

Mississippi PG3 Training

By Mark Waits
NCPP



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Introduction into Pavement Preservation



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What is pavement preservation?

- The term “***Pavement Preservation Programs and Activities***” means programs and activities employing a network level, long-term strategy that enhances pavement performance by using an integrated, cost-effective set of practices that extend pavement life, improve safety, and meet road user expectations”.

Source: Section 1507 of Public Law 112-141, “Moving Ahead for Progress in the 21st Century” Act (MAP-21).

What is pavement preservation?

- When the right treatment is applied to the right road at the right time, roads can be kept in good condition instead of performing costly rehabilitation and reconstruction alternatives later in the pavement's life when the structure has deteriorated.

Source: National Center for Asphalt Technology (NCAT) at Auburn University.



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Pavement Preservation



Pavement Preservation



Pavement Preservation



Pavement Preservation Scrub Seal in early 1900



Pavement Preservation Crack Seal



Pavement Preservation Chip Seals



Pavement Preservation Fog Seals



Pavement Preservation Micro Surfacing in China



Pavement Preservation

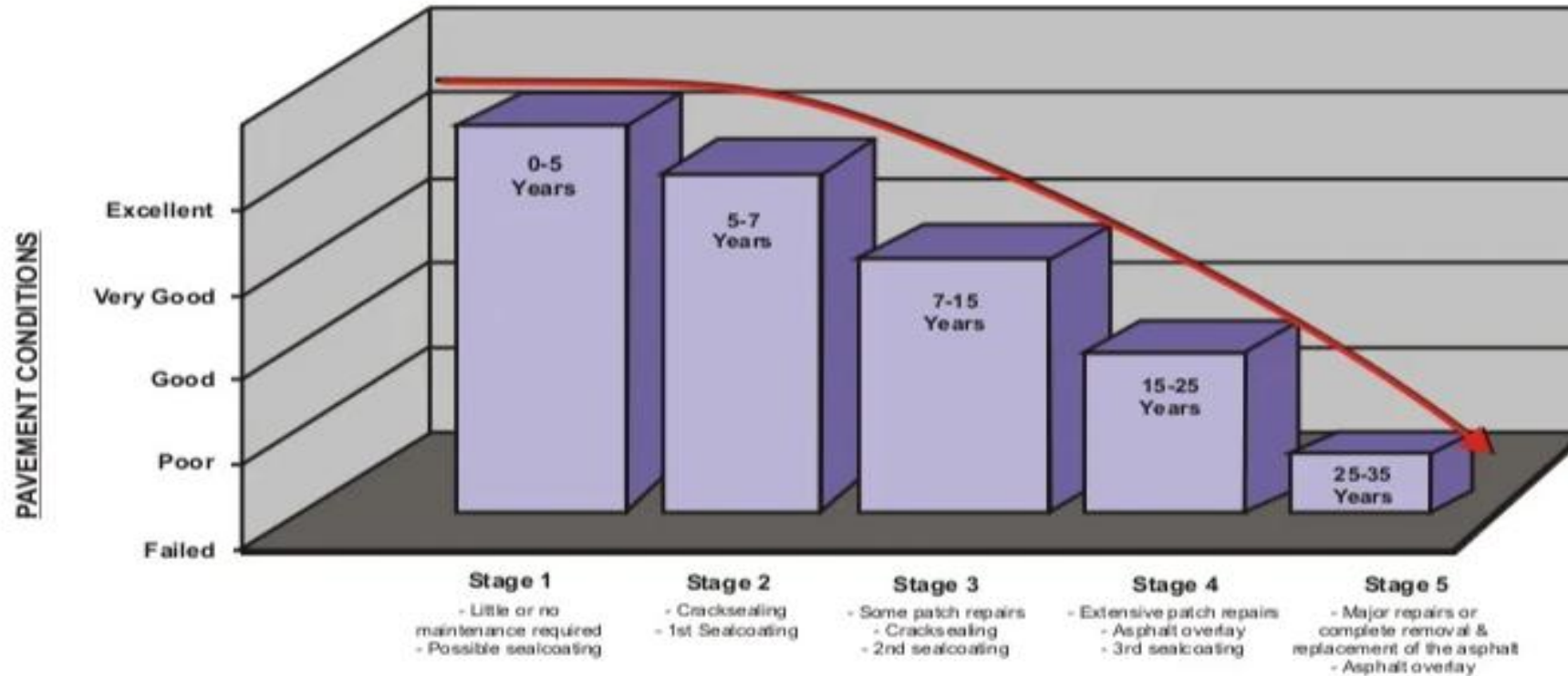
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PAVEMENT LIFE CYCLE

