

# 2012 NCAT Pavement Test Track Pavement Preservation Study



at AUBURN UNIVERSITY

SE Pavement Preservation Partnership Meeting

May 29, 2013

Mary Robbins

# Pavement Preservation

“A program employing a network level, long-term strategy that enhances pavement performance by using an integrated, cost-effective set of practices that extend pavement life, improve safety and meet motorist expectations”

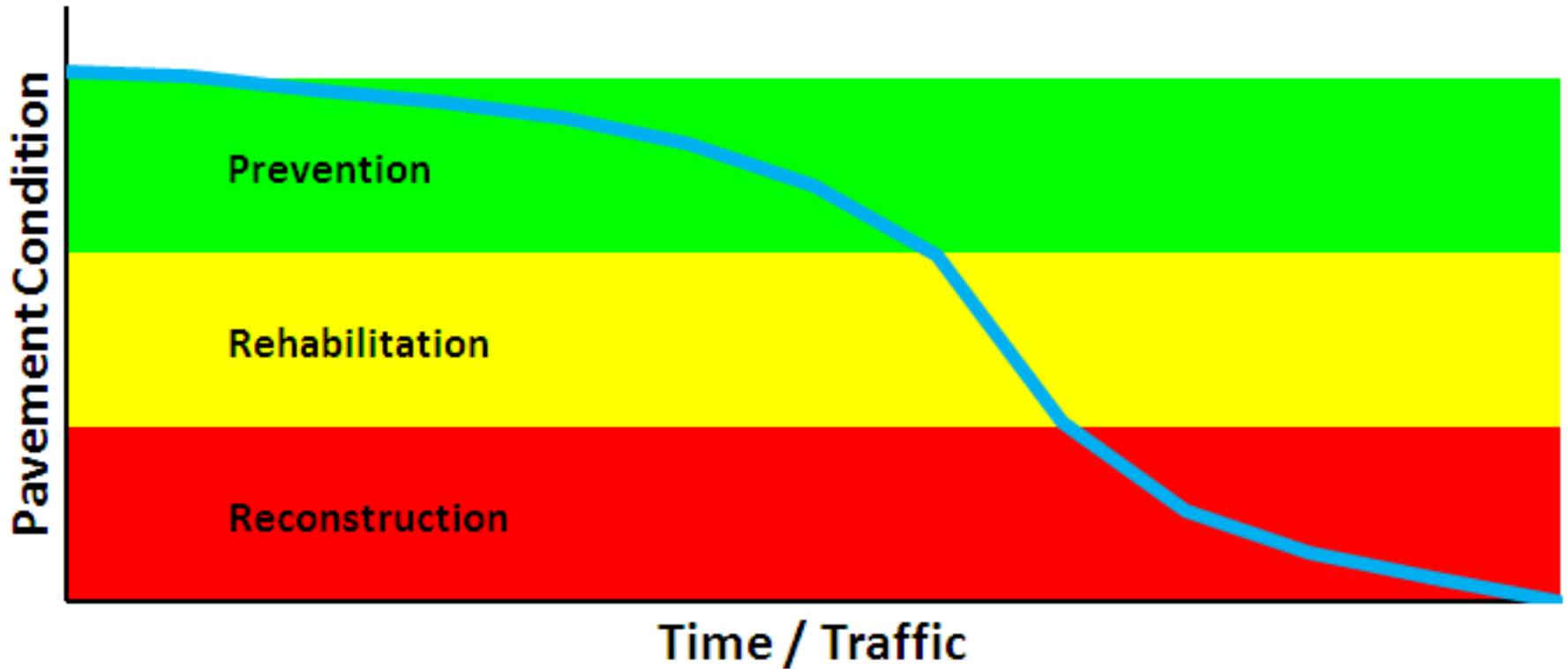
*- FHWA Pavement Preservation Expert Task Group*

# Pavement Preservation

“A program employing a network level, long-term strategy that enhances pavement performance by using an integrated, cost-effective set of practices that **extend pavement life**, improve safety and meet motorist expectations”

*- FHWA Pavement Preservation Expert Task Group*

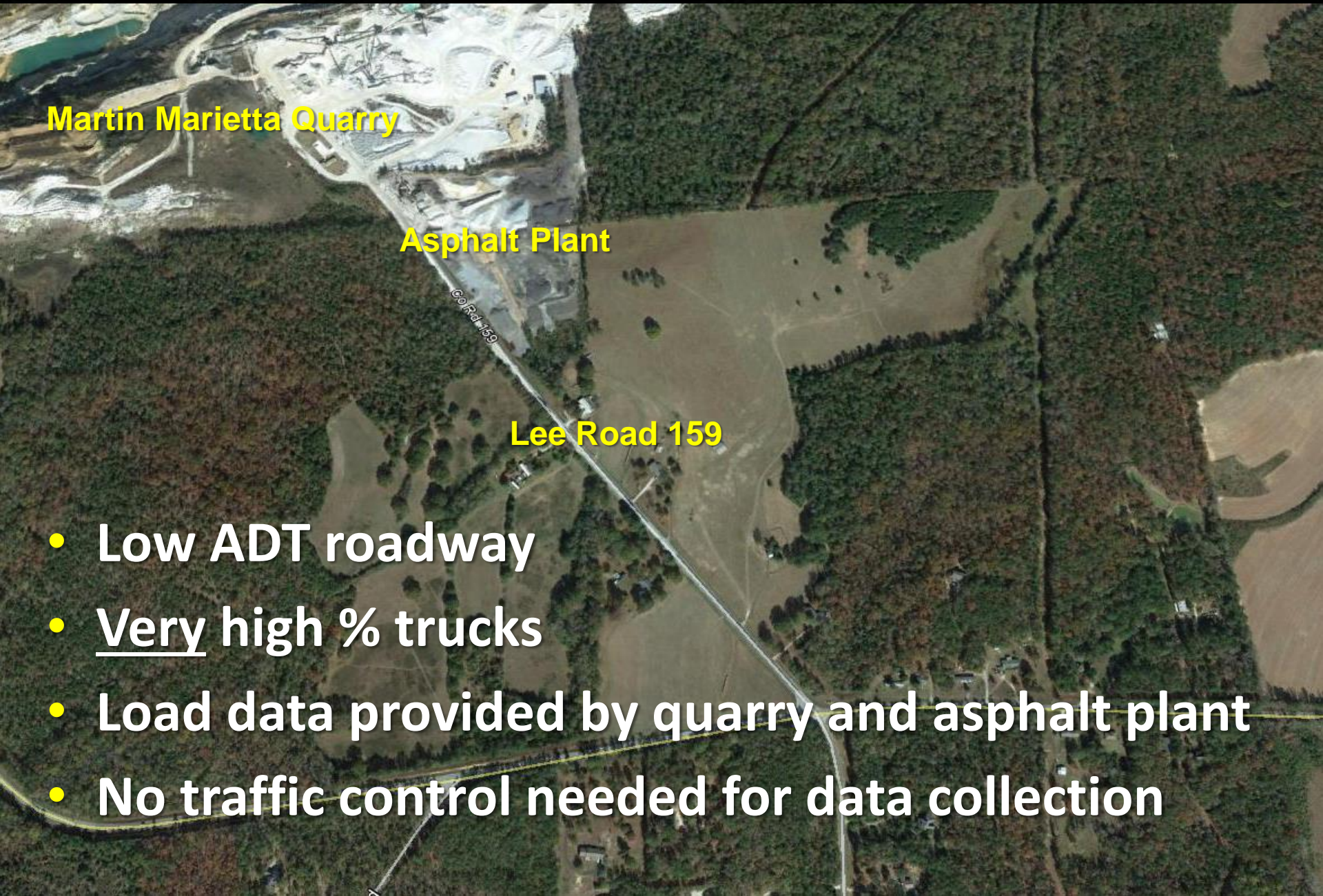
# Pavement Preservation



# 2012 Preservation Group (PG) Study

- Quantify life extending benefit of study treatments
  - Time/traffic to return to pretreatment condition(s)
  - Test sections on the Track and Lee Road 159
- Sampling/testing for construction quality

