




### Current NCAT Research Areas

- High RAP content mixes
- Warm mix asphalt
- Pavement preservation
- Drainable, quiet pavements
- Alternative binder materials
- Optimized structural design
- Automated QC technologies


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### 2006 Track Sponsors

(+ FHWA & Industry)


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### 2006 Research Cycle (Phase 3)

-N1 through N10 and S11 Are Structural Sections  
 -All Other Sections Have Deep Perpetual Foundations  
 -Research Cycle of Construction Shown by Color  
 -Black=2000 Cycle, Blue=2003 Cycle, Red=2006 Cycle

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### Research Objectives

- Optimize thickness design (structural)
- Identify ideal surface mixes (surface)

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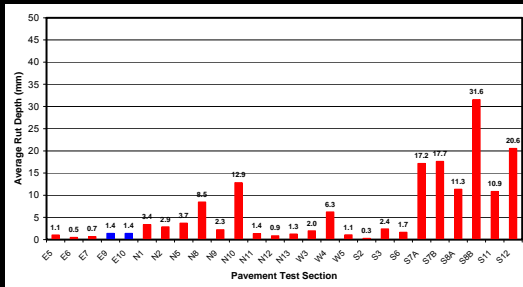


### Accelerated Traffic

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### Rutting Performance

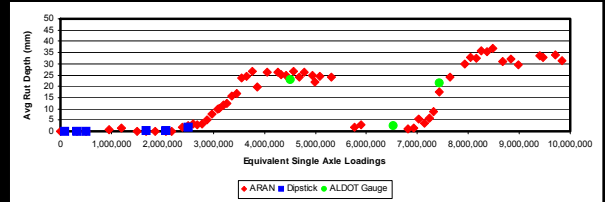


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### Rutting in "Bad" Mixes

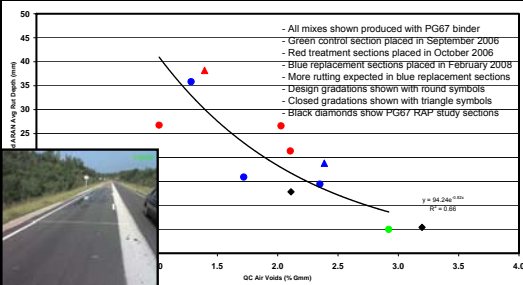


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### Low QC Voids Experiment

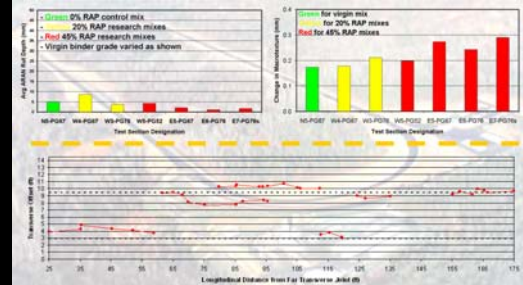


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### High RAP Mix Performance

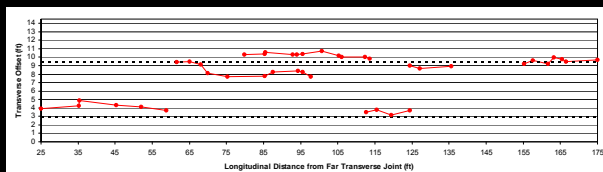


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### Cracking in High RAP PG76s

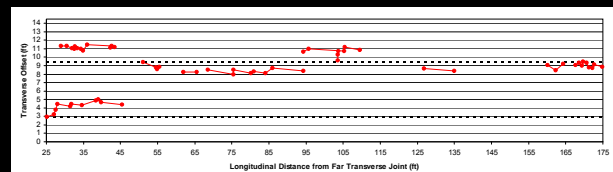


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### Cracking Before 2006 Rebuild

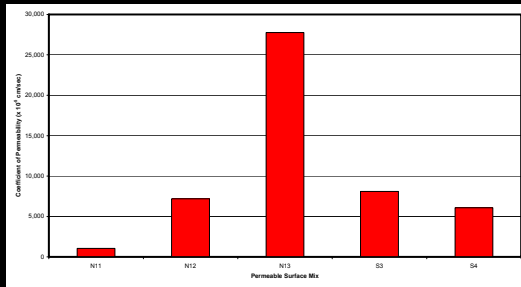


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### Permeable Surface Mixes



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### Twin Layer Paver

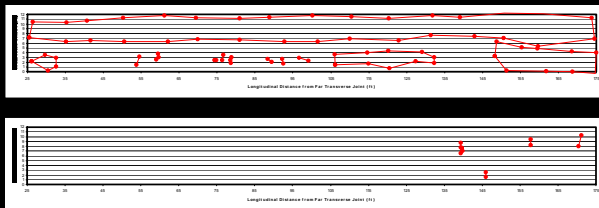


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### 6/4/07 – 2.7 million ESALs



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### Key Findings to Date

- Fine versus coarse mixes
- Benefit of modified binders
- Optimized use of gravel (dense, SMA, OGFC)
- Evaluation of new technologies
- Aggregate quality specifications
- Warm mix early performance (then late)
- Mechanistic ( $\sigma$ - $\epsilon$ ) performance models
- Result in specification improvements

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### 2009 Pavement Test Track

- More formal sponsorship by industry
- Global interest in participation
- Alternative binders and new modifiers
- Track Symposium in February 2009
- Reconstruction begins March 2009
- Begin traffic July 2009

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## 2009 Group Experiment

Conventional Dense HMA	Permeable Surface on Dense HMA	Low Surface RAP % High Base	High Surface RAP % High Base	Foamed Warm Mix	Additized Warm Mix	Alternative Binder (SEAB)	Alternative Binder (SEAM)
7 inches	7 inches	7 inches	7 inches	7 inches	7 inches	7 inches	Parapetral Design 12 inches
6 inches DGAB	6 inches DGAB	6 inches DGAB	6 inches DGAB	6 inches DGAB	6 inches DGAB	6 inches DGAB	6 inches DGAB
SBP Subgrade	SBP Subgrade	SBP Subgrade	SBP Subgrade	SBP Subgrade	SBP Subgrade	SBP Subgrade	SBP Subgrade

Pavement Section Feedings



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Click here for the official NCAT web site, Tracks in US, or Tracks Worldwide




Aerial Photo of the 309 Acre Site (Click for Photo Album) Track Cam (Click for Live Feed)

**WELCOME** to the home page for the NCAT Pavement Test Track. The primary objective of this site is to effectively communicate our experiences to the world as we sponsor research designed to extend the life of flexible pavements. Experimental mixes on our 1.7 mile oval are installed in 200 ft test sections that facilitate meaningful field performance comparisons, and laboratory testing is conducted on samples made during construction to facilitate practical lab to field performance correlations. We appreciate your interest and value your feedback. While you are here, we would appreciate you taking the time to participate in a brief web survey that will help us to propose effective experiments for the 2009 Track.

**NOTICE** - We have updated the website to include information on the 2009 Track. The 2009 Track is a multi-phase project that will be completed in 2009. The 2009 Track is a multi-phase project that will be completed in 2009. The 2009 Track is a multi-phase project that will be completed in 2009.

**ESALS** - 10 million ESALS is planned to be completed by the fall of 2008. The planning process is now underway for the fourth research cycle, which will be built in 2009.



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