PaveScan RDM™

Image Your World.

PaveScan RDM – What is it?

It is a complete GPR system that will:

- **Provide on-site dielectric values of newly laid and compacted asphalt**
- **Continuous Full Coverage (CFC)**
- **Provide compaction information on-site using a contour map**
- **Provide coring locations**
- **Allow input of core information for calibration and back calculation of % compaction, % void content, and density**

PaveScan RDM – Background

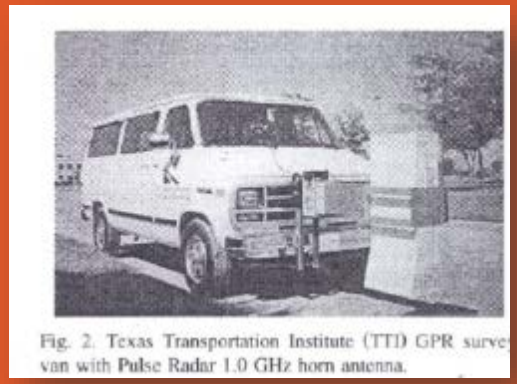


Fig. 2. Texas Transportation Institute (TTI) GPR surve
van with Pulse Radar 1.0 GHz horn antenna.

Research begin in the 1990s by TTI and GSSI

SHRP2

STRATEGIC HIGHWAY RESEARCH PROGRAM

Became a SHRP2 RO6C Initiative

PaveScan RDM – Background

SHRP2 Solution

Rapid Technologies to Enhance Quality Control on Asphalt Pavements (R06C)

GPR, one of two ways to evaluate asphalt pavements during construction

Measures uniformity and potential defect areas in asphalt pavements during construction.

Offers real-time testing of potentially 100 percent of the pavement area.

PaveScan RDM – Building the Technology

Prototype

- **TTI – 2012**
- **Virginia with TTI – 2013**
  - **Charlottesville**
  - **Fredericksburg**
- **University of Minnesota - 2015**

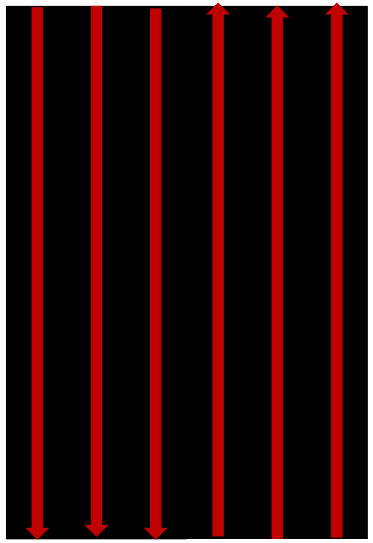
PaveScan RDM – What is it?

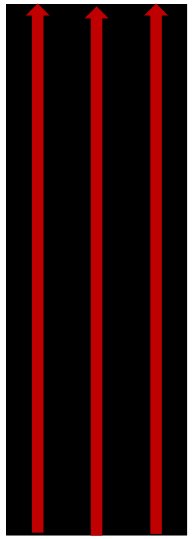
Cart Based System

1 or 3 channel systems

PaveScan RDM – How it works

- Collection at 2 foot spacing (2 passes per lane)
- Center of Lane and Wheel Paths (1 pass per lane)
- Shoulders Joints



