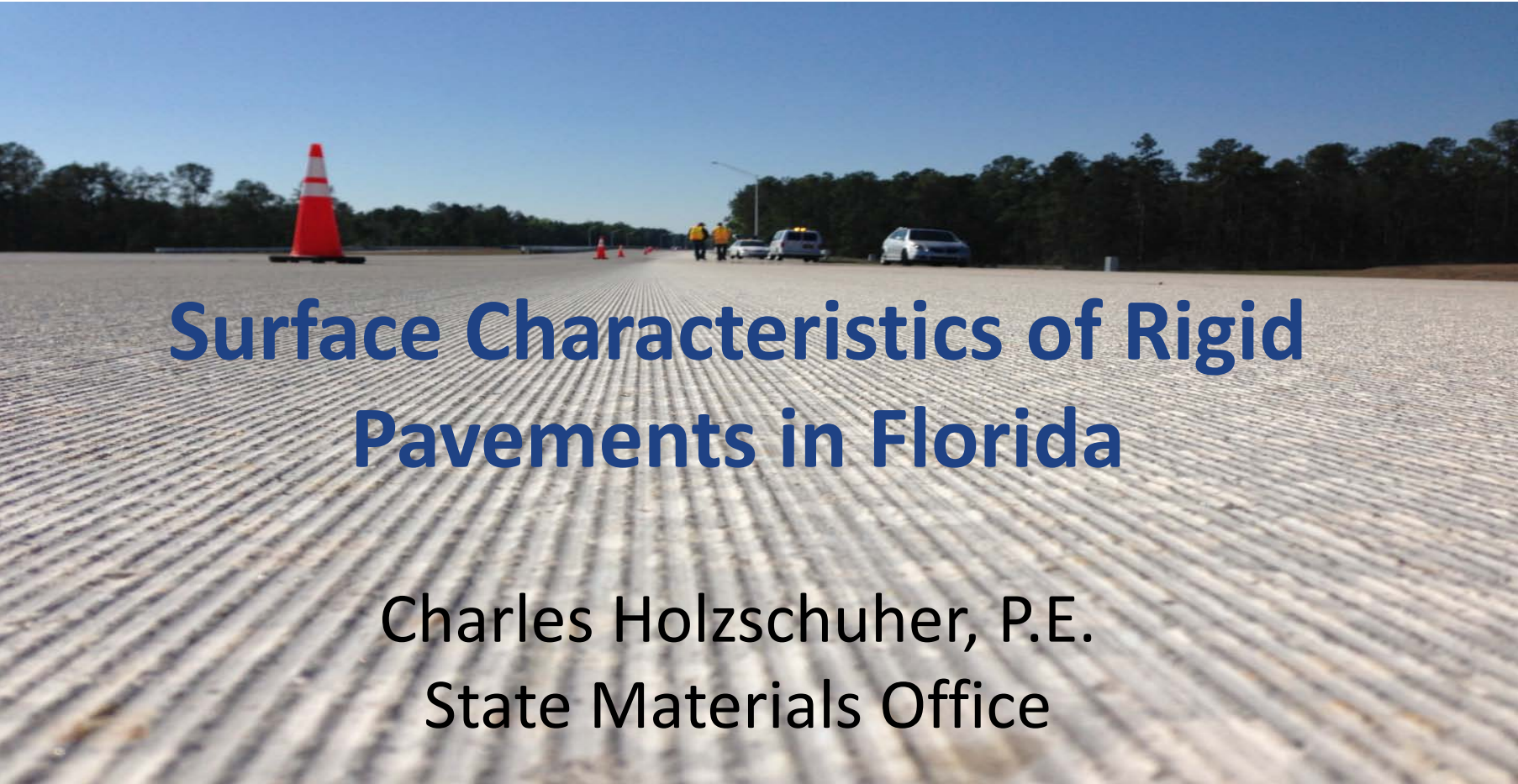




FLORIDA DEPARTMENT OF
TRANSPORTATION

A wide-angle photograph of a road construction site. The foreground shows a freshly laid, light-colored gravel or aggregate surface with a distinct, repeating pattern of parallel ridges. In the middle ground, a large orange and white traffic cone stands on the left. Further back, two workers in high-visibility yellow vests are visible near a white van and other vehicles. The background is a clear blue sky and a line of trees.

