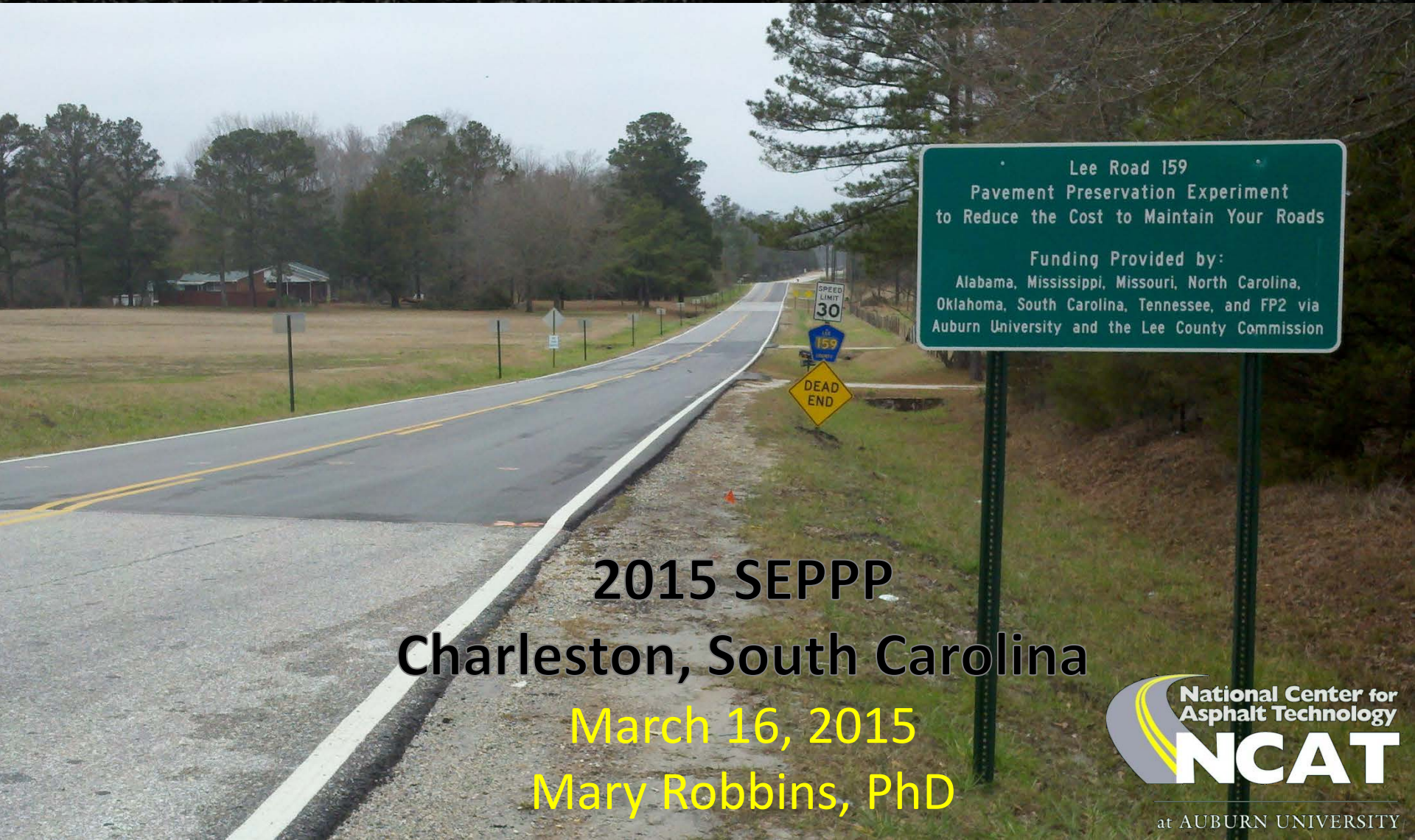


2012 NCAT Pavement Test Track: Pavement Preservation Study Overview



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

2015 SEPPP

Charleston, South Carolina

March 16, 2015

Mary Robbins, PhD



at AUBURN UNIVERSITY

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*

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

Lee Road 159

Pavement Preservation Experiment to Reduce the Cost to Maintain Your Roads

Funding Provided by:

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Pavement Preservation on Lee Road 159

Martin Marietta Quarry

Asphalt Plant

Lee Road 159

- Low ADT roadway
- Very high % trucks
- 14-year old 5½" pavement
- Diverse pavement condition
- Load data provided by quarry and asphalt plant

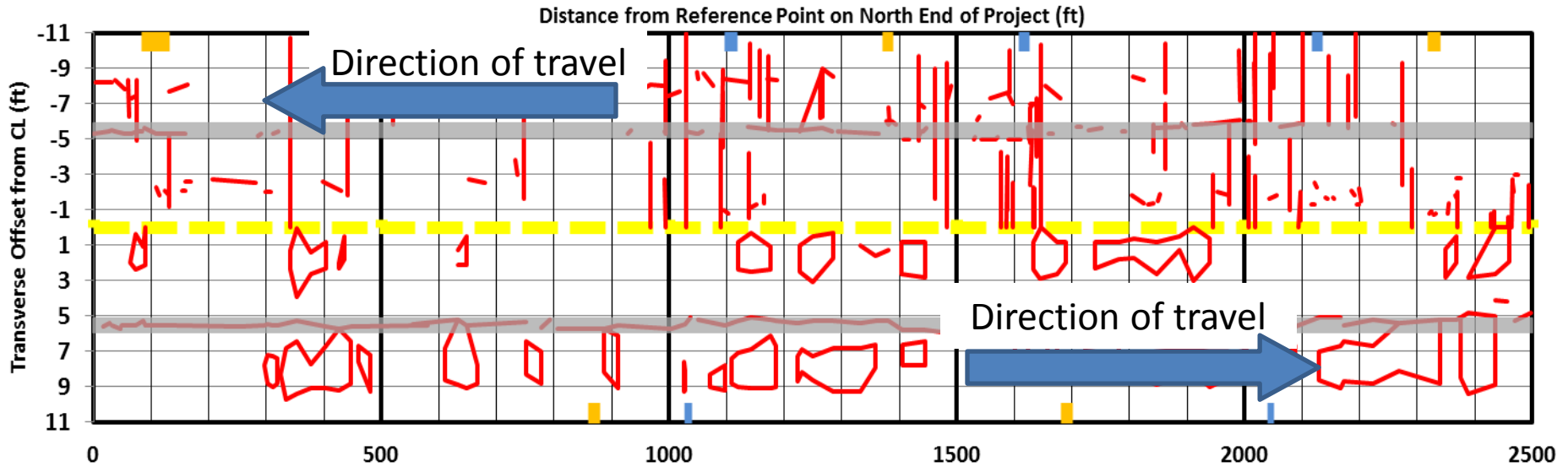


Preservation Group (PG) Experiment

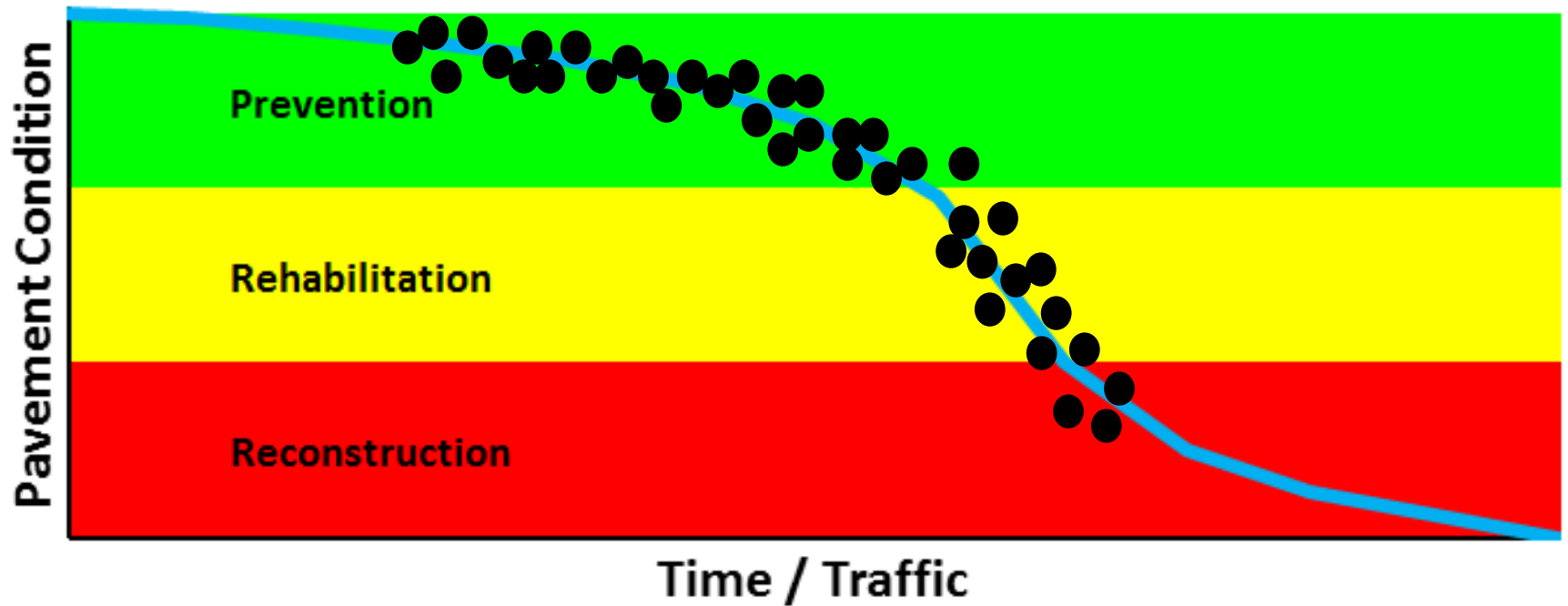
- 25, 100-ft sections on local county road (Lee Road 159)
 - $\approx 5\frac{1}{2}$ " thick paved access road to quarry/asphalt plant
 - 2 control, 23 sections with treatments/combinations, Pretreatment condition varied by WP and direction
 - Placed between July and September, 2012



