2012 NCAT Pavement Test Track Pavement Preservation Study

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NE Pavement Preservation Partnership Meeting

April 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

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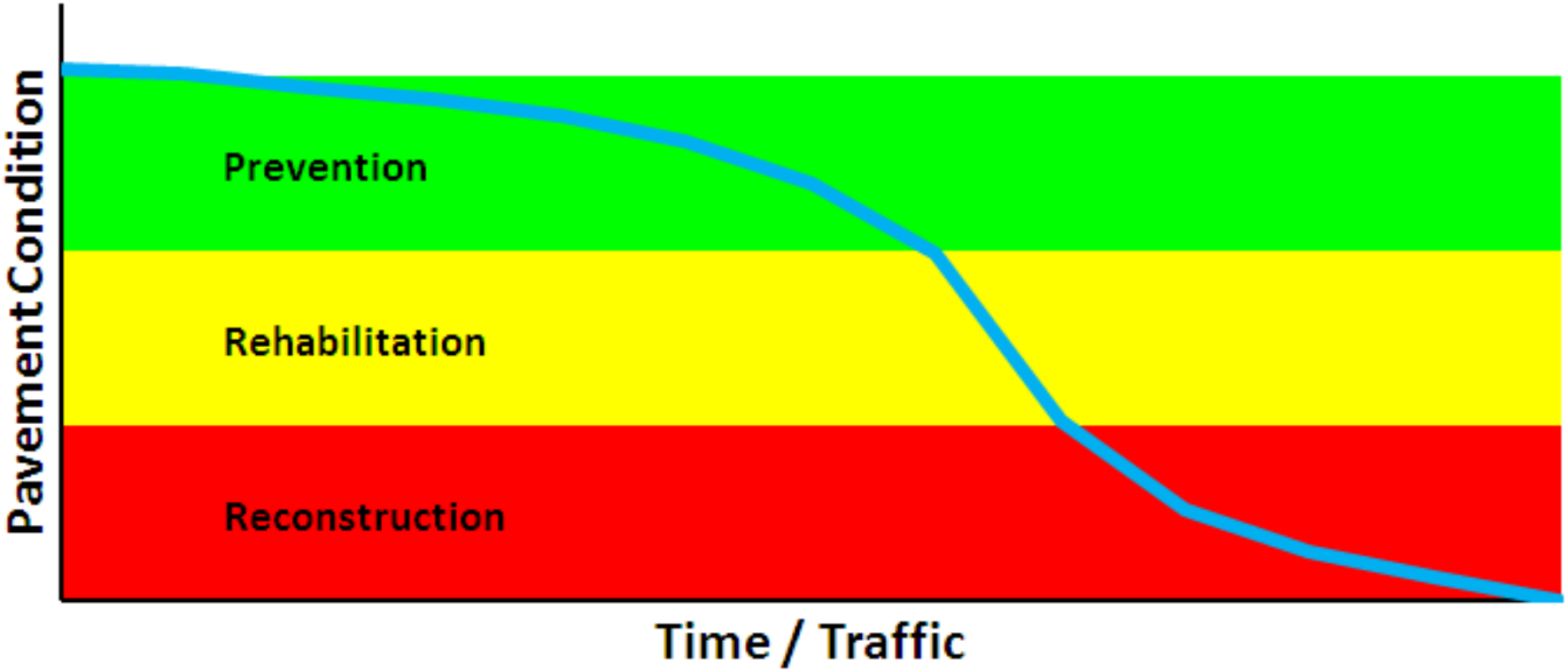
Pavement Preservation



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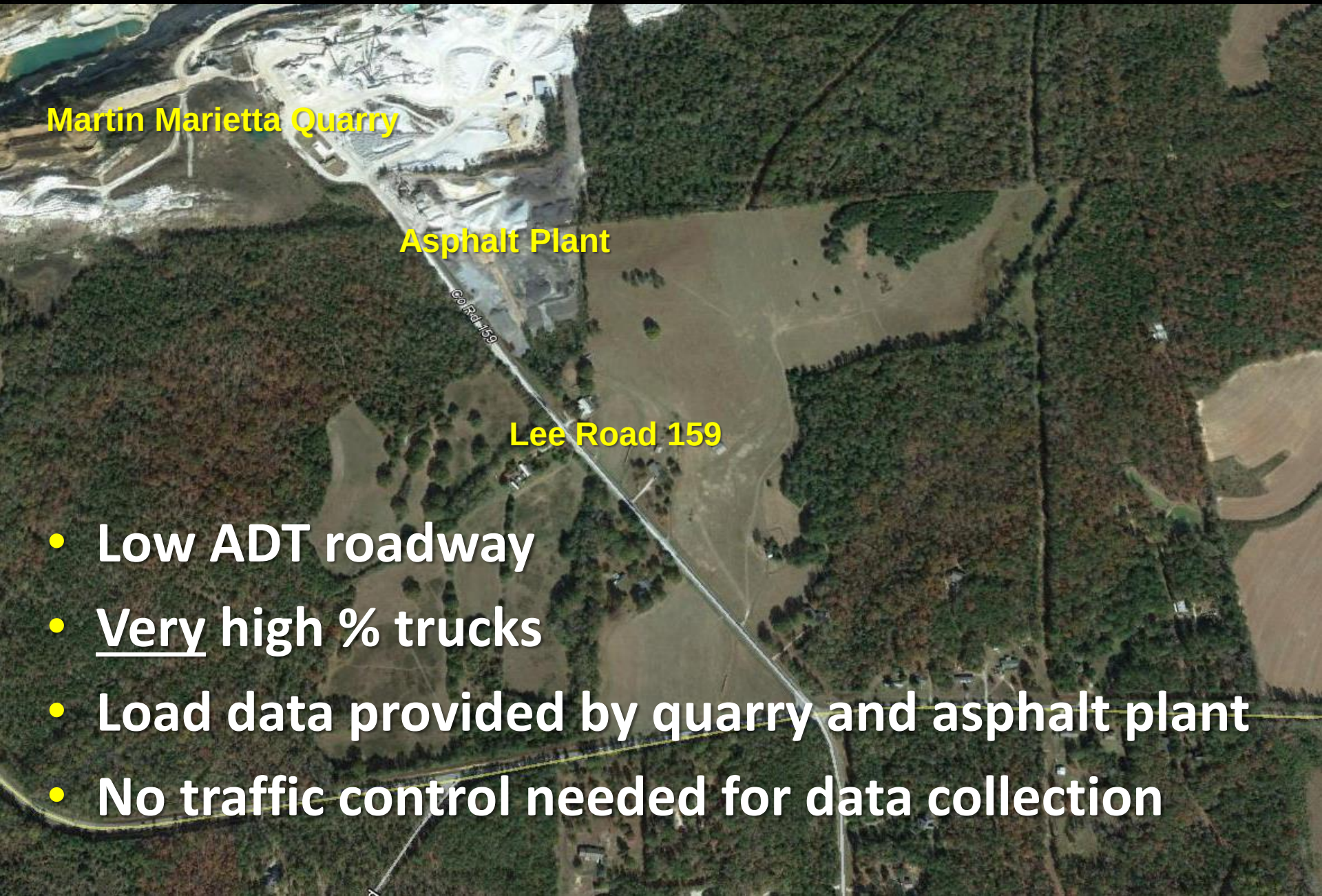
2012 Preservation Group (PG) Study

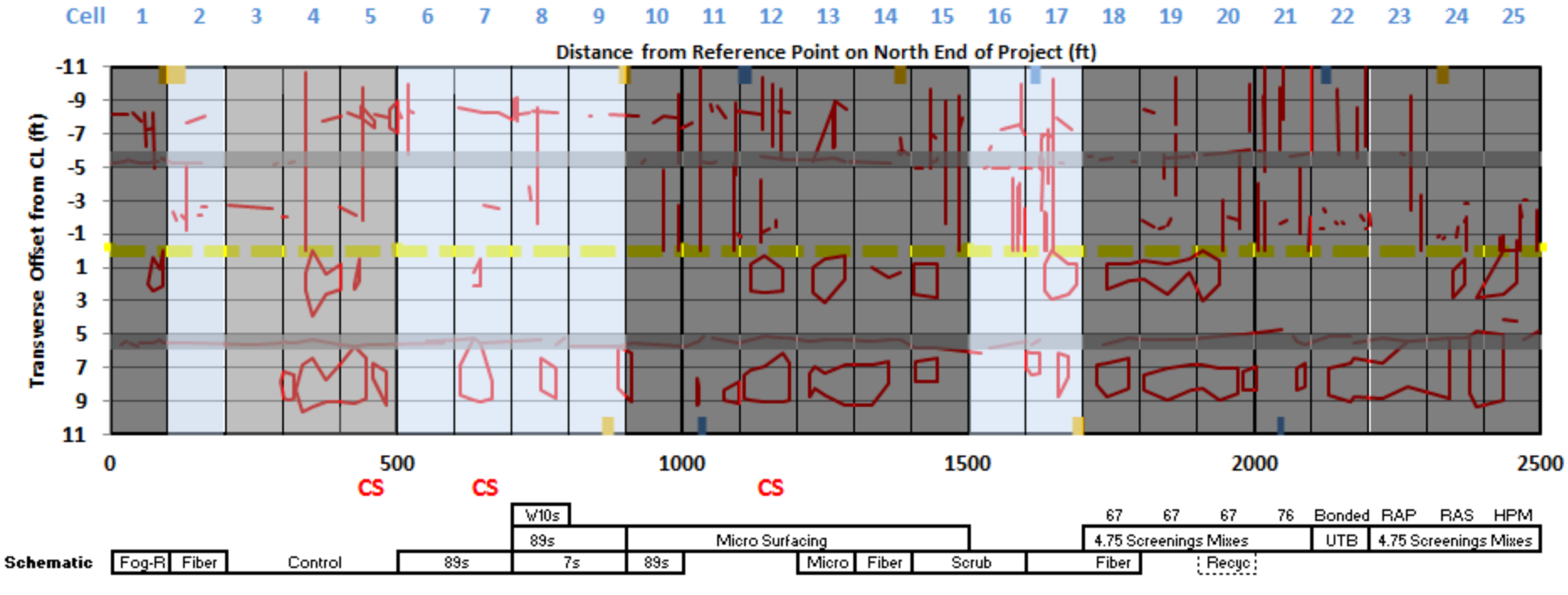
- Quantify life extending benefit of study treatments
  - Time/traffic to return to pretreatment condition(s)
  - Test sections on the Track and Lee Road 159
- Sampling/testing for construction quality