Surface Characteristics of Rigid Pavements in Florida

Charles Holzschuher, P.E.
State Materials Office

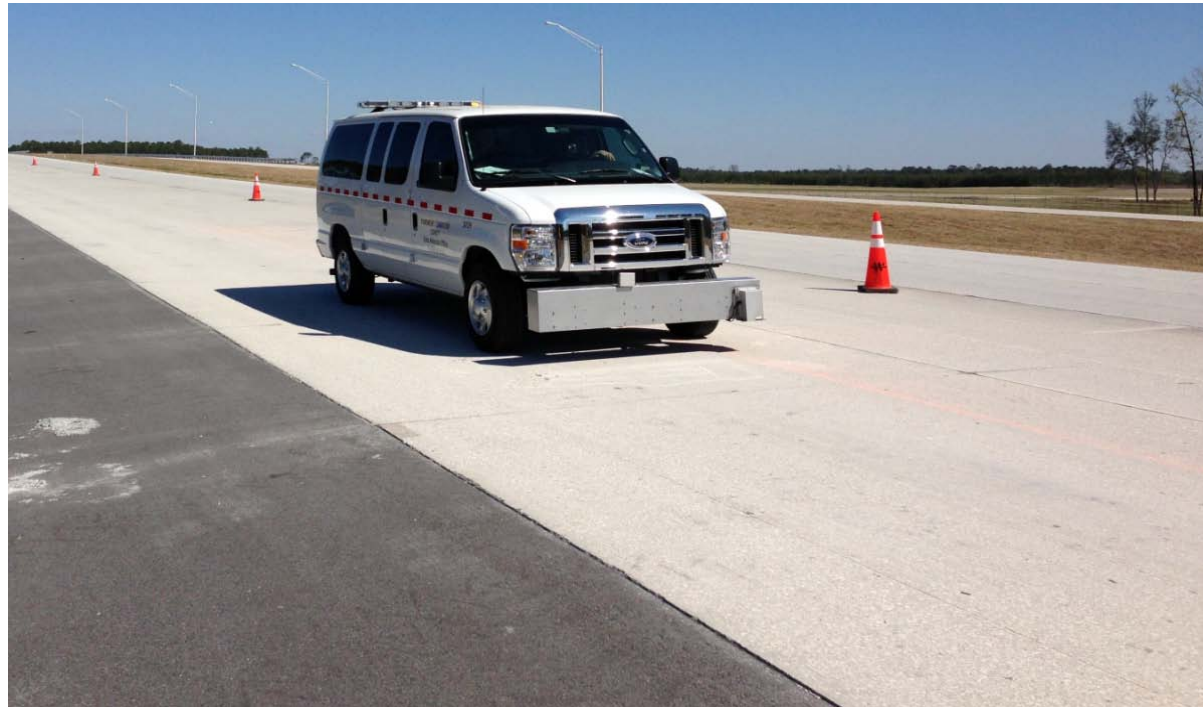


Florida Department of Transportation

Pavement Condition Survey

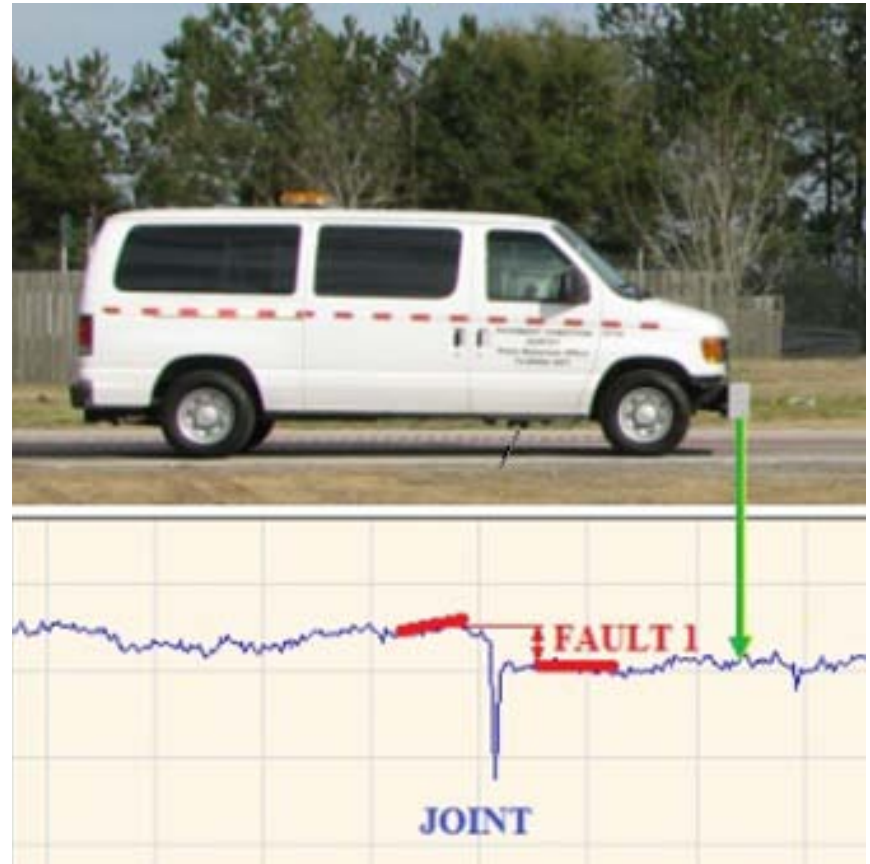
➤ High Speed Profiler

- ❑ 100% Survey each year (Rigid)
- ❑ Ride Rating
 - ✓ Ride Number (RN)
- ❑ Defect Rating
 - ✓ Visual
 - ✓ Image Based
 - ✓ Faulting



Automated Faulting

- Replaced Manual Faulting
- Focus Technology Selected by AASHTO TIG
- Implemented in AASHTO R36-13, Option B