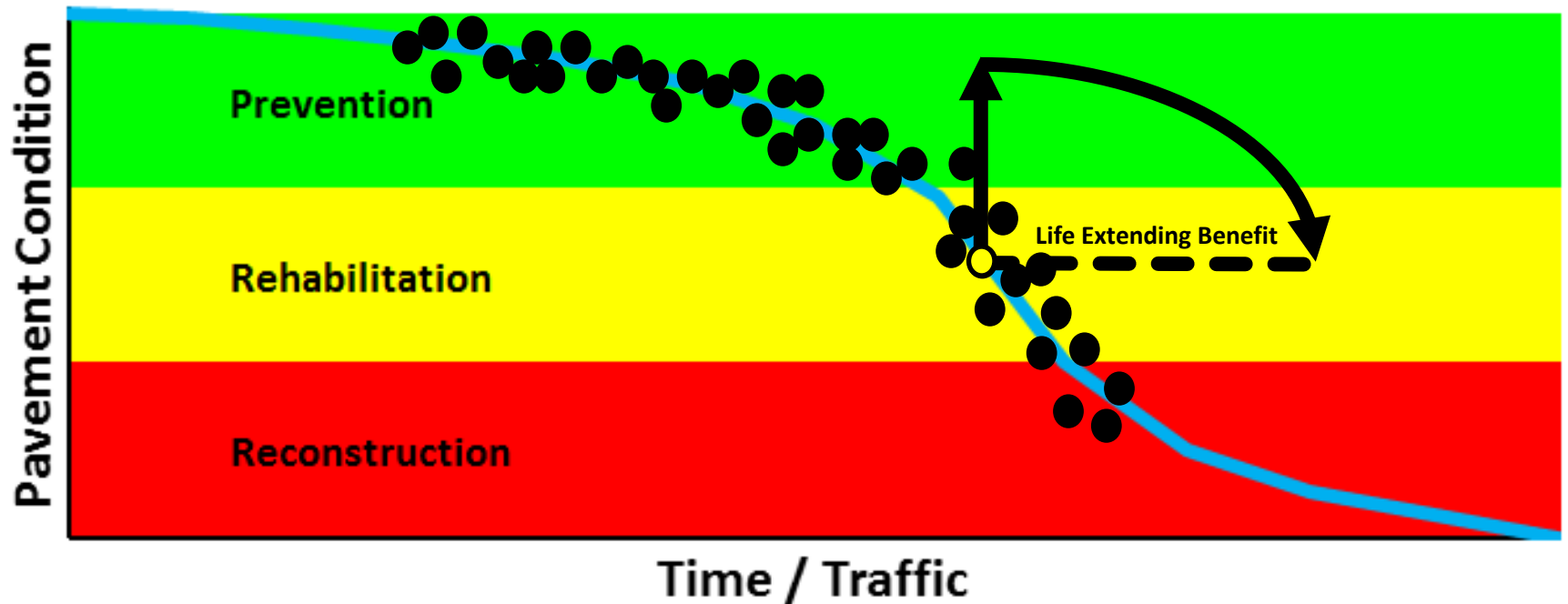
Lee Road 159



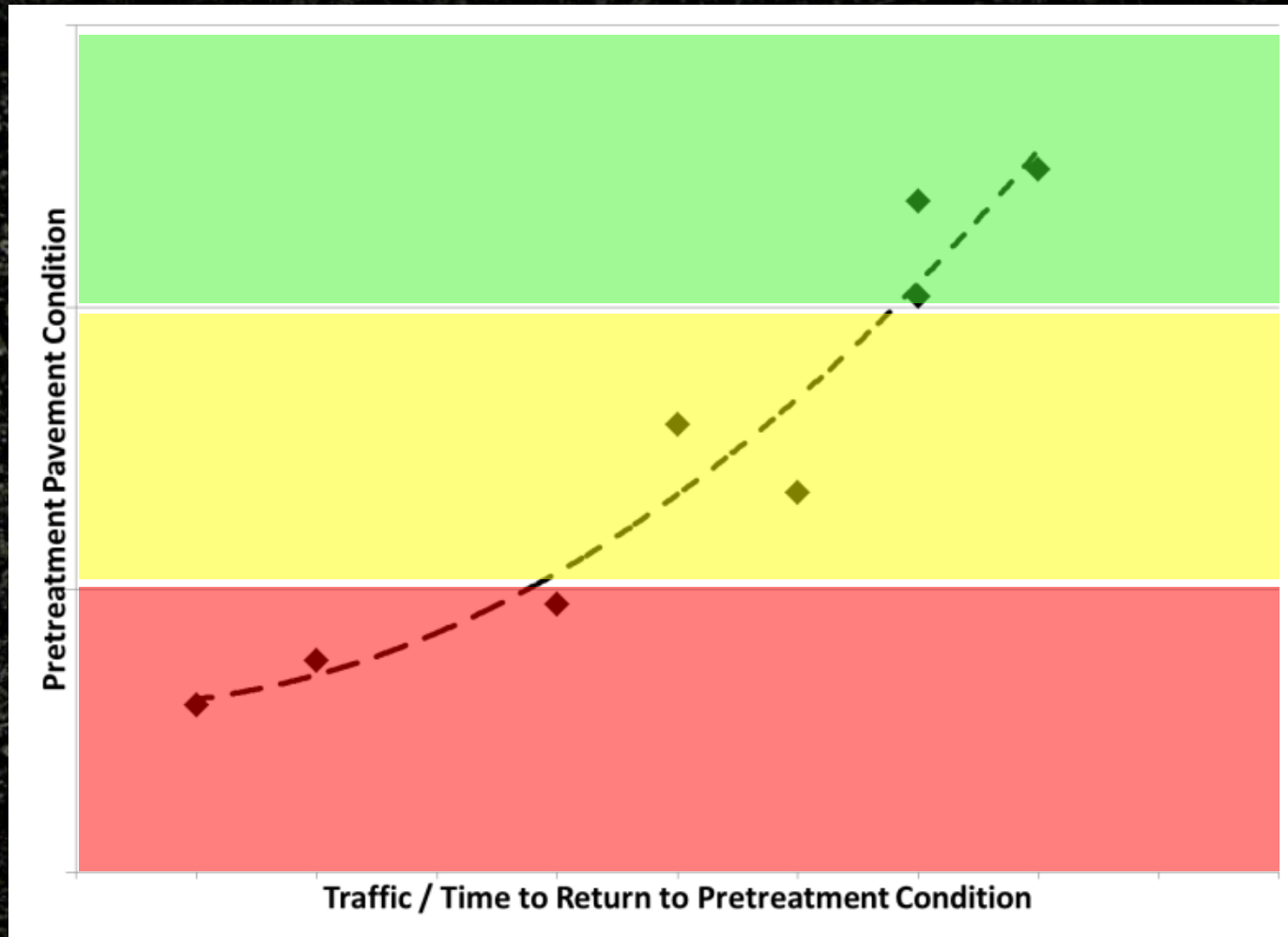
Pavement Preservation on Lee Road 159



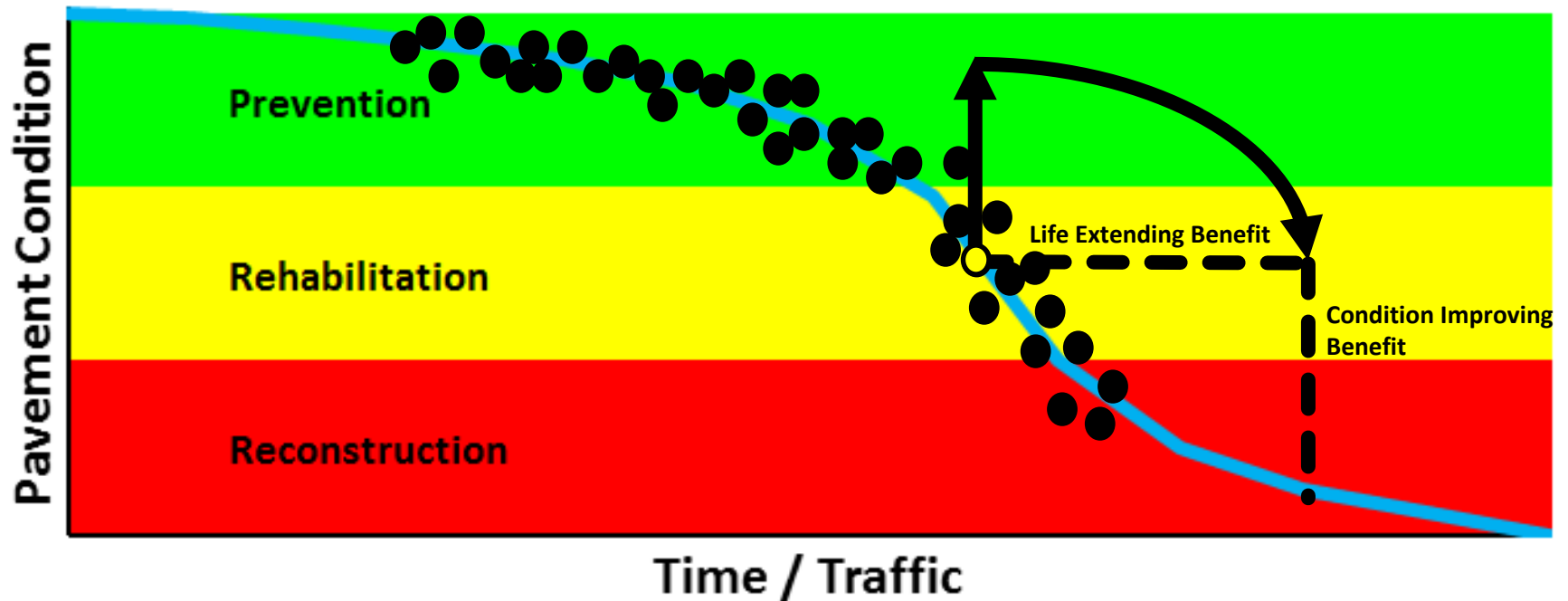
Pavement Preservation on Lee Road 159



Pavement Preservation on Lee Road 159



Pavement Preservation on Lee Road 159



Final Layout

1. Rejuvenating Fog Seal
2. Fibermat Chip Seal
3. Control
4. Control
5. Crack Seal (CS)
6. Single Layer Chip Seal
7. CS + Single Layer Chip Seal
8. Triple Layer Chip Seal
9. Double Layer Chip Seal
10. Single Chip + Microsurfacing (Cape)
11. Microsurfacing
12. CS + Microsurfacing
13. Double Layer Microsurfacing
14. Fibermat Chip + Microsurfacing (Cape)
15. Scrub Seal + Microsurfacing (Cape)
16. Scrub Seal
17. Distress Demo Section
18. Fibermat Chip + HMA thinlay (HMA Cape)
19. HMA Thinlay (PG 67-22)
20. HMA + 100% Foamed Recycle Inlay
21. HMA Thinlay (PG 76-22)
22. Ultra Thin Bonded Wearing Course
23. HMA Thinlay (50% RAP)
24. HMA Thinlay (5% PCRAS)
25. HMA Thinlay (High Polymer)

LR 159 Testing Overview

- Weekly
 - Inertial Profiler (roughness, texture, rutting)
 - Visual inspections with notes/pictures



LR 159 Testing Overview

- Monthly
 - Video for crack mapping
 - Rut depth
 - Wet ribbed surface friction
 - Subgrade moisture readings
 - Falling weight deflectometer (FWD)

