

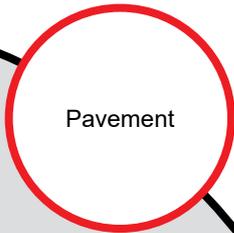


Caltrans Division of Research,  
Innovation and System Information

# Research



# Results



Pavement

**MAY 2019**

**Project Title:**

Technology Transfer Intelligent Compaction Consortium (TTICC)

**Task Number:** 2258

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## Technology Transfer Intelligent Compaction Consortium (TTICC) for Intelligent Compaction (IC)

The TTICC provides a forum for addressing the needs and challenges of implementing Intelligent Compaction (IC) across the country.

### WHAT IS THE NEED?

Increasingly, state departments of transportation (DOTs) are challenged to design and build longer life pavements that result in a higher level of user satisfaction for the public. One of the strategies for achieving longer life pavements is to use innovative technologies and practices. In order to foster new technologies and practices, experts from state DOTs, Federal Highway Administration (FHWA), academia and industry must collaborate to identify and examine new and emerging technologies and systems. The purpose of this pooled fund project is to identify, support, and facilitate intelligent compaction research and technology transfer initiatives.

### WHAT WAS OUR GOAL?

The goal of the TTICC is to identify and implement needed research projects and plans at the annual workshop on intelligent compaction for soils and Hot Mix Asphalt (HMA). The workshop served as a forum to generate collaboration to identify the research, education, and implementation necessary for advancing intelligent compaction for earthworks and asphalt.

### WHAT DID WE DO?

The TTICC project is led by the Iowa Department of Transportation (DOT) and partnered by the following state DOTs: California, Georgia, Iowa, Kentucky, Missouri, Ohio, Pennsylvania, Virginia, and Wisconsin. There were four Workshops held for Technology Transfer for IC Consortium.



Caltrans provides a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.

The workshops consisted of reviewing the TTICC goals, state DOT briefings on intelligent compaction implementation activities in their state, voting and brainstorming sessions on intelligent compaction road map research and implementation needs. Identification of action items for TTICC, industry, and Federal Highway Administration (FHWA) on each of the road map elements were the establishment at the workshops. The top two IC research needs are (1) data management and analysis, and (2) developing IC specifications and guidance and roadmap elements. After updating the IC roadmap, the workshop participants identified action items for the TTICC group, FHWA, and industry for advancing each of the road map elements.

125 projects have been identified from 2002 to 2013. Hot Mix Asphalt (HMA) or earthwork projects, demonstrations or pilot projects, and links to specifications, project reports, tech briefs, magazine articles, or any other relevant information from each project are available in the final report. The TTICC website has this information showing an interactive map with the project locations. Additionally, 15 tech briefs have been completed and the development for an IC 101 video showing the IC technology has been posted on the CEER TTICC webpage.

## WHAT WAS THE OUTCOME?

A key outcome of the consortium was the establishment of workshops to evaluation and update of the IC Road Map.

## WHAT IS THE BENEFIT?

The TTICC provides a forum for addressing the needs and challenges of implementing Intelligent Compaction (IC) across the country. The IC is the

next new and best technology to be developed (right after nuclear gages technology). It holds great promise for developing performance specifications. It provides a tool for quality control that can be used for quality assurance. It can help define specifications that will be in-line with Pavement Design Guide. This is something that will benefit Caltrans and other state DOT's.

## LEARN MORE

<http://www.ceer.iastate.edu/tticc/>

[http://www.dot.ca.gov/research/researchreports/dri\\_reports.htm](http://www.dot.ca.gov/research/researchreports/dri_reports.htm)

## IMAGES



IC rollers for soils and aggregates

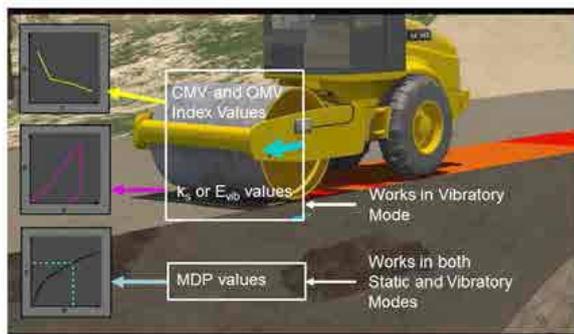


**Caterpillar:**  
CMV, RMV, MDP

**Dynapac:**  
CMV, BV

**Bomag:** E<sub>VIB</sub>

## Overview of different IC measurements for Soils, Aggregate, and HMA



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