- Precision Study:
 - ❑ Bias: 0.03 in.
 - ❑ Repeatability: 0.02 in.
 - ❑ Reproducibility: 0.04 in



Downward Image Analysis

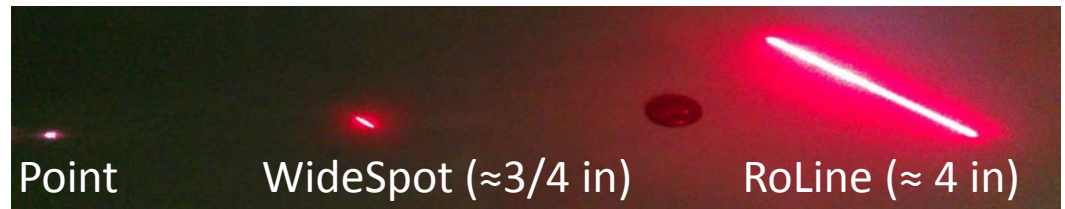
- Multi Purpose Survey Vehicle
- Images used for defect rating
- Working towards automation
- Use for Pre-Design
 - ❑ Rehabilitation Projects
 - ❑ Minimize field review
 - ❑ Transfer files to microstation



Ride Evaluation Study

➤ Comparison of Laser Types (Rigid Pavements)

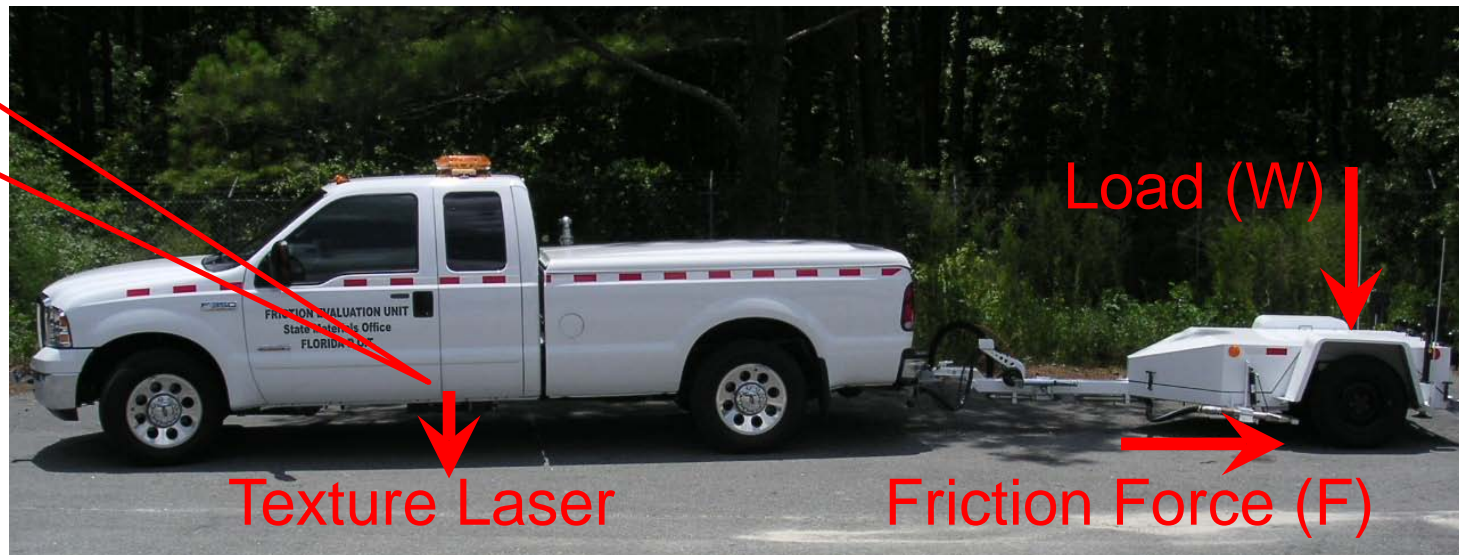
- ❑ Point, Wide Spot, and Roline
- ❑ Reference Device, SurPro