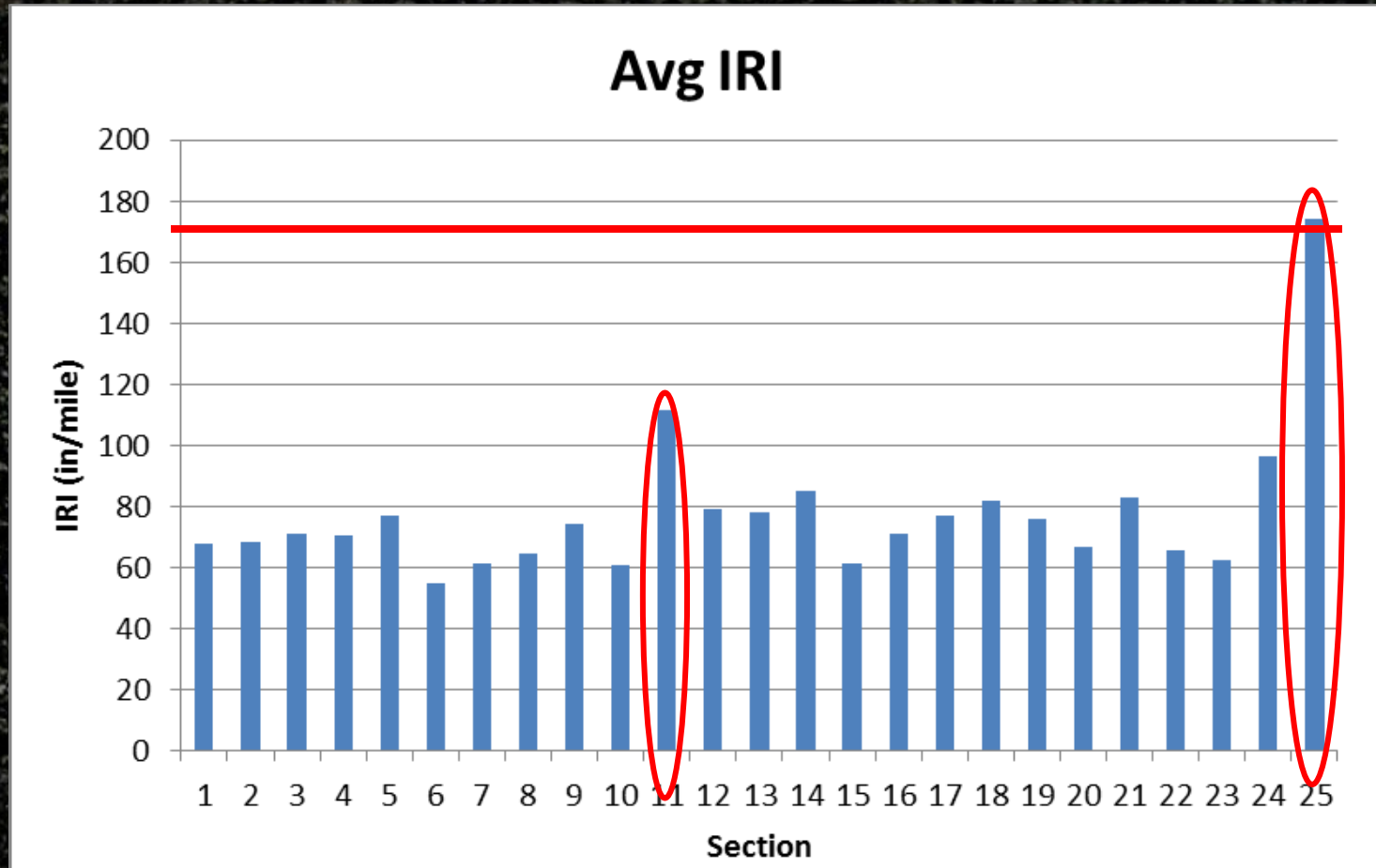


Video Crack Mapping

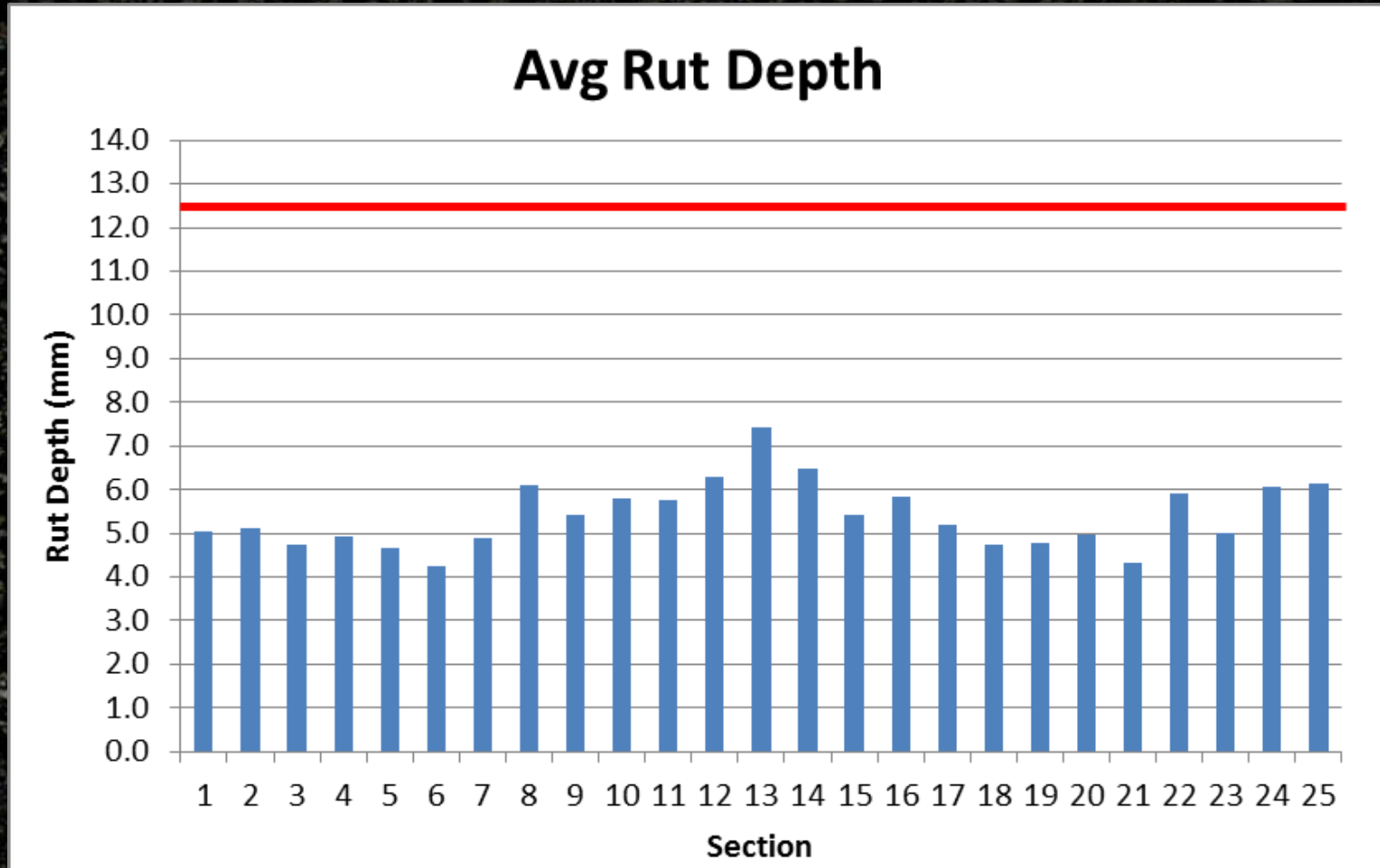


PRETREATMENT CONDITION

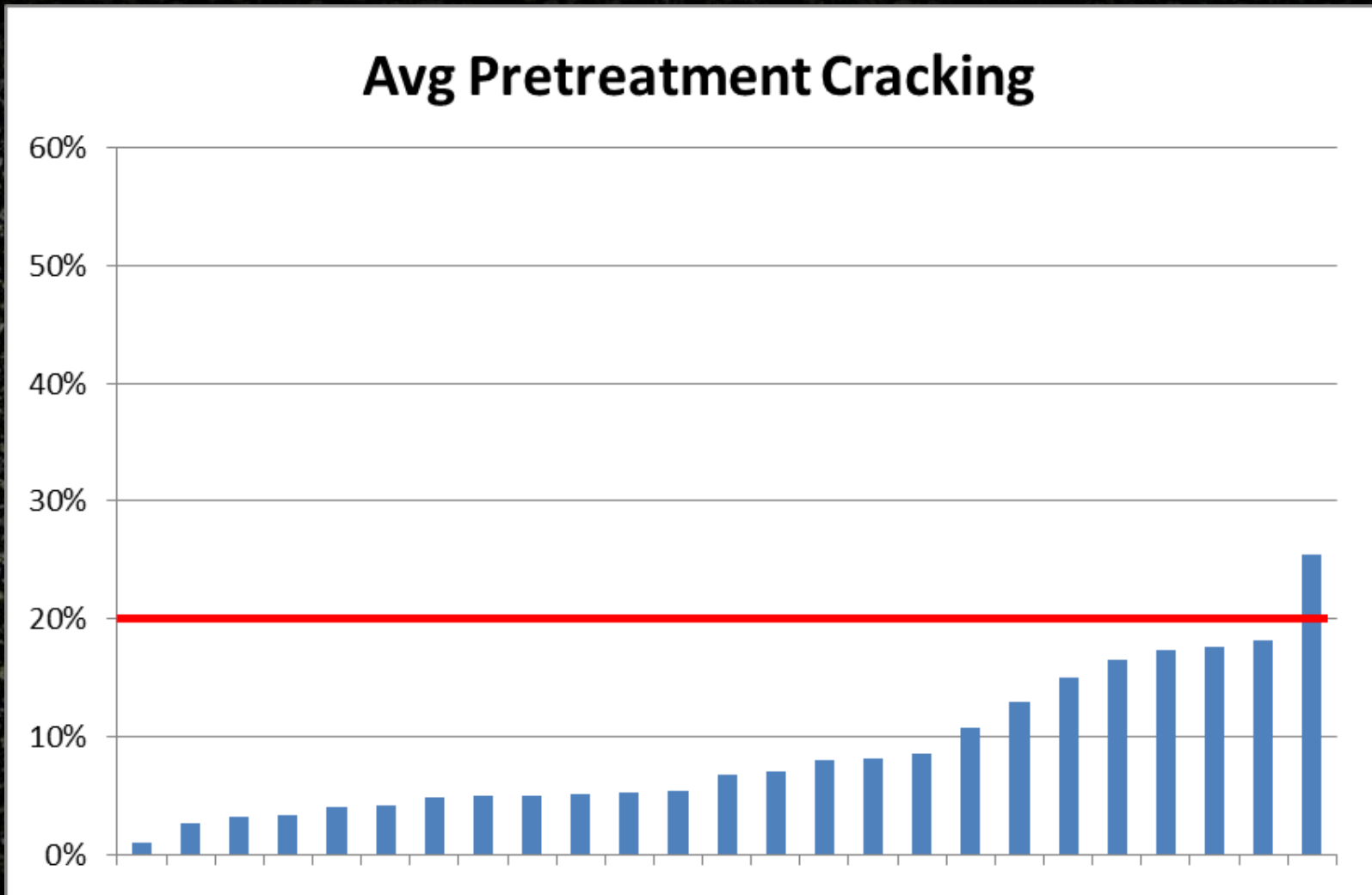
Pretreatment Condition



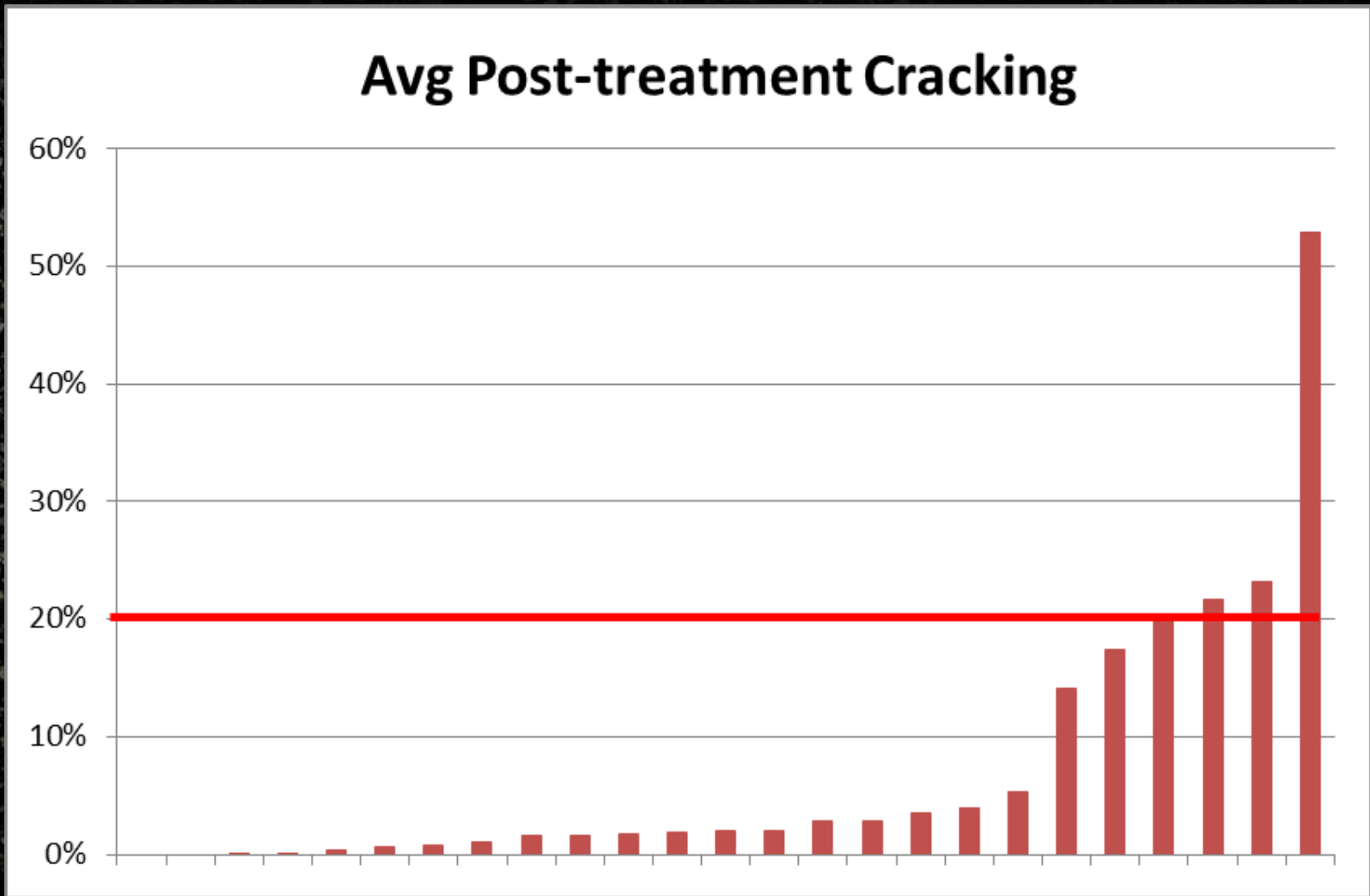
Pretreatment Condition



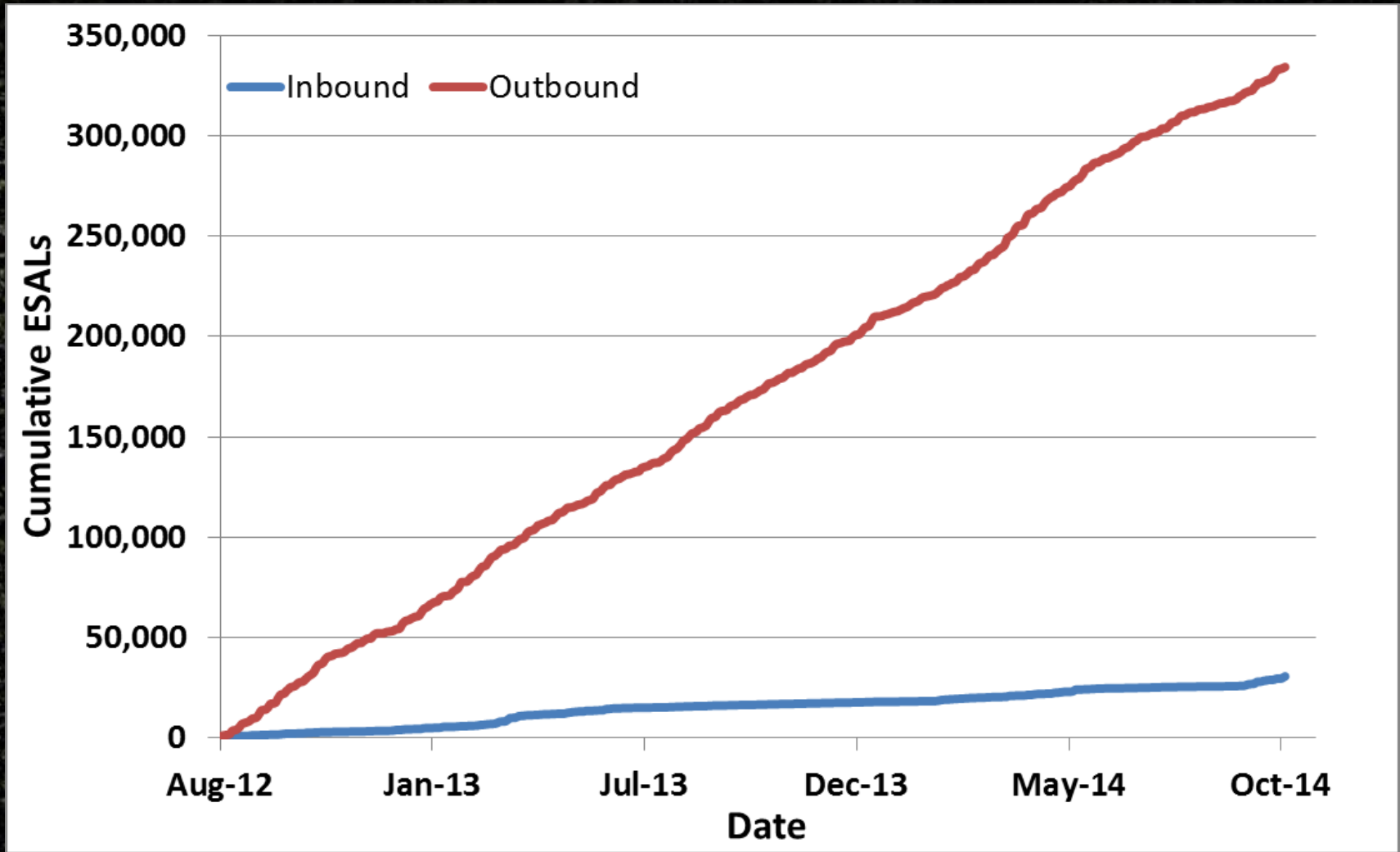
Percent of Lane Area Cracked