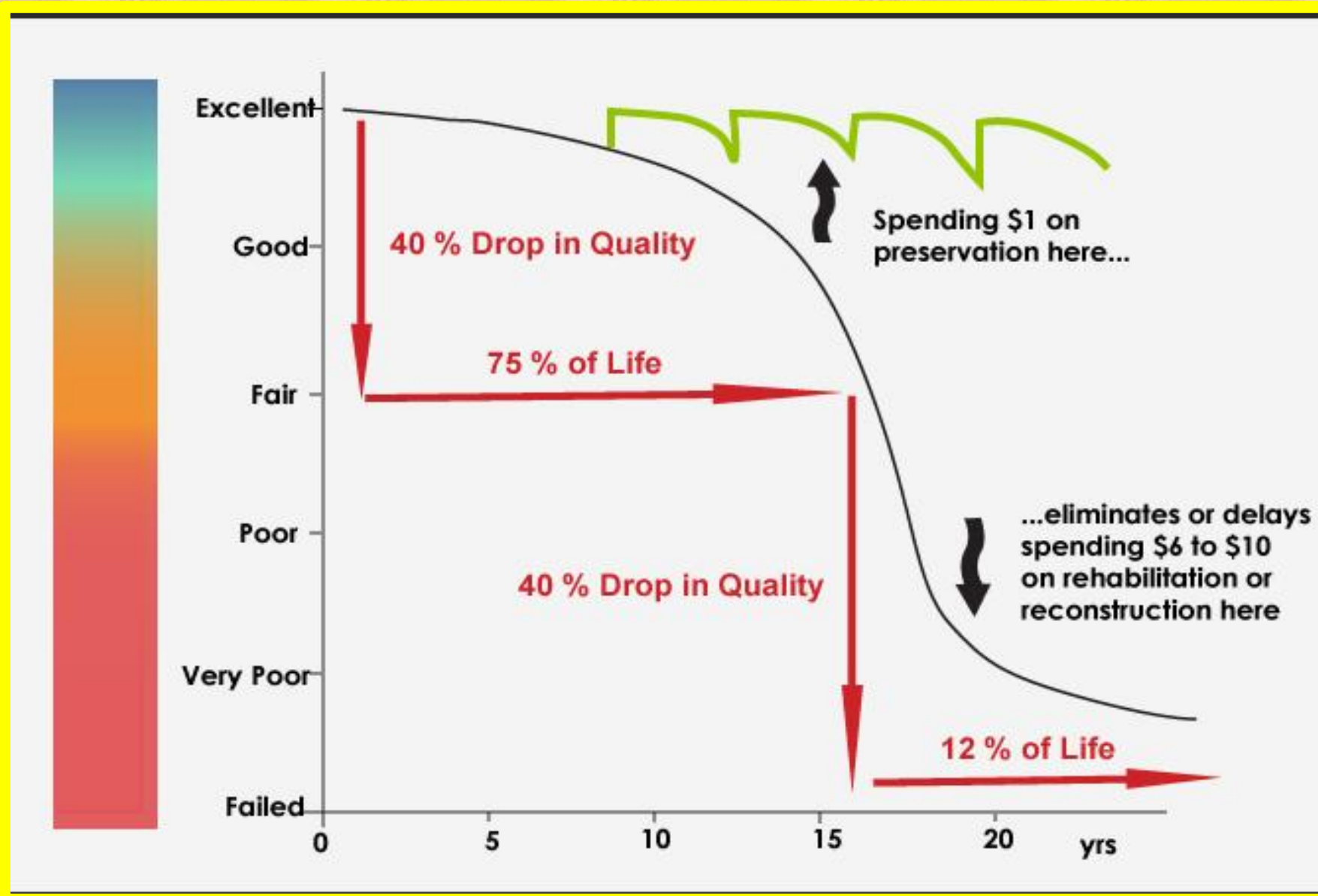


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PAVEMENT MAINTENANCE PROCEDURE BY STAGE

