

In-Place Recycling Research

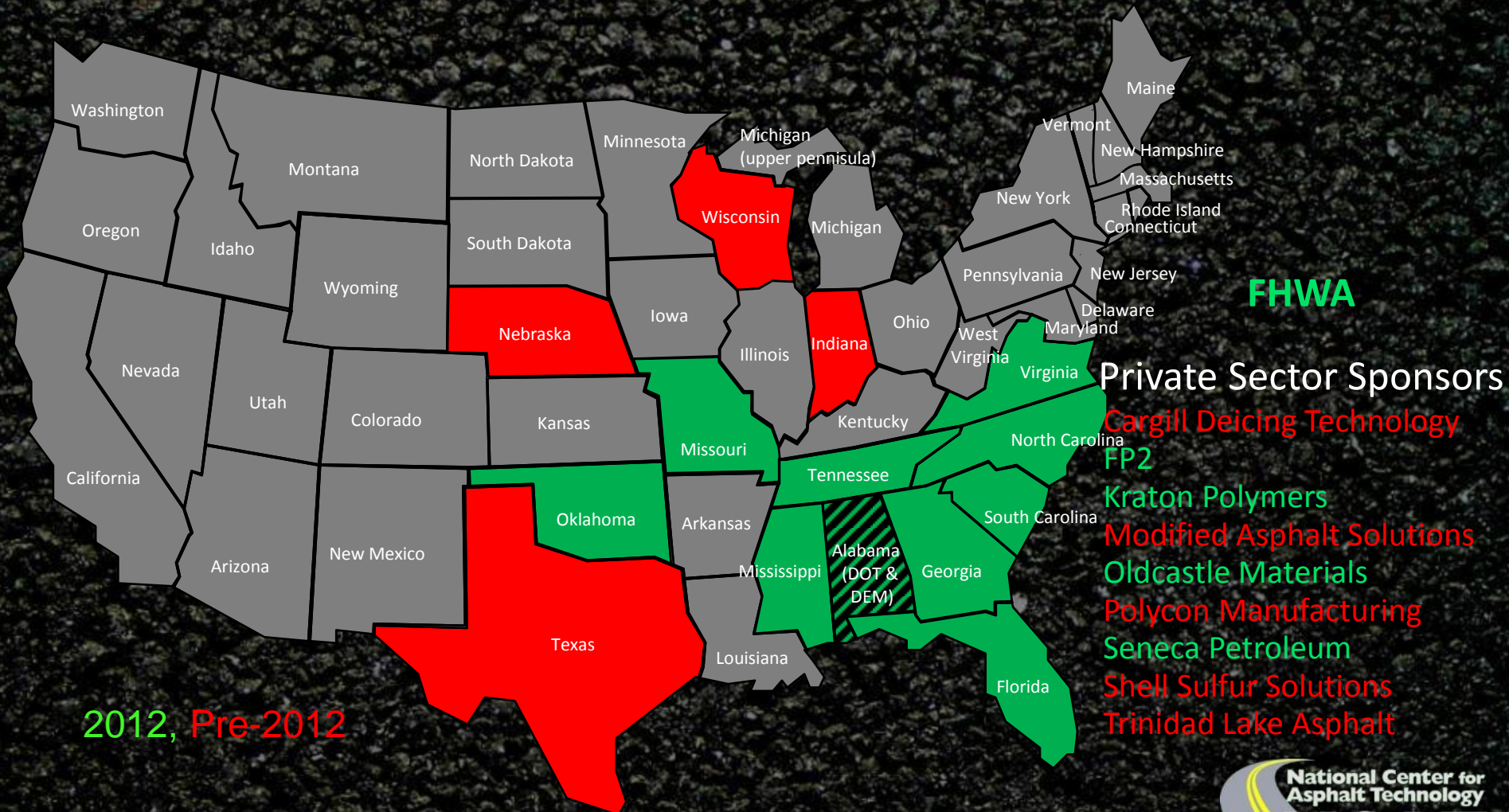


at AUBURN UNIVERSITY

Dr. R. Buzz Powell, P.E.



Track Research Sponsors



2012, Pre-2012

FHWA

Private Sector Sponsors

Cargill Deicing Technology

FP2

Kraton Polymers

Modified Asphalt Solutions

Oldcastle Materials

Polycon Manufacturing

Seneca Petroleum

Shell Sulfur Solutions

Trinidad Lake Asphalt



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Content

- CR mix in 2012 on Track and Lee Road 159
- Ongoing CR mix laboratory research at NCAT
- Plan to expand 159 research in 2015
- National preservation experiment initiative

CR Mix on Track & Lee Road 159

- 3.66 miles on I-81 in Augusta County, VA in 2011
- Post-mill FDR in right lane due to deterioration
- CCPR base mix placed with 4 inch asphalt overlay
- Need to quantify CR structural contribution.

