Alabama DOT Pavement Preservation

Jessie Spear, P.E.

Assistant State Maintenance Engineer

Roadway

September 18, 2023





ALDOT Pavement Preservation

• Overview

- Pavement Preservation Policy (PPP)
- Pavement Preservation Training
- Federal Maintenance Resurfacing Program
- Interstate Maintenance Program
- Success Story
 - I-20/59 Micro-Surfacing Test Project



Pavement Preservation Policy

- Put into place in 2019
- Between ALDOT and Alabama Division of FHWA
- Purpose
 - Define the eligibility of two preservation strategies: Preventative Maintenance (PM) and Minor Rehabilitation (MR)
- Provides decision-making matrices for PM 1, PM 2, and MR projects
- Maximizes eligible funding sources for pavement management



Pavement Preservation Policy

• Example matrix for decision-making

	Preventative	Preventative	Minor
	Maintenance 1	Maintenance 2	Rehabilitation
	(PM 1)	(PM 2)	(MR)
Flexible Pavement Selection of Treatments	 Crack Filling and Sealing Fog Seal Scrub Seal Chip Seal Double Surface Treatment Triple Surface Treatment Slurry Seal Micro-surfacing Surface Sealing High Friction Surface Treatment Thin Lift Asphalt Concrete Layer (not to exceed 110 lbs./sy.) Safety Layer Cape Seals 	 PM 1 eligible treatments Asphalt Concrete pavement should not exceed 2.0" in total thickness (excluding any safety layer). 	 PM 1 and PM 2 eligible treatments Adjustment layer (as needed for cross-slope and/or superelevation correction) The combination of Asphalt Concrete binder and wearing surface layers should not exceed 5.0" in total thickness (excluding any safety layer or adjustment layers).



Pavement Preservation Training

- National Center for Asphalt Technology (NCAT) Opelika, AL
 - Training held in 2019
 - ALDOT personnel were able to see different applications that had been placed on CR-57 and US-280
- Alabama Transportation Assistance Program (ATAP)
 - Training was held in August
 - Topics:
 - Distress identification
 - Treatments available
 - Selecting the right treatment for the right road at the right time





Pavement Preservation Training

- ALDOT Area Offices
 - Training tentatively set for 2024
 - Topics:
 - How to develop a pavement preservation program
 - Different applications that are available to us
 - How to select the correct application for a specific roadway
 - Train designers to implement the PPP into plan development



Pavement Preservation Training

- Impact of Training
 - FY 2019 FY 2023 FM Resurfacing Program overview
 - PM 1 projects increased, and MR projects decreased
 - Time for training again

FM Resurfacing Program						
	PM 1	PM 2	MR			
FY 2019	7	55	45			
FY 2020	10	76	19			
FY 2021	15	70	24			
FY 2022	11	72	14			
FY 2023	9	63	20			



Federal Maintenance Resurfacing Program

- Budget set at \$270 million annually (FY 2020 FY 2023)
- FY 2023 breakdown of preventative maintenance projects

Application	Percentage of Total PM 1 and PM 2 Projects Let	
Traditional Mill & Fill	62.86%	
Milling, Scrub Seal & Wearing Surface	11.43%	
Milling, G Treatment & Wearing Surface	5.71%	
Milling, Wearing Surface & OGFC	4.29%	
Cape Seal	2.86%	
Scrub Seal	1.43%	
Micro-surface, Type II	1.43%	
Micro-surface, Type III and Type II	1.43%	
Scrub Seal & Micro-surface, Type III	1.43%	
G Treatment and Wearing Surface	1.43%	
Wearing Surface	1.43%	
Milling, E Treatment & Wearing Surface	1.43%	
OGFC	1.43%	
HDMB on Shoulders	11.43%	



Interstate Maintenance Program

- FY 2019 FY 2022 Overview
 - Pavement preservation projects
 - Amount spent on preservation projects

IM Resurfacing Program							
	PM 1	PM 2	MR	Total			
FY 2019	11	4	6	21			
Amount Spent	\$39,055,459	\$44,714,935	\$89,859,597	\$173,629,991			
FY 2020	7	6	5	18			
Amount Spent	\$39,724,555	\$42,794,635	\$63,506,110	\$146,025,300			
FY 2021	6	5	3	14			
Amount Spent	\$25,161,317	\$53,390,841	\$41,855,418	\$120,407,576			
FY 2022	8	8	2	18			
Amount Spent	\$29,979,285	\$54,626,389	\$44,703,298	\$129,308,972			

 IM Scope Team – ALDOT's Maintenance Bureau and Bureau of Materials & Tests; and AL Division of FHWA