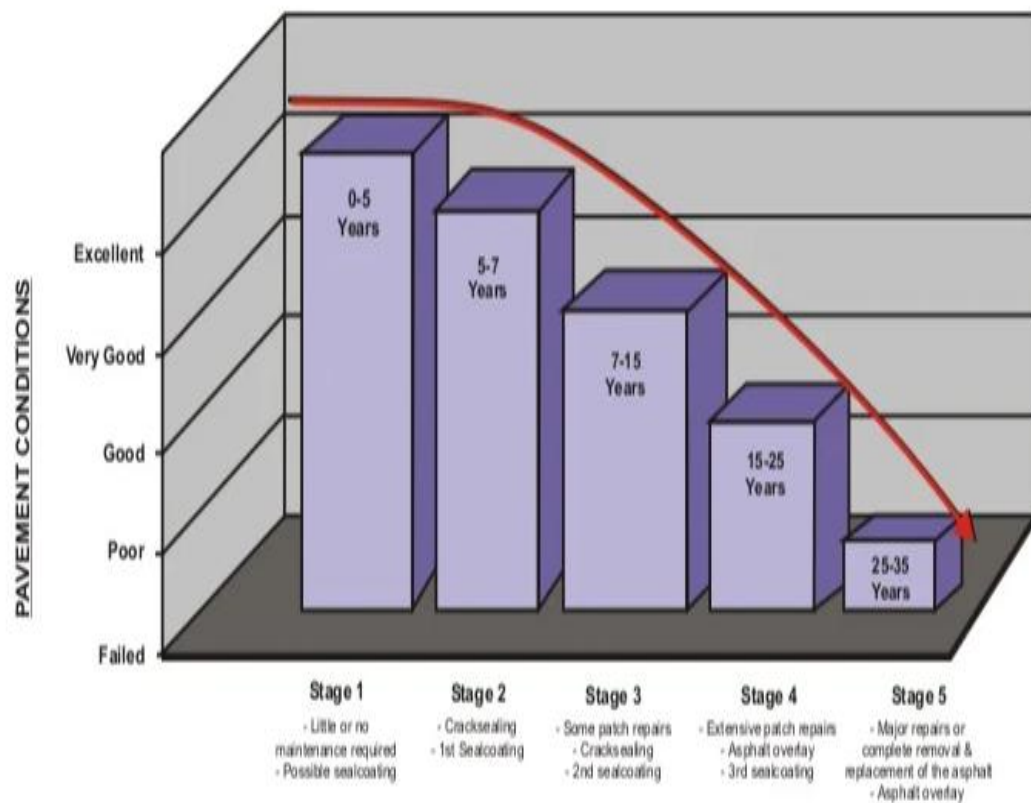
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Pavement Preservation