“Full Depth Reclamation”



100% RAP Foamed CR Base Mix



- Overlay thickness for 6" interstate CR base mix ?
 - 200 uε with 6" overlay, 300 uε with 4" overlay
- Benefit of subgrade+base cement stabilization ?
 - 150 uε with 4" overlay (half base/subgrade value)

100% RAP Foamed CR Base Mix



100% RAP Foamed CR Base Mix



Lee Road 159



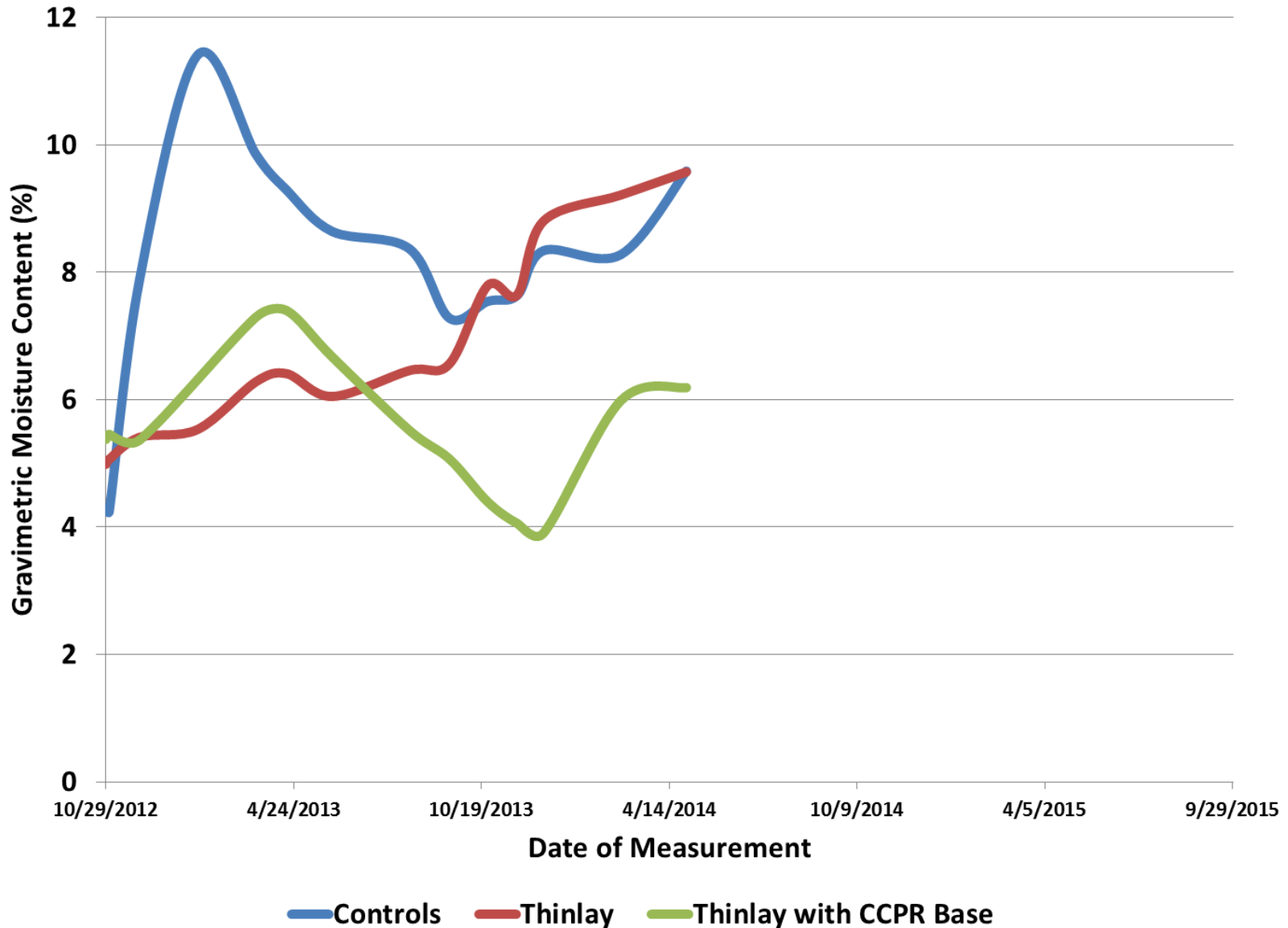
Milling for CR Base Mix in Section L20



L20 – Thin HMA
Overlay on
100% RAP Mix Base

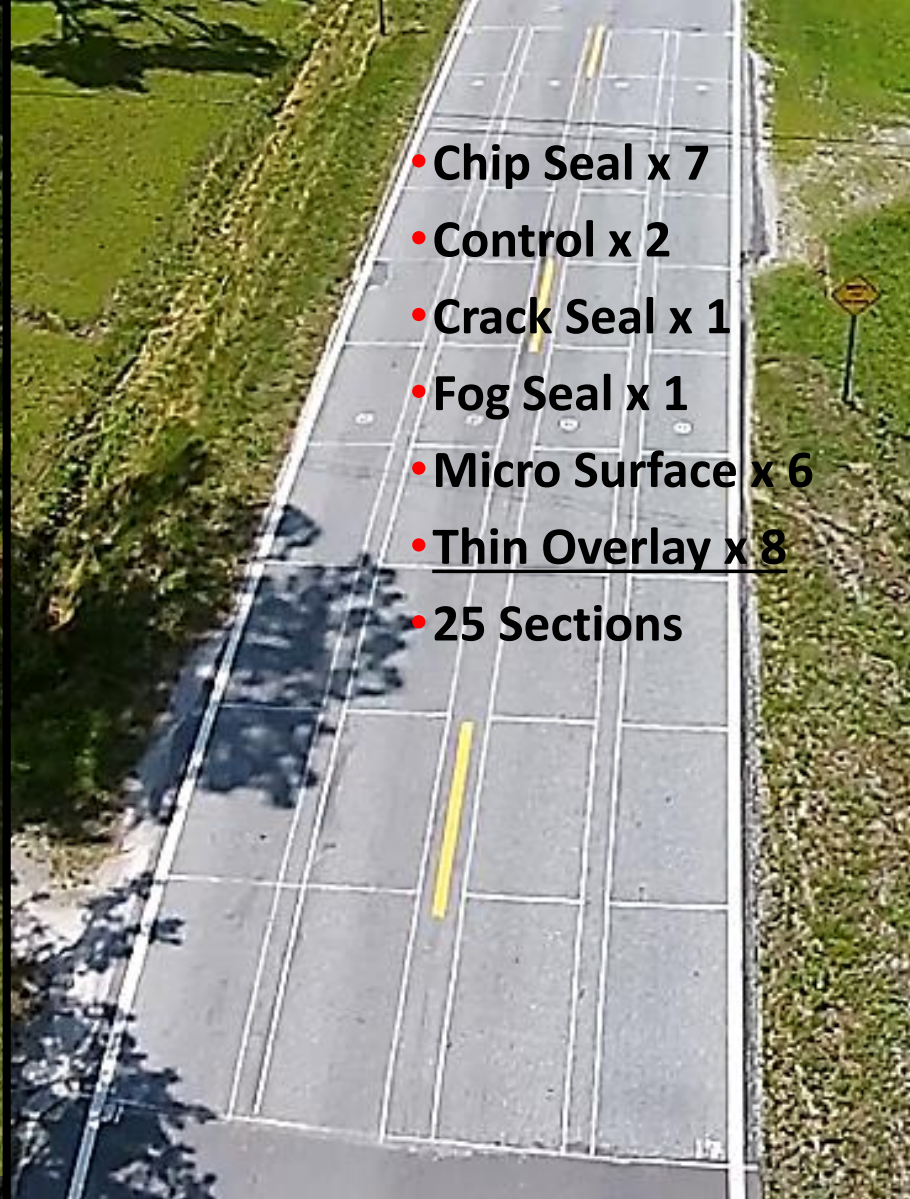