PG Sections on Lee Road 159



- 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

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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 (+$W2_{lightweight}$)

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Rates Checked Prior to Placement

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Actual Rates Verified During Placement

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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

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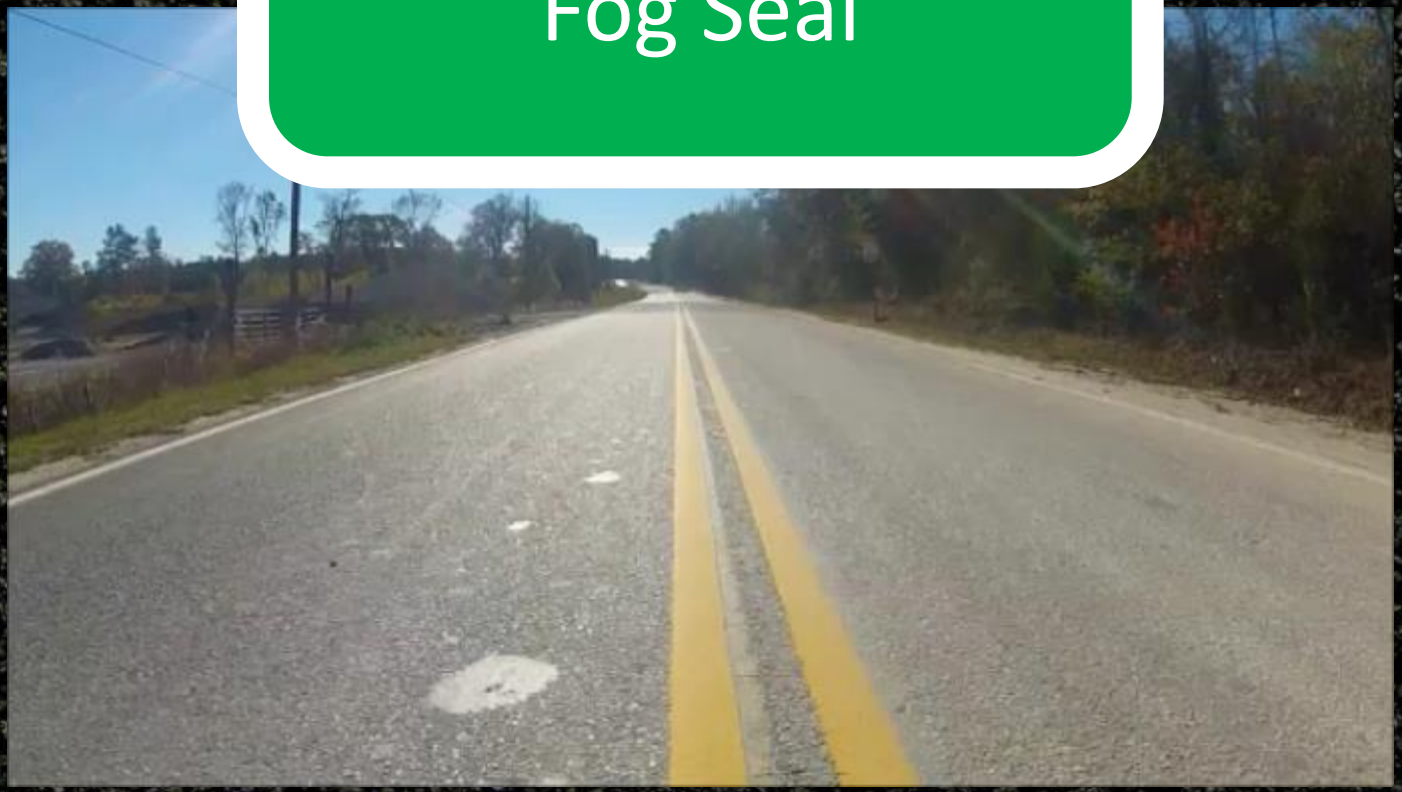
L1 – Rejuvenating Fog Seal



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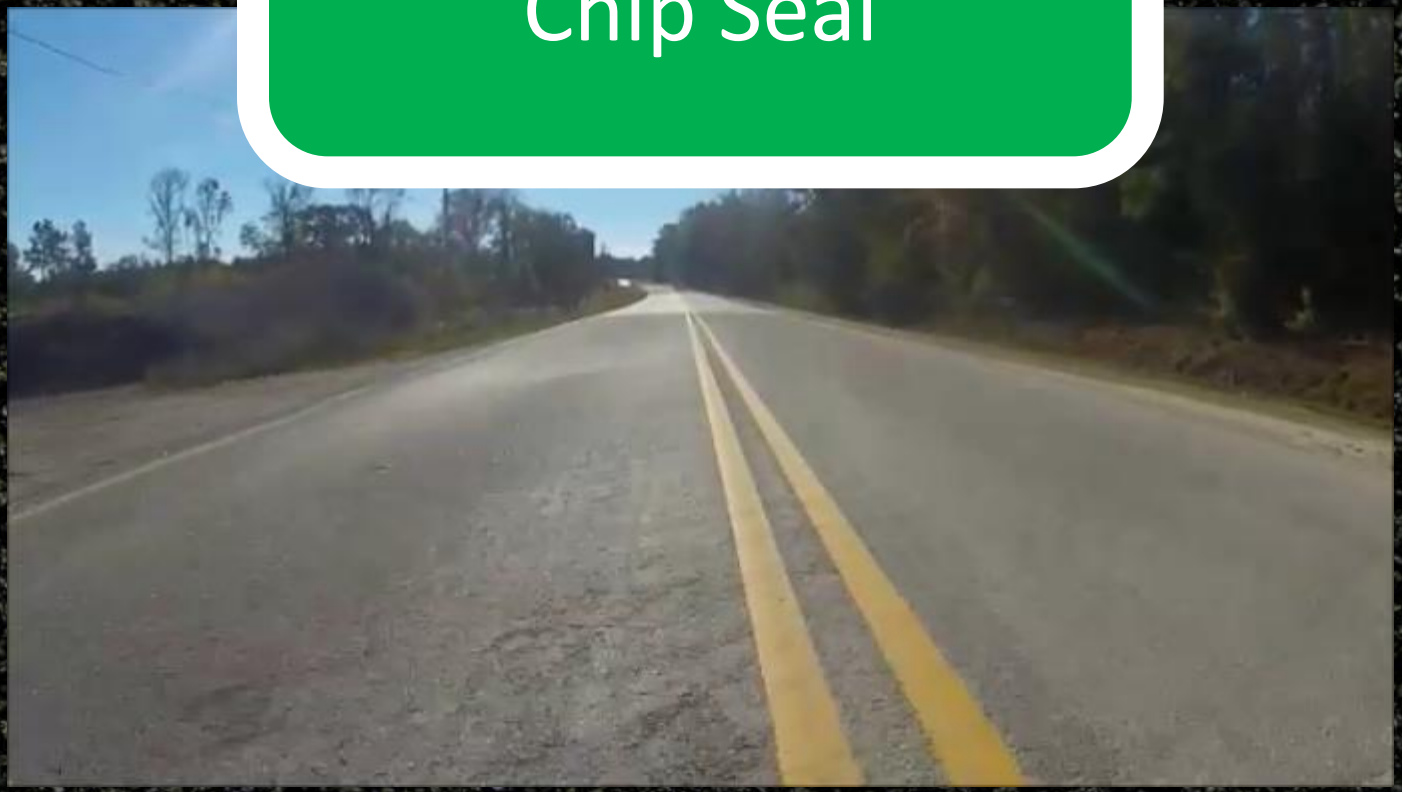
L2 – FiberMat Chip Seal



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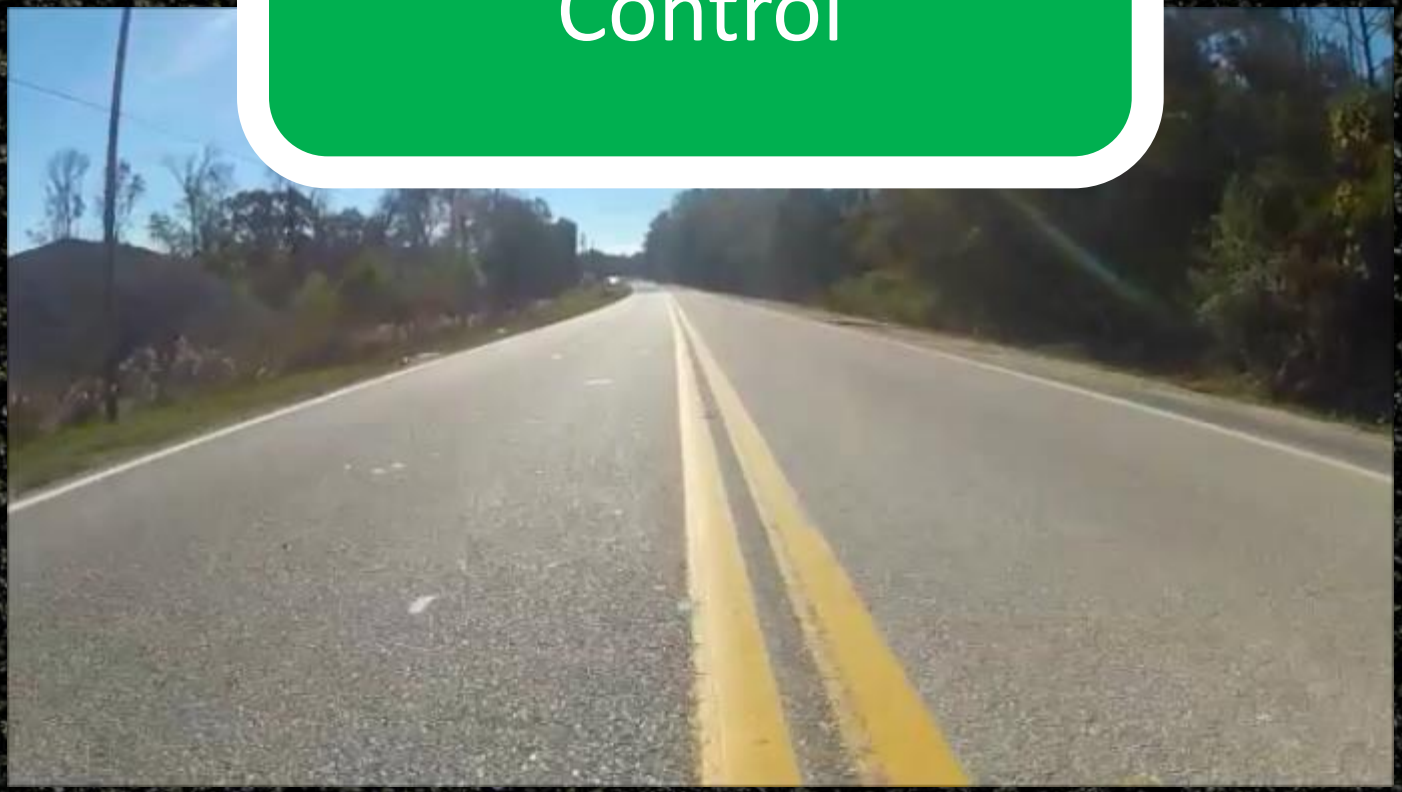
L3 – Untreated Control