- Project Information
 - IM-I059(401)
 - Sumter County Tuscaloosa Area
 - Let in 2017
 - MP 19.590 26.902, project limits
 - MP 19.590 21.590, micro-surfacing test section NBR
 - Outside of test section, micro-milling (less than ½") and placement of 90 lbs/sy of OGFC
 - Existing roadway pavement conditions
 - No cracking
 - Slight raveling and rutting



- Placed two layers in test section
 - No milling was performed
 - Micro-Surfacing Seal Coat, Type III (approx. 22 lbs/sy)
 - Micro-Surfacing Seal Coat, Type III (approx. 23 lbs/sy)
 - Placed on the mainline and outside shoulders
 - HDMB placed on the inside shoulders

± 2 % No. 200 5 - 15 5 - 15 DESIGN REQUIREMENTS						

Note 1: Percent residual asphalt based on weight of dry aggregate.

Note 2: Type II for spread rates of 10 - 20* pounds per square yard based on dry aggregate weight.

Note 3: Type III for spread rates of 15 - 30^* pounds per square yard based on dry aggregate weight.

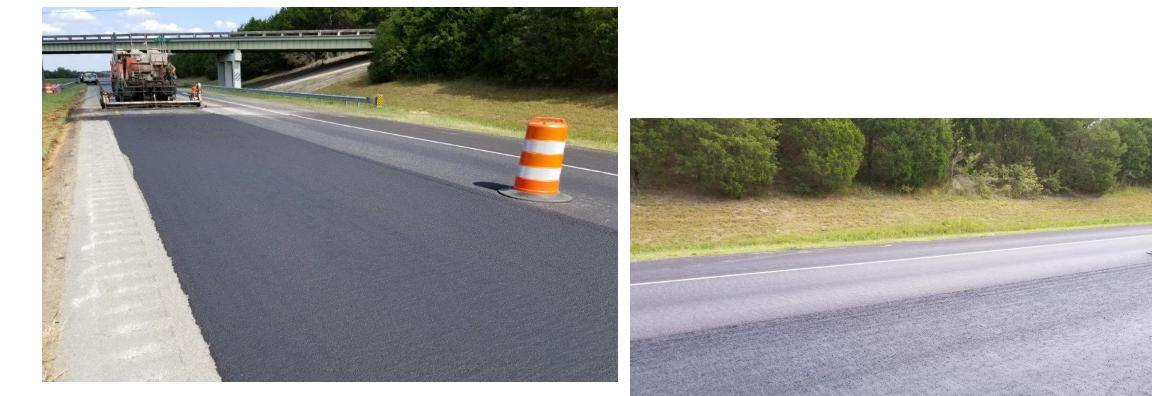
Note 4: If more than 30 pounds per square yard of mixture is required, additional lifts shall be applied.

Note 5: The gradation and percent residual asphalt as shown on the Micro-Surfacing design or as established by the Engineer shall be maintained with the listed Mixture Control Tolerances.

* The Micro-surfacing type and target spread rate will be as shown in the plans and shall be controlled to within plus or minus 2 pounds per square yard except in no case shall a spread rate be less than the minimum be allowed. Scratch courses and rut filling applications are exempt from this specifications as rates will vary based upon the depth of the ruts and shall be spread as separate lifts.



• 2017 during construction







• 2017 during construction









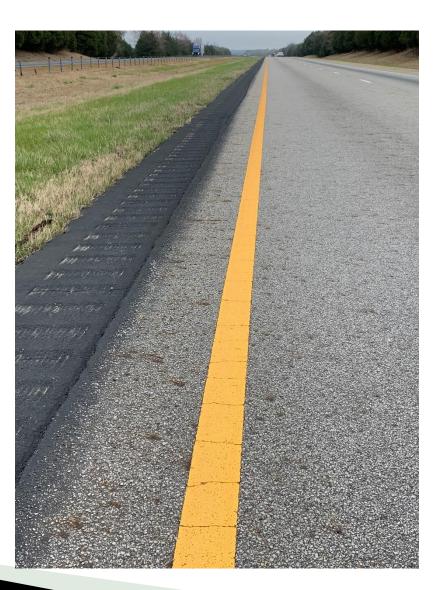
• Current pictures







• Current pictures







- What we learned
 - Use one Type III layer with one Type II layer on top
 - Provides a smoother ride and is less audible
- Success
 - Allowed ALDOT to use micro-surfacing more on State Routes
 - Let a project in August to place micro-surfacing on 17.900 miles of I-59 in Sumter County – Tuscaloosa Area



Jessie Spear, P.E.

Assistant State Maintenance Engineer,

Roadway

ALDOT – Maintenance Bureau

Office: 334.242.6274

Cell: 334.239.5536

Email: spearj@dot.state.al.us



Alabama Department of Transportation