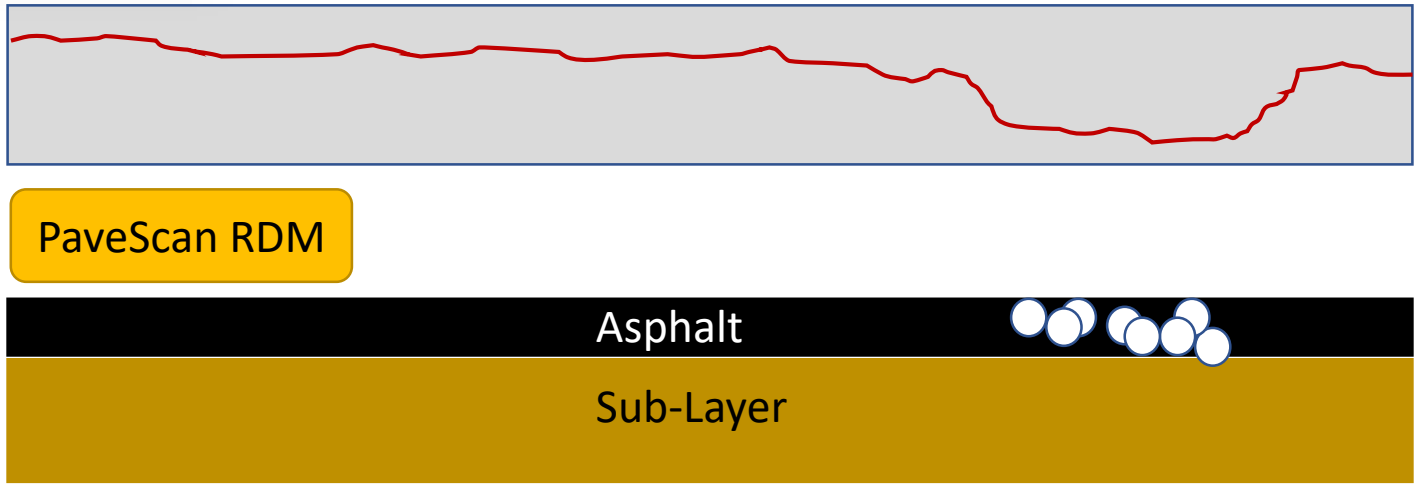


PaveScan RDM – How it works

- Collects Surface Dielectric Value
- Dielectric values indicate uniformity
- Cores can be taken to calibrate with compaction
- An option to collect data viewing Void Content Percentage instead of Dielectric based on the calibrations

PaveScan RDM – How it works

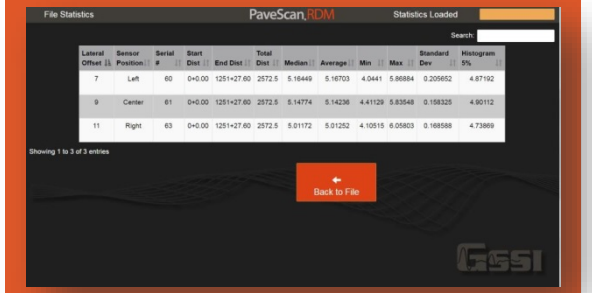
Reminder:
Dielectric of
Asphalt : 4-7
Air : 1