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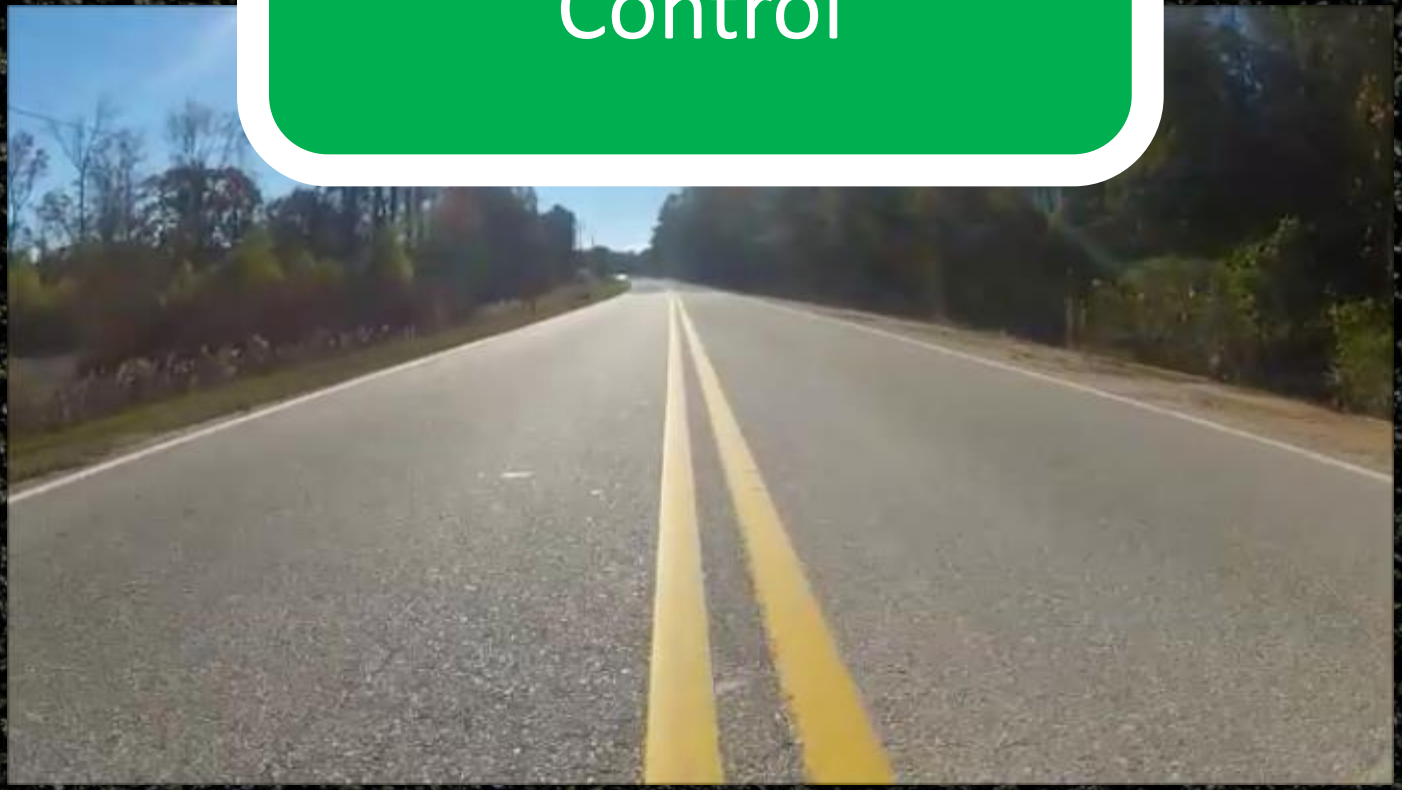
L4 – Untreated Control



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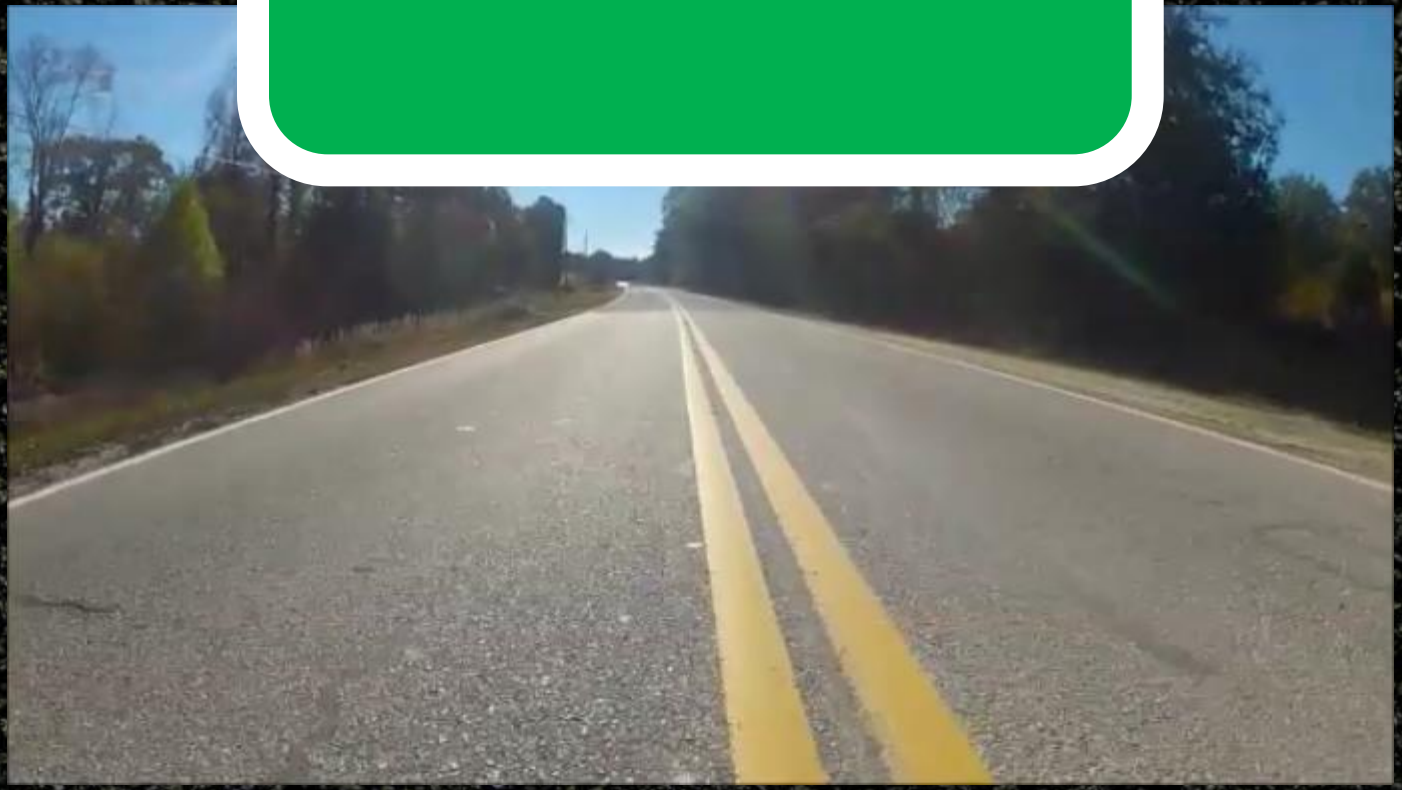
L5 – Crack Sealing



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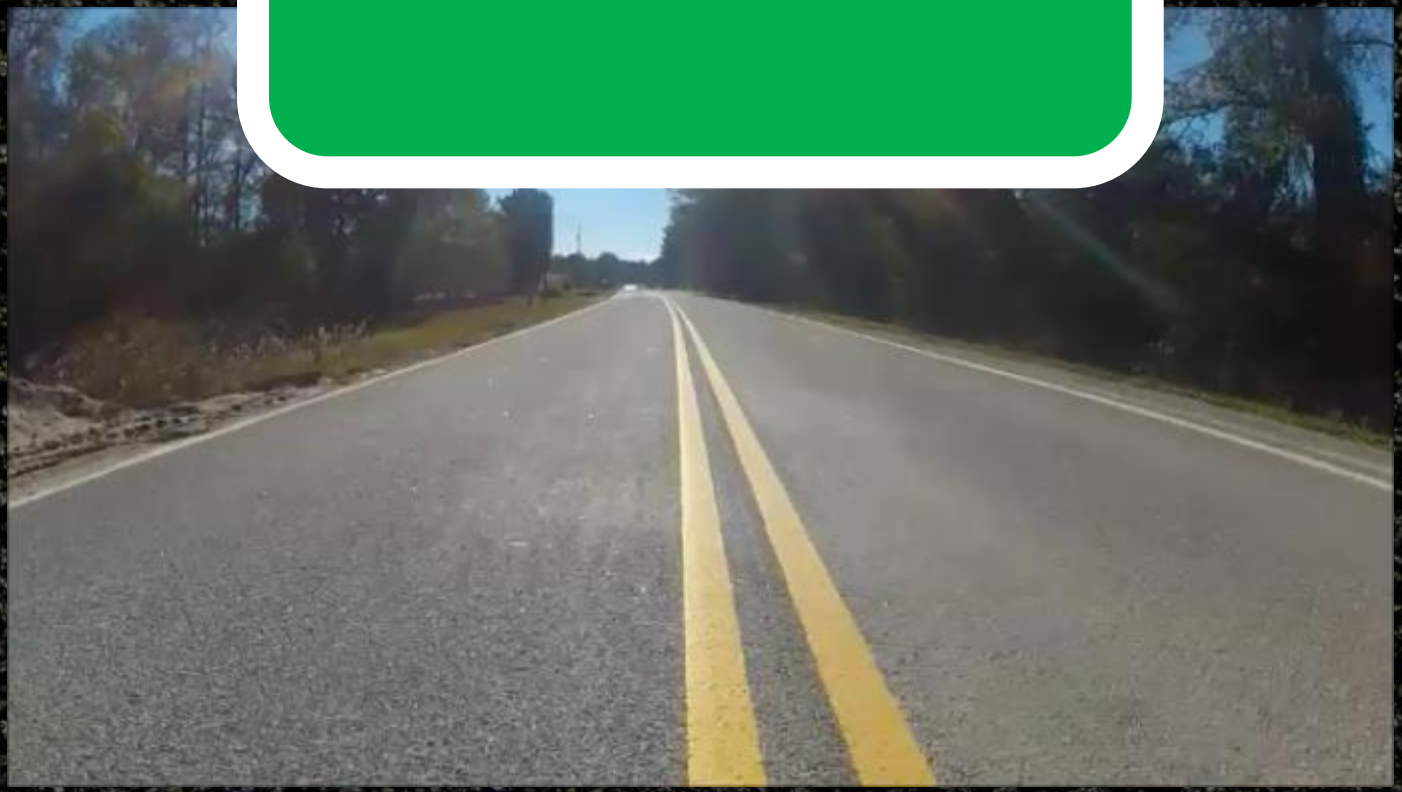
L6 – Chip Seal