Percent of Lane Area Cracked



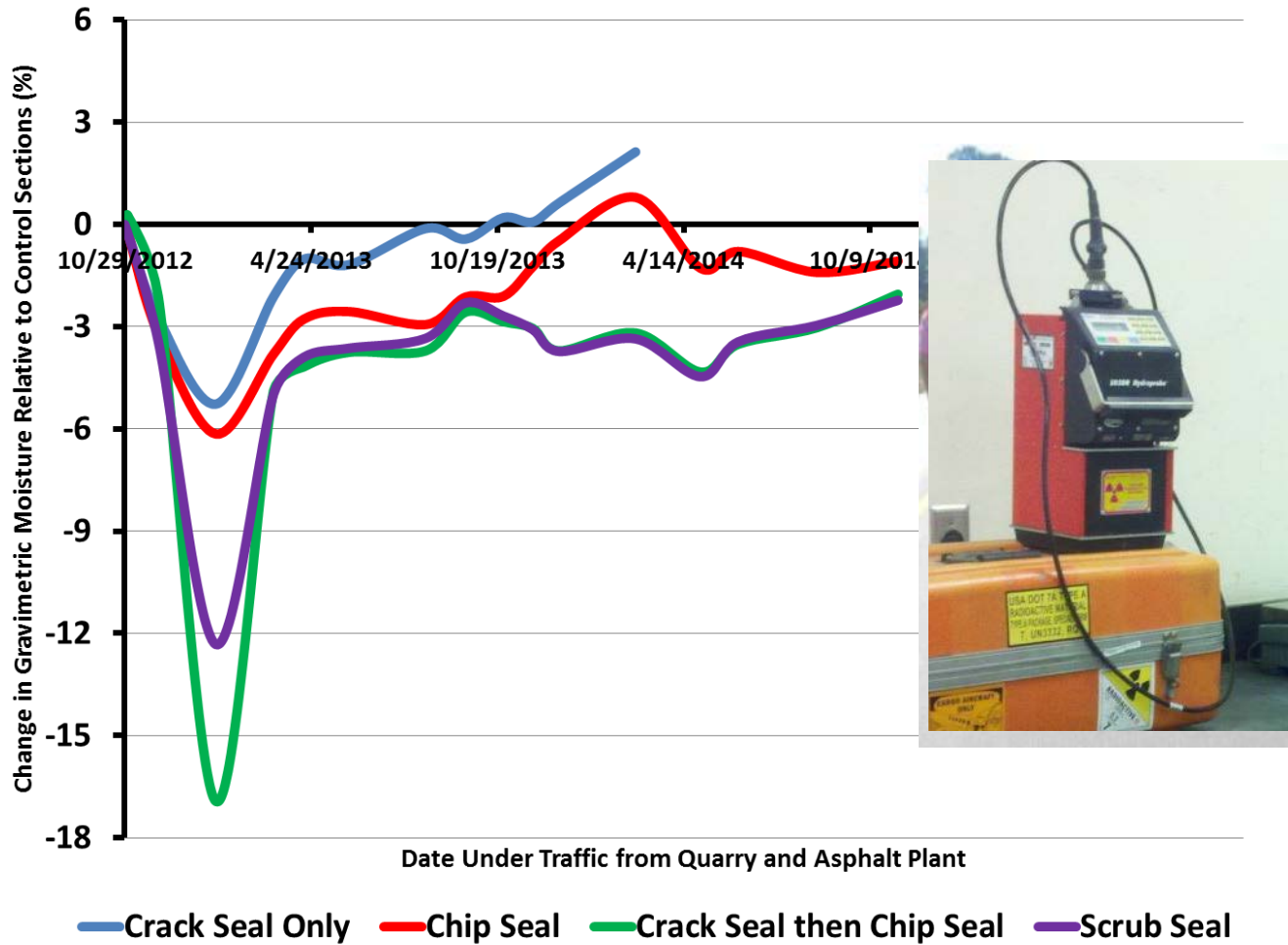
Truck Damage on Lee Road 159



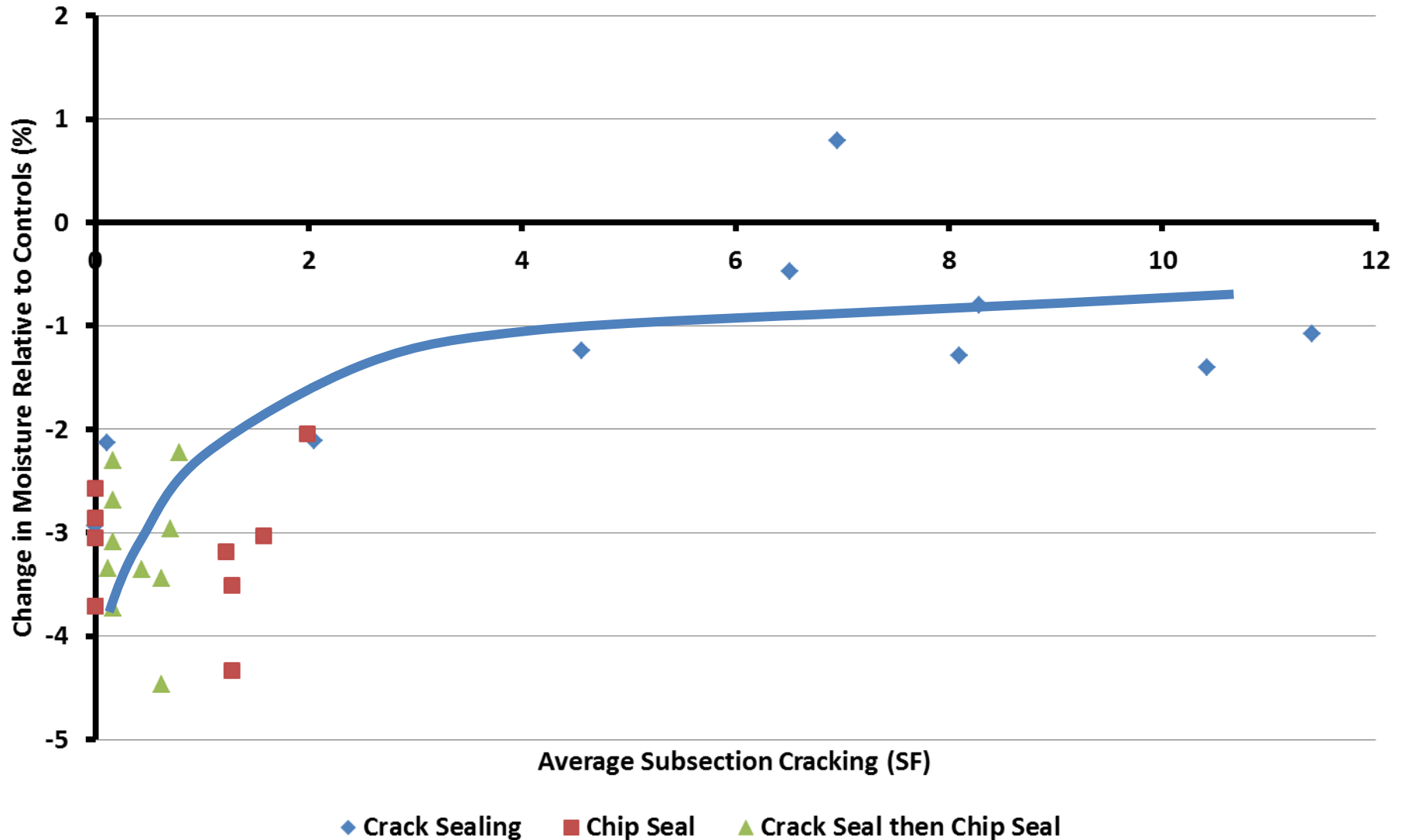
Post-Treatment Condition

QUANTIFYING BENEFITS

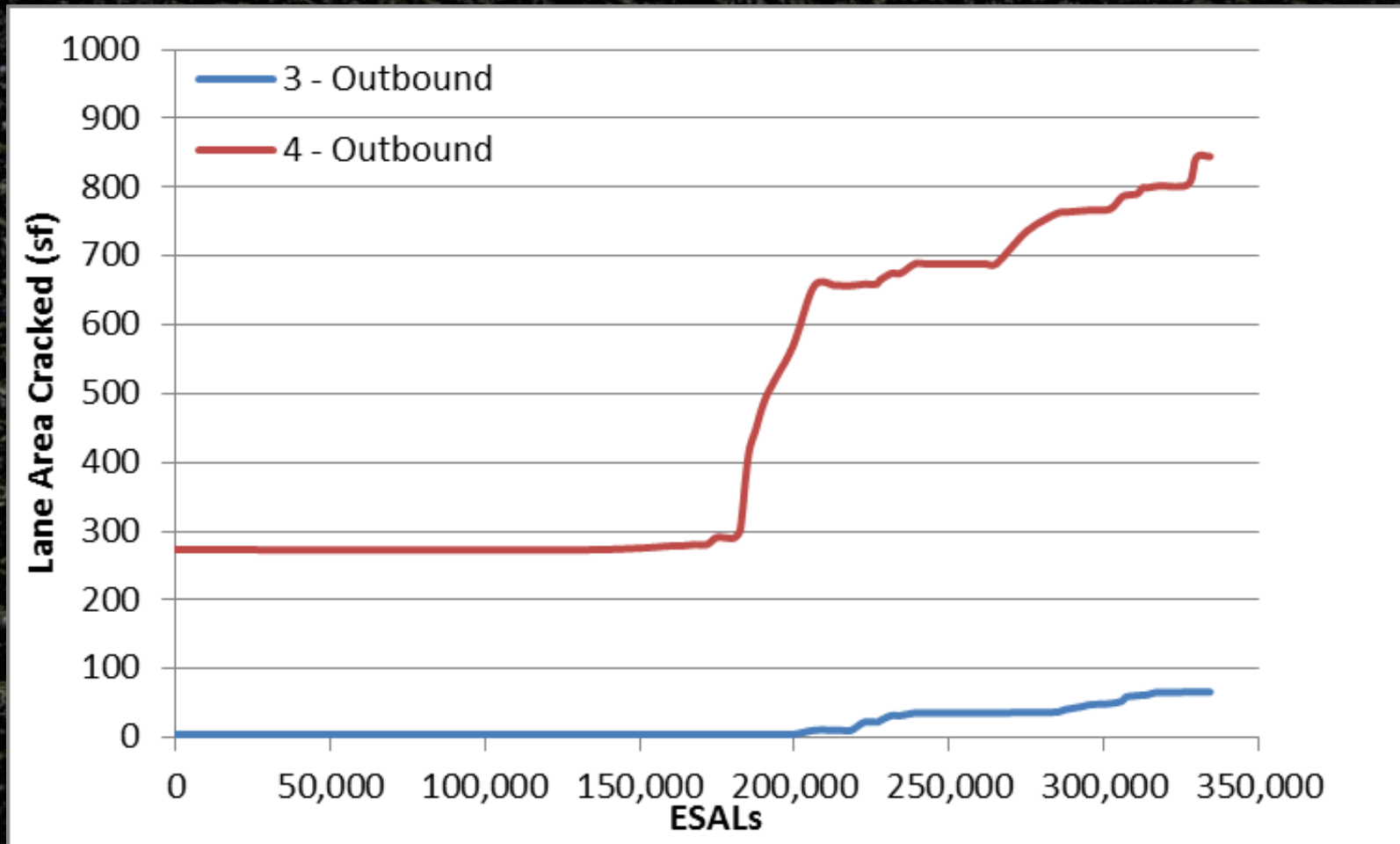
Subgrade Moisture



Subgrade Moisture vs Cracking

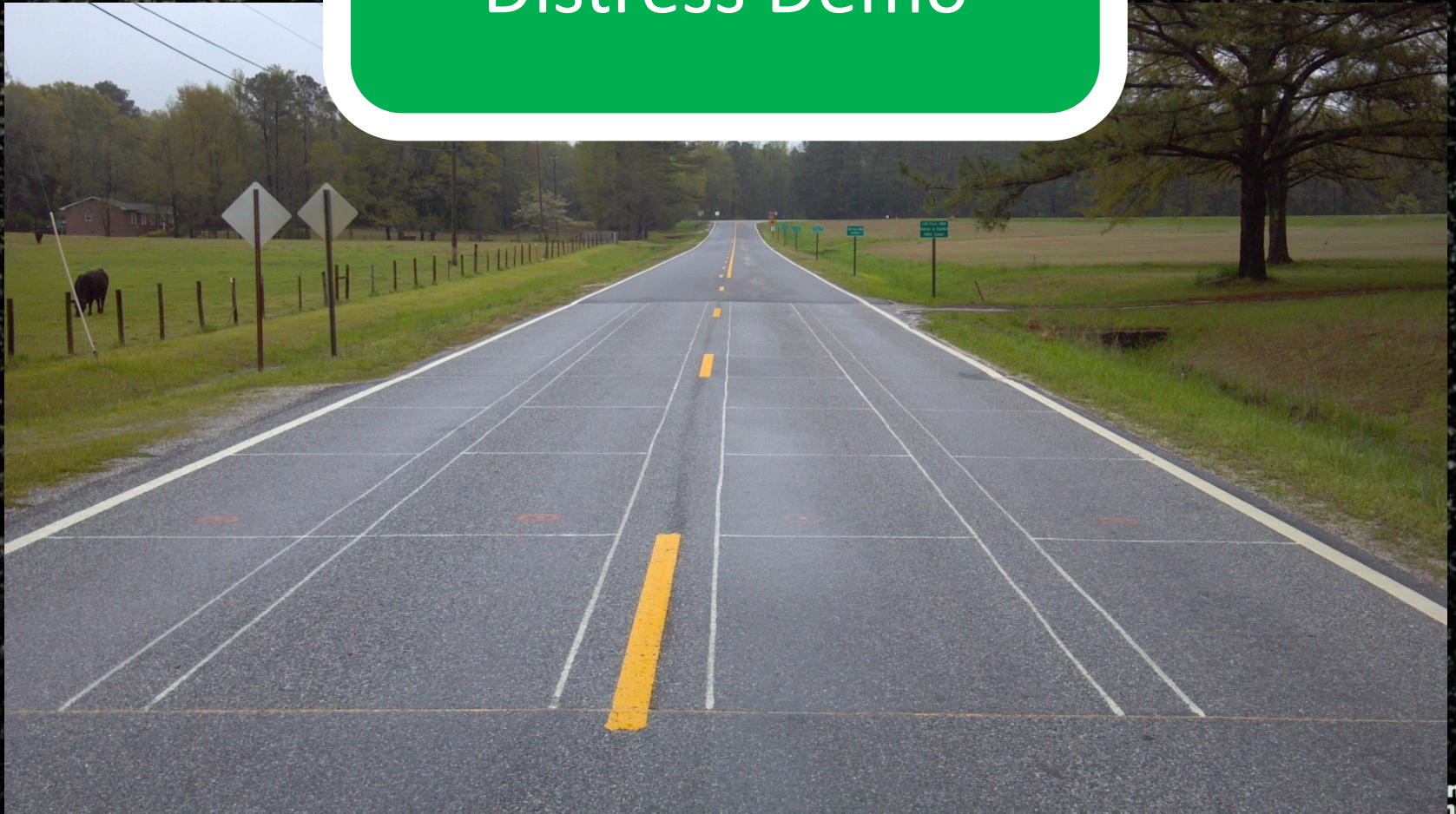