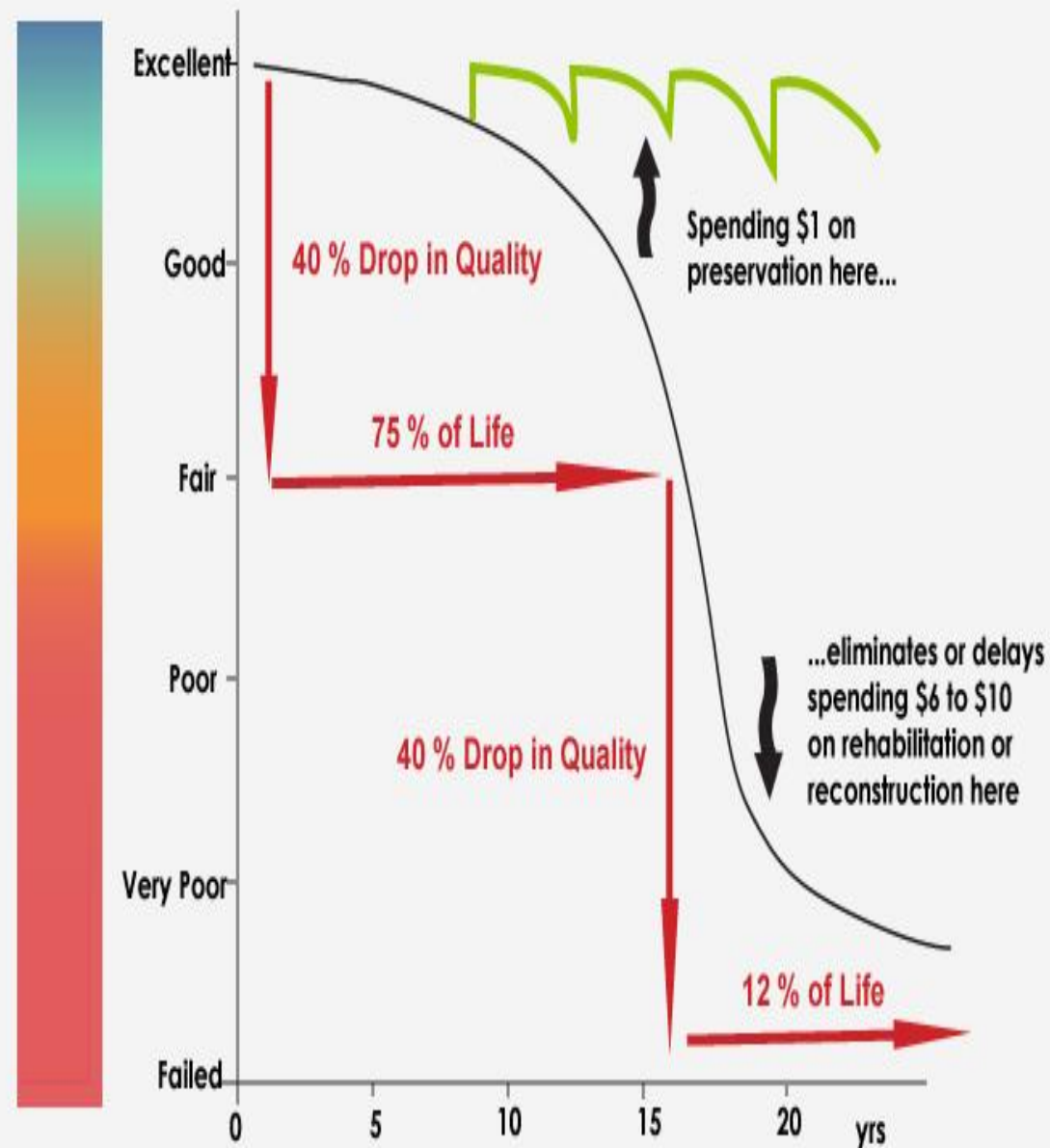





PAVEMENT LIFE CYCLE



PAVEMENT MAINTENANCE PROCEDURE BY STAGE





WHY PAVEMENT PRESERVATION?

WHY PRESERVATION?



WHY PRESERVATION?



WHY PRESERVATION?



WHY PRESERVATION?



WHY PRESERVATION?



WHY PRESERVATION?



SO, ... HOW'S YOUR DAY GOING?

WHY PRESERVATION?



WHY PRESERVATION?



WHY PRESERVATION?



WHY PRESERVATION?



WHY PRESERVATION?



WHY PRESERVATION?



WHY PRESERVATION?



WHY PRESERVATION?