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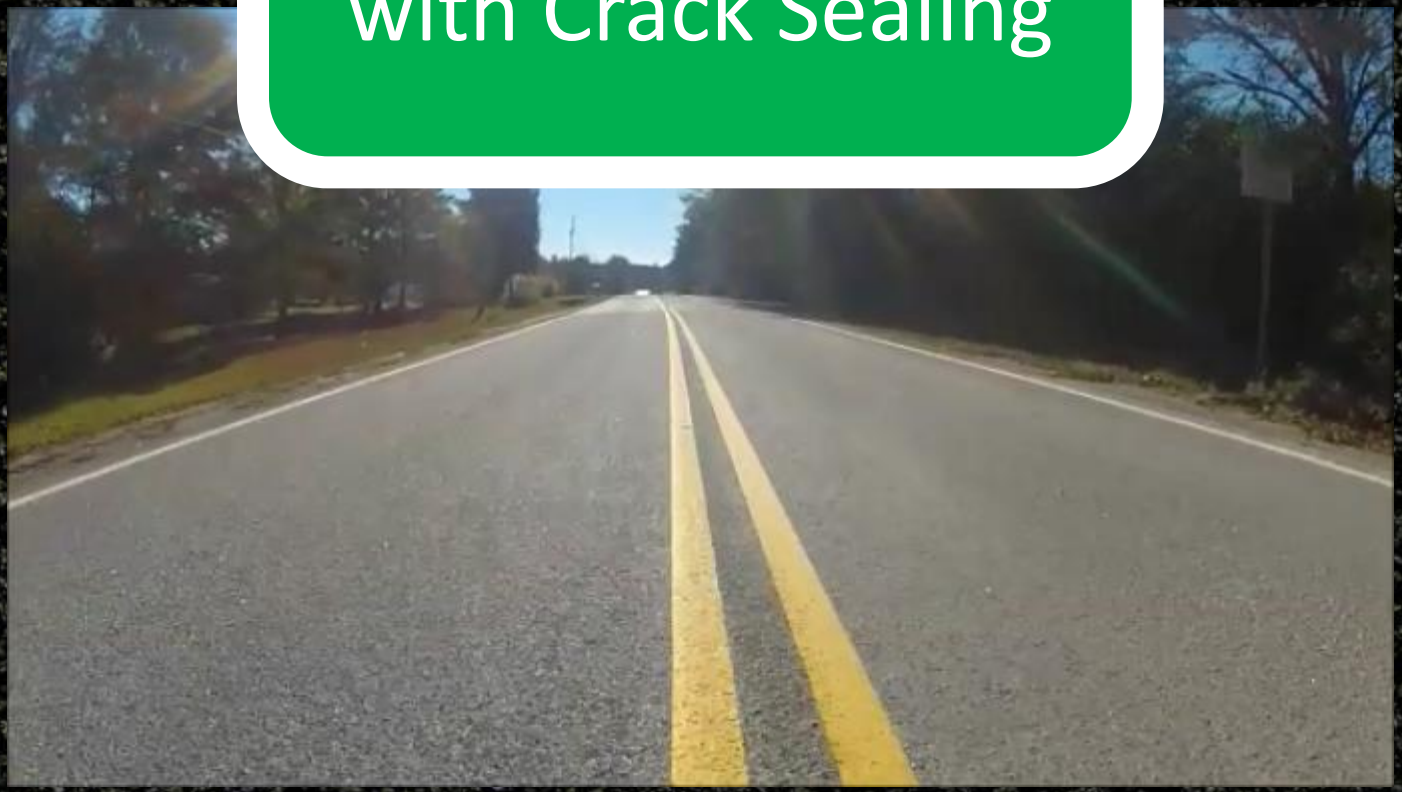
L7 – Chip Seal with Crack Sealing



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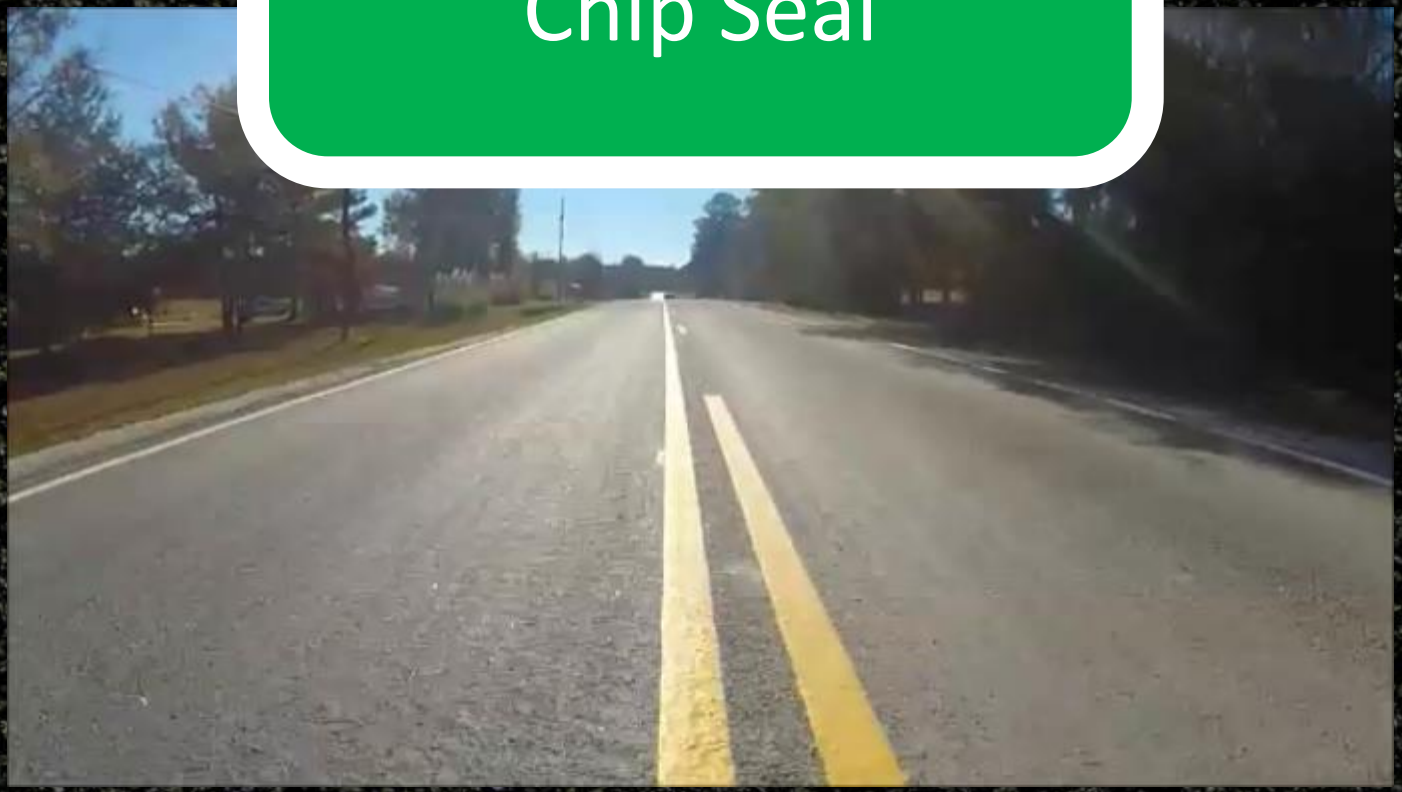
L8 – Triple Layer Chip Seal