# PG Sections on Lee Road 159



Martin Marietta Quarry

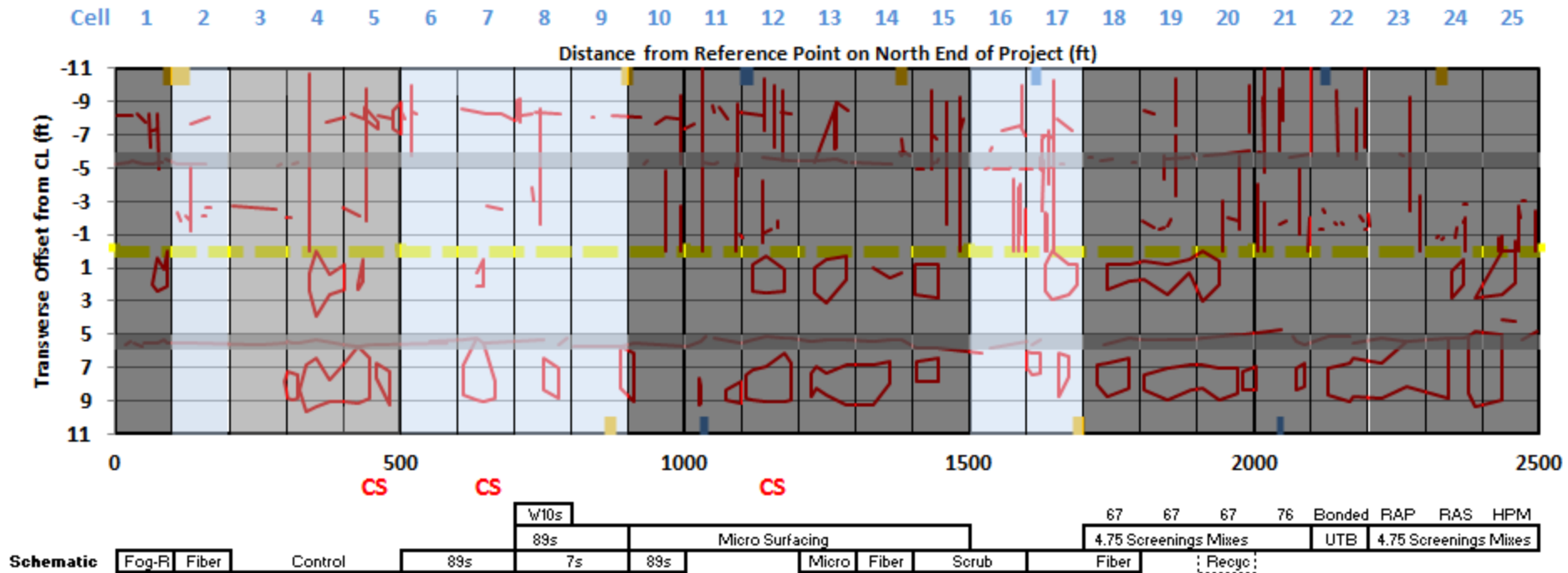
Asphalt Plant

Co Rd 159

Lee Road 159

- Low ADT roadway
- Very high % trucks
- Load data provided by quarry and asphalt plant
- No traffic control needed for data collection

# Final 159 Treatment Layout



- Preventive maintenance
- Routine maintenance
- Minor rehabilitation

# 2012 Preservation Group (PG) Study

- Fog seals (with and without rejuvenators)
- Crack seals (routing/filling, hot air lance, go-type)
- Chip seals (single, double, triple, scrub, FiberMat)
- Cape seals (on chip/scrub seals, FiberMat)
- Micro surfacing (single, double, Capes)
- Plant mix overlays (4.75 screening mix variations)
- Ultra thin bonded wearing course
- Lightweight aggregates for surface treatments

# Lee Road 159 Construction Overview

- FiberMat by Strawser on 7/17
- Week of 8/6 was busy and challenging
  - Chip/scrub seals & micro surface by Vance Brothers
  - 100% foamed recycle mix by Lanford Brothers
  - Inbound thin overlays by East Alabama Paving (EAP)
- Outbound thin overlays by EAP on 8/13
- Outbound bonded with Astec spray paver 8/28
- FiberMat on 159 by Strawser 9/19 (+W2<sub>lightweight</sub>)

# Rates Checked Prior to Placement



# Actual Rates Verified During Placement



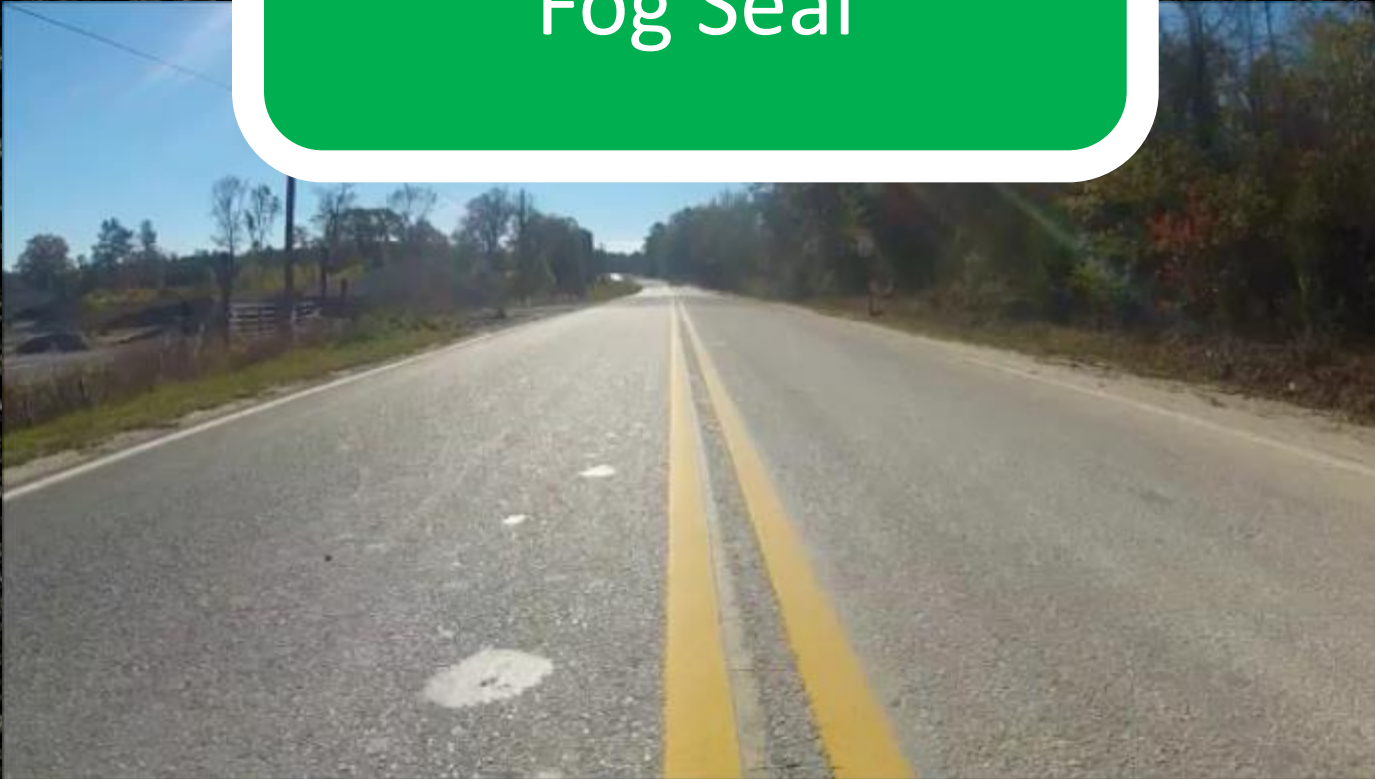
## Lee Road 159

# Pavement Preservation Experiment to Reduce the Cost to Maintain Your Roads

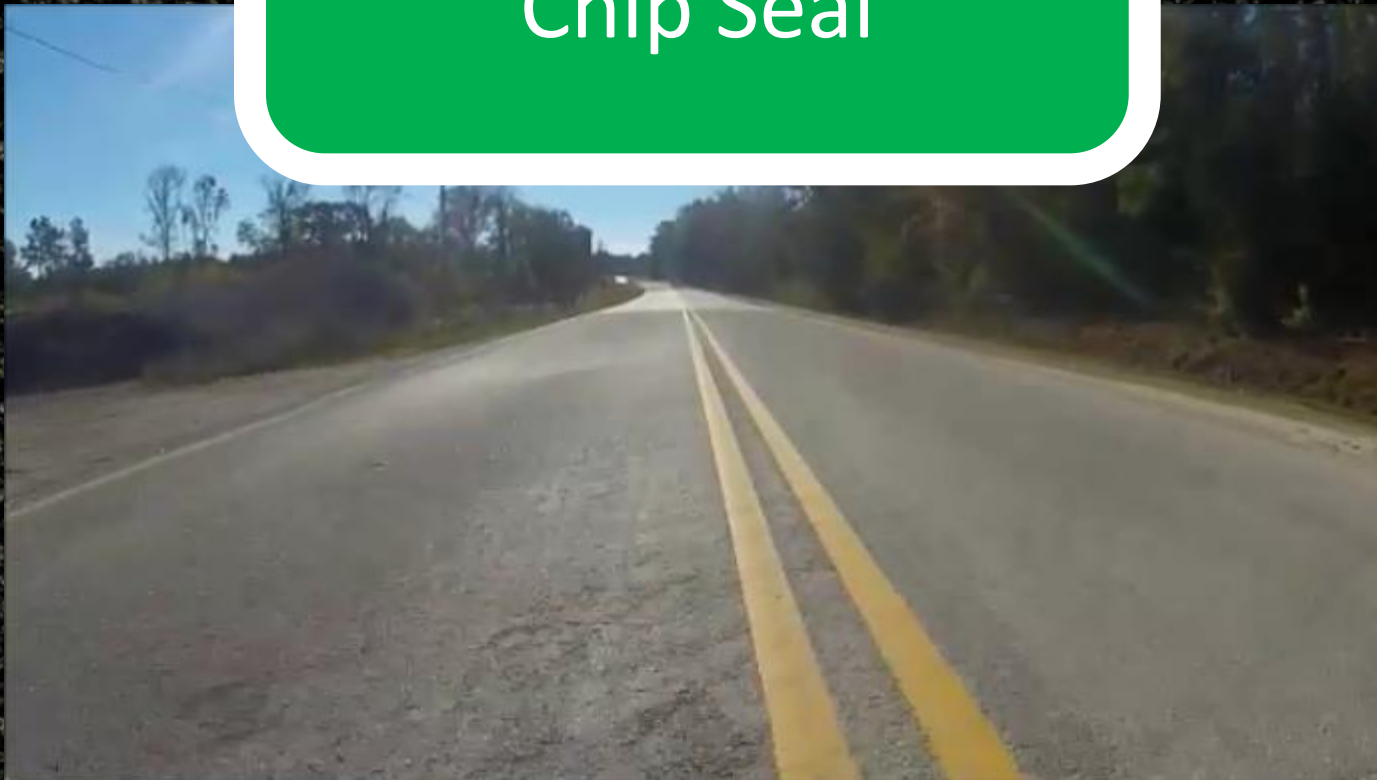
## Funding Provided by:

