



# 2023 National Pavement Preservation Conference

Southeast Pavement Preservation Partnership

Indianapolis, IN, September 18<sup>th</sup>, 2023

# Outline

- TDOT Resurfacing Program
- Pavement Preservation
- Successful Story

# TDOT Resurfacing Program

- Current network and pavement condition

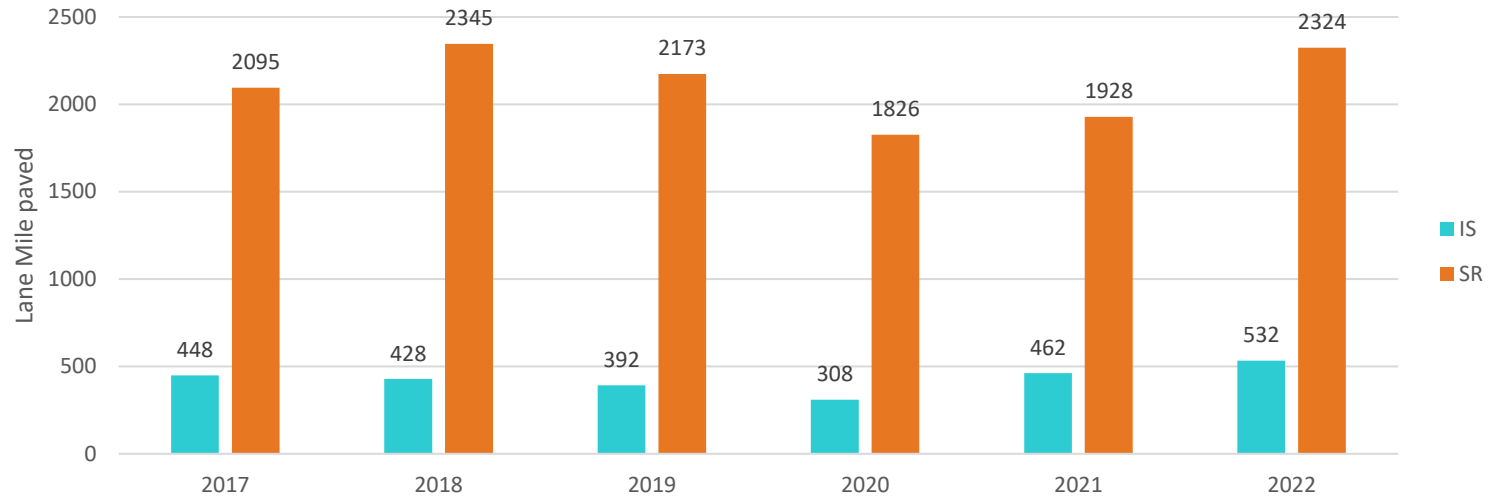


As of 2-11-2023

Route Type	Region, Lane-Mile				Grand Total, Lane-Mile
	1	2	3	4	
Interstate	1,608.931	980.855	2,256.73	1,032.883	5,879.399
NHS_State	2,848.843	2,501.028	3,712.741	3,690.678	12,753.29
Non_NHS_State	4,703.194	4,250.654	5,360.593	4,913.001	19,227.442
<b>Total</b>	<b>9,160.968</b>	<b>7,732.537</b>	<b>11,330.064</b>	<b>9,636.562</b>	<b>37,860.131</b>