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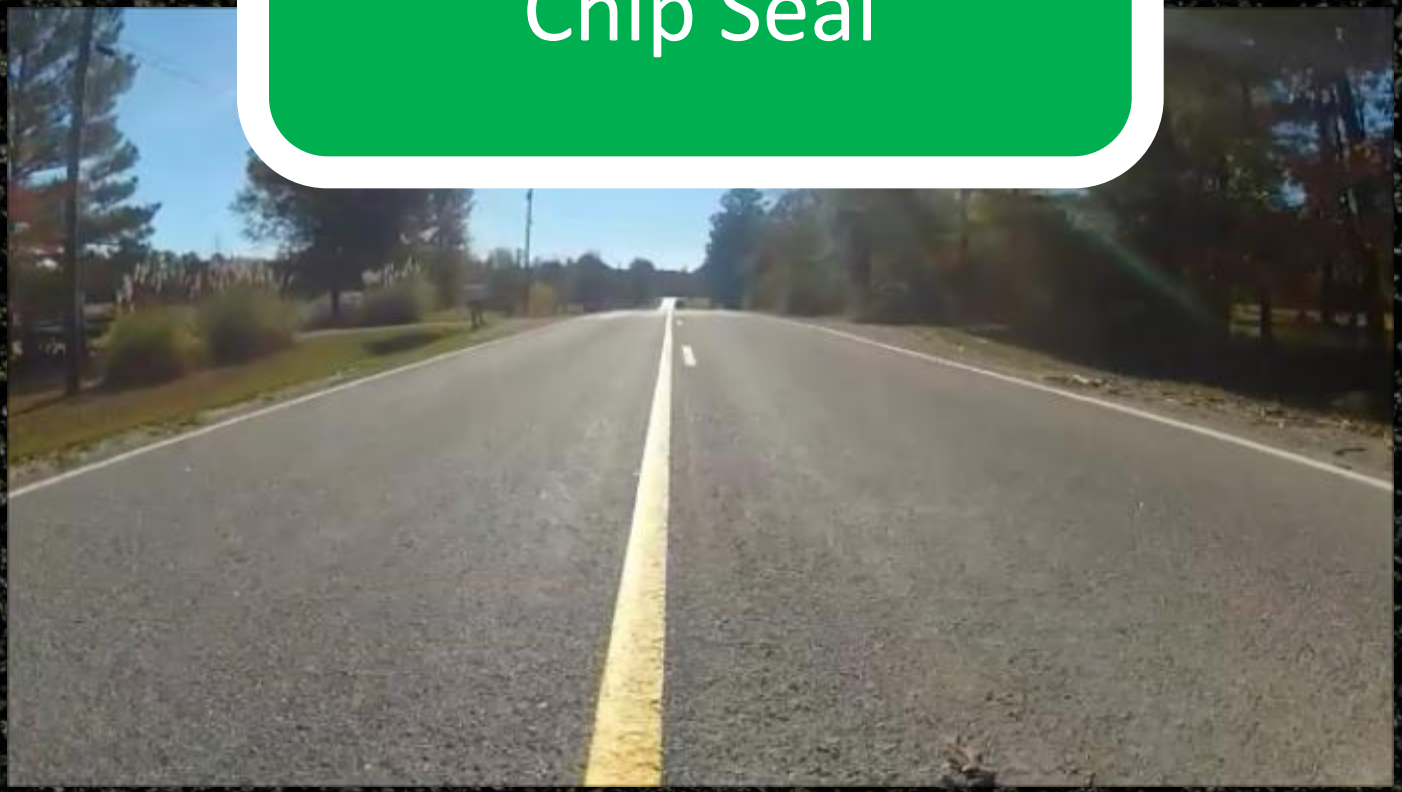
L9 – Double Layer Chip Seal



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L10 – Cape Seal (Micro Surface on Chip Seal)

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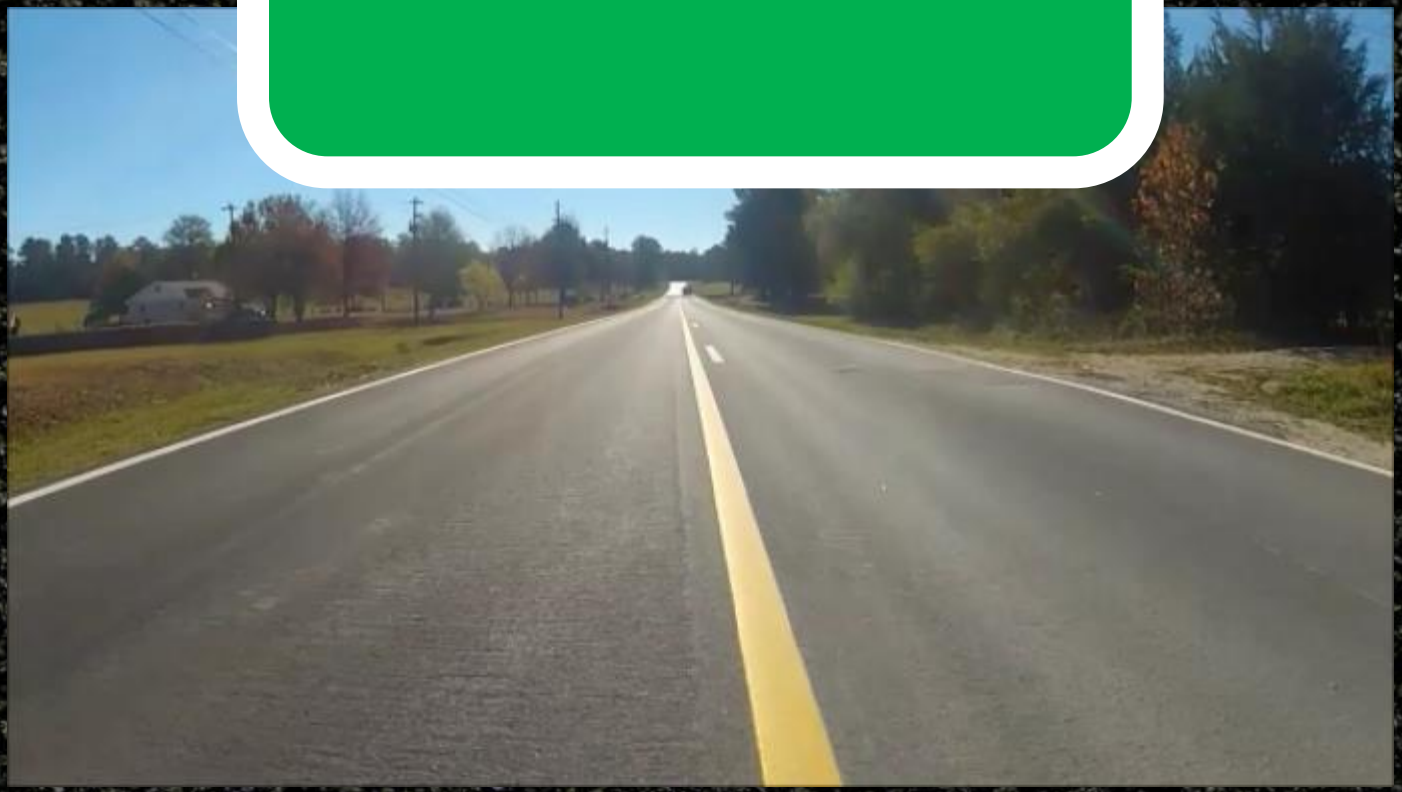
L11 – Micro Surface



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L12 – Micro Surface with Crack Sealing

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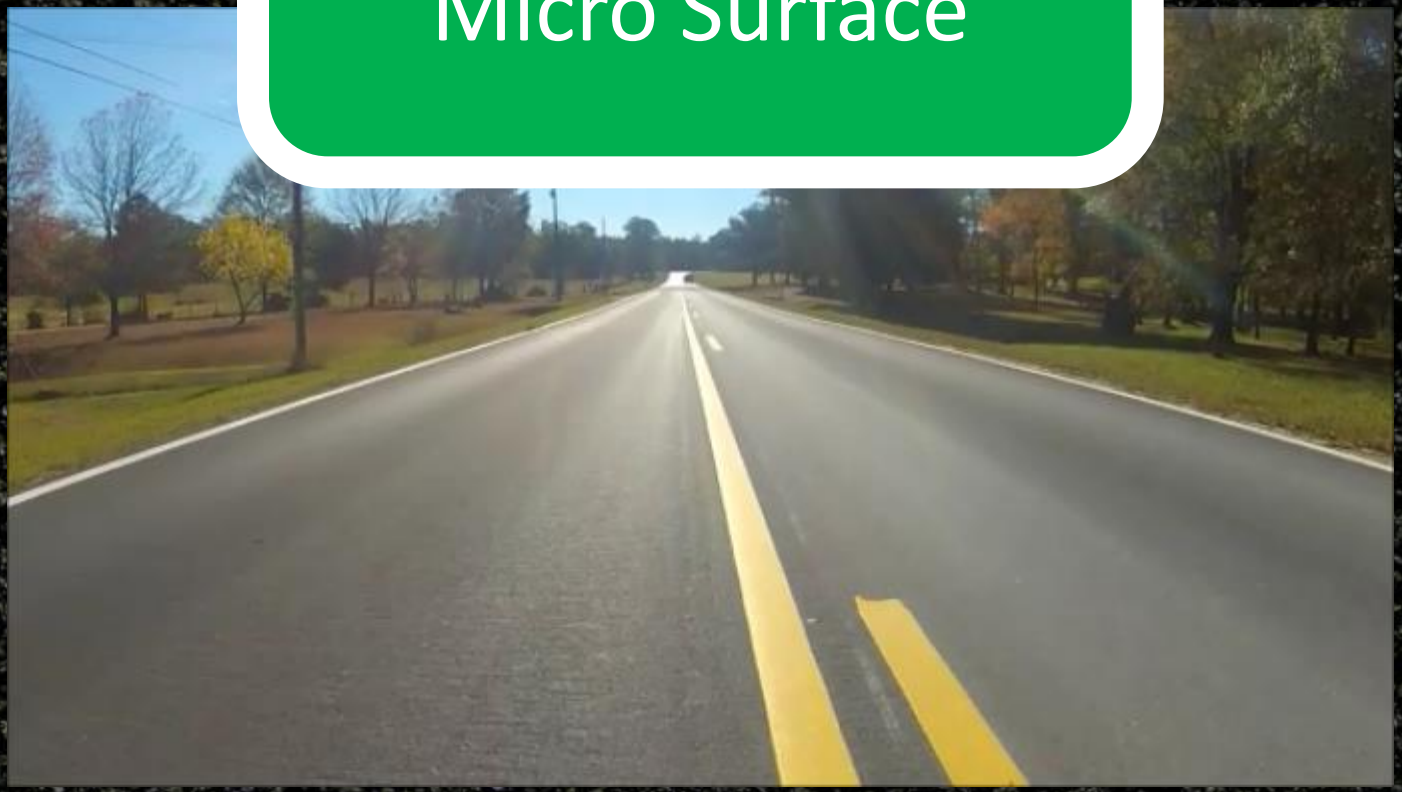
L13 – Double Layer Micro Surface