Pavement Friction

➤ Roadway Friction Tester

- ❑ Friction Number (Ribbed/Smooth)
- ❑ Texture Laser (64 kHz) below Tow Vehicle



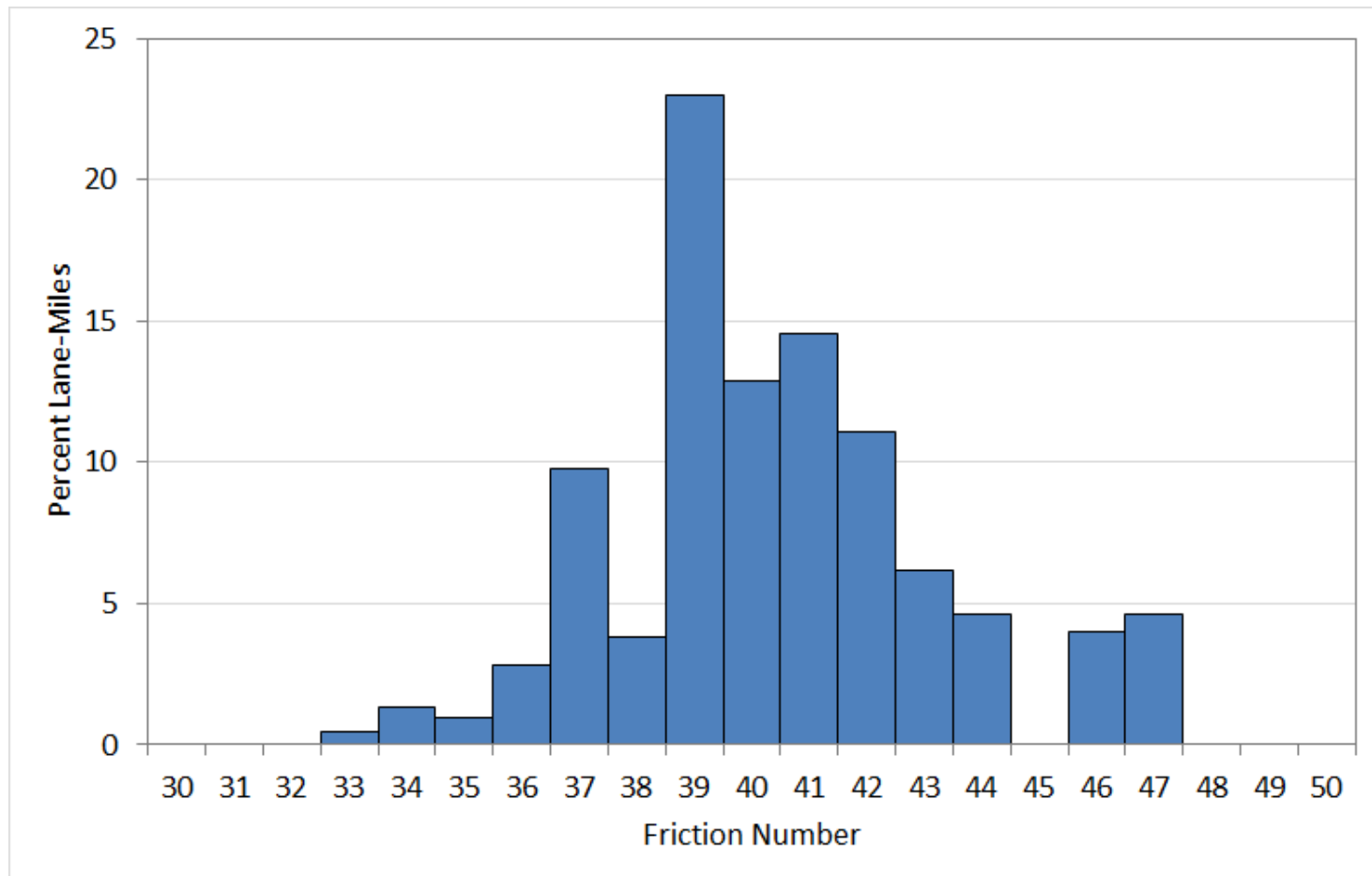
Historical Rigid Pavement Friction

➤ Network Friction Survey 2005 - 2007

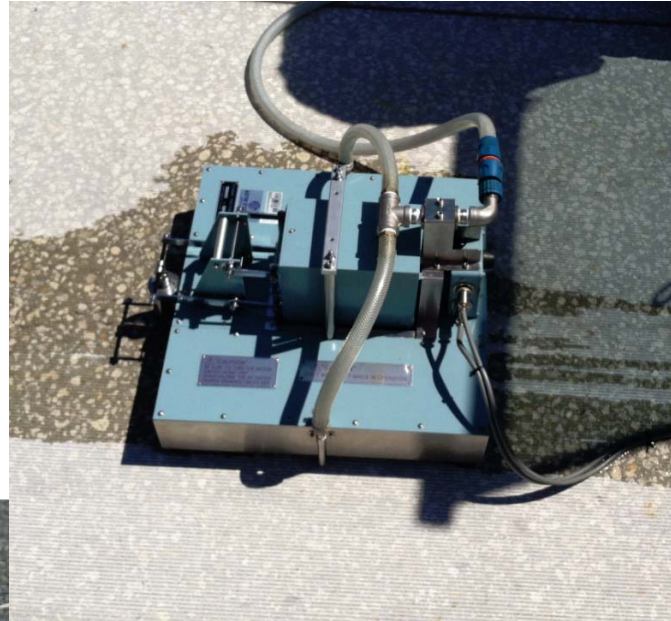