# TDOT Resurfacing Program

- Summary of resurfaced lane mile

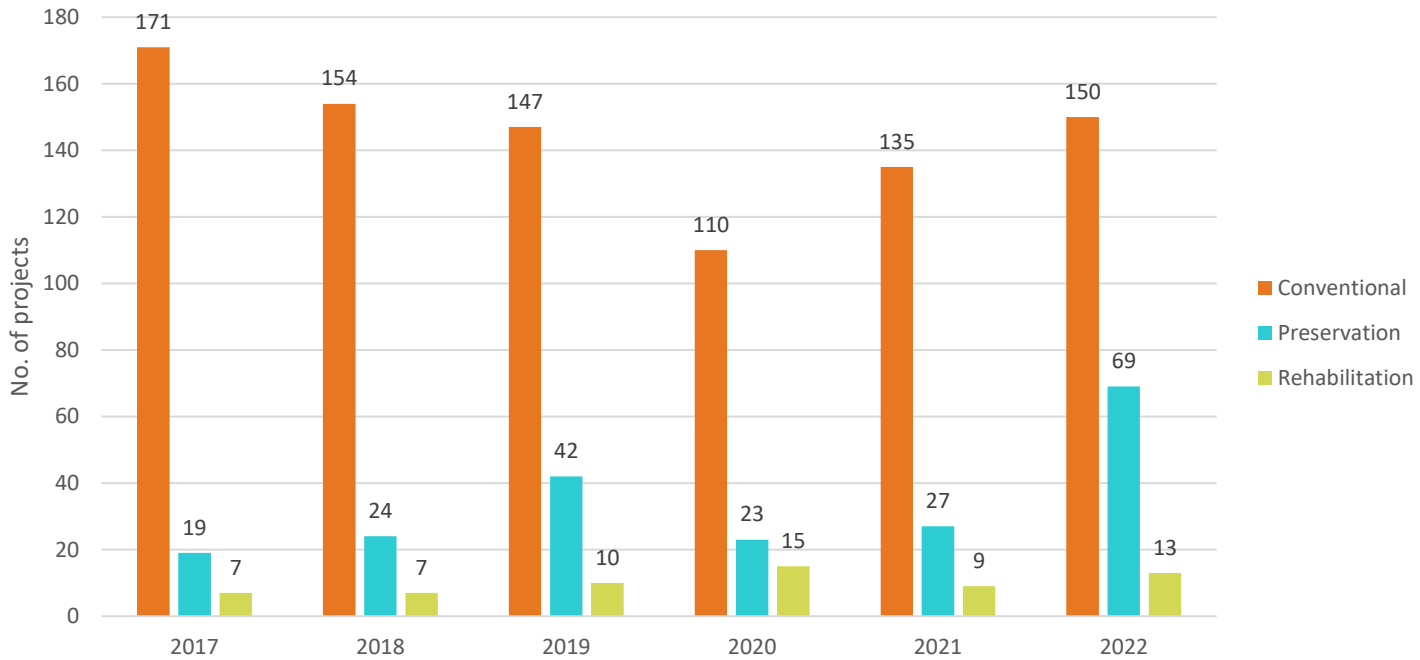


# TDOT Resurfacing Program

- Conventional treatments
  - Thin asphalt overlays (85 psy. or 65 psy. thin lift); HMA overlay (1.25"); mill and replacement (less than 1.5 inches in depth)
- Typical preservation treatments
  - Chip seals; micro-surfacing (single/double lift); crack sealing, concrete joint sealing; cape seals, scrub seal.
- Typical rehabilitation treatments
  - Deep mill and fill (greater than 1.5 inches depth); Full depth recycling; Cold in-place recycling; Hot in-place recycling

# TDOT Resurfacing Program

- About 200 projects are delivered annually.



# TDOT Resurfacing Program

- PMS support
  - Pavement condition data
    - Roughness and surface distresses;
    - Overall index for pavement evaluation (PQI)
  - Construction history
    - Type of treatment, contract number, construction cost, year of completion
  - Maintenance and Rehabilitation strategy analysis
    - Decision trees for preliminary treatment recommendation
    - Prioritize projects based on cost-effectiveness values;
    - Draft preliminary 3-year resurfacing list

# TDOT Resurfacing Program

- Project-level pavement evaluation
  - Falling Weight Deflectometer
  - Ground Penetrating Radar (GPR)
  - Dynamic Cone Penetration
  - Core Drill





# Pavement Preservation

- Treatment selection
  - Decision trees
    - Based on overall index, age of pavements, fatigue cracks, functional class(Interstate/Rural SR/Urban SR)
  - Cost analysis
    - The unit costs are determined based on region's average over the past 5 years.
  - Performance models
    - Based on the performance data from historical data

# Pavement Preservation

- Life extension

Treatment	Pavement	Life Extension
Crack seal	Flexible/Composite	Up to 3 years
Micro-surfacing (single application)	Flexible/Composite	6-8 years/ 5-7 years
Micro-surfacing (double application)	Flexible/Composite	7-9 years
Scrub seal	Flexible/Composite	Up to 7 years
Chip seal w/Fog seal	Flexible/Composite	6 years
Cape seal	Flexible/Composite	10 years
Thin Overlay Treatment	Flexible/Composite (1.25") Flexible (0.75") Flexible (0.6")	12/10 years (1.25") 9 years (0.75") 7 years(0.6")
Chip Seal with Thin Overlay	Flexible	12 years
Mill and Replace with OGFC	Flexible	9-11 years
Mill and Replace Treatment	Flexible/Composite	12 years

# Success Story: CAM Implementation

- Part of FHWA's EDC-6 Targeted Overlay Pavement Solutions (TOPS) Program
- TDOT selected the Crack Attenuating Mix (CAM)
- A CAM is designed as an interlayer to reduce reflective cracking in hot mix overlays, but also exhibits high rut resistance.
- FHWA supplied TDOT with resources from other state DOTs (TXDOT, NJDOT) to help develop specifications.
- A specialized mixture like CAM could potentially require innovative materials, additives, and modifiers that are not a part of standard resurfacing
- Evaluate the mix design with performance related tests as opposed to typical volumetric parameters

