



Plans for Each Sponsor on the
2021 NCAT Pavement Test Track
Buzz Powell

SEVENTH
RESEARCH CYCLE

NCAT TEST TRACK CONFERENCE

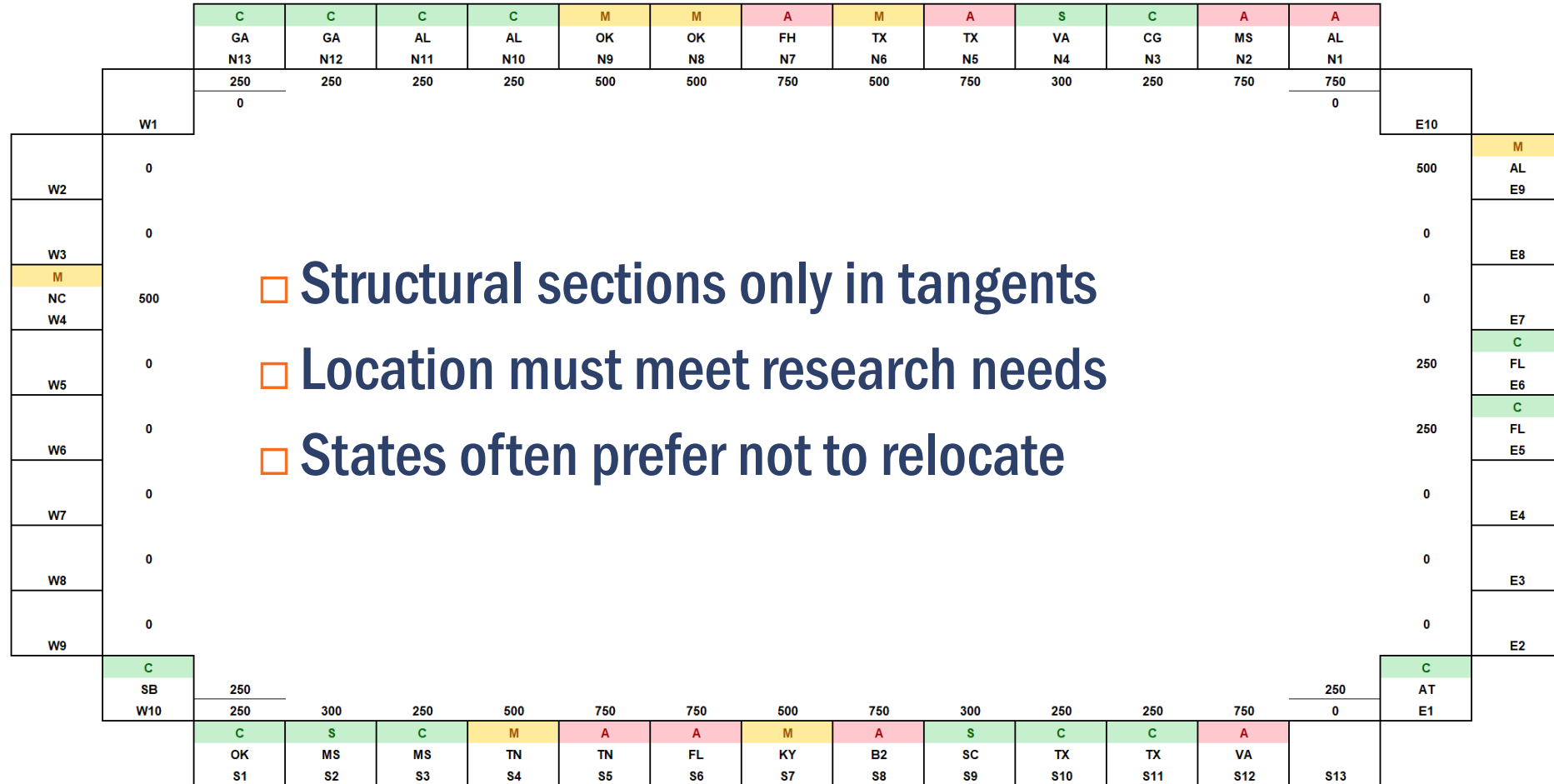
NCAT+MnROAD Pavement Research Partnership

- Preservation Group (PG) study
 - ▣ Lee Road 159 and US-280 sections at NCAT
 - ▣ CSAH-8, US-169, and 70th Street sections at MnROAD
 - ▣ Long-term data collection for preservation benefits
- Additive Group (AG) experiment
 - ▣ New bottom-up fatigue cracking sections at NCAT
 - ▣ New “cracking challenge” sections at MnROAD
 - ▣ Impact of various mix additives on pavement life

Cost of NCAT Track Experiments

- Traffic continuations (\$250-\$300k over 3 years)
- New mill/inlay sections (\$500k over 3 years)
- New structural sections (\$750k over 3 years).

Track Layout Development



Traffic Continuations₁₆

- Higher RAP with recycling agents – CA_{N3}
- Foamed cold central plant recycle (CCPR) base – VA_{N4}
- High performance thinlays (DGA, SMA) – AL_{N10,N11}
- Interlayer strategies for crack prevention – GA_{N12,N13}
- Soybean based polymer modified asphalt – SB_{W10}



Traffic Continuations₁₆

- BMD via recycling agents, gradation change, etc. – OK_{S1} , $TX_{S10,S11}$
- Impact of base stabilization, subgrade modification – MS_{S2}
- Long term benefit of surface rejuvenators – MS_{S3}
- Full depth rapid rebuilds (grinding vs thinlays on HiMA) – SC_{S9}
- Rejuvenation of open graded friction surface course – SR_{E1}
- Impact of density on performance – $FL_{E5,E6}$

New Mill/Inlay Sections₇

- Minimum HMA thickness over cold (re)recycling – VA_{S12}
- BMD via recycling agents, gradation, etc. – $OK_{N8,N9}, TX_{N6}$
- Bond strength with different tack products and/or rates – NC_{W4}
- Friction performance mix optimization – KY_{S7}
- High performance open graded friction course surface – AL_{E9}



New Mill/Inlay Mix Designs by NCAT

- TX surface BMD with Overlay Tester rate of crack progression
- OK surface with higher RAP plus binder with rejuvenator
- OK surface with dry recycled tire rubber additive redesign
- TN surface BMD 6" gyratory design with 4" Marshall CT_{Index}
- KY "BMD+friction" targeting specific surface friction
- AL high performance OGFC using Cantabro with critical aging.



New Structural Sections₇

- Additive Group (AG) study for additive impact on pavement life
- “AG+” B2Last high polymer performance with reduced viscosity.



Potential Rejuvenated CCPR Sections



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Questions and Answers



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