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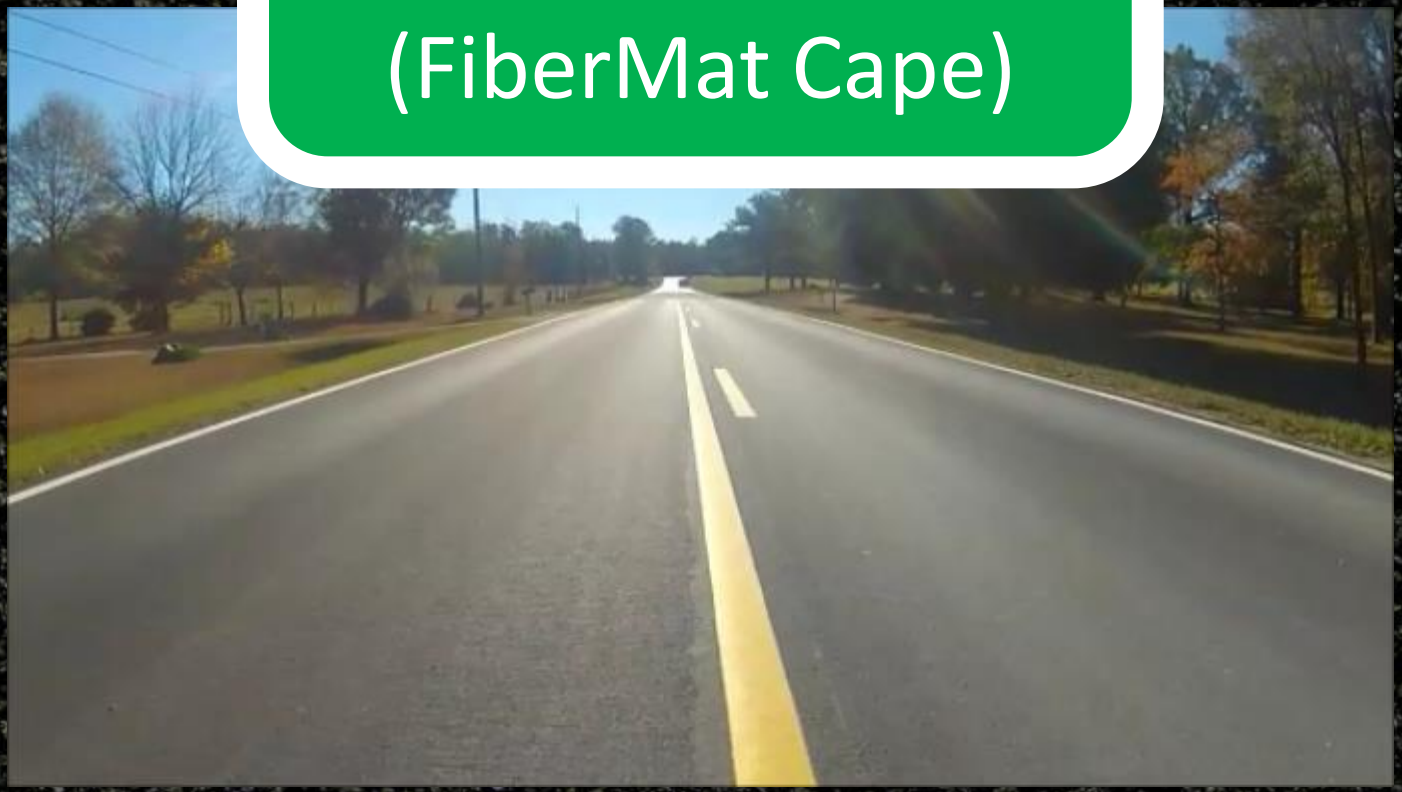
L14 – Micro Surface on FiberMat (FiberMat Cape)



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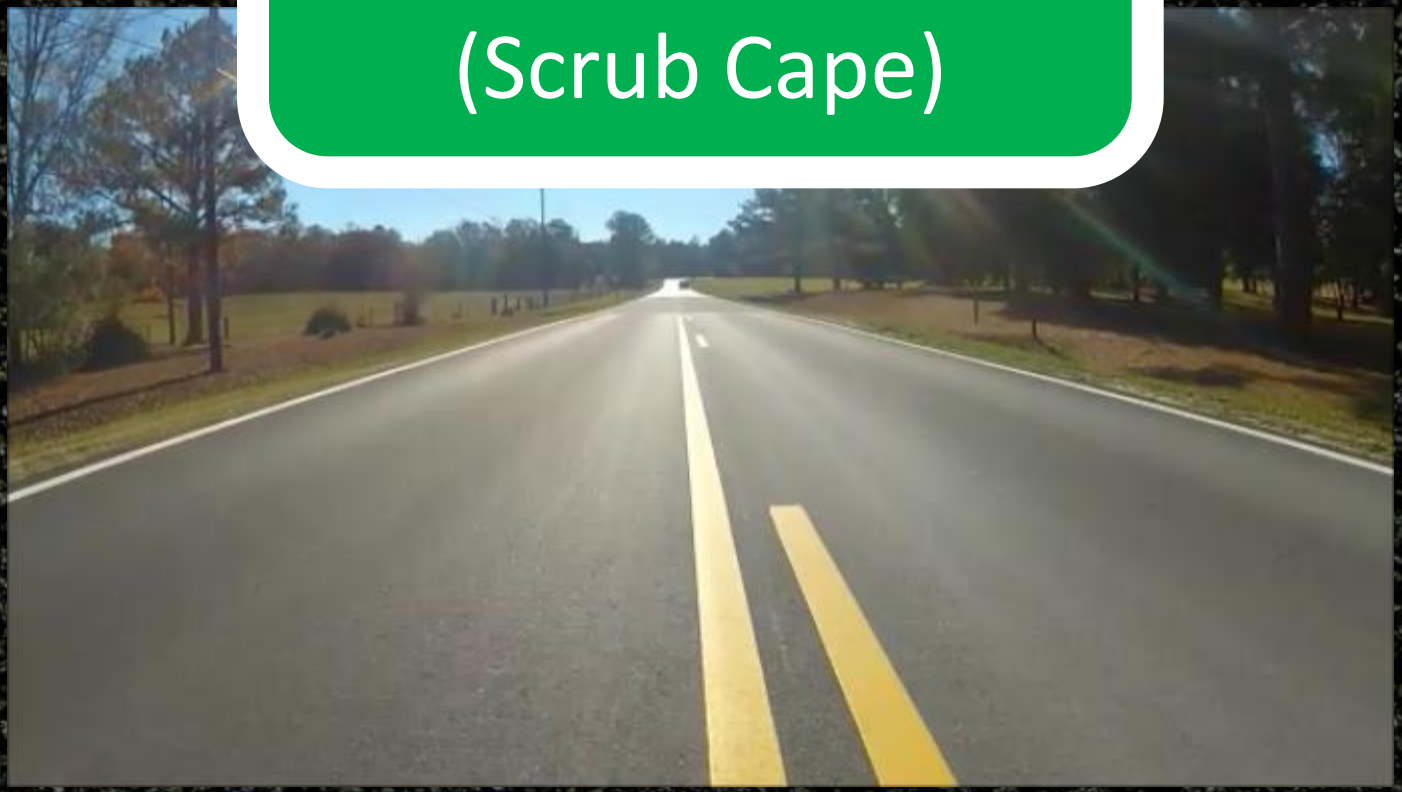
L15 – Micro Surface on Scrub Seal (Scrub Cape)



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L16 – Scrub Seal

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L17 – Subsection Distress Data Demonstration

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L18 – Thin HMA Overlay on FiberMat (HMA Cape)

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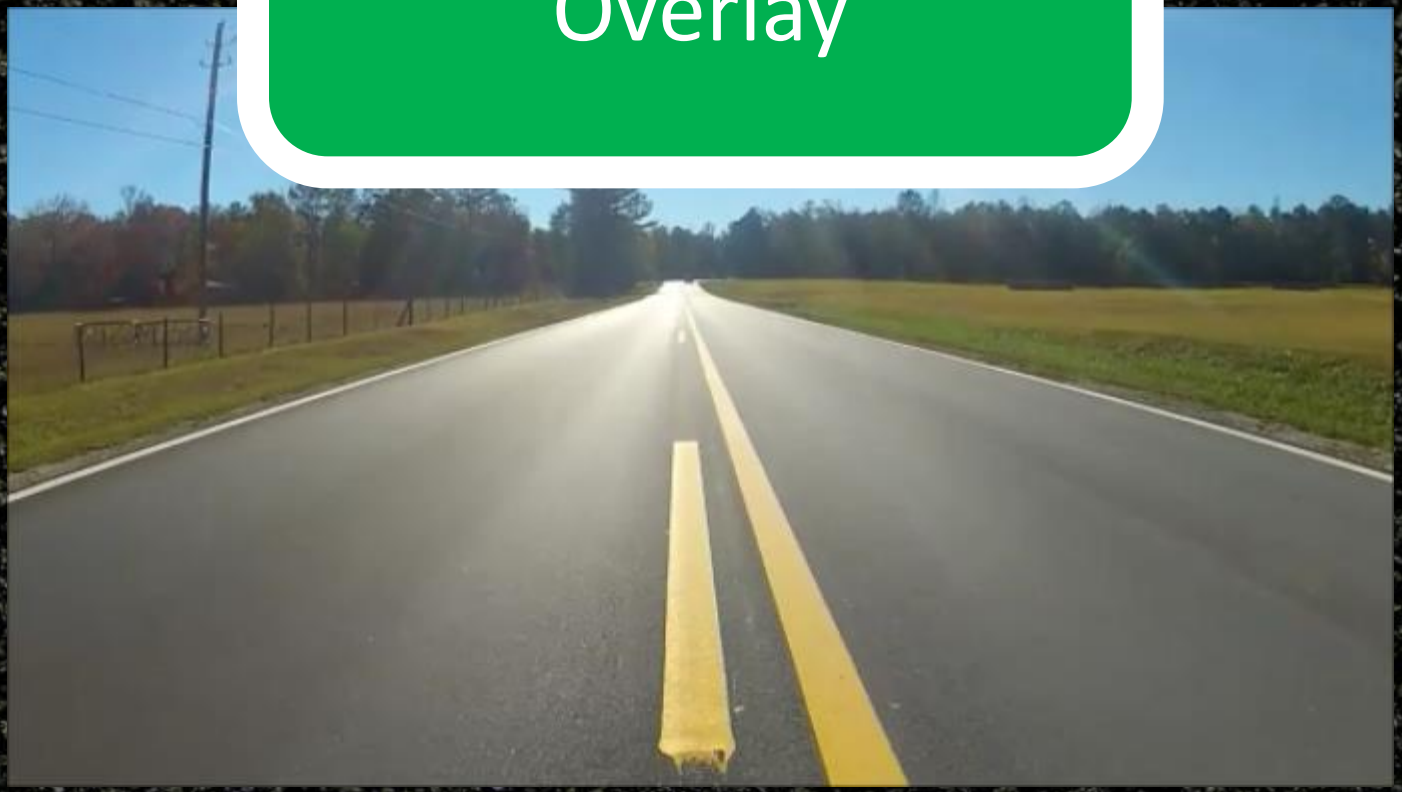
L19 – Thin HMA Overlay