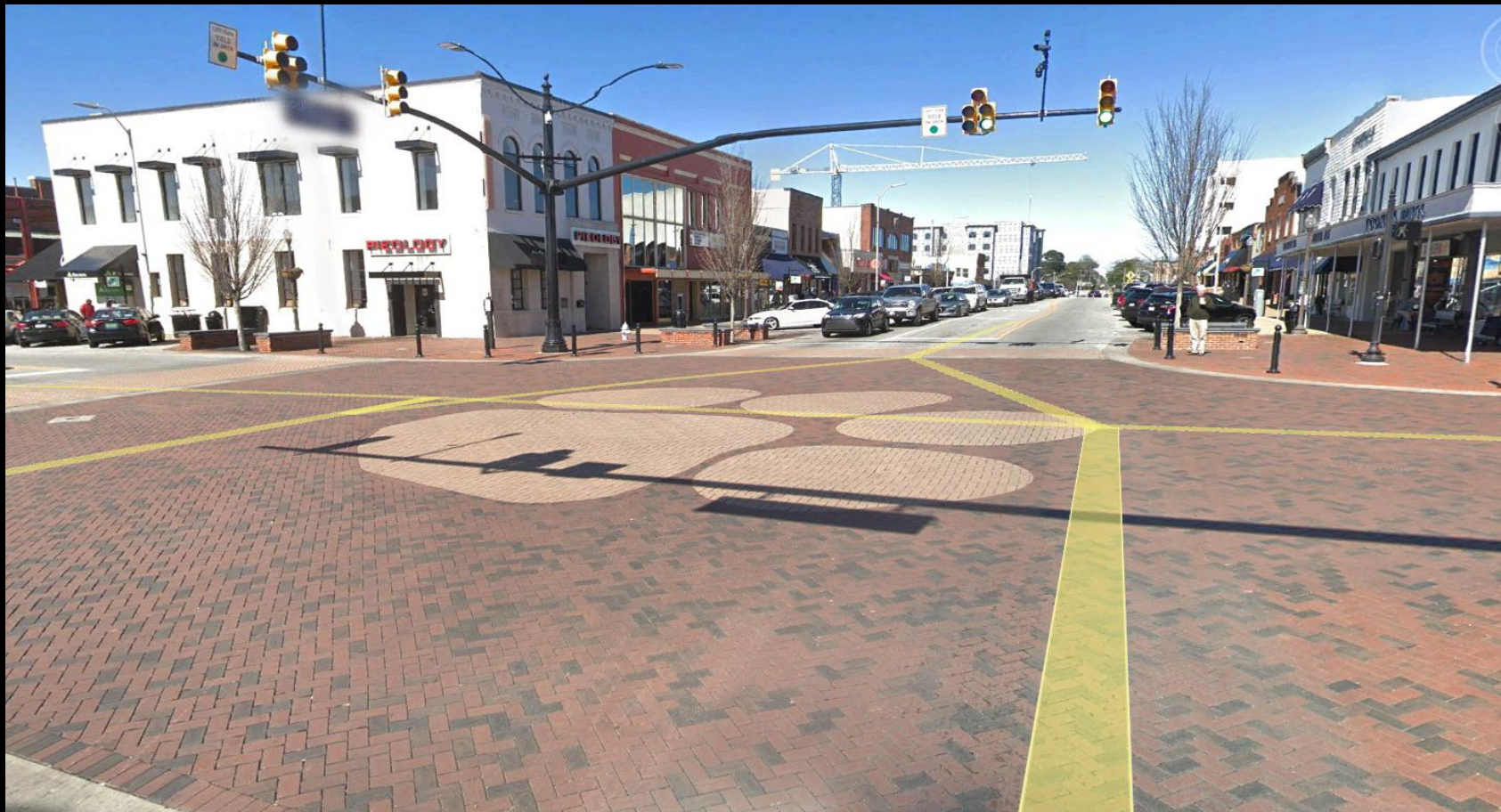
WHY PRESERVATION?



WHY PRESERVATION?



WHY PRESERVATION?



WHY PRESERVATION?




WHY PRESERVATION?



WHY PRESERVATION?





WHY PAVEMENT PRESERVATION?

WHY PAVEMENT PRESERVATION?