Cracking Performance

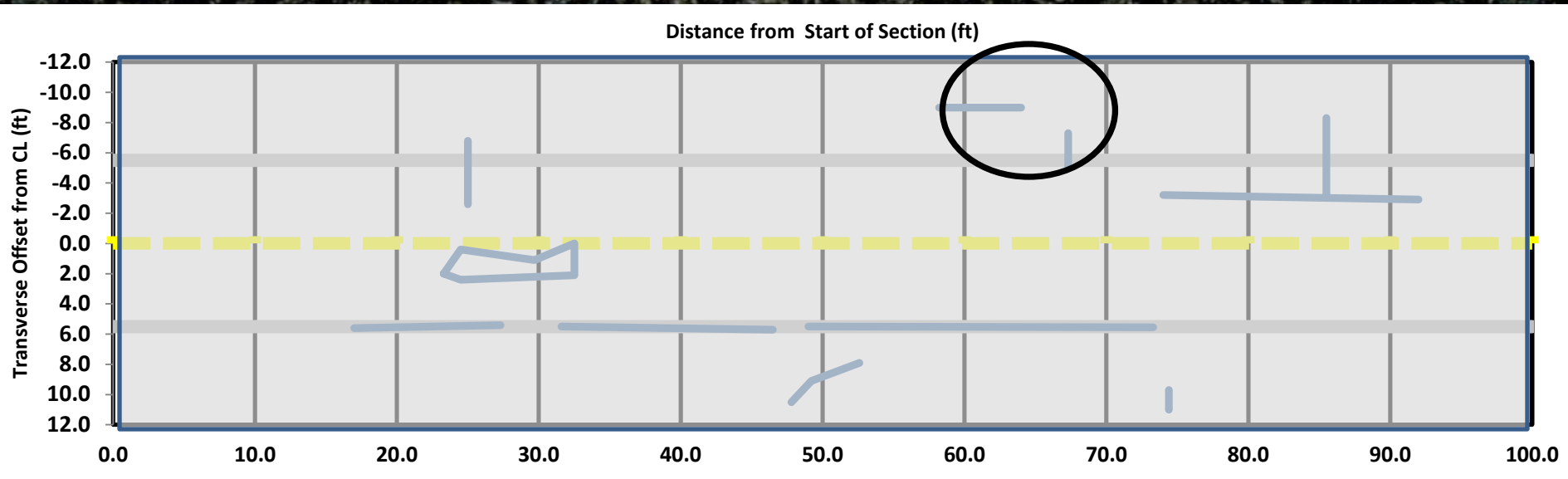


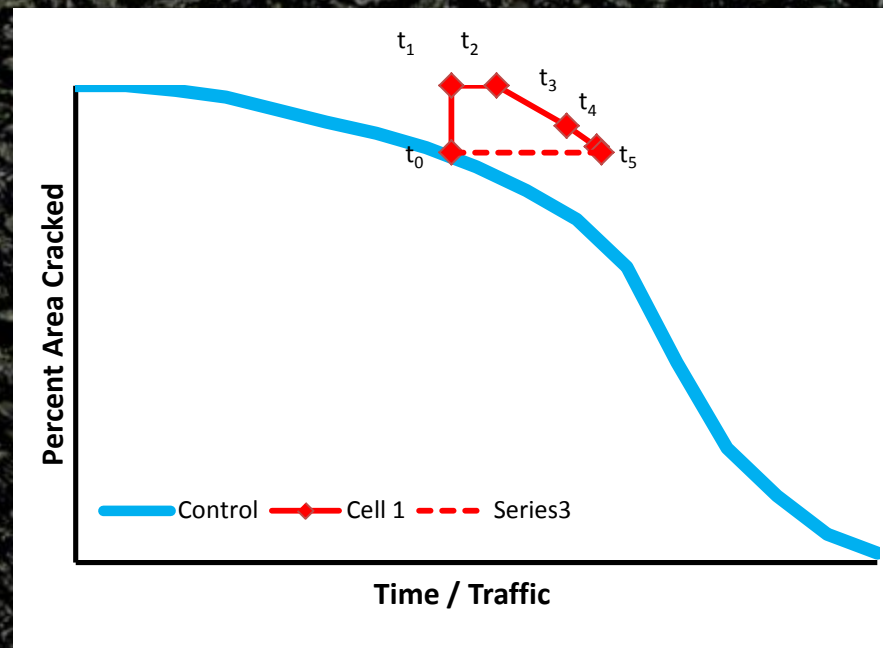
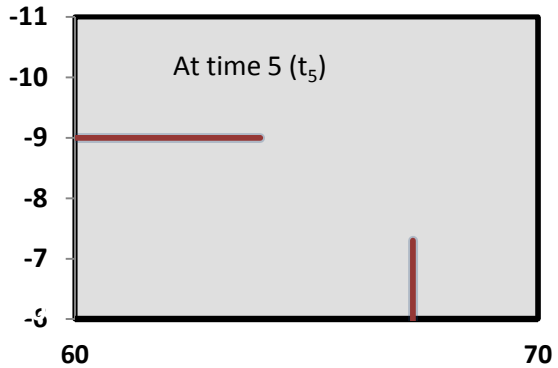
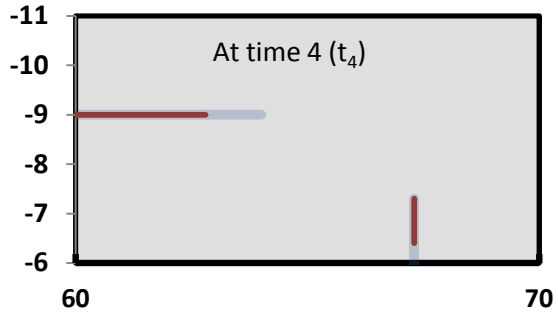
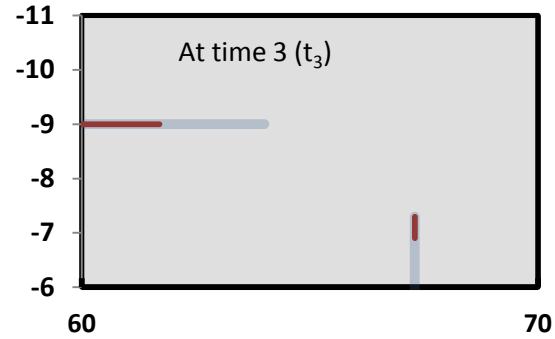
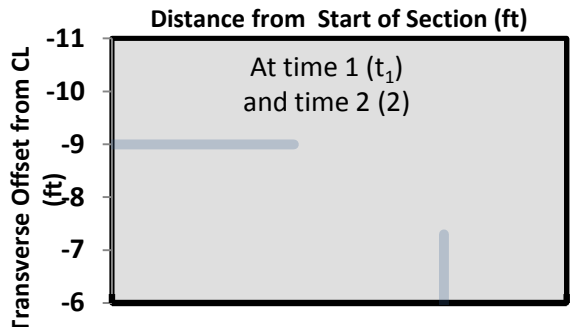
BENEFITS OF PAVEMENT PRESERVATION