Alabama, Mississippi, Missouri, North Carolina,  
Oklahoma, South Carolina, Tennessee, and FP2 via  
Auburn University and the Lee County Commission

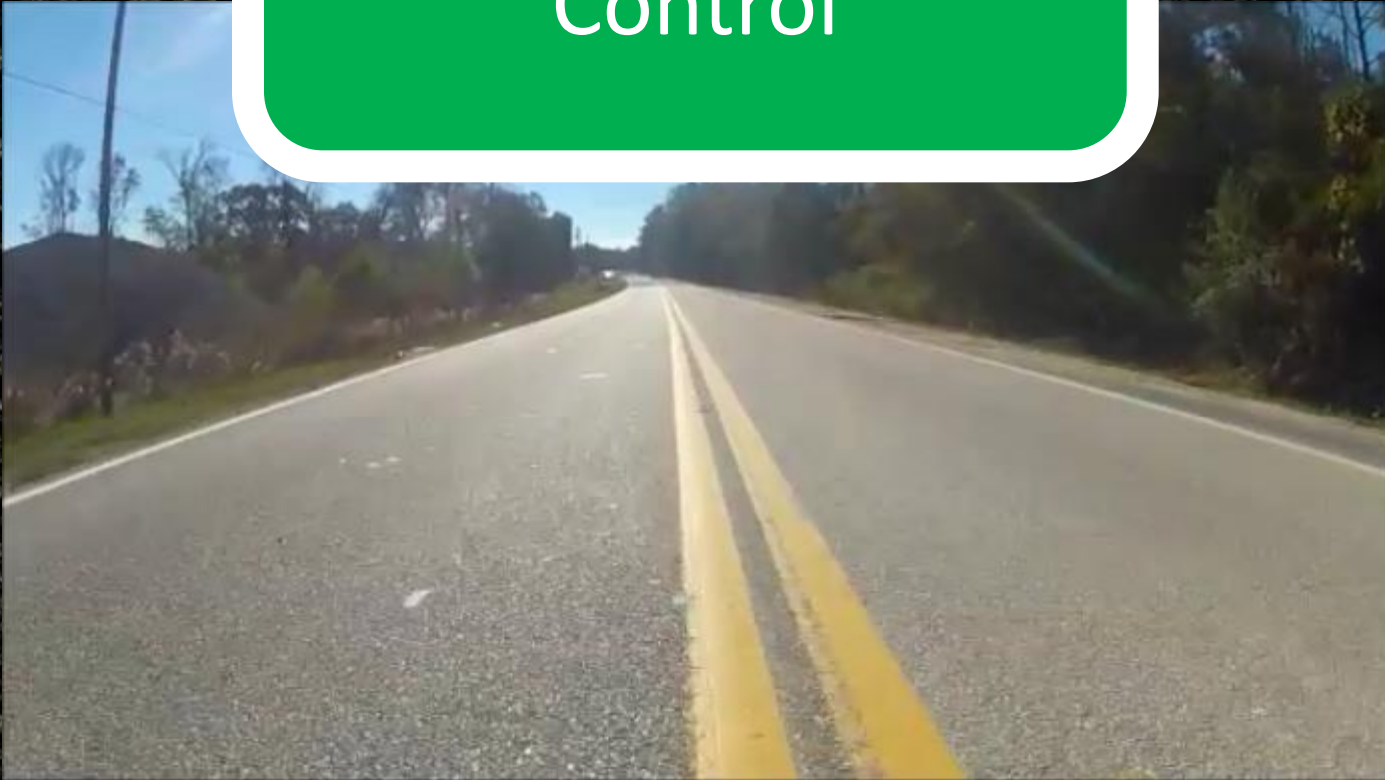
# L1 – Rejuvenating Fog Seal



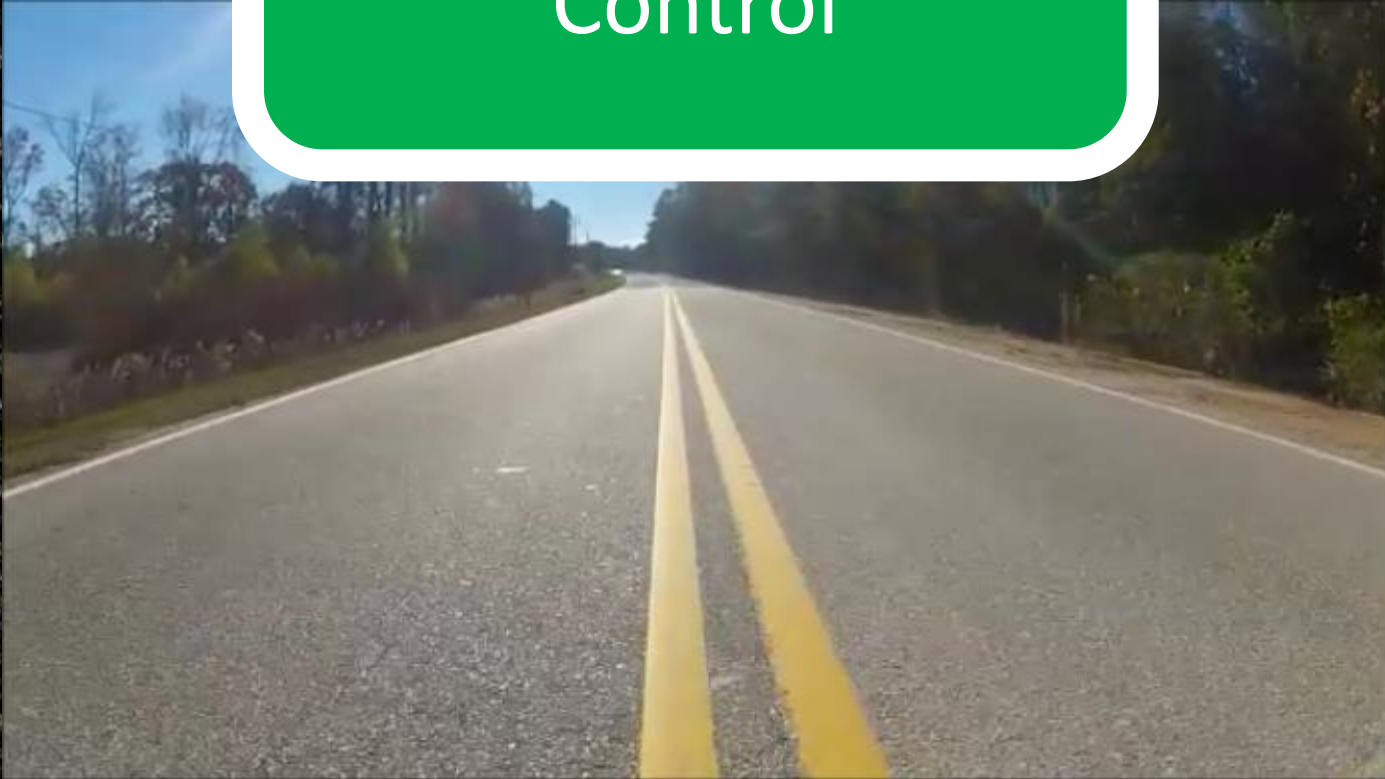
## L2 – FiberMat Chip Seal



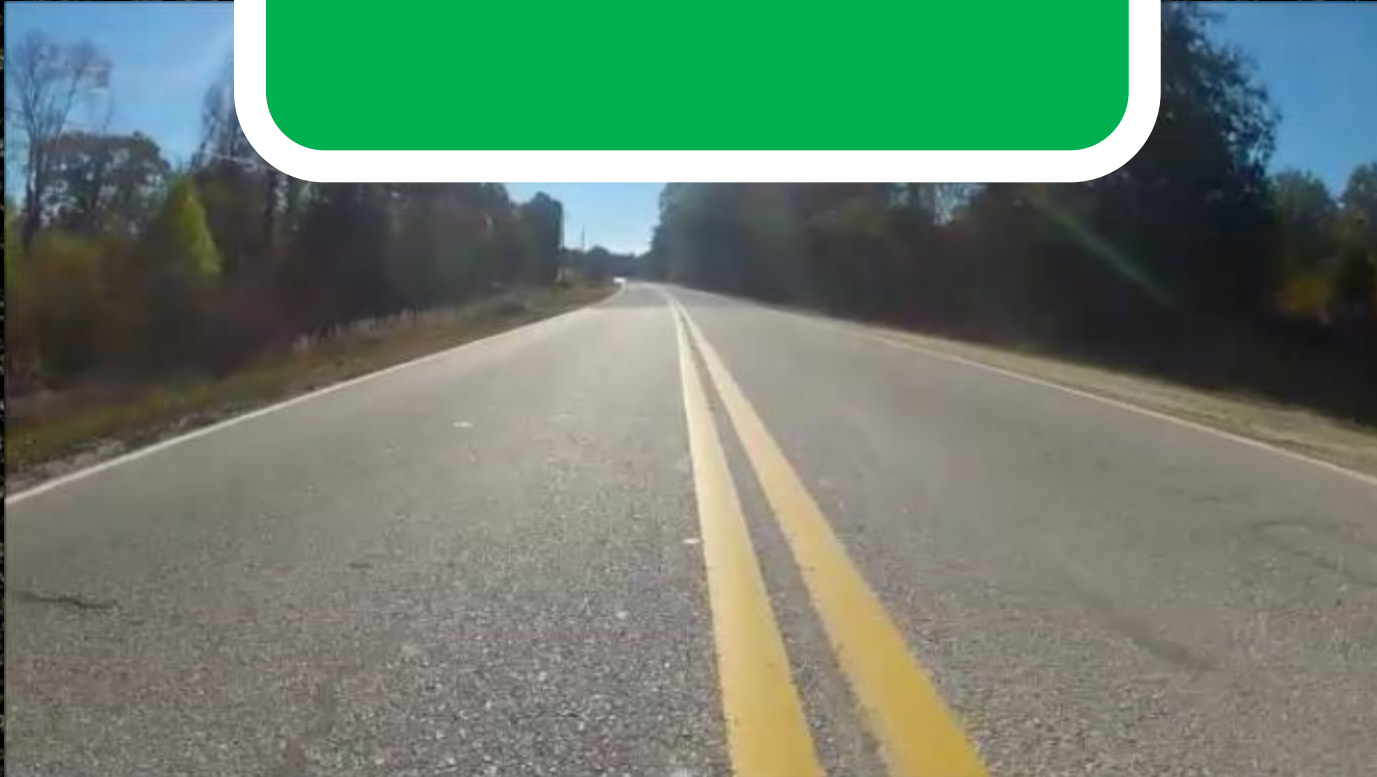
## L3 – Untreated Control



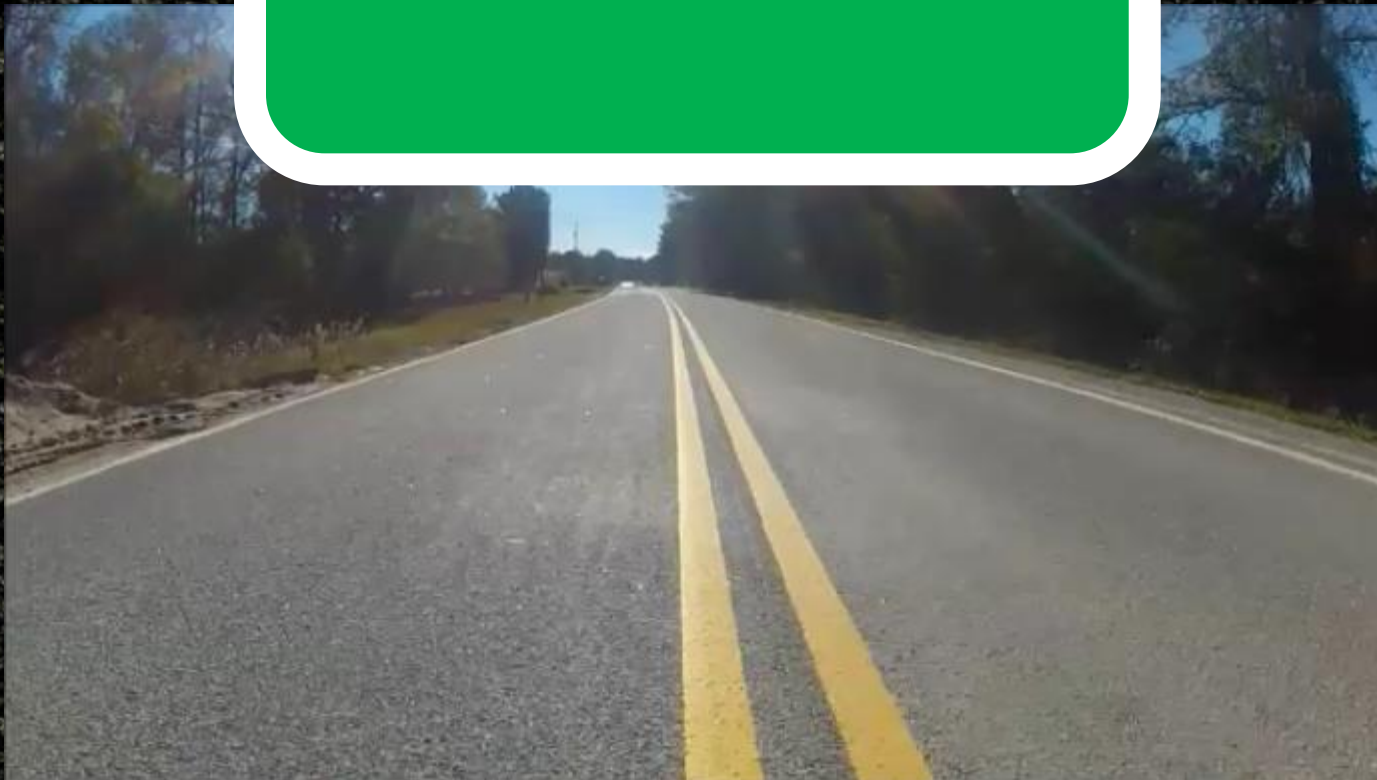
## L4 – Untreated Control



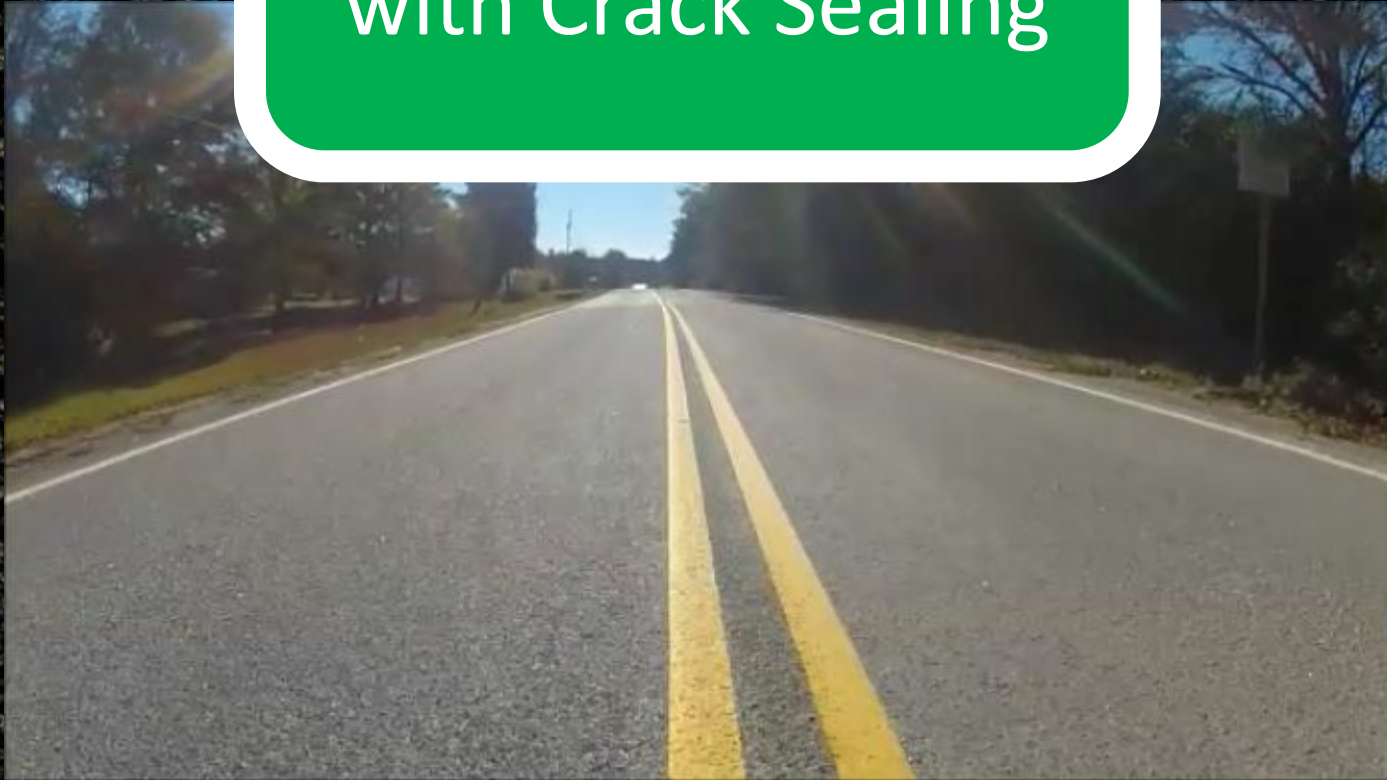