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L20 – Thin HMA Overlay on 100% RAP Mix Base

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L21 – Polymer Thin HMA Overlay

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L22 – Bonded Thin HMA Overlay

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L23 – 50% RAP
Thin HMA Overlay

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L24 – 5% RAS
Thin HMA Overlay

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L25 – HiMA
Thin HMA Overlay

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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

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ARAN Van for Rut Depths

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Falling Weight Deflectometer

Lee 159 Testing

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

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Lee 159

- Progression of cracking in control

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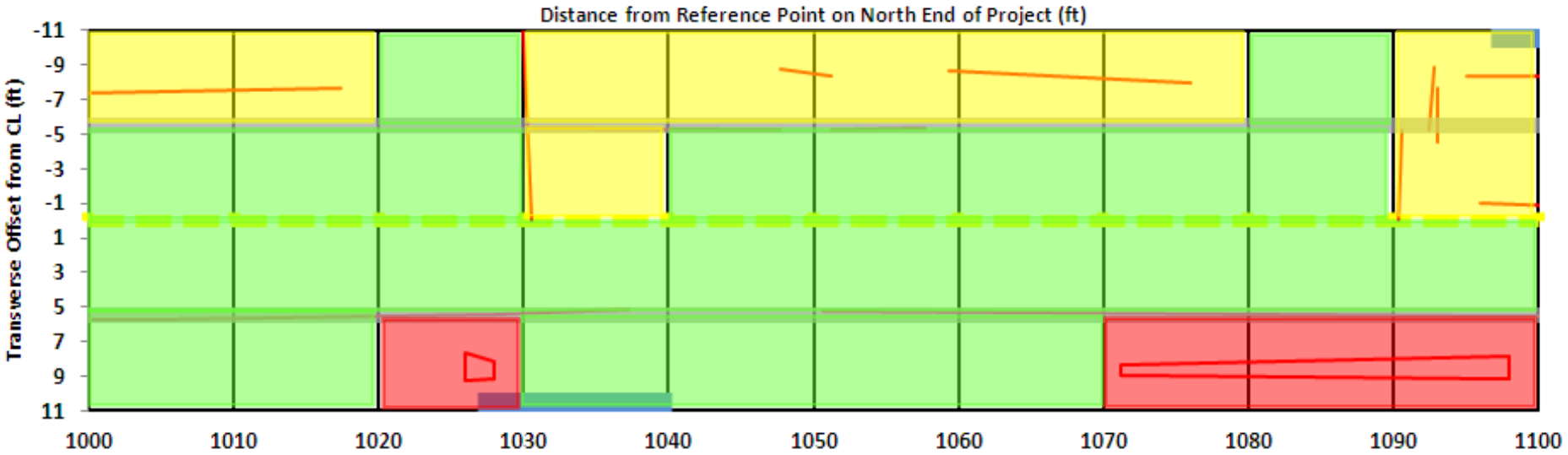
Lee 159

L11 Lee Road 159



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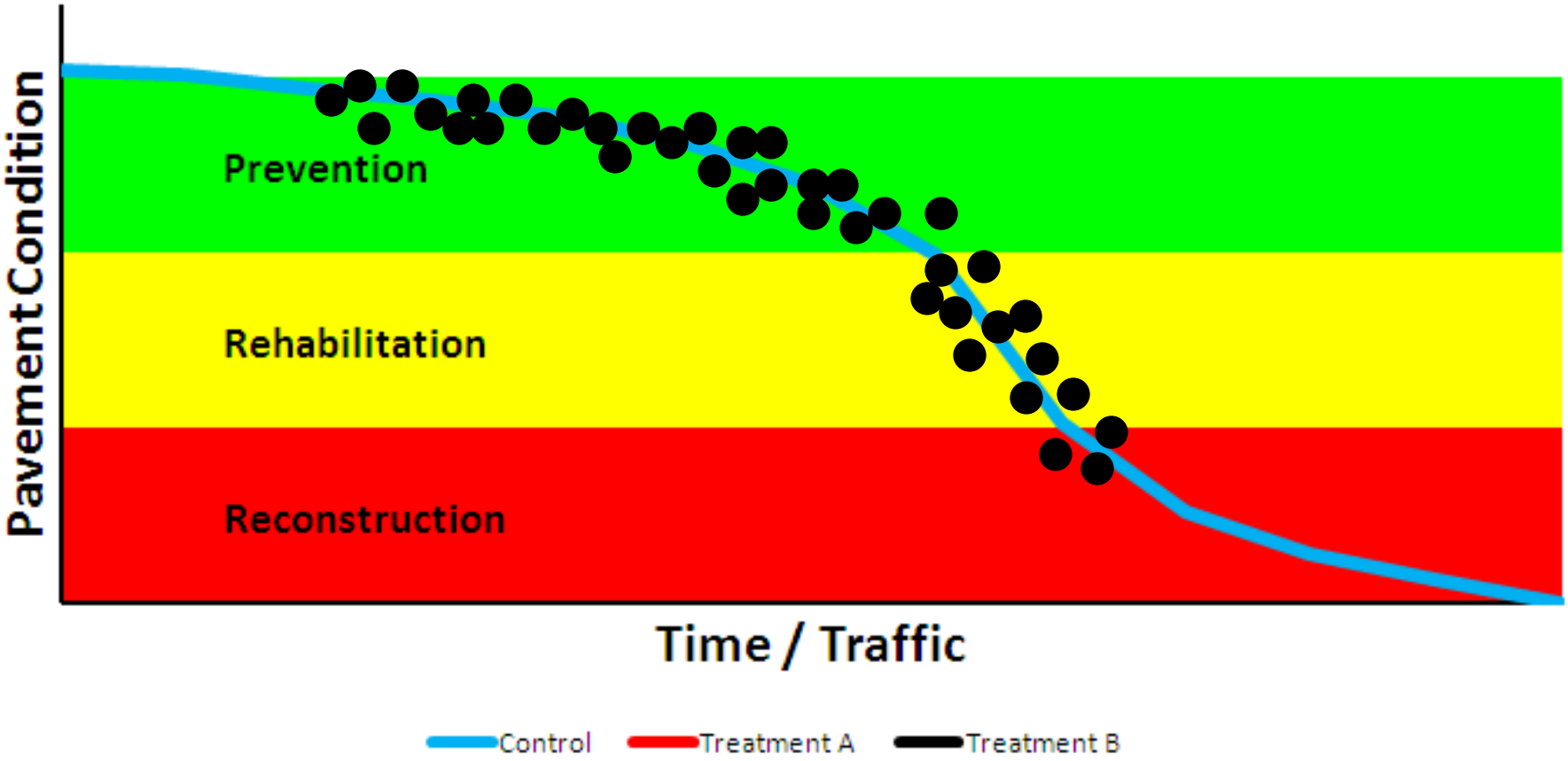
PG Study Implementable Findings



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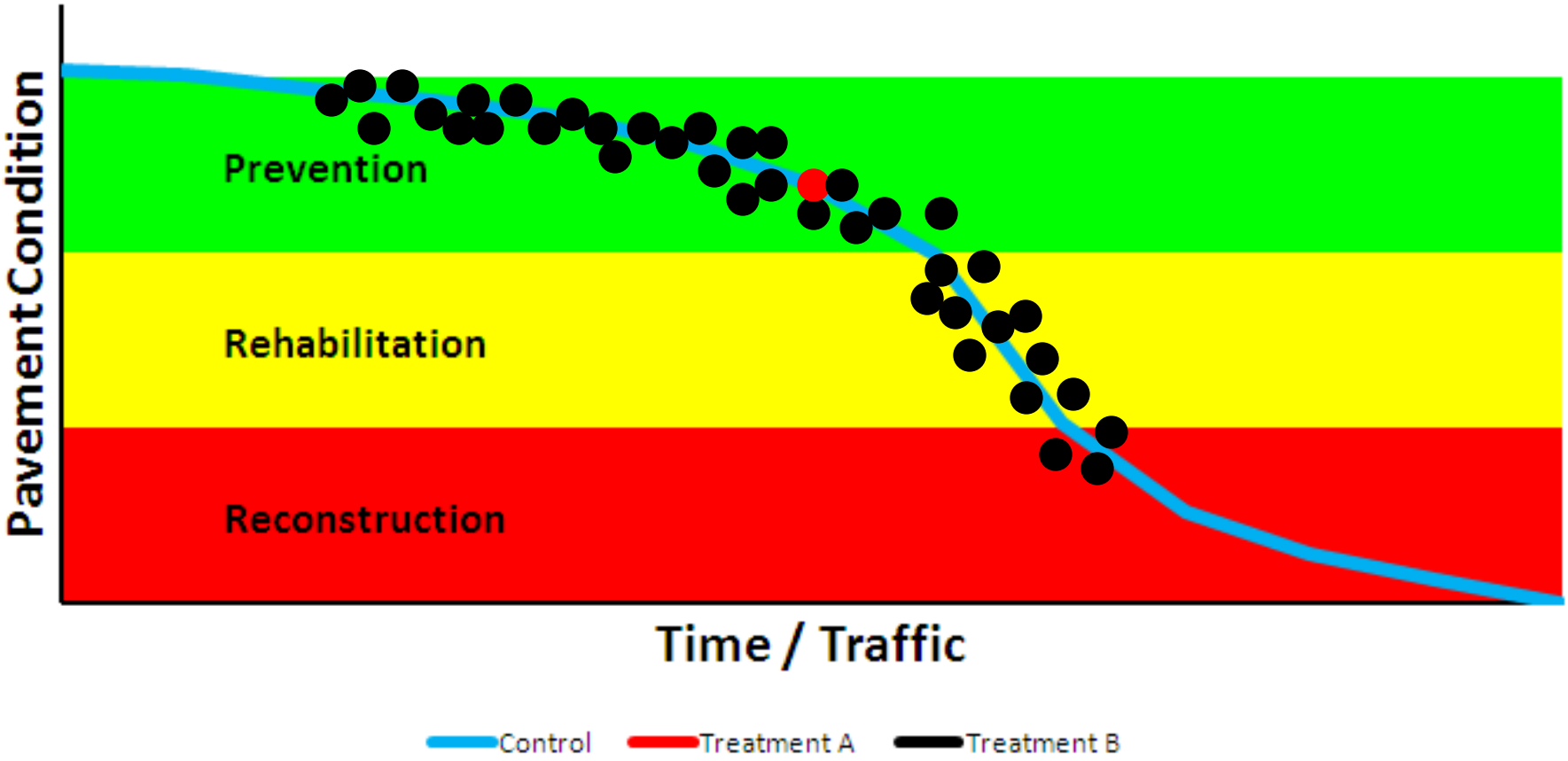