# Success Story: CAM Implementation

- Carried out a feasibility study in the lab using local materials
- Used these results to set specifications



CAM



411-D

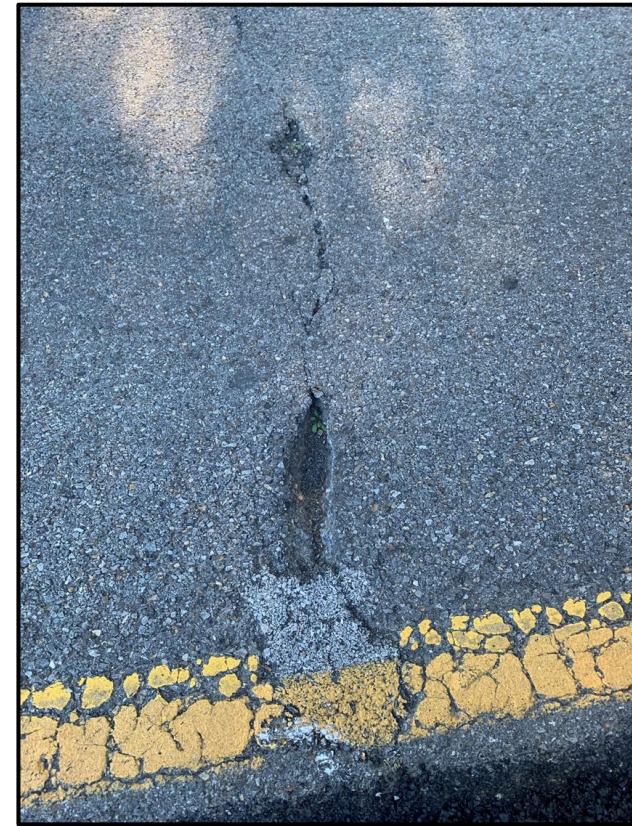
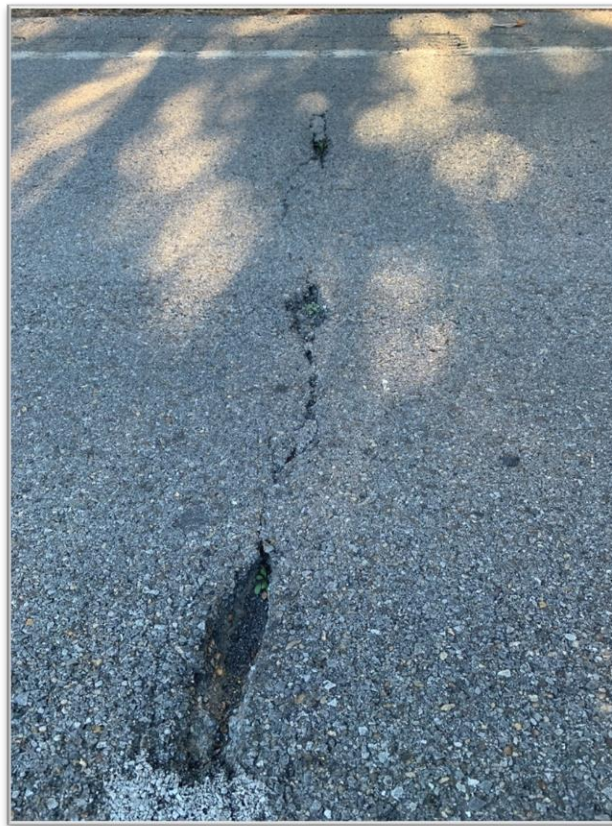
# Success Story: CAM Implementation

- Held an optional pre-bid meeting with interested contractors for the 4 selected projects.
- Projects let in May 2022
- 3 of the 4 projects were awarded
- Contractors partnered with external labs to develop and economize mix designs
- CAM placement started in Fall 2022
- SR 33/US 411 Polk County
  - 1.25" Cold Planing
  - 1.25" CAM
  - 1.25" Dense Graded Surface Mix (411-D)



