

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

4<sup>th</sup> Quarterly Progress Report – July 2008 to September 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](http://www.IntelligentCompaction.com)) to facilitate knowledge transfer and information sharing. Further detailed, technical review is under way. The site was updated at a weekly basis.

### 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

- There were two field demonstrations conducted during this period at TXDOT and KSDOT.
- TXDOT demo: A special provision document was developed for the cohesive fine grained soil that was used for the TXDOT demo. TXDOT had assisted to reformat it to comply with TXDOT standard. Similar documents were prepared for treated base and subbase materials in anticipation of different material types for the IC demonstration in Fort Worth, Texas. The project team conducted a web meeting with the TXDOT team (including contractor) to prepare for the soil/stabilized base IC demonstration. The field demonstration at TXDOT was conducted between July 20 and 26 using a Case/Ammann pad foot and a smooth drum soil rollers as well as a Dynapac smooth drum soil roller. An open house was conducted on with 40+ attendees from TxDOT districts as far as 5

hours away. A web page was created for this demo to provide the most updated information.

- KSDOT demo: A special provision document was developed for the cohesive fine grained soil that was used for the KSDOT demo. The project team conducted a web meeting with the KSDOT team (including contractor) to prepare for the fine grained soil IC demonstration. The field demonstration at KSDOT was conducted between August 17 and 24 using a Sakai pad foot soil roller with a smooth drum shell kit as well as a Caterpillar pad foot soil roller. Wireless technology from the Caterpillar AccuGrade system was also demonstrated. An open house was conducted on with 40+ attendees from KSDOT, University of Kansas, roller vendors and dealers. A web page was created for this demo to provide the most updated information.

#### TASK 6 – Database Management Plan

- A draft plan 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.
- A prototype of IC data processing tool is under development.

#### 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 conducted along with the IC field demonstration project at TX/DOT and KS/DOT.

#### TASK 9 – Presentations

- The project team has presented in several informal

#### TASK 10 – Annual and Final Reports

- A draft annual report is under development.

### **B. WORK PLANNED FOR NEXT QUARTER (OCTOBER 2008 TO DECEMBER 2008):**

#### 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 4 to 5 sites in 2009. The leadership team will conduct a web meeting in mid-October to review the work conducted in 2008 and plan for those for 2009 and beyond.

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

- Presentation may be if opportunity (such as: paving conferences and etc.) comes up.

TASK 10 – Annual and Final Reports

- An annual report will be produce during this period.

**C. IDENTIFICATION OF PROBLEMS/RECOMMENDED SOLUTIONS:**

- No problems are identified in this quarter.