L17 – Subsection Distress Demo

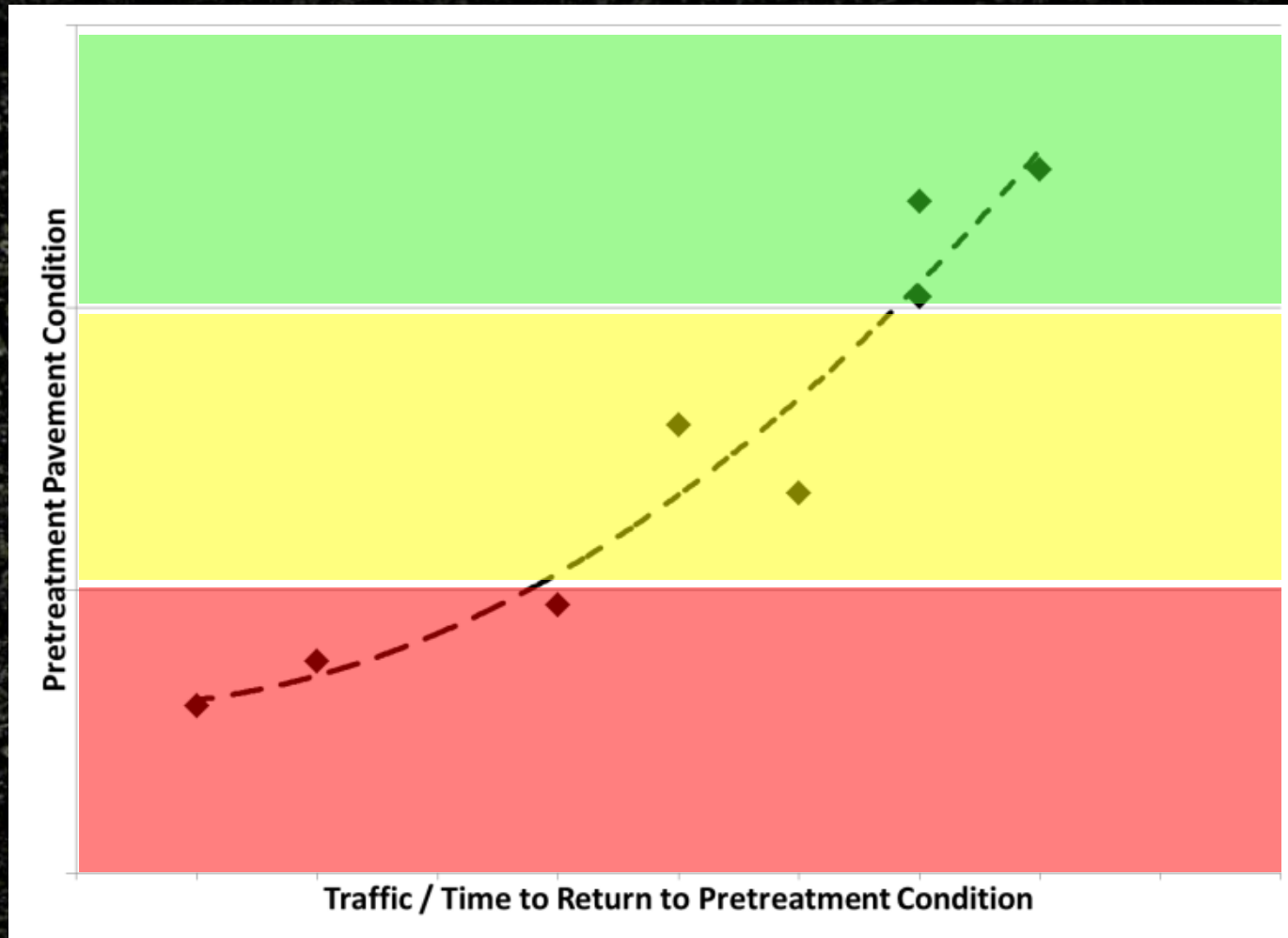


Benefit of Pavement Preservation

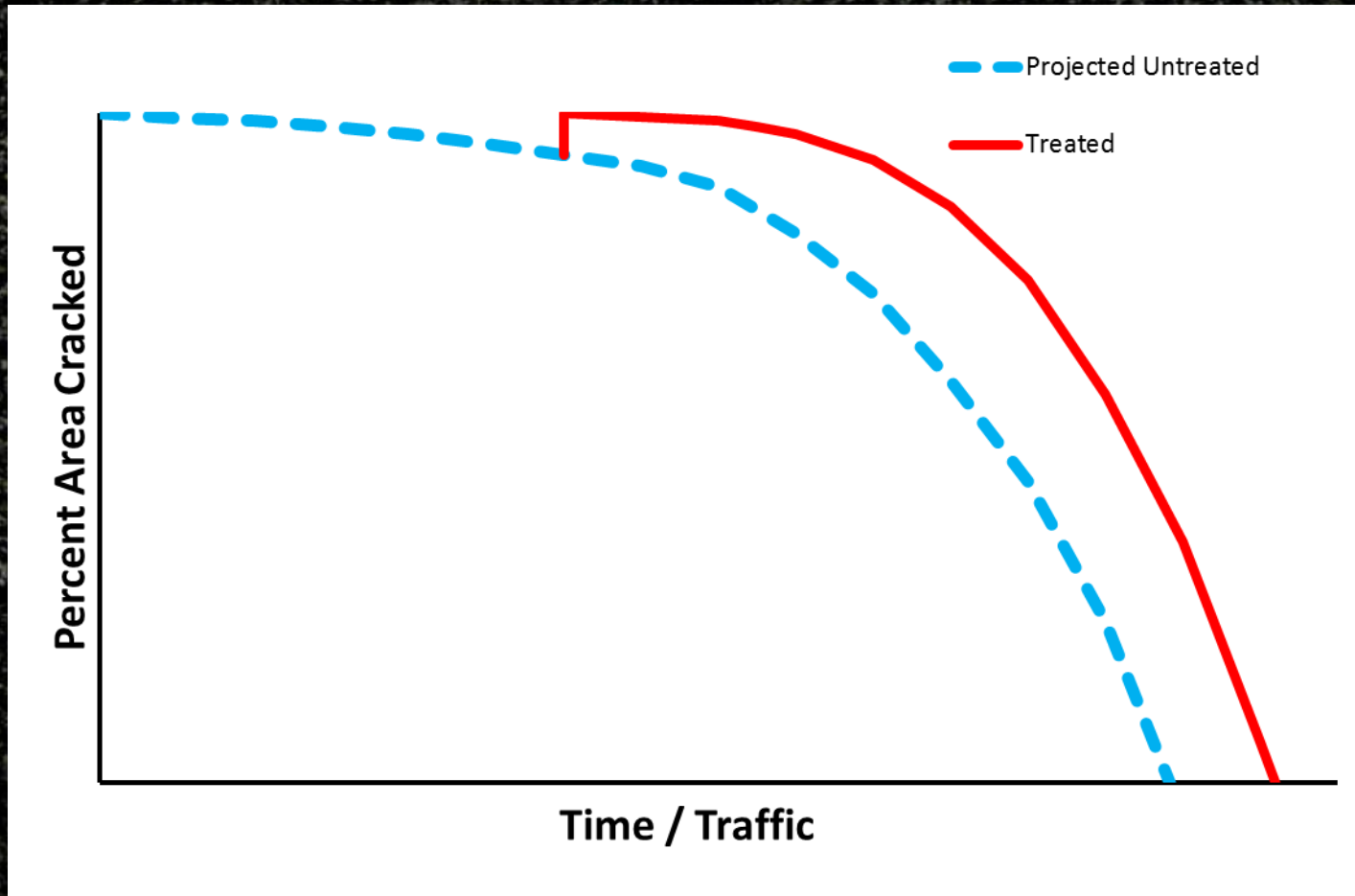




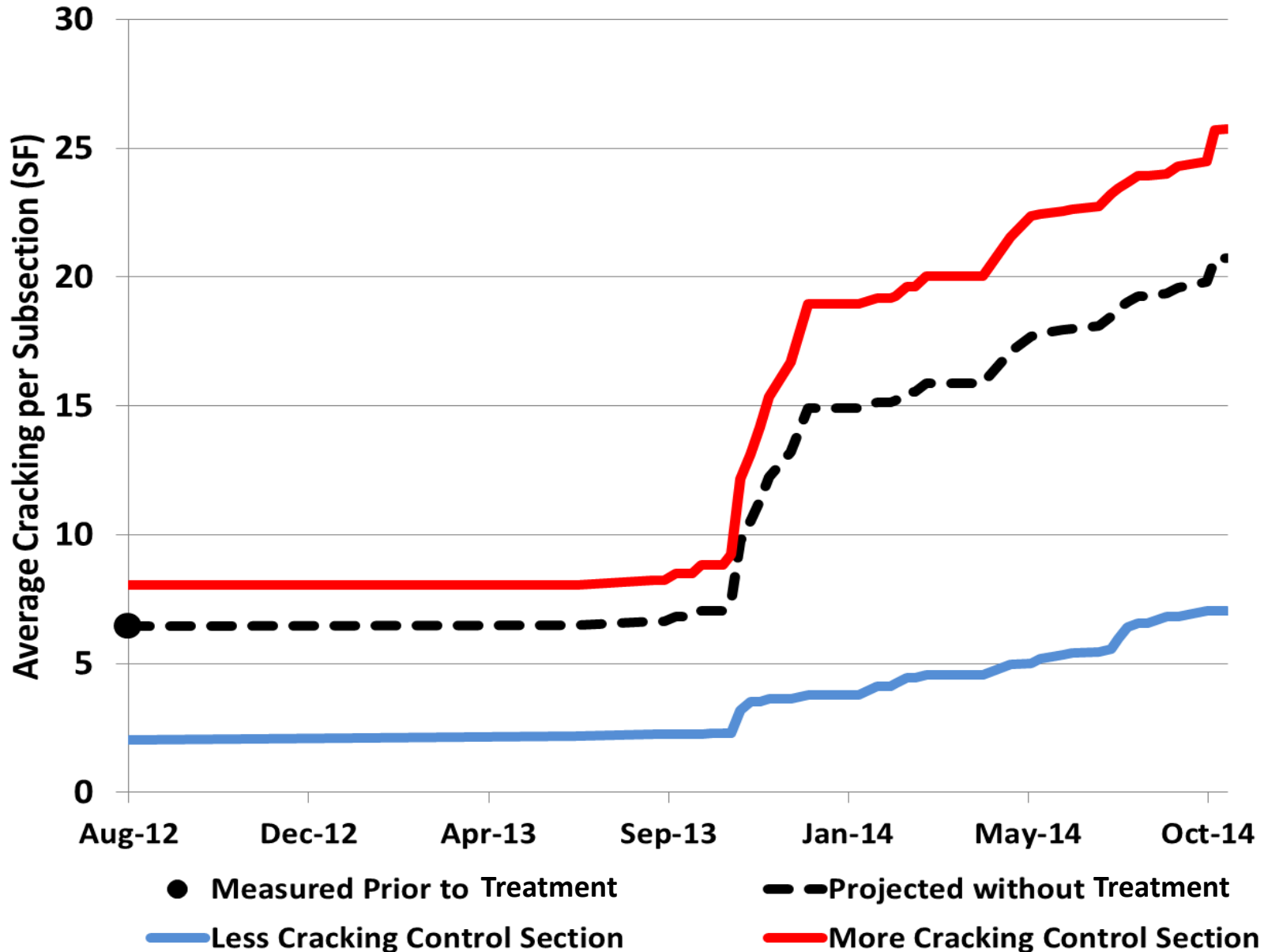