## L5 – Crack Sealing



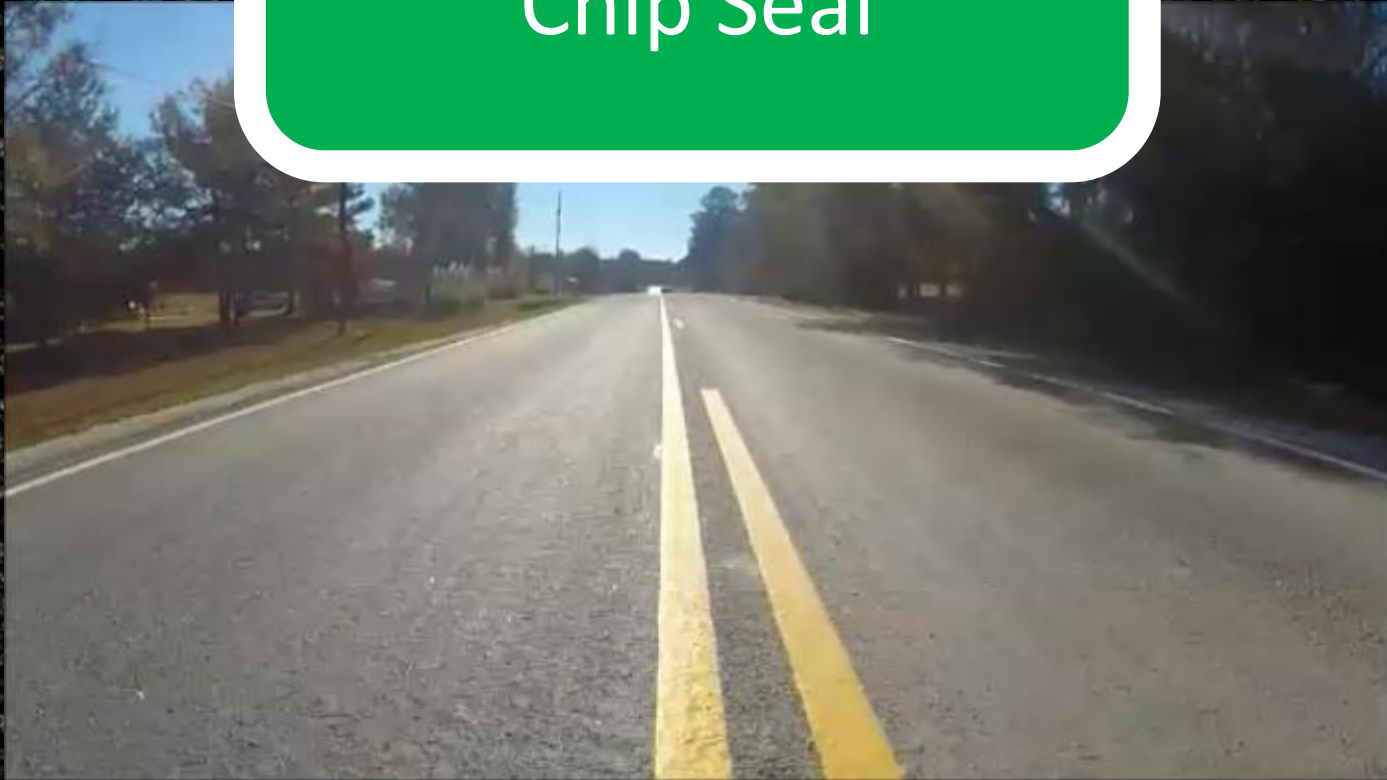
## L6 – Chip Seal



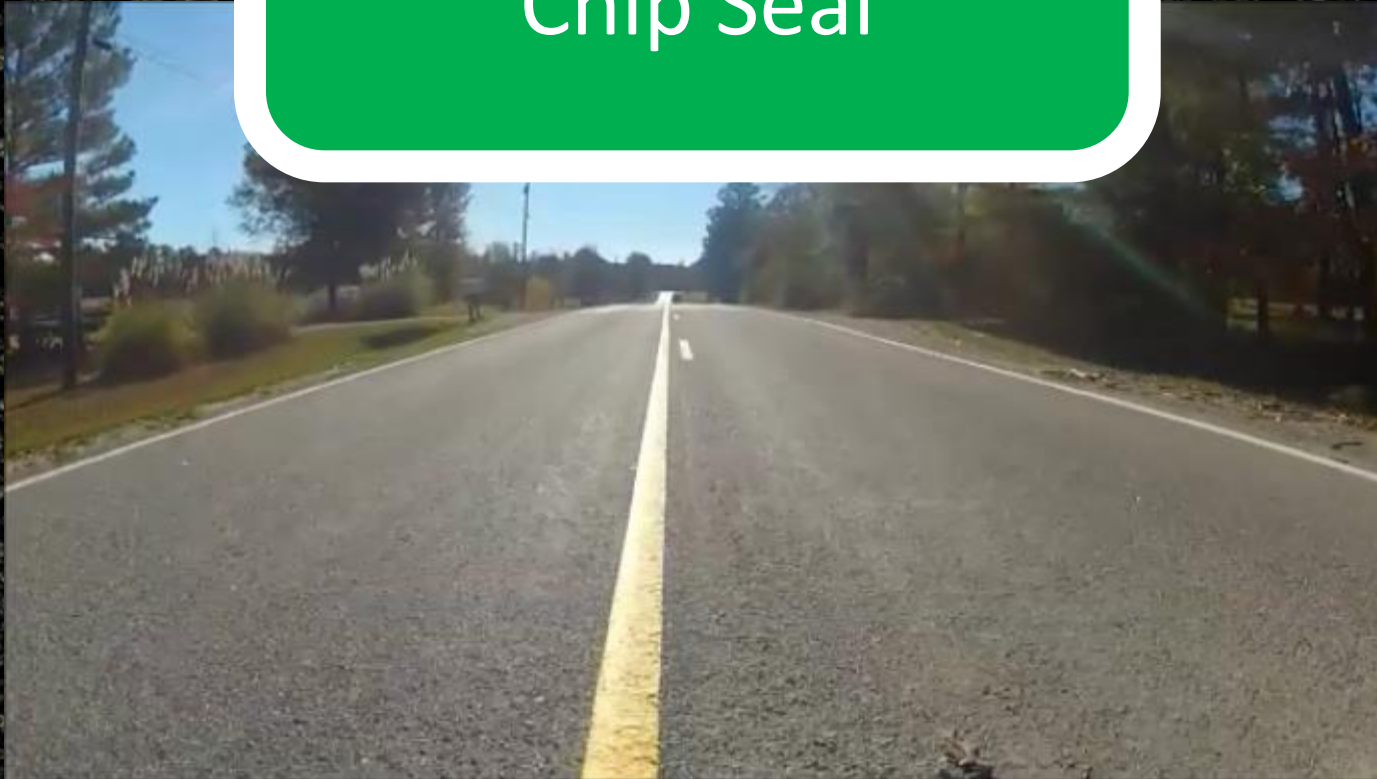
## L7 – Chip Seal with Crack Sealing



## L8 – Triple Layer Chip Seal



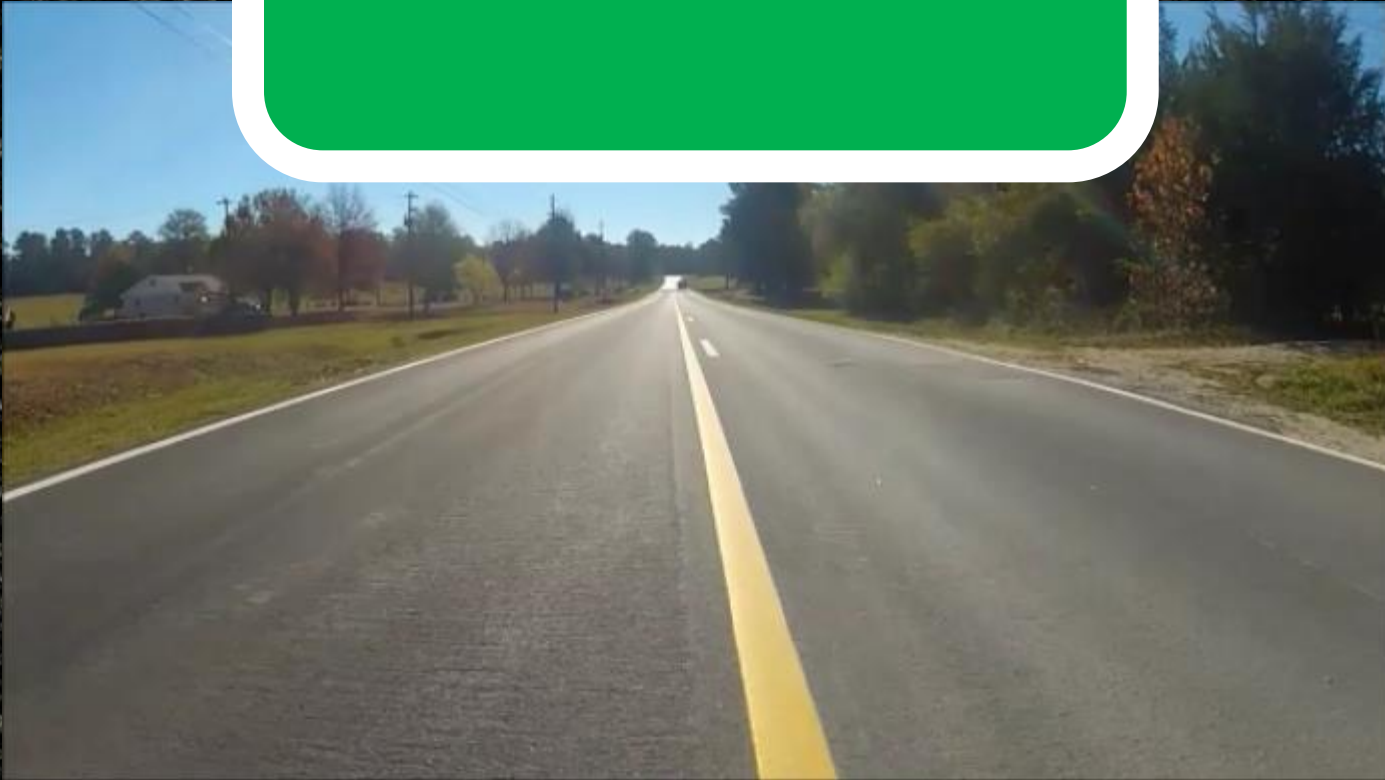
## L9 – Double Layer Chip Seal



# L10 – Cape Seal (Micro Surface on Chip Seal)



# L11 – Micro Surface



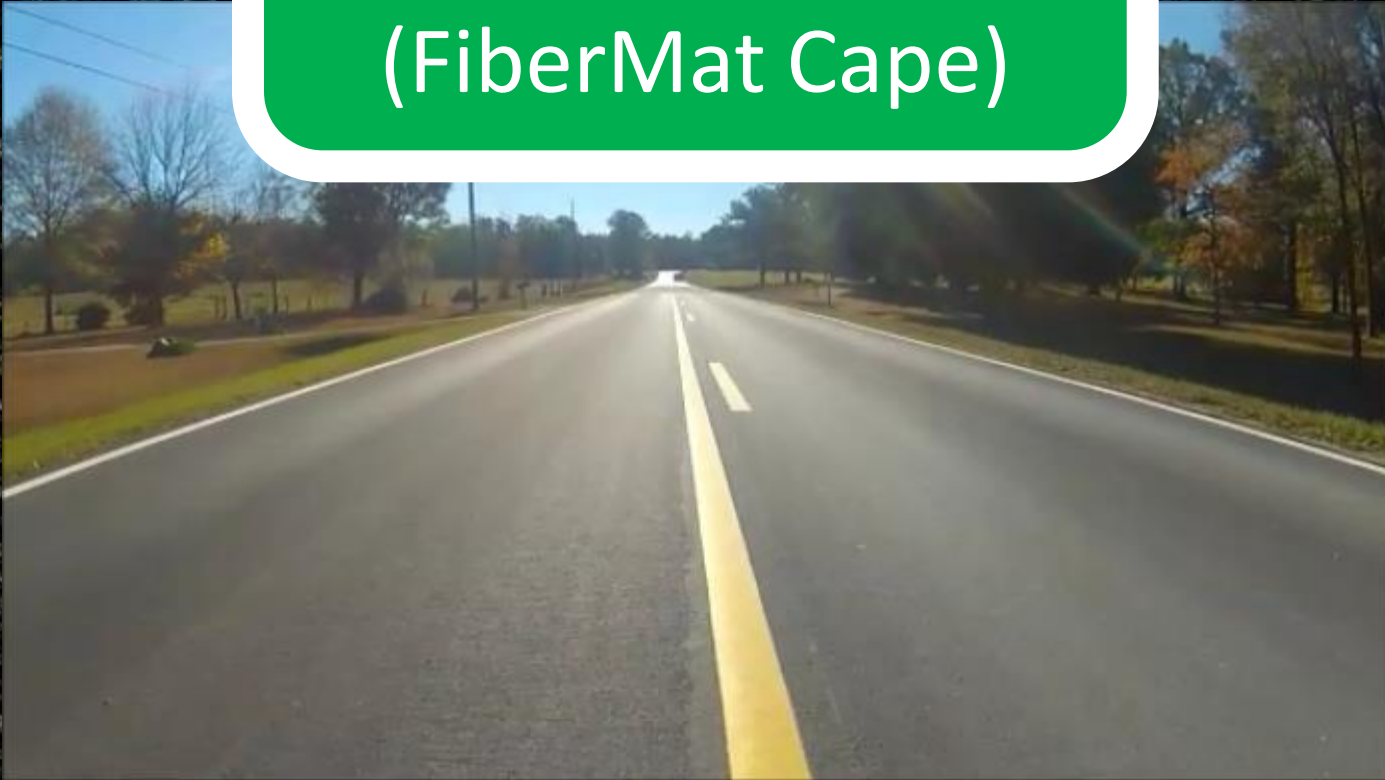