Subgrade Moisture Contents

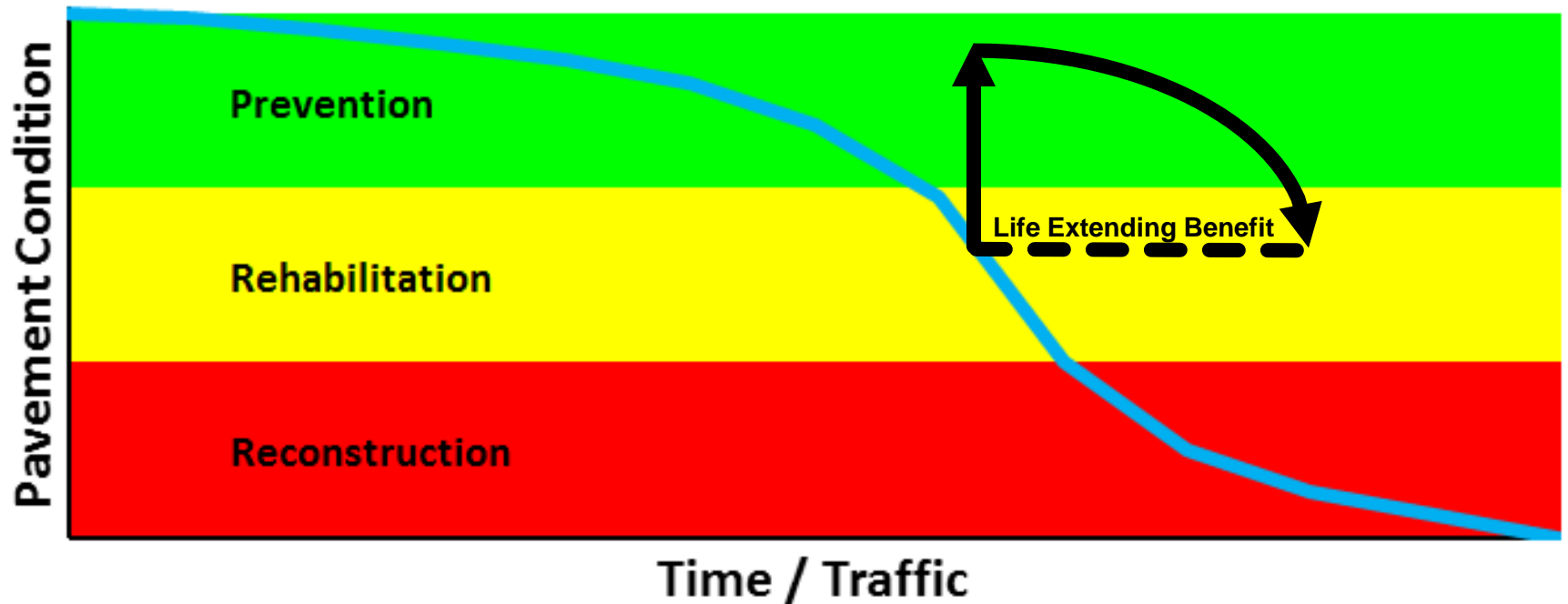


Preservation on Lee Road 159

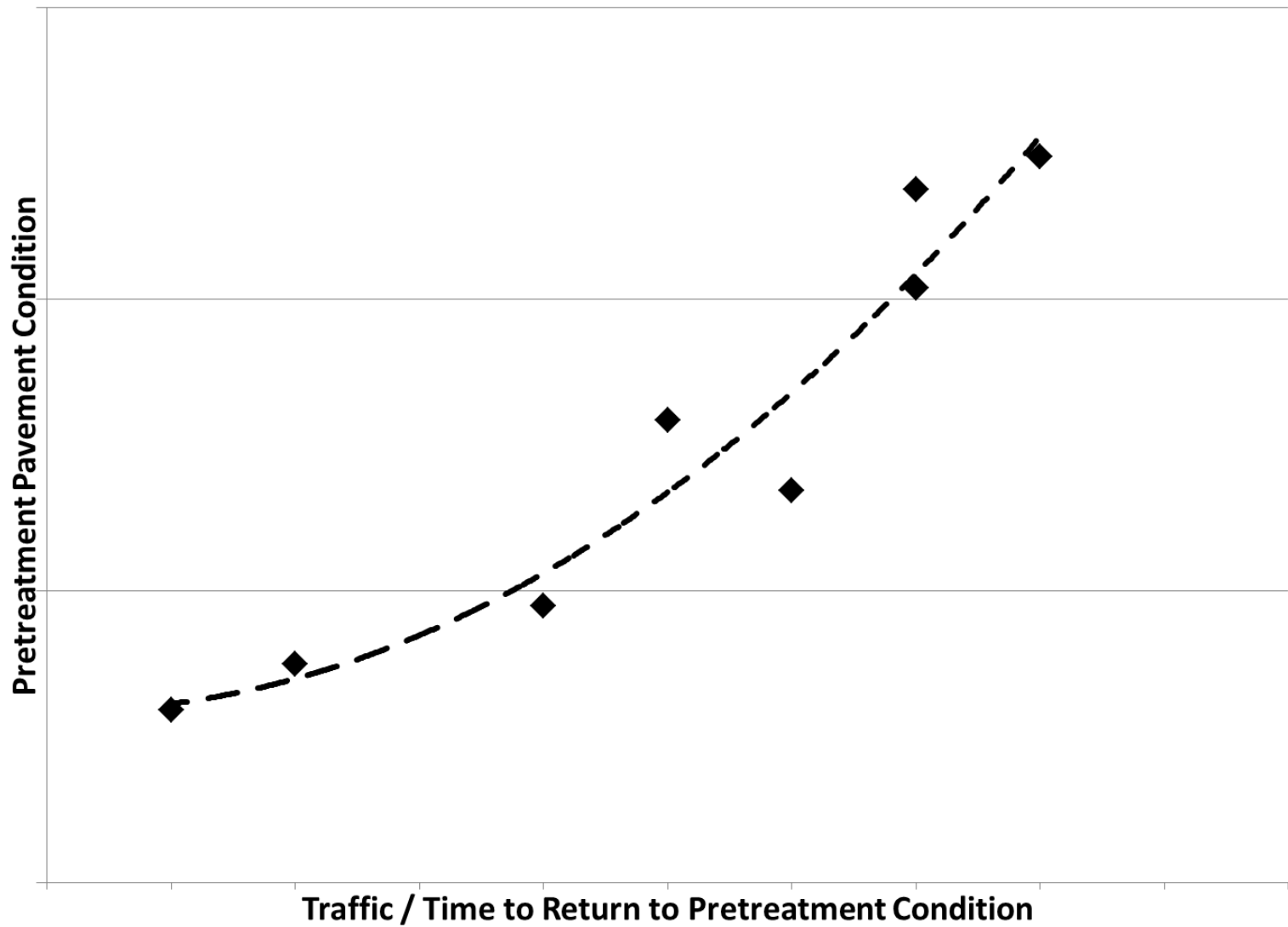
- Chip Seal x 7
- Control x 2
- Crack Seal x 1
- Fog Seal x 1
- Micro Surface x 6
- Thin Overlay x 8
- 25 Sections



