in several meetings in the future.
 - October 27/28, 2009: Ohio Paving Conference in Columbus, Ohio, "Soil Intelligent Compaction" by Victor Lee Gallivan.
 - November 10, 2009: SE Asphalt User Producer Annual Meeting, "HMA Intelligent Compaction" by Bob Horan.
 - December 3, 2009: Kansas Asphalt Pavement Association, "HMA Intelligent Compaction" by Bob Horan.
 - January 10, 2010: TRB "Intelligent Compaction Workshop", by the research team.
- Presentation materials have been constantly updated and incorporated with recent findings.

TASK 10 – Annual and Final Reports

- The draft annual report for 2008 is revised and posted on the pooled fund page of the IC website.
(http://www.intelligentcompaction.com/downloads/TPF/IC_Annual%20Report_2008_V4.pdf)

B. WORK PLANNED FOR NEXT QUARTER (APRIL 2009 TO JUNE 2009):

TASK 1 - Technical Working Group (TWG)

- This task is complete.

TASK 2 - Literature Review and Evaluation of Intelligent Compaction Equipment

- The first step of this task is complete. On-going update (e.g. in-depth IC technical information) is expected in the next quarter.

TASK 3 – Preparation of Interim Report and Work Plan Package

- This task is complete. However, the literature review will be updated continuously.

TASK 4 – Technical Working Group Initial Meeting

- This task is complete.

TASK 5 - Coordinated IC Field Demonstrations

- Planning for the field demonstration will be underway for the next 2 sites (GADOT and INDOT) in 2009.
- Summary of tentative time line for IC demo for the rest of 2009:
 - GADOT (Aug. 17 to 21) (asphalt IC) (confirmed)
 - INDOT (Sept) (asphalt IC)

TASK 6 – Database Management Plan

- A database plan will be finalized to manage data to be collected during the project period. A prototype of an IC data process tool will be developed and tried out on the data collected so far.

TASK 7 – Development of a Feasibility Report for an European Scan

- This task is eliminated.

TASK 8 – Quality Control/Assurance Training and Assistance

- Quality control/assurance training and assistance will be conducted along with the IC field demonstration project.

TASK 9 – Presentations

- There are no scheduled/planned IC presentations in the period. Other presentation may be if opportunity (such as: paving conferences and etc.) comes up.
- An IC workshop is also planned to be conducted at TRB 2010. A draft workshop agenda will be developed to meet the TRB deadline in June, 2009.

TASK 10 – Annual and Final Reports

- No report will be produced during this period.

C. IDENTIFICATION OF PROBLEMS/RECOMMENDED SOLUTIONS:

- No problems are identified in this quarter.