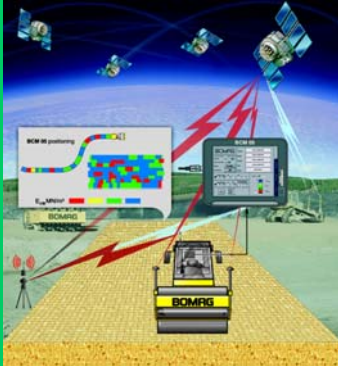


# Asphalt Intelligent Compaction Demonstration Projects



A typical IC System (courtesy of Bomag)

## Who are welcome to participate

- DOT Construction Engineers, QC/QA Personnel, Spec Writers
- Paving Managers, Superintendents, QC Personnel
- Earthworks Managers, Superintendents, QC Personnel
- IC Roller Vendors

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## What is Intelligent Compaction (IC)

Intelligent Compaction (IC) is an equipment-based technology for better quality control that results in longer pavement lives. IC machines are vibratory rollers with accelerometers mounted on the axle of drums, global positioning system, infra-red temperature sensors (for asphalt), and on-board computers that can display color-coded maps in real-time to track roller passes, asphalt surface temperatures, and stiffness of compacted materials.

## Who We Are

The FHWA has been leading a national effort to advance the IC technology through numerous projects since 2008 to improve compaction quality of materials that include granular soils, cohesive soils, stabilized base, and asphalt pavements. To further accelerate the implementation of IC, FHWA is conducting IC research to further investigate the correlation between IC and in-place asphalt densities.

## Asphalt IC Field Projects Wanted

The FHWA IC research team is seeking nine (9) asphalt projects from 2012 to 2014 for this study. The requirements for the projects are two (2) lifts, 1 mile or more asphalt construction as extensive coring would be conducted at the base course (further details on page 2). The steps for an IC demonstration are:

- Select an asphalt paving project
- Include an IC special provision in the contract
- Convene planning meetings
- Perform 3-day field demonstration
- Conduct a 1/2 day open house event

## Contact:

If you are interested in participating in this study and providing candidate asphalt projects, please contact:

Dr. George Chang, P.E., Principal investigator (PI)

Transtec Group, 6111 Balcones Drive, Austin TX 78731

(512) 451-6233 gkchang@thetranstecgroup.com

**More information is available at:**

# Asphalt IC Project Requirements

## Project Materials/Layers/Length

The requirements of the IC demonstration projects include:

- Materials: Hot mix asphalt (HMA) or warm mix asphalt (WMA) overlay or full depth construction
- Layers: at least two (2) lifts of construction while the bottom lift will be the focus of this study
- Length: at least 1 mile or more of the projects will be used for detailed study

## Recommended IC Systems

All IC systems must be equipped with Real-time Kinematic (RTK) GPS, accelerometer-based measurement systems, infra-red temperature sensors, and an on-board computer display system. The IC data outputs shall be compatible with the Veda software. The recommended double-drum IC systems include but not limit to the following (in order of trade names): Bomag, HAMM/Wirtgen, and Sakai.

## Field Demonstration

The activities during the demonstration consist of:

- Day 1 : IC setup, training and IC compaction
- Day 2: IC compaction (at breakdown and/or intermediate positions), and GPS, field point tests and coring at 60 locations after finishing rolling,
- Day 3: IC compaction (at breakdown and/or intermediate positions), GPS, field point tests.
- Day 4: Open House event for half a day.

Field points may include: nuclear density gauge, lightweight deflectometer for asphalt (LWD-a), and etc.

## Cost

FHWA will cover the cost for onsite FHWA IC research team and IC roller shipment. IC roller usage during the IC demo will be no cost to DOT or contractors. DOT or contract will cover the coring and bulk density tests of asphalt cores.

## Recommended Double-drum IC Systems



Bomag



HAMM/Wirtgen



Sakai

## Veda IC Software