Preservation on Lee Road 159



Preservation on Lee Road 159



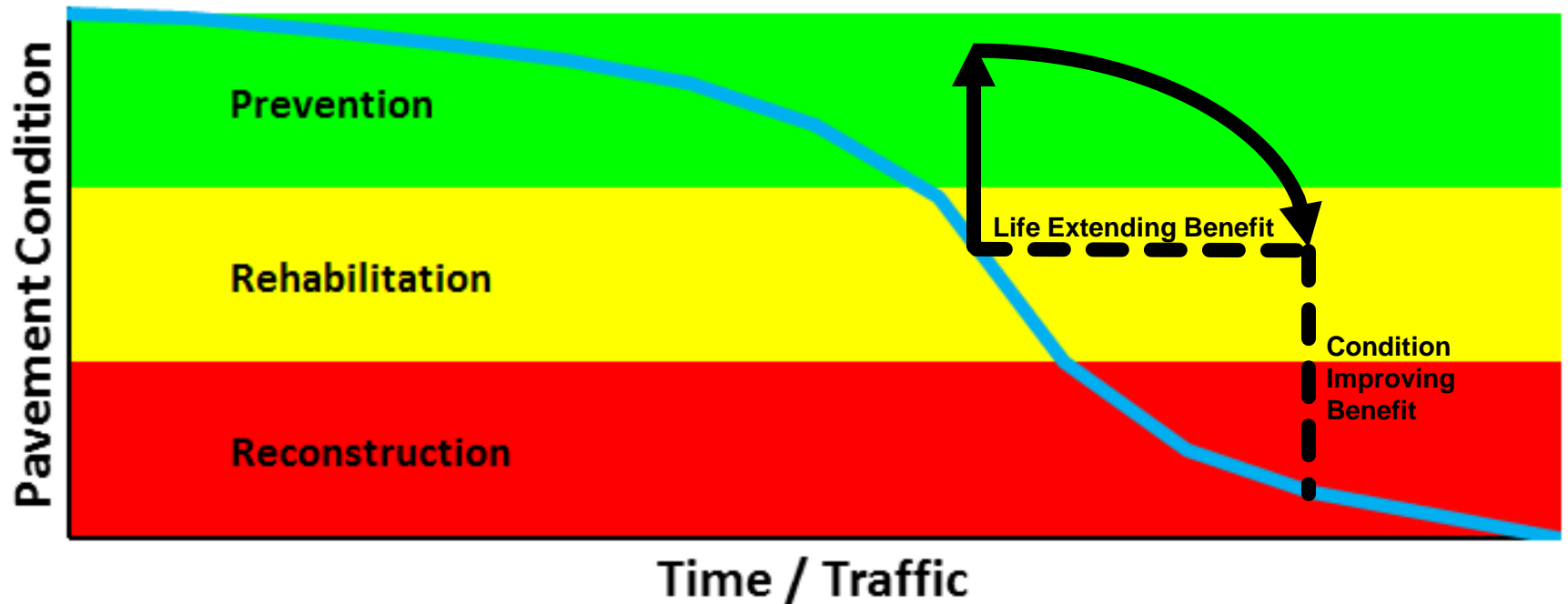
NCAT's CR Research Efforts

- Mix design methodologies
- Structural contribution (E, M-E)
- QC/QA practices for DOTs
- Training and implementation.

Plan to Expand 159 Research in 2015

- Continue to monitor/maintain Track and 159
- Higher ADT roadway, longer sections, similar age
- Better quantify condition improving benefit
- Expand scope to add more recycling mixes.

Preservation on Lee Road 159



Higher ADT Off-Track Preservation

- US-280 3 miles to east
- 17,000 ADT, >10 years old
- Westbound outside lane
- Tenth mile sections
- Duplicate Lee Road 159
- CCPR_{F,E}, CIR_{F,E}, and HIR
- High BR thin overlays

National Preservation Experiment

- Low temperature effects outside NCAT scope
- New MnRoad experiment also to be built soon
- NCAT treatments in extreme northern climate
- Opportunity for rigid pavement test sections
- National scope appeal to FHWA / more states.

www.pavetrack.com



Performance



- Home