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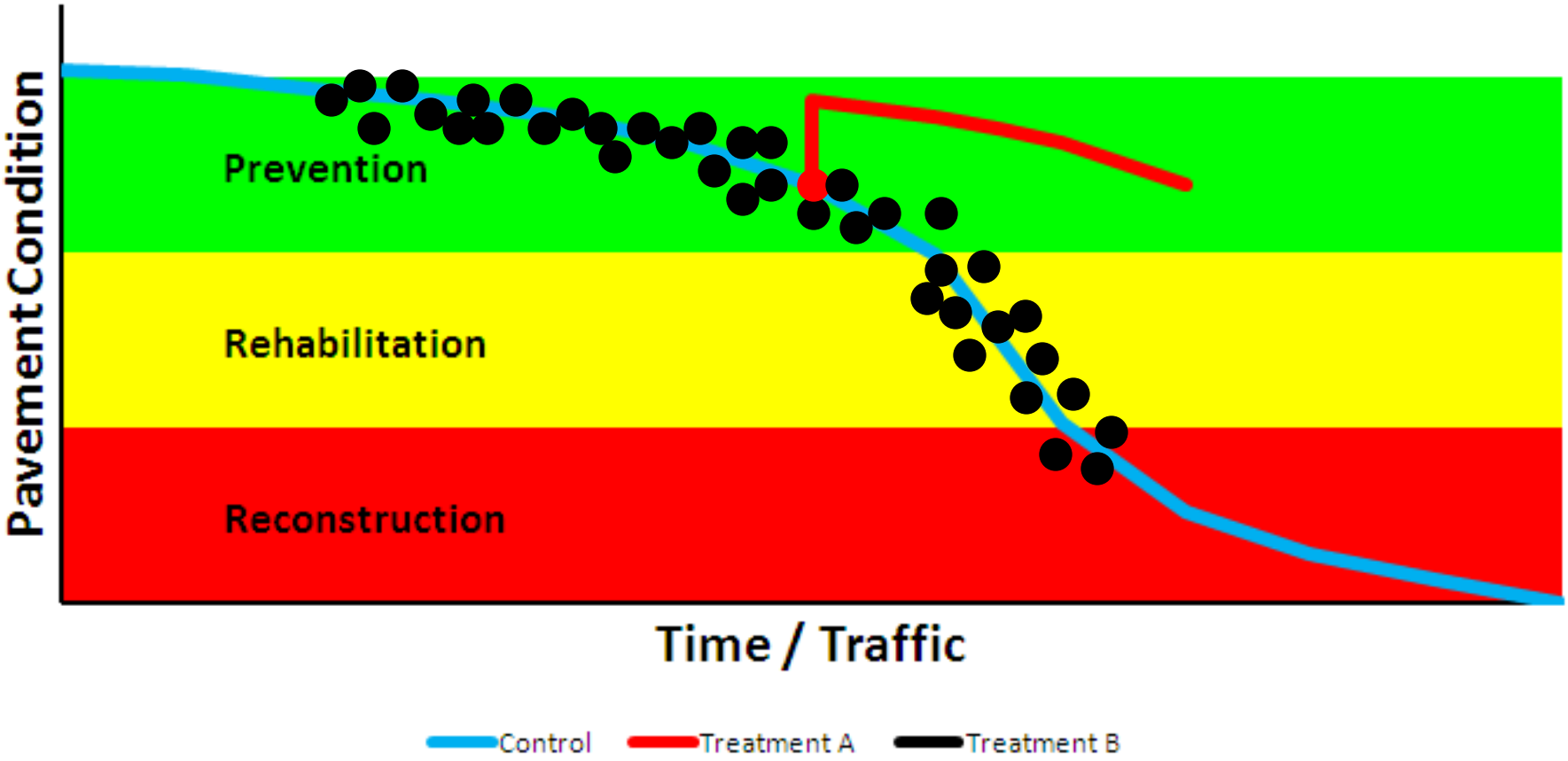

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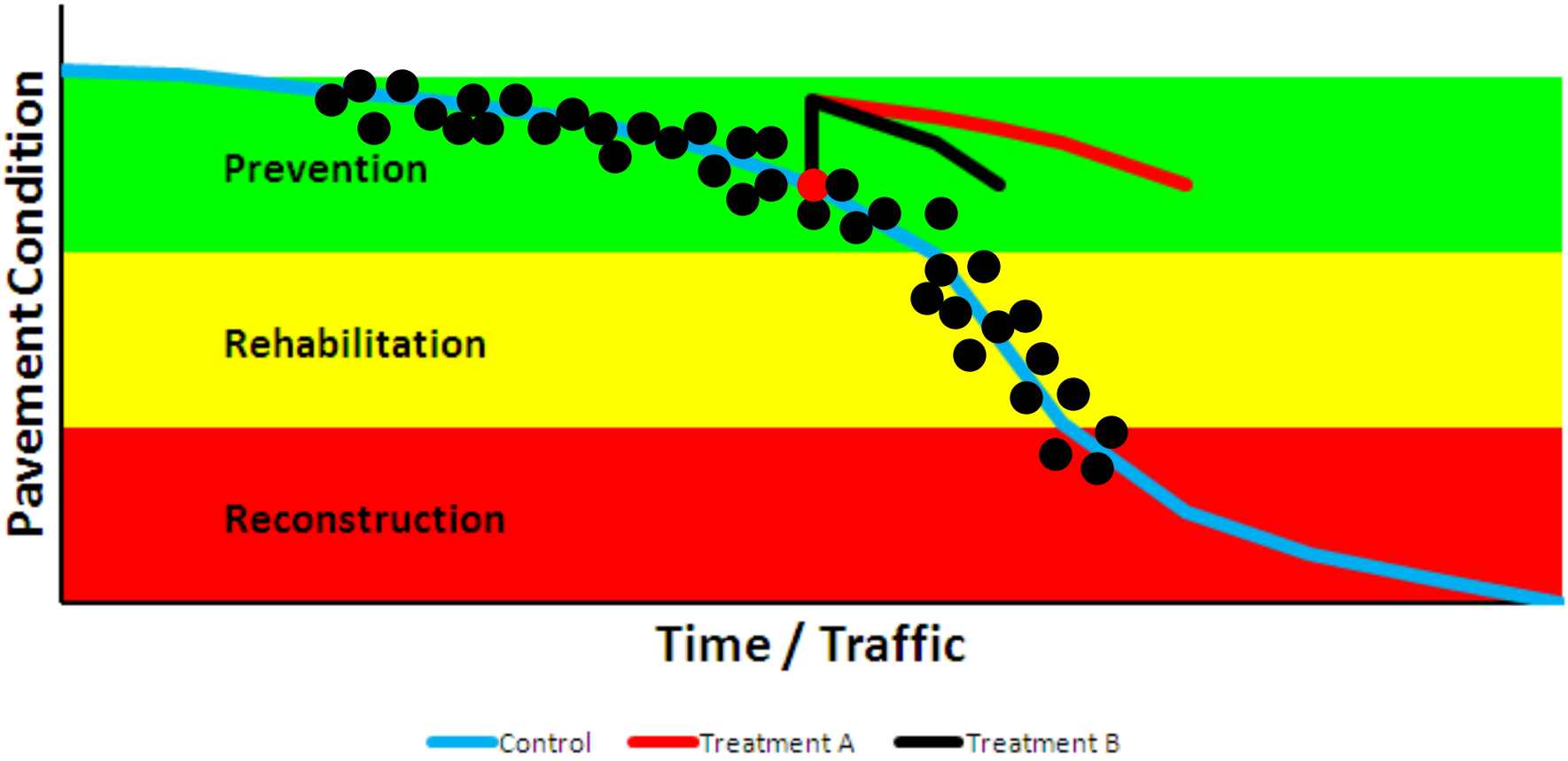

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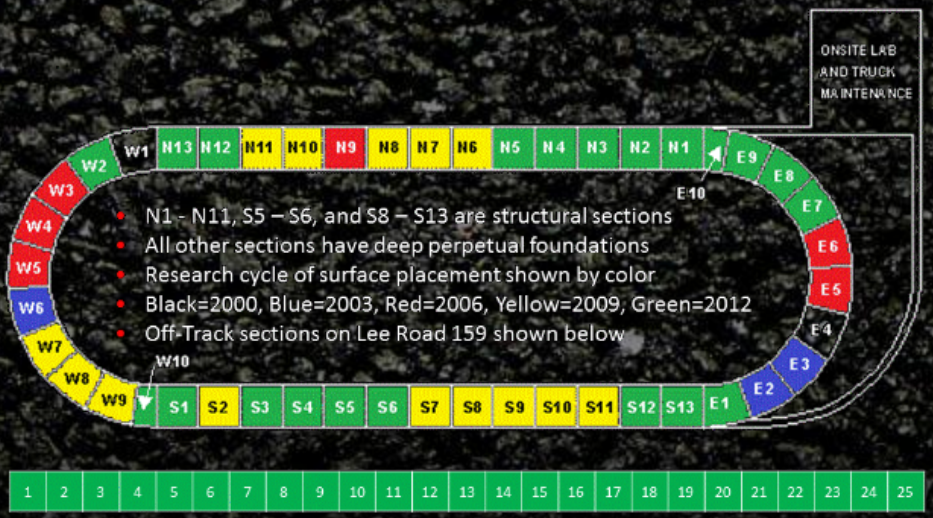

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