## L12 – Micro Surface with Crack Sealing



## L13 – Double Layer Micro Surface



# L14 – Micro Surface on FiberMat (FiberMat Cape)



# L15 – Micro Surface on Scrub Seal (Scrub Cape)



# L16 – Scrub Seal



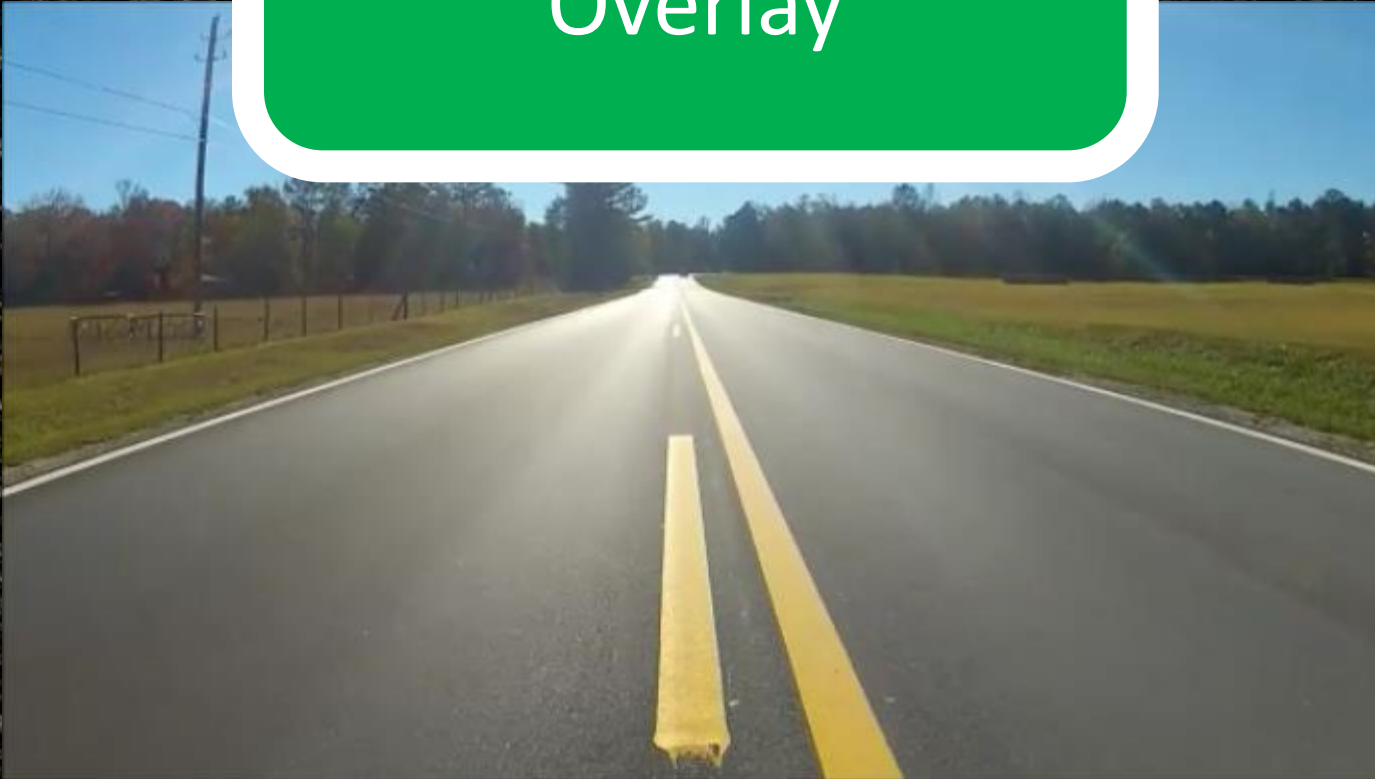
# L17 – Subsection Distress Data Demonstration



# L18 – Thin HMA Overlay on FiberMat (HMA Cape)



# L19 – Thin HMA Overlay



L20 – Thin HMA  
Overlay on  
100% RAP Mix Base



# L21 – Polymer Thin HMA Overlay



## L22 – Bonded Thin HMA Overlay



# L23 – 50% RAP Thin HMA Overlay



# L24 – 5% RAS Thin HMA Overlay



# L25 – HiMA Thin HMA Overlay



# 159 Testing Overview

- Weekly
  - ARAN Van (rutting, roughness, texture)
  - Video for crack mapping
  - Visual inspections with notes/pictures
- Monthly
  - Wet ribbed surface friction
  - Subgrade moisture readings
  - Falling weight deflectometer (FWD)
- Other
  - Ground penetration radar (GPR)