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Click here for [the official NCAT web site](#), [Tracks in US](#), or [Tracks Worldwide](#)

Opelika, AL
Get the 10 day forecast

61°F
Cloudy

Feels Like: 61°F
Humidity: 81%
Wind: SE at 8 mph

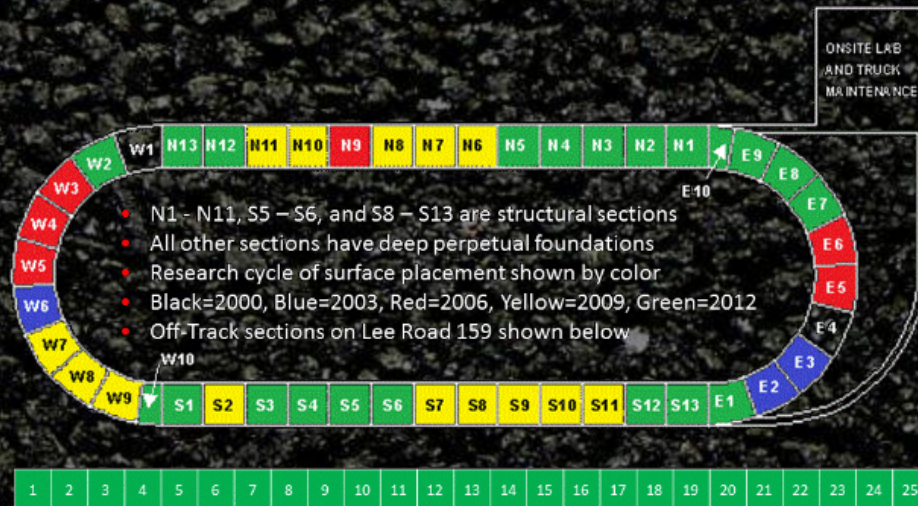
Enter city/zip **GO!**

The Weather Channel
Hit the Road
weather.com
Travel Top 10s
Weather at 30,000 feet

HOTLINKS to [download PAVE reports](#), [review upcoming NCAT training courses](#), [query historical weather data](#), [view current color radar](#) or [preview local forecast](#).

0. ESALs as of 2300 hours on

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.



2015 Pavement Test Track Conference

March 3-5, 2015

The Hotel at Auburn University
and Dixon Conference Center
Auburn, Alabama

- ▶ WMA & High RAP/RAS/GTR Mixes
- ▶ Optimized Structural Design
- ▶ Pavement Preservation
- ▶ Implementation

Official registration information will soon be available at www.ncat.us



at AUBURN UNIVERSITY



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