# Success Story: CAM Implementation

- SR 33/US 411 Polk County



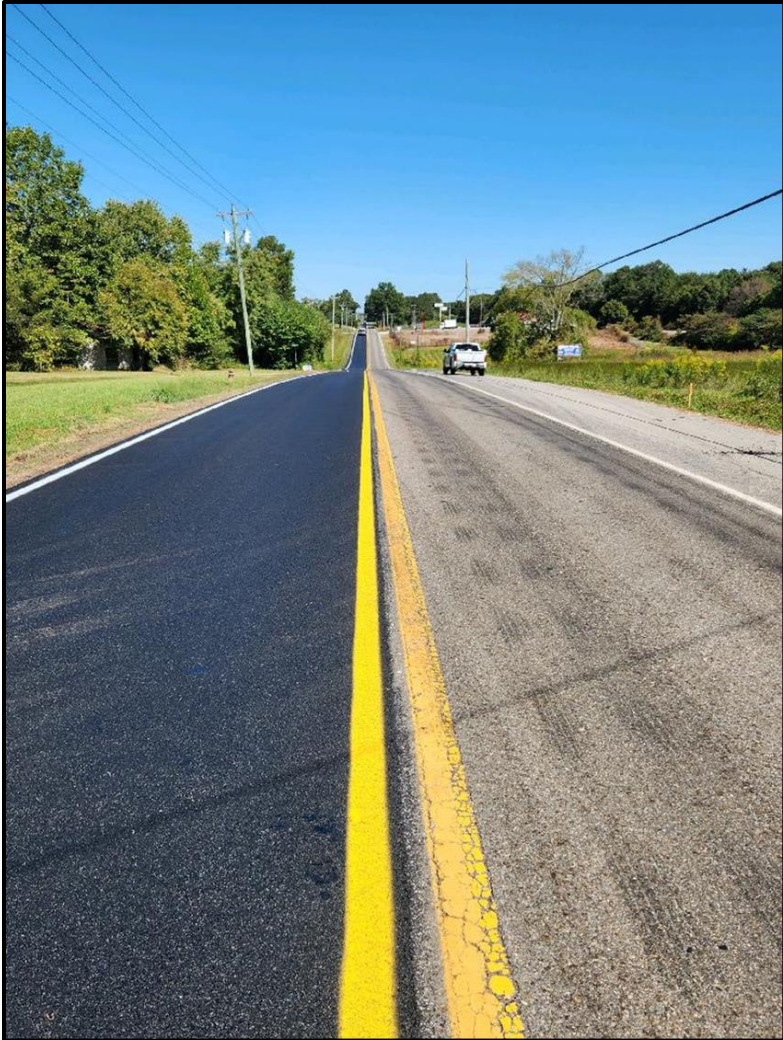
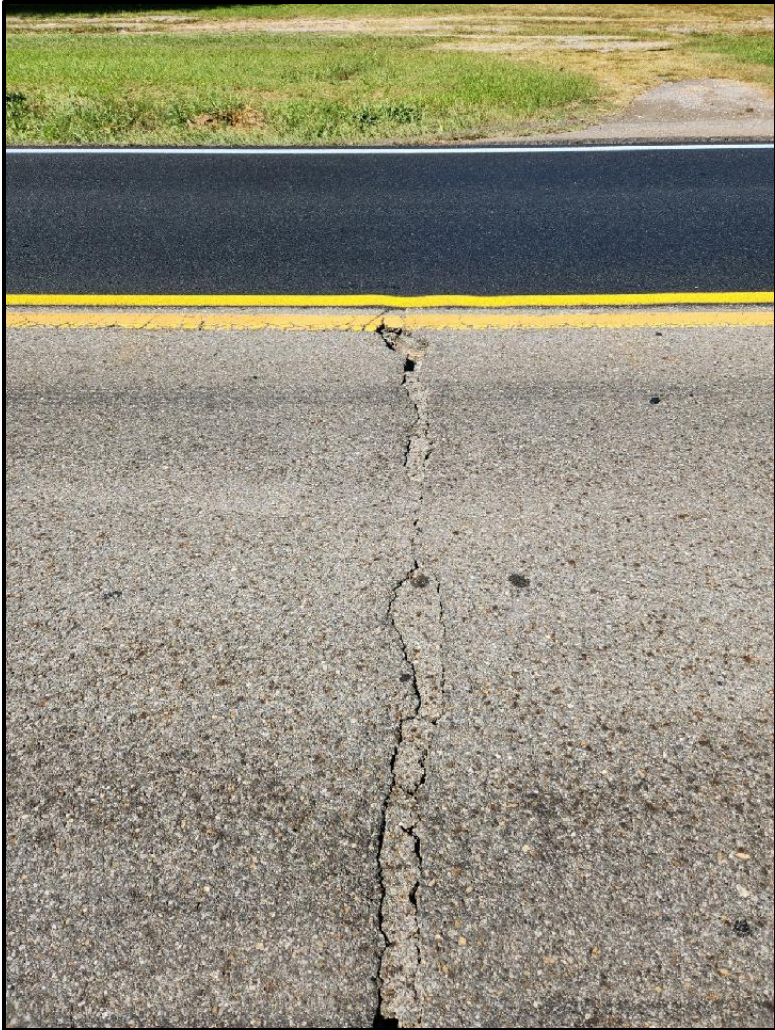


# Success Story: CAM Implementation





# Success Story: CAM Implementation





# Success Story: CAM Implementation