PaveScan RDM – Output

Core Locations, Manual and System Generated

PlayBack Data

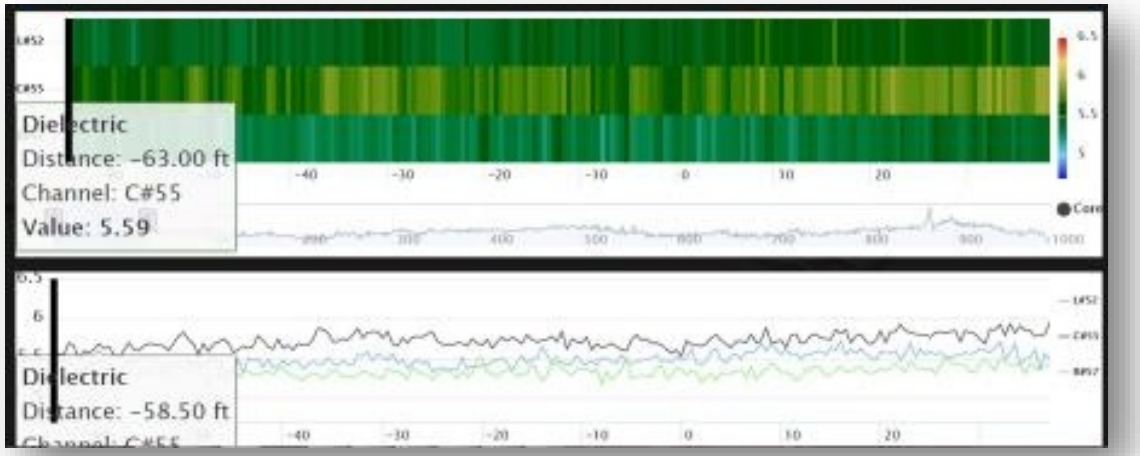


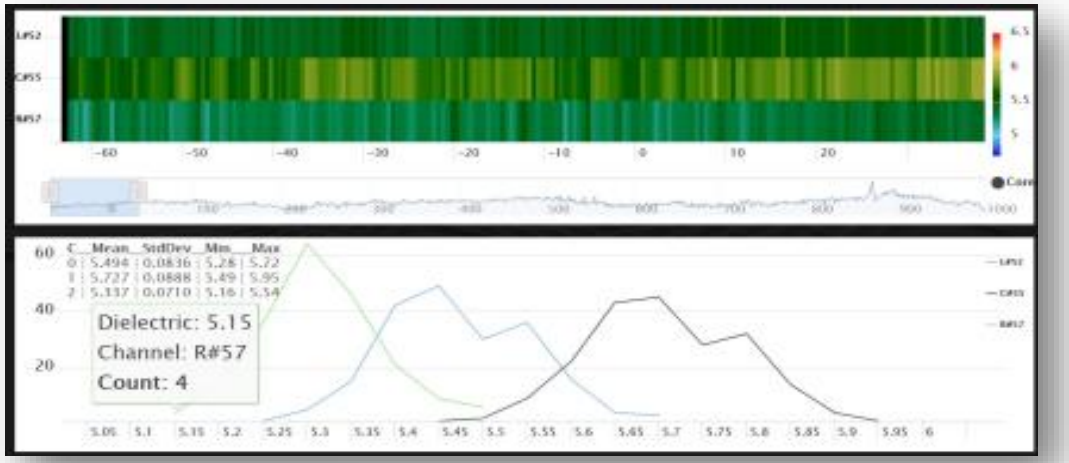
Output Statistics

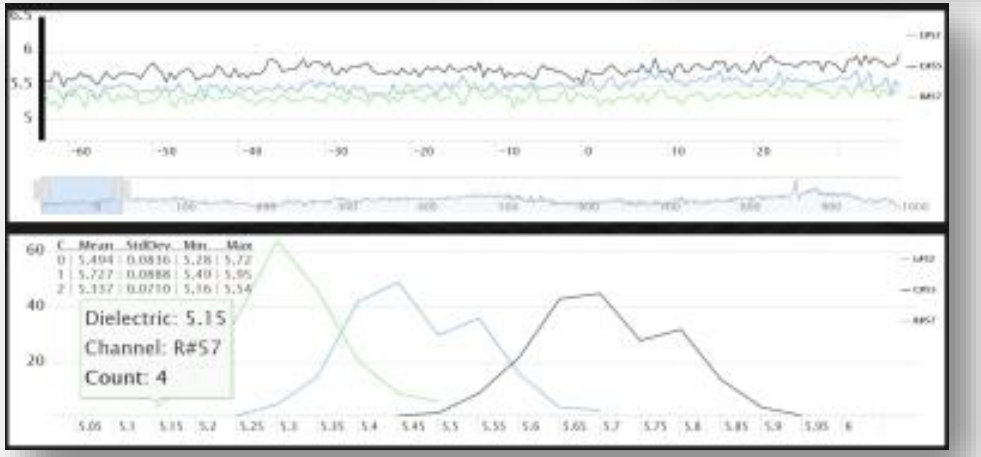
Export .csv files and .kml files

PaveScan RDM – How it works

On-site information, Reports







PaveScan RDM – What's New/Upcoming

Winter – 2019

- **Vehicle Mounted Systems**
- **Experimental option to measure dielectrics of pucks**

PaveScan RDM – What's New/Upcoming

Spring – 2019

- **User Interface Customizations**
  - **Show and hide information and buttons**
  - **Options for entries to be read-only in the field**
  - **Select what Information for Exporting Options**
- **GPS Accuracy Calculation Routine**
- **GPR Coordinate Transform Option (i.e. County Coordinate System)**

PaveScan RDM – What's New/Upcoming

Summer/Fall – 2019

- **Capability to upload data to an online repository**
- **Greater QA of dielectric calculation via radar signal analysis**
- **Provide precision and accuracy measurement capabilities**
  - **Test blocks with known dielectrics**
  - **Routine to check antenna performance with supplied test blocks**

Thank You!