Surface Texture	State Lane Miles	Tested FN Lane Miles	Mean FN
Longitudinal Grinding (LGD)	692	206	39
Burlap Drag	237	103	43
Transverse Tining (TTN)	8	4	49
Overall	937	313	41

Friction Number Distribution

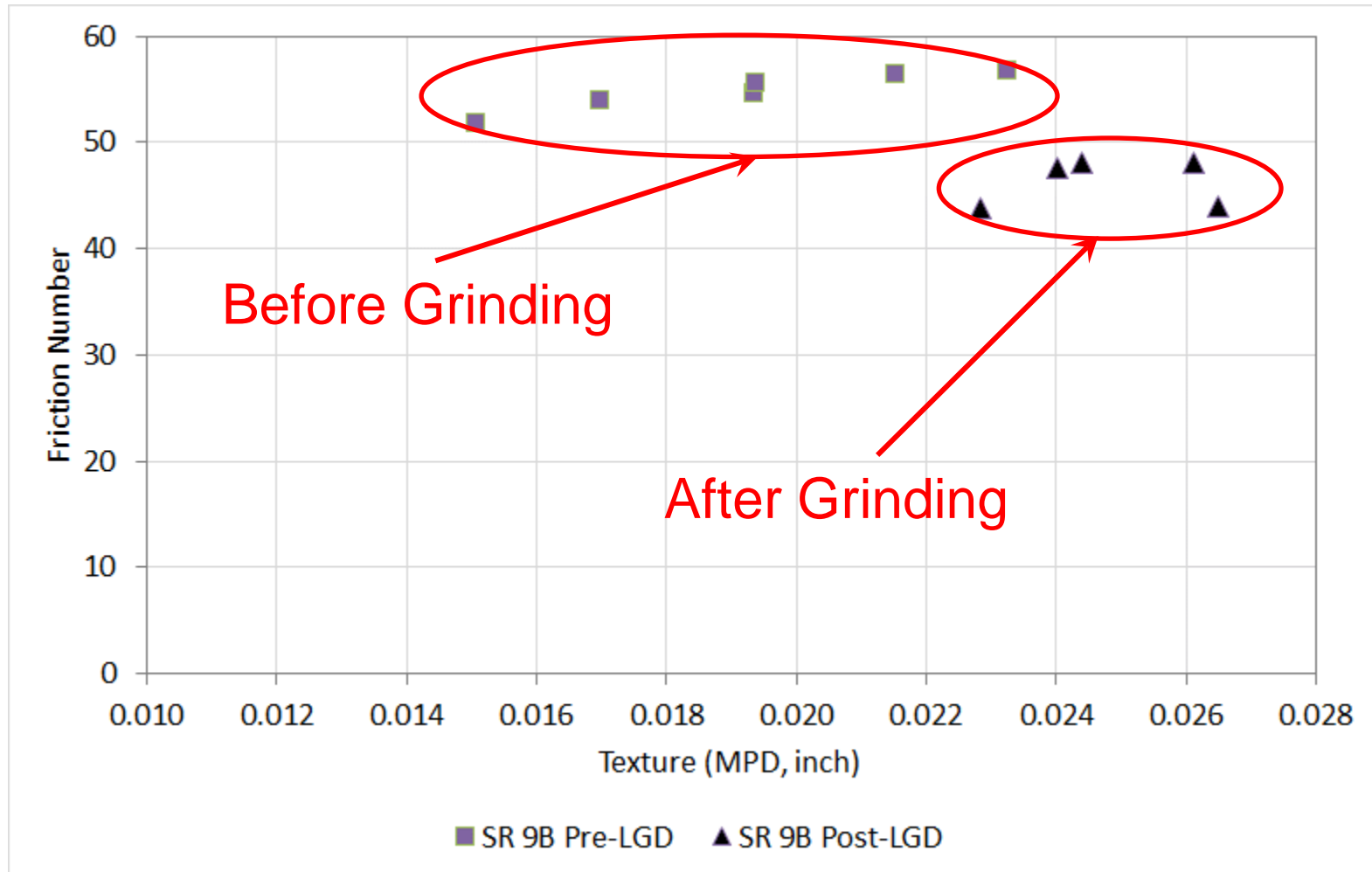
➤ New and Rehabilitated LGD Pavements (09 – 13)