# ARAN Van for Roughness/Texture



# ARAN Van for Rut Depths



# Falling Weight Deflectometer



# Lee 159 Testing

- Ground Penetrating Radar
  - By 3d-Radar
  - Dec. 3, 2012



# Lee 159

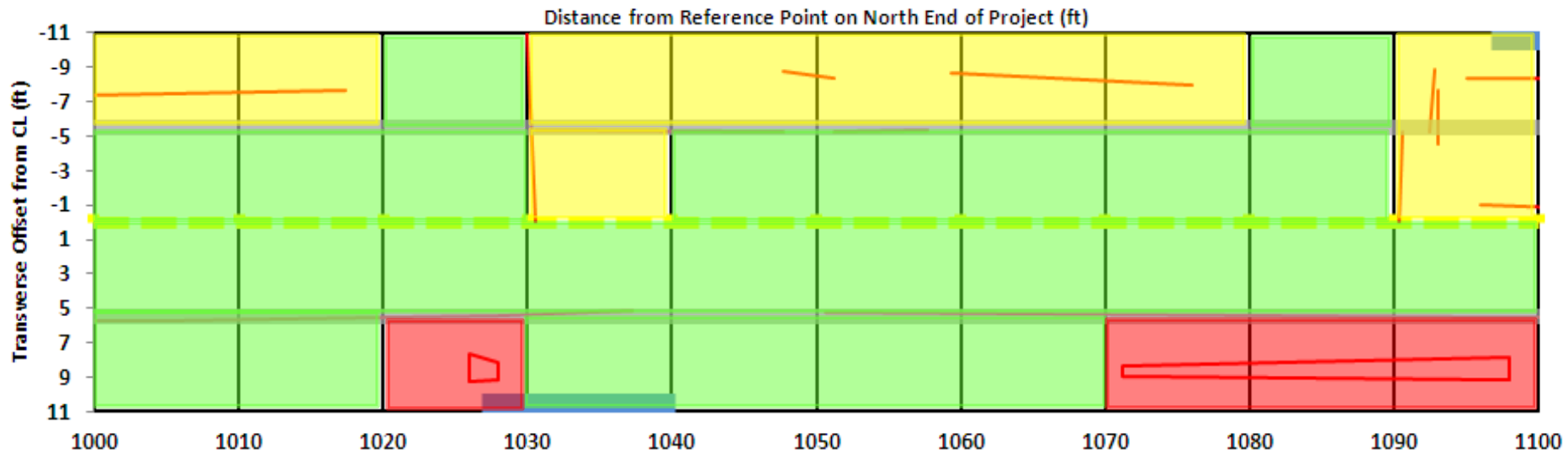
- Progression of cracking in control



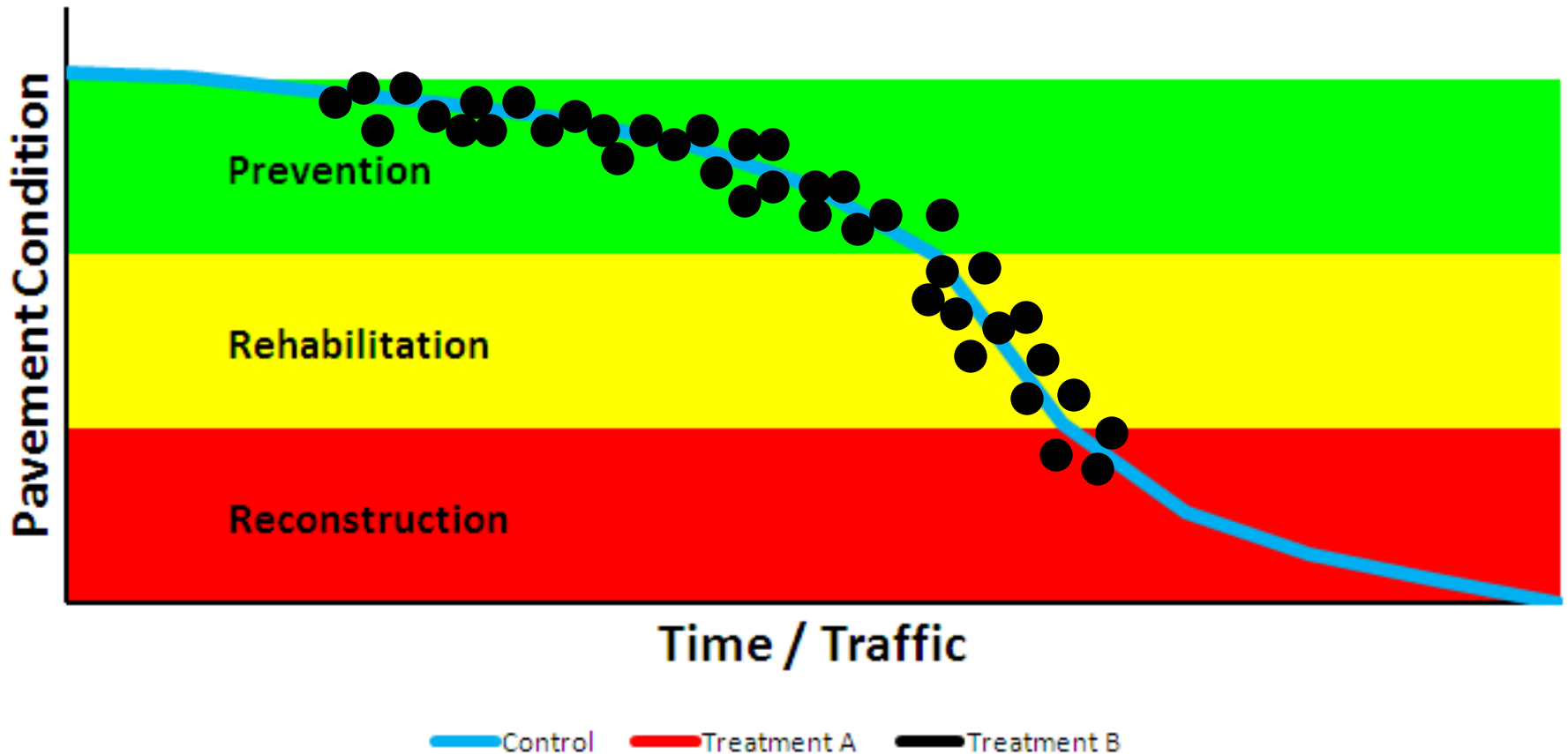
# Lee 159



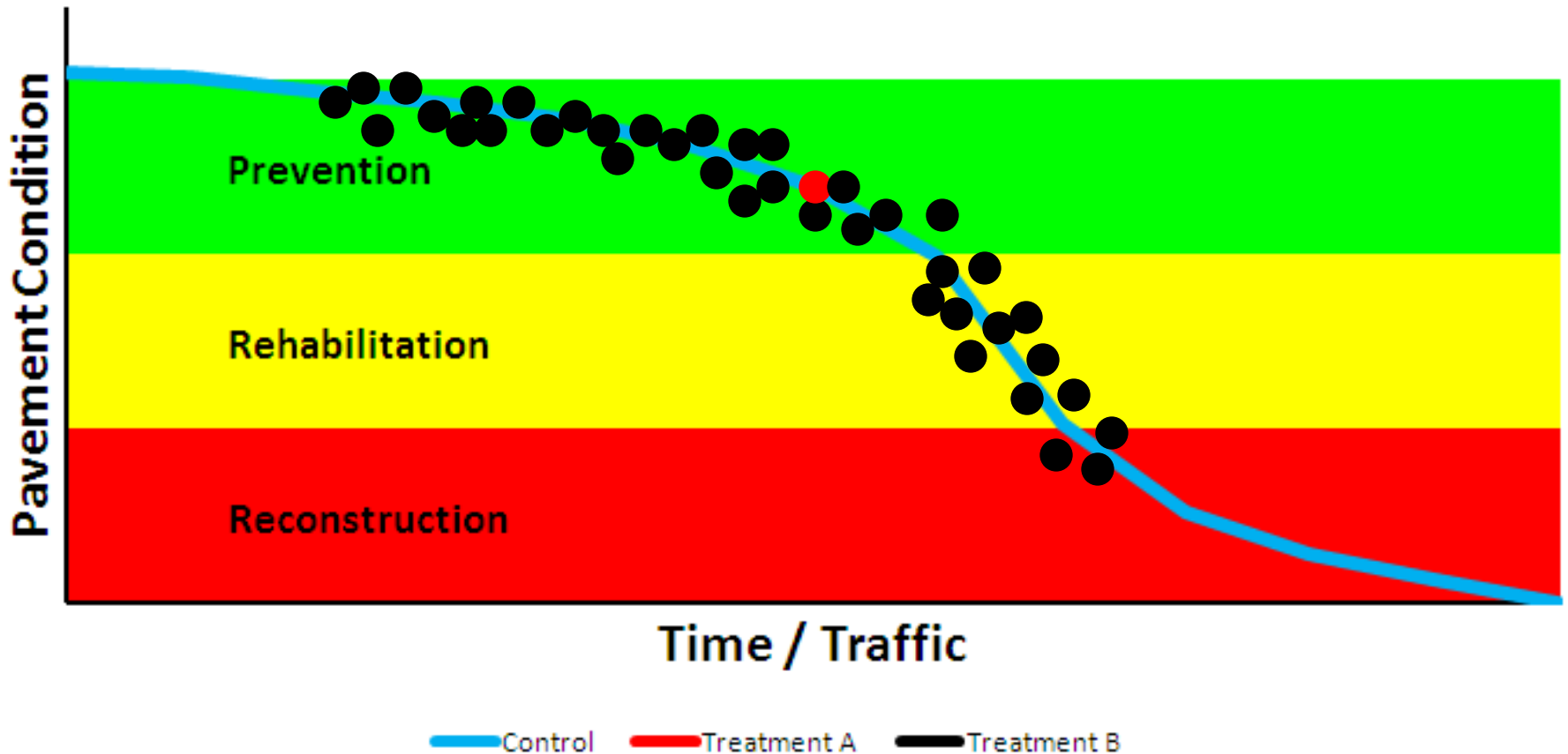
# L11 Lee Road 159



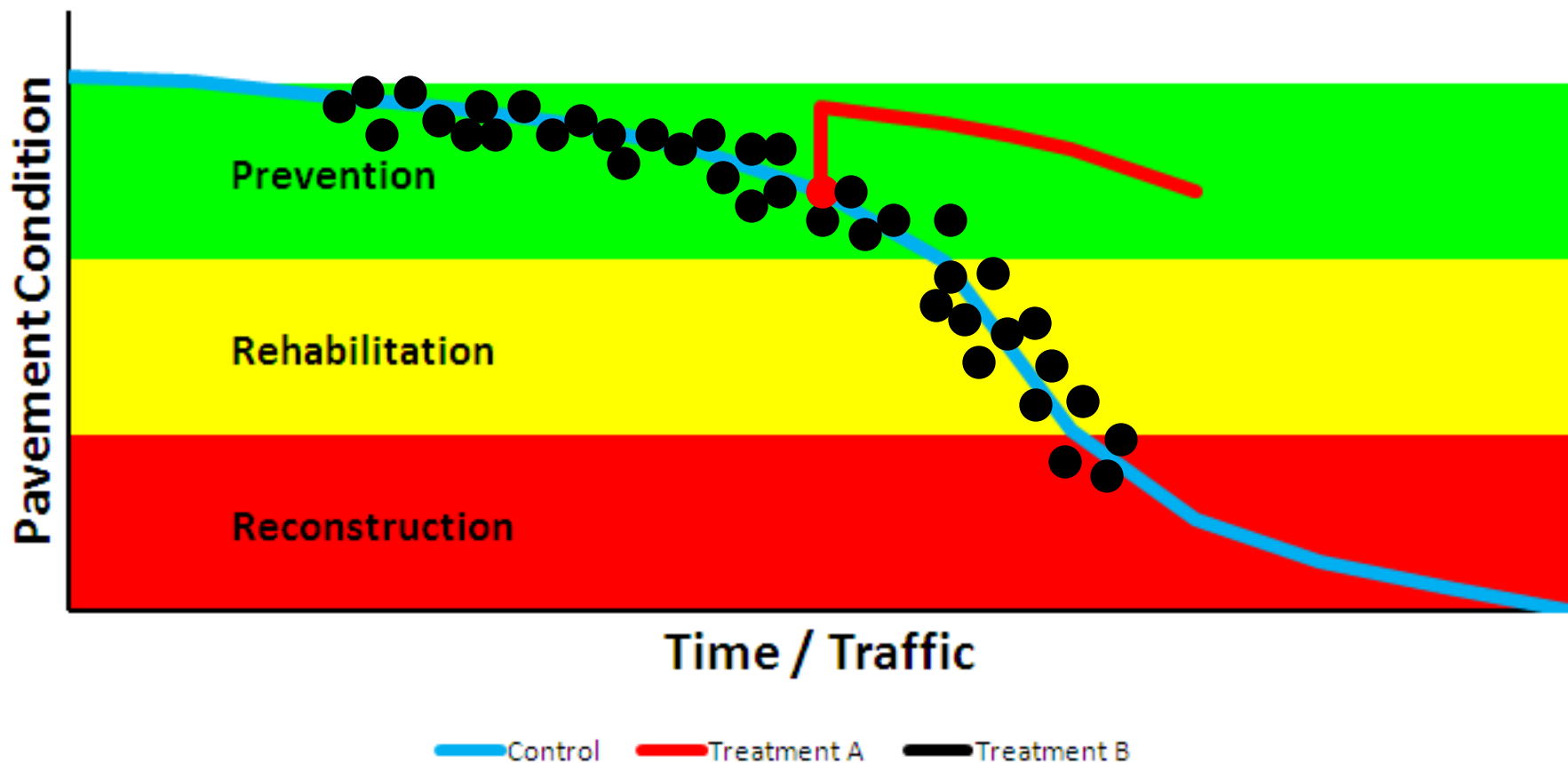
# PG Study Implementable Findings



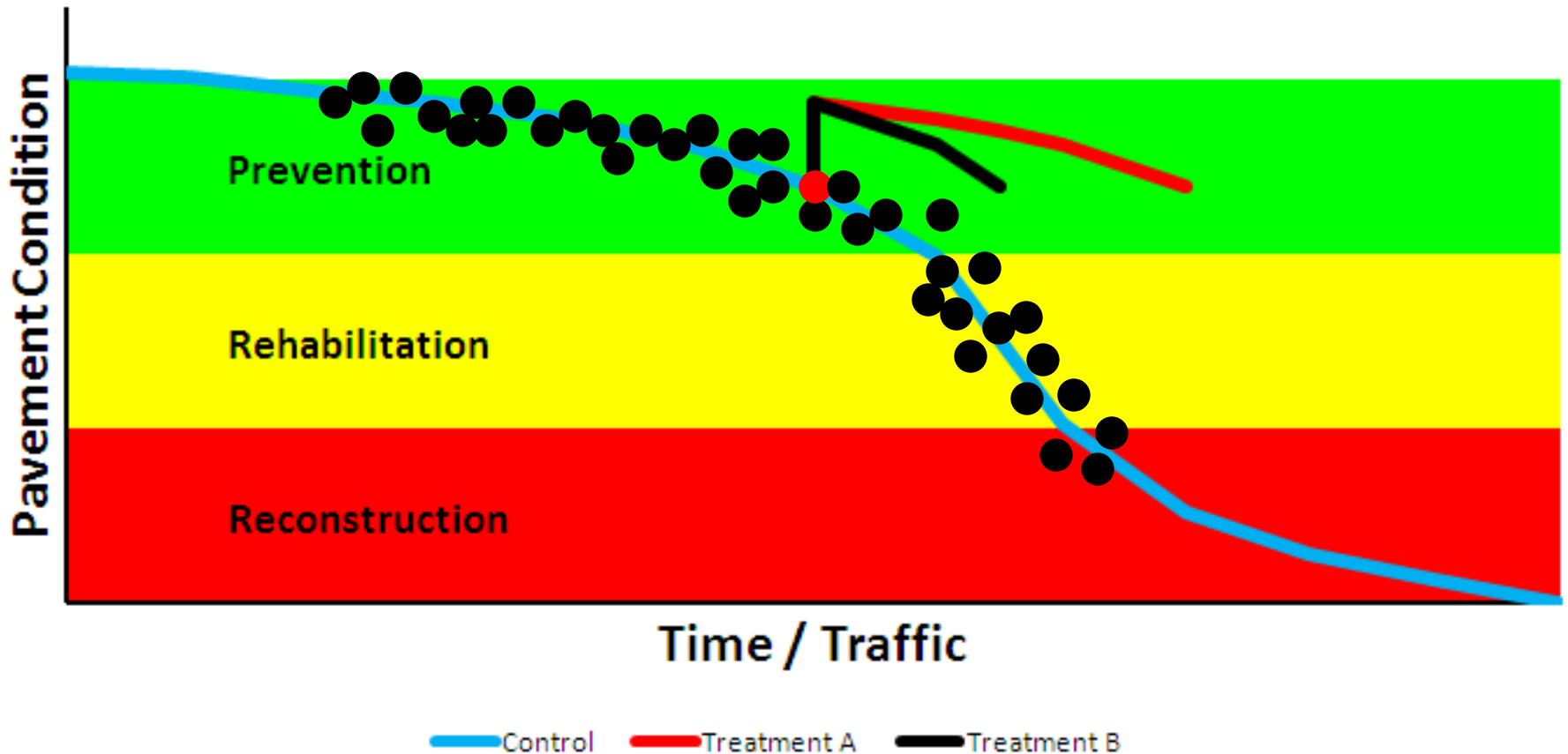
# PG Study Implementable Findings



# PG Study Implementable Findings



# PG Study Implementable Findings



# www.pavetrack.com



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Performance data for each section can be viewed by positioning your mouse over the section in question and left-clicking. Based on feedback from our research sponsors, the performance reports have been revised to include crack maps. The 2009 performance reports are now a fully integrated and active part of the web presentation.