Pavement Preservation on Lee Road 159



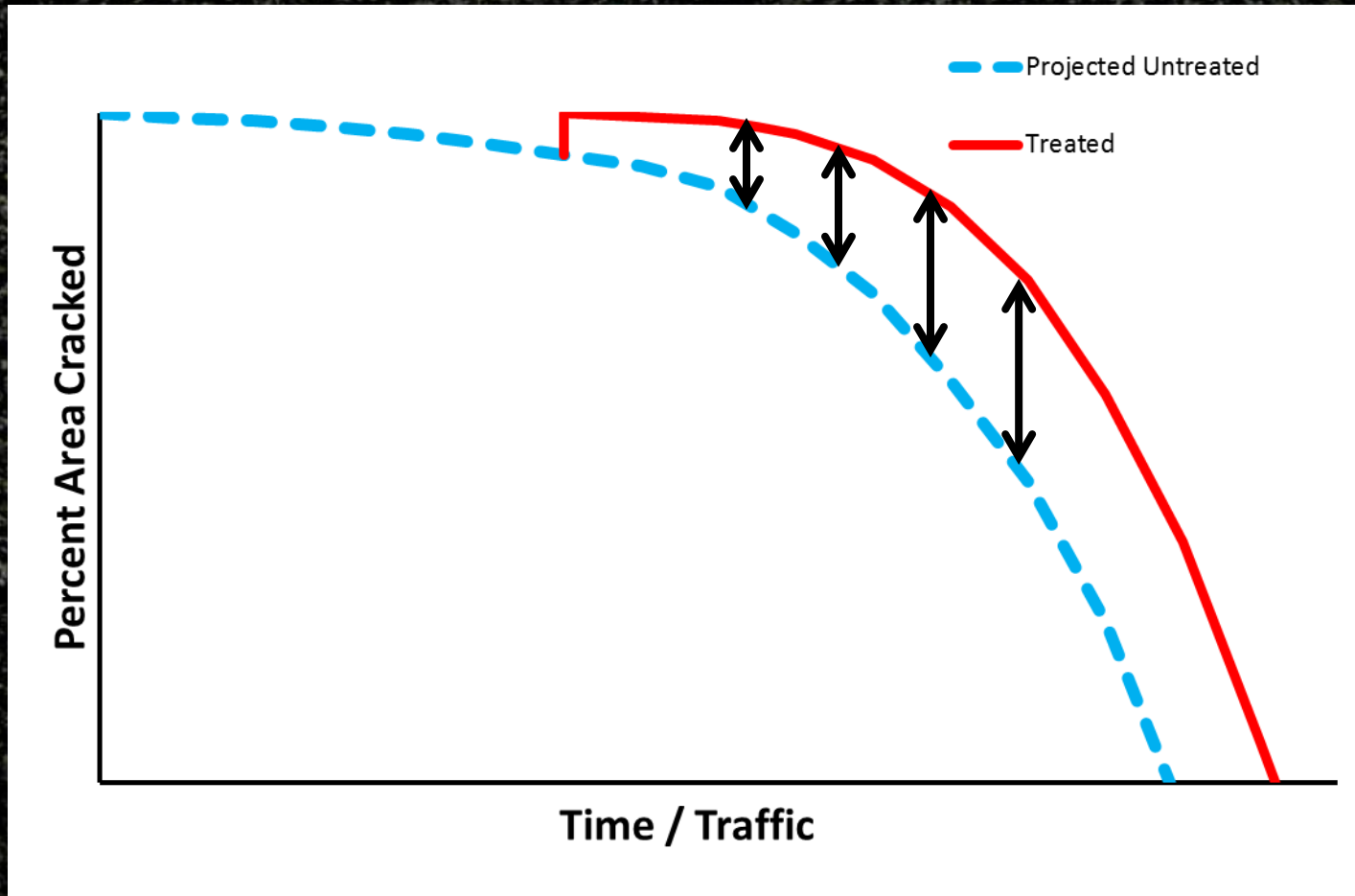
Reduction in Cracking



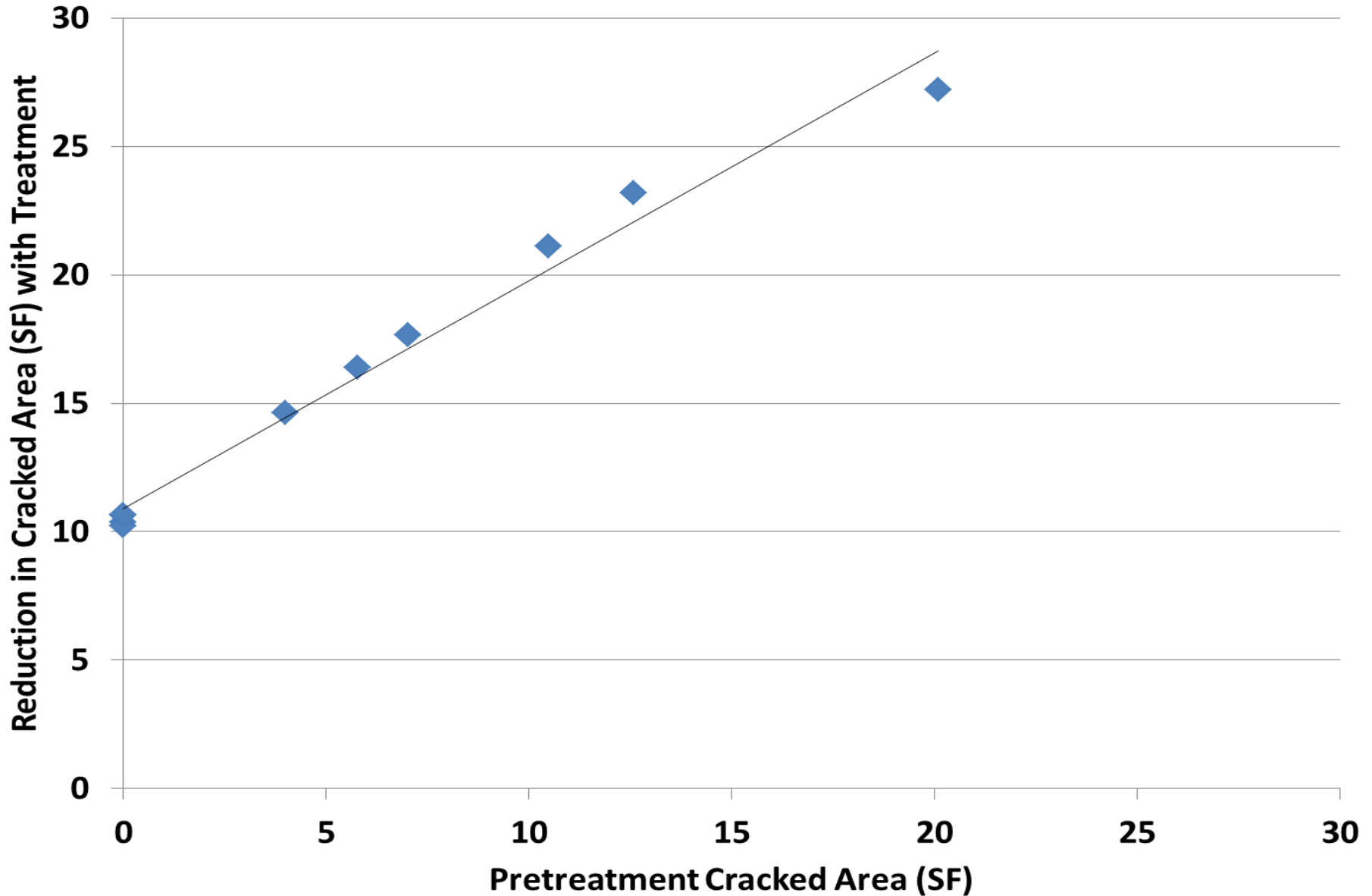
Projection of Cracking – What if left untreated?