Site Specific Equipment (Texture/Friction)



Friction/Texture Before & After Grinding





Pavement Noise Research, On-Going

- FDOT Noise Trailer (OBSI)
- Rigid Pavements
 - ❑ LGD - dB(A) 104-108



FWD/GPR

➤ FWD

- ❑ Load Transfer
- ❑ Structural Capacity

➤ High Speed GPR

- ❑ Thickness
- ❑ Forensics



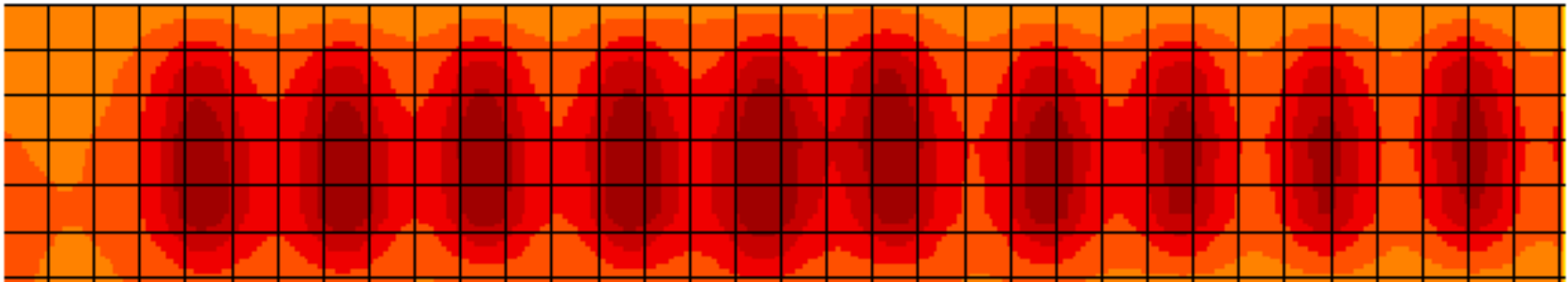
MIT-SCAN Device

- Magnetic Imaging Tool for Measuring Dowel Bar Alignment Nondestructively
- Reported Accuracy: 0.08 in.



Joint with Dowels

- Oval Shape Signal Around Dowel
 - ❑ Increased Magnetic Signal Strength Near Dowel



MIT-SCAN T2 Device

- Magnetic Tool for Measuring Pavement Thickness Nondestructively
- Reported Precision: 0.1 in.





Questions?