

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

5th Quarterly Progress Report – October 2008 to December 2008
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 also posted 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 (the project is likely to be extended), 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 web meeting in mid-October to review the work conducted in 2008 and planned for those for 2009 and beyond.
- No field demonstration was conducted during this period. However, planning was underway for 2009 IC demos.

- Reports and preliminary results for the three IC demo in 2008 have either been revised or finalized:
 - The final report for the Mn/DOT HMA IC demo was posted on the project webpage (<http://www.intelligentcompaction.com/index.php?q=node/112>).
 - The final draft report for the TxDOT IC demo was posted on the project webpage (<http://www.intelligentcompaction.com/index.php?q=node/124>). Final revision is under way to incorporate comments from various reviewers.
 - The data analysis and reporting is under way for the KSDOT IC demonstration project. Any information related to this project is posted on the project webpage (<http://www.intelligentcompaction.com/index.php?q=node/128>).

TASK 6 – Database Management Plan

- A draft plan and analysis frame work is being reviewed by the project team. A priority was identified during the first three demonstrations to develop a tool to view and analyze IC data.
- A draft IC data storage specification was developed and posted on the IC website. It is also being reviewed by all IC roller manufacturers.
- A prototype of IC data processing tool is under development and being revised. The details of this tool were described in the 2008 Annual Report. 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. Particularly, 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.

TASK 9 – Presentations

- The project team has presented in several informal meetings.
- Presentation materials have been constantly updated and incorporated with recent findings.

TASK 10 – Annual and Final Reports

- A draft annual report for 2008 is complete and posted on the IC website. It is being reviewed by all Task Working Group (TWG).

B. WORK PLANNED FOR NEXT QUARTER (JANUARY 2009 TO MARCH 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 5 sites (NYSDOT, MSDOT, GADOT, MD SHA, and INDOT) in 2009.
- The leadership team will conduct a meeting at TRB in January to review the work conducted in 2008 and plan for those for 2009 and beyond.
- The leadership team will conduct a meeting at TRB in January with MSDOT to plan for the IC demo in 2009.
- The leadership team will conduct a web meeting with NYSDOT in January to plan for the IC demo in 2009.
- Summary of tentative time line for IC demo in 2009:
 - NYSDOT (late May to early June) (Soil/subbase IC. ISU geomobile lab is reserved)
 - MSDOT (June) (Stabilized subbase IC. ISU geomobile lab is not yet reserved)
 - GADOT (July/Aug) (asphalt IC)
 - INDOT (flexible, preferably Mid-June to Mid-July) (asphalt IC)
 - MD SHA (uncertain, but it may happen. Will get update from Larry M.)

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 at the Mn/DOT, TxDOT, and KSDOT sites.

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

- Scheduled/planned IC presentation:

- TCM conference, February 10, 2009 – Presentation on IC - project update and asphalt IC (Dave Merritt)
- MnDOT paving conference, February 11, 2009 – “IC project update” (George Chang) and “Linking soil IC to design” (David White)
- Iowa asphalt conference, Mar. 5, 2009 - IC project update (George Chang)
- World of Asphalt, March 9-12, 2009 – Asphalt IC (Bob Horan)
- NDDOT, March, 2009 – Asphalt IC (Bob Horan)
- Japanese delegates at GADOT, late Aug. 2009. (Lee Gallivan)
- 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.