

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

15th Quarterly Progress Report – April 2011 to June 2011
Prepared by The Transtec Group, Inc.
5 July 2011

NB: This is the final progress report under this contract.

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 complete.

TASK 3 – Preparation of Interim Report and Work Plan Package

- This task is complete.

TASK 4 – Technical Working Group Initial Meeting

- This task is complete.

TASK 5 - Coordinated IC Field Demonstrations

- All thirteen (13) full scale IC field demonstrations and three (3) mini demonstration are completed.

2010 DEMONSTRATION PROJECTS

Full-scale demo projects

State	Dates	Materials	Rollers	Further Info
Wisconsin	May 10 to 14	HMA	Sakai	Webpage
Pennsylvania	Sept. 20 to 23	HMA	Sakai/Volvo	Webpage
North Dakota	August 9 to 12	Soils	CAT	Webpage
Indiana	August 17 to 19	Soils*	CAT	Webpage
Virginia	Sept. 27 to 30	HMA	Sakai/Volvo	Webpage

* Funded by INDOT

Candidate Stand-alone "Mini" Demo Projects*

State	Dates	Materials	Rollers	Further Info
Texas	May 24 to May 26	HMA	Sakai	Webpage
California-1	Nov. 1 to 3	HMA	Sakai	Webpage
California-2	Nov. 9 to 11	HMA	Sakai	Webpage

* Funded by the FHWA

2009 DEMONSTRATION PROJECTS

Full-scale demo projects

State	Dates	Materials	Rollers	Further Info
New York	May 22	18- Soils/SB, HMA*	Bomag and Caterpillar (Sakai*)	Webpage
Mississippi	July 17	13- Stabilized HMA*	base, Case/Ammann and Caterpillar (Sakai*)	Webpage
Maryland	July 25	20- HMA	Sakai and Bomag	Webpage
Georgia	Sept 18	14- HMA	Sakai	Webpage
Indiana	Sept 25	21- HMA	Sakai and Bomag	Webpage

* Included mini HMA demonstration

2008 DEMONSTRATION PROJECTS

Full-scale demo projects

State	Dates	Materials	Rollers	Further Info
Minnesota	June 2-23	HMA	Sakai	Webpage
Texas	July 20-27	Soils, SB	Case/Ammann and Dynapac	Webpage
Kansas	Aug 17-24	Soils	Sakai and Caterpillar	Webpage

Summary of all IC-related Reports are as follows:

Topic	Last Revision	File Size (MB)	Pages of Reports	Figures
MN HMA demo report	Nov., 2008	11	76	56
TX soils/subbase demo report	Dec., 2008	56	93	76
KS soils demo report	May, 2009	26	125	93
NY HMA/Soils demo report	Feb., 2010	34	224	181
MS HMA/Soils demo report	April, 2010	14	198	148
MD HMA demo report	Sept., 2009	22	98	88
GA HMA demo report	March, 2010	33	96	78
IN HMA demo report	June, 2010	31	98	86
PA HMA demo report	Nov, 2010	19	73	50
WI HMA demo report	June, 2010	7.5	127	98
TX mini HMA demo report	June, 2010	5.7	87	69
VA HMA demo report	Nov, 2010	1.8	56	39
CA HMA demo No.1 report	Dec, 2010	12.5	55	44
IN Soils demo report	April, 2010	1.8	60	46
Generic IC Experimental Plan	June, 2008	0.7	41	7
Interim Report	June, 2008	1.4	76	3
2008 Annual Report	Feb., 2009	4.6	127	54
2009 Annual Report	Jan., 2010	21	108	91
IC Dana Management	Dec., 2010	23	118	81
IC Demo Tech Brief	Jan. 2010	0.18	4	
Soils IC Tech Brief	March, 2010	5.7	8	
HMA IC Tech Brief	Jan., 2010	0.9	6	
	Total	332.78	1954	1388

* excluding experimental plans.

TASK 6 – Database Management Plan

- This task is complete.

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 the pooled fund States.

- MnDOT has developed pilot IC specifications for granular materials that have been tested in six (6) construction projects in 2010. The IC research team is assisting MnDOT by developing an IC Data Management tool under a contract funded by Mn/DOT and FHWA. The tool is being used in the fields during the 2011 construction season. Under this separate contract, the IC team also developed an IC Data Management Guideline (http://www.intelligentcompaction.com/downloads/reports/IC_Data_Guidelines_V3.3_all.pdf) and Technical Manual for the IC Viewer Tool (http://www.intelligentcompaction.com/downloads/reports/Veda_TechnicalManual_V1.03_all.pdf) as practical guidance for IC implementation.
- TxDOT has developed pilot IC specifications for granular materials that have been tested in IC projects in the Dallas area. IC is currently used as quality control tool at several TX projects including the DFW connector project and a Highway-for-Life project.
- INDOT has been developing a plan and specification for IC implementation in 2011. The IC research team is assisting INDOT on its soils IC specification which will serve as a basis for the HMA IC specification.

TASK 9 – Presentations

- The project team has delivered for presentations in the following meetings:
 - On June 9, 2011, the FHWA IC team conducted an Intelligent Compaction Workshop during the Geohunan International conference, June 9-11, 2011 in Changsha, Hunan province, China under a separate contract from the FHWA.
- Presentation materials have been constantly updated and incorporated with recent findings. All presentation events by the IC research team are posted: (<http://www.intelligentcompaction.com/index.php?q=node/167>)

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)
- The draft annual report for 2009 is revised and posted on the pooled fund page of the IC website. (http://www.intelligentcompaction.com/downloads/TPF/IC_Annual_Report_2009_V1c.pdf)
- The draft annual report for 2010 is revised and posted on the pooled fund page of the IC website. (http://www.intelligentcompaction.com/downloads/TPF/IC_Annual_Report_2010_V1.pdf)
- The final report (including three generic IC specifications for soils, subbase, and HMA) is revised and posted on the pooled fund page of the IC website. (http://www.intelligentcompaction.com/downloads/Reports/0_FHWATPF_IC_FinalReport-v4.1-all.pdf)

B. WORK PLANNED FOR NEXT QUARTER (N/A):

The project will end on July 31, 2011.

C. IDENTIFICATION OF PROBLEMS/RECOMMENDED SOLUTIONS:

- No problems are identified in this quarter.