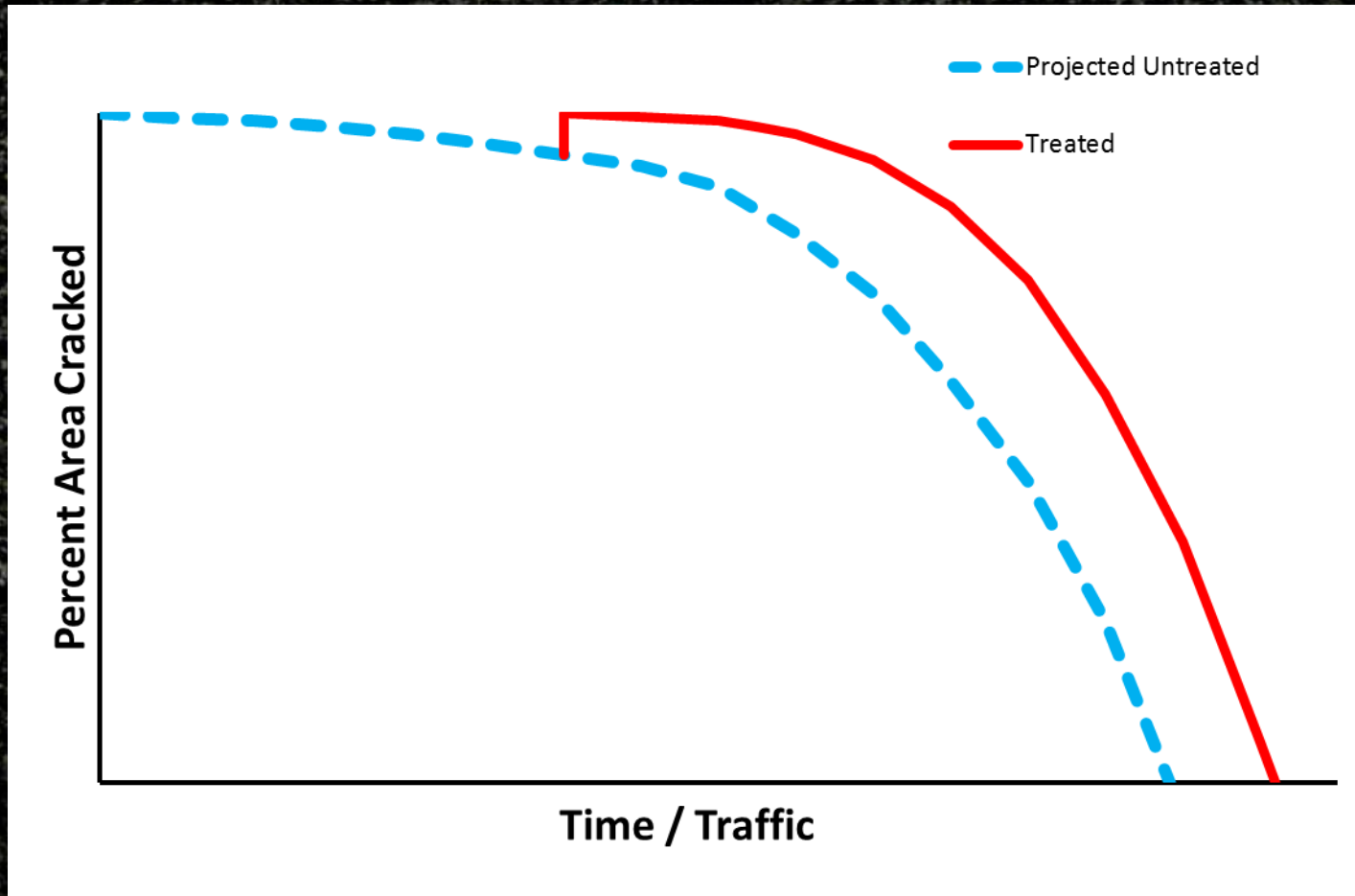
Reduction in Cracking



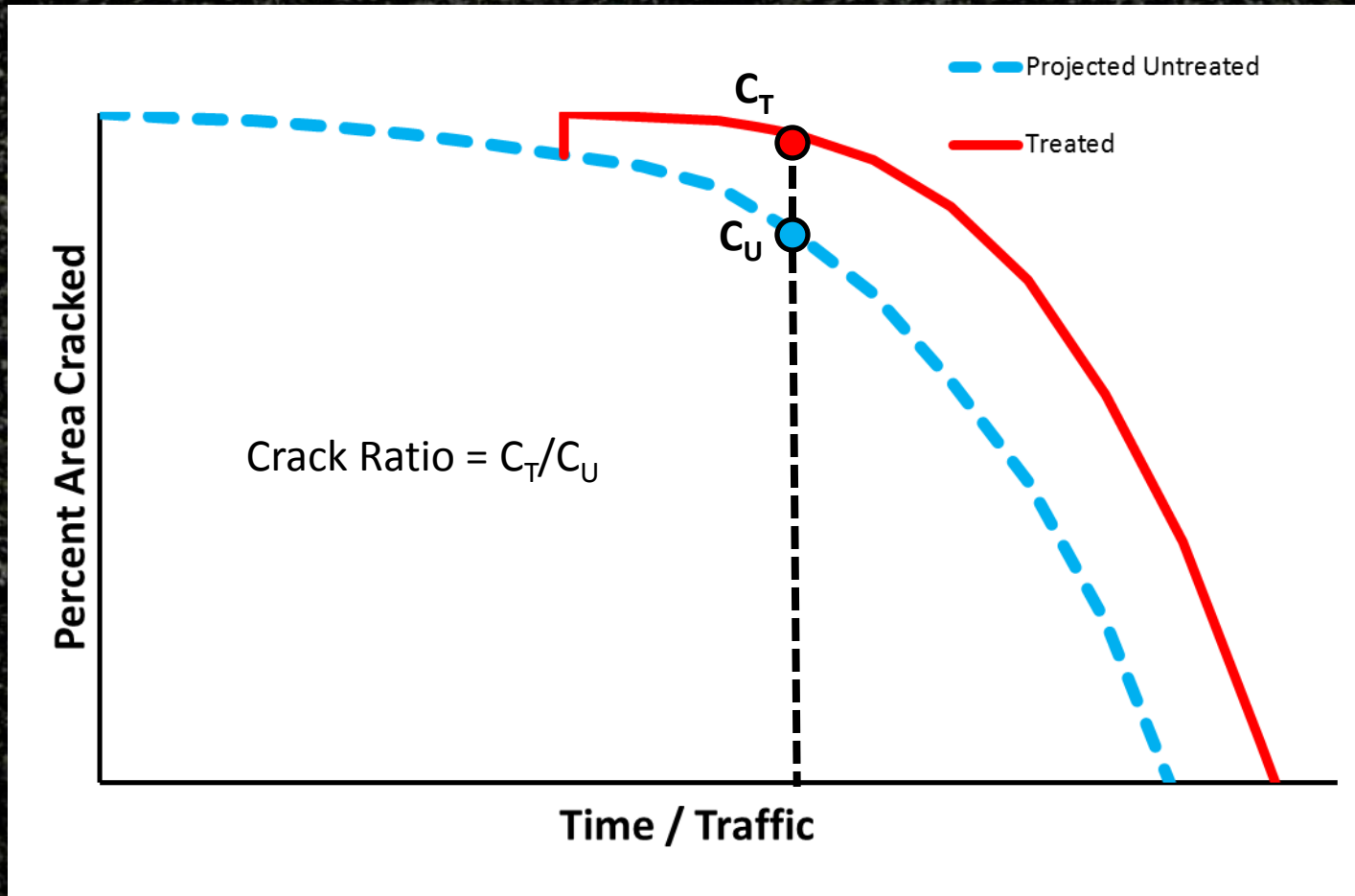
Reduction in Cracking



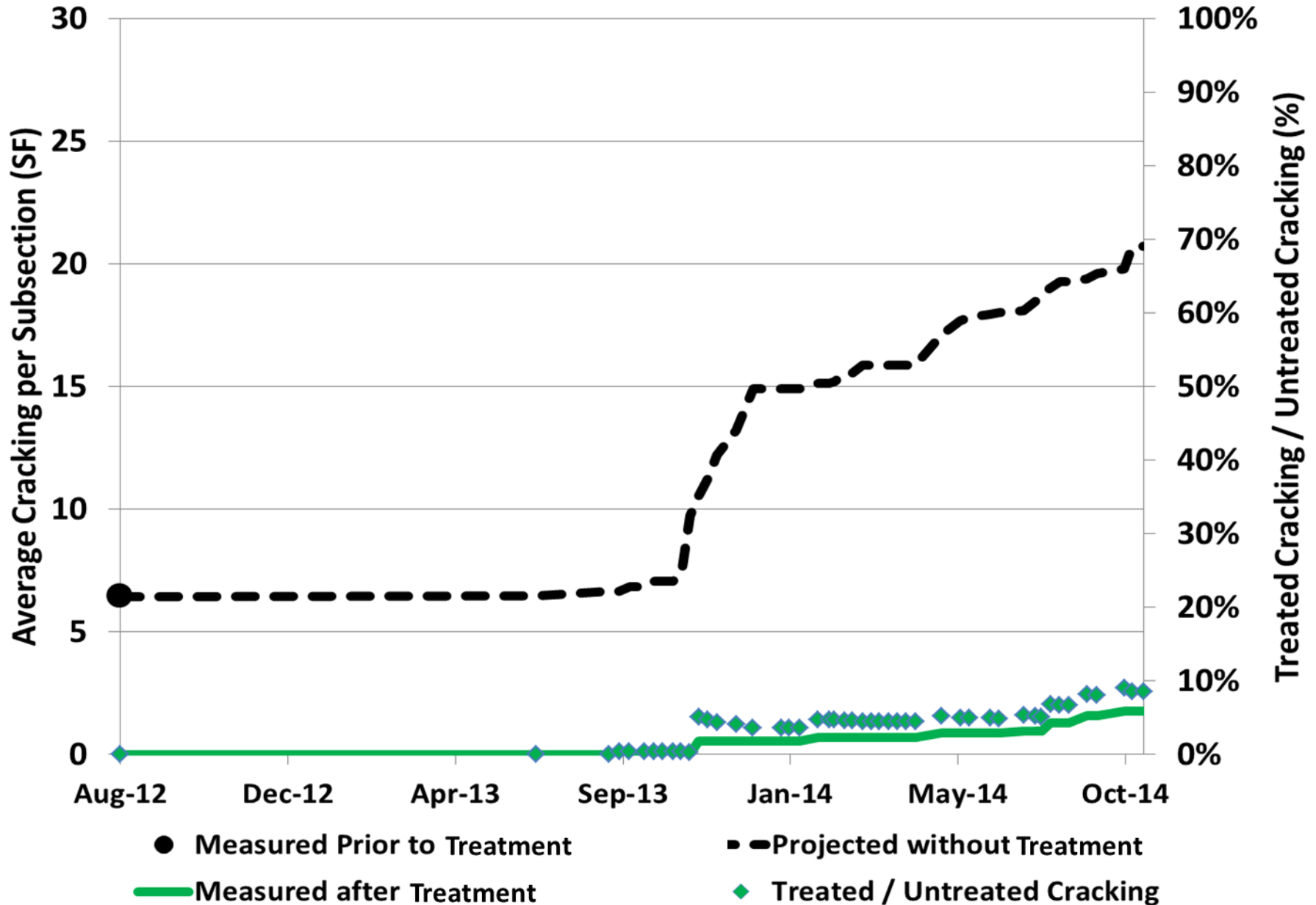
Reduction in Cracking



Ratio of Cracking – Treated vs Untreated



Treatment Alternatives



Questions ?



www.ncat.us

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