In Alabama

- *Approximately 24,545 Non-Interstate Lane Miles*
- *Average **2016** Lane Mile Cost as of July 2016 letting was \$146,159.73*
- *Approximately \$3.6 Billion to resurface all lane miles in one FY (@ current cost average)*
- *Approximately 15 years of level funding at \$244 million to make one “cycle”.*
- *Pavement design life is ????????*

IM and FM Project Development

Trends - IM & FM Preservation Projects (PM 1, PM 2, MR) since 2014

FY	Total IM	IM PM1 %	IM PM2 %	IM MR %	Total FM	FM PM1 %	FM PM 2 %	FM MR %
2014	12	0/0%	2/17%	10/83%	124	3/2%	29/23%	92/75%
2015	16	3/18%	3/18%	10/64%	109	0/0%	52/48%	57/52%
2016	12	6/50%	2/17%	4/33%	114	1/1%	53/46%	60/53%
2017	18	8/44%	0/0%	10/56%	127	6/5%	64/50%	57/45%
2018	20	6/30%	8/40%	6/30%	110	7/6%	50/46%	53/48%
Total	78	23/30%	15/19%	40/51%	584	17/3%	248/42%	319/55%

IM and FM Project Development

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FY	Total IM	IM PM1 %	IM PM2 %	IM MR %
2014	12	0/0%	2/17%	10/83%
2015	16	3/18%	3/18%	10/64%
2016	12	6/50%	2/17%	4/33%
2017	18	8/44%	0/0%	10/56%
2018	20	6/30%	8/40%	6/30%
Total	78	23/30%	15/19%	40/51%

IM and FM Project Development

Trends - FM Preservation Projects (PM 1, PM 2, MR) since 2014

FY	Total FM	FM PM1 %	FM PM 2 %	FM MR %
2014	124	3/2%	29/23%	92/75%
2015	109	0/0%	52/48%	57/52%
2016	114	1/1%	53/46%	60/53%
2017	127	6/5%	64/50%	57/45%
2018	110	7/6%	50/46%	53/48%
Total	584	17/3%	248/42%	319/55%

IM and FM Project Development

Trends - What does this mean?

FY	IM PM1/PM2/M R	IM Lane Mile Cost	FM PM1/PM2/M R	FM Lane Mile Cost	Total Lane Mile Cost
2014	0/2/10= 12	\$357K	3/29/92	\$150K	\$212K
2015	3/3/10= 16	\$313K	0/52/57	\$160\$	\$196K
2016	6/2/4= 12	\$257	1/53/60	\$150K	\$172K
2017	8/0/10= 18	\$257	6/64/57	\$142K	\$175K
2018	6/8/6= 20	Not to Let	7/50/53	Not to Let	Not to Let

IM and FM Project Development

Trends - Can I make a plan for Pavement (asset) Management?

FY	IM PM1/PM2/M R	IM Lane Mile Cost	FM PM1/PM2/M R	FM Lane Mile Cost	Total Lane Mile Cost
2014	0/2/10= 12	\$357K	3/29/92	\$150K	\$212K
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IM and FM Project Development

Trends - Can I make a plan for Pavement (asset) Management?

YES! Using Lane Mile Cost, Current PCR, curve of pavement decline, and projected budget

FY	IM PM1/PM2/M R	IM Lane Mile Cost	FM PM1/PM2/M R	FM Lane Mile Cost	Total Lane Mile Cost
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IM and FM Project Development

- **Asset Management plan - IM**

- Using Lane Mile Cost, PCR, Pavement Deterioration Curve, etc.

FY	PCR	Budget	PM 1	PM 2	MR	Actual IM Budget
2018	82.6	\$179M	\$23.5M (13%)	\$58.6M (33%)	\$98.9M (54%)	\$192M (\$179M for pavement/ \$13M for other)
2019	86.5	\$132M	\$20M (15%)	\$95M (72%)	\$17M (13%)	\$174M (\$132M flexible/\$30M Conc/\$12M other)
2020	87.9	\$110M	\$40M (36%)	\$70M (64%)	\$0 (0%)	\$176M (\$78M flexible/\$120M Conc)
2021	88.3	\$130M	\$124M (95%)	\$6M (5%)	\$0 (0%)	
2022	91.1	\$131M	\$125M (96%)	\$6M (4%)	\$0 (0%)	
2023	92.9	\$137M	\$132M (96%)	\$5M (4%)	\$0 (0%)	

IM and FM Project Development

- Asset Management plan - IM

- PCR Improves from 82 to 93 in a 5 year plan

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FY 2019 – FY 2022 Overview

Amount spent on IM preservation projects

IM Resurfacing FY 2019 - FY2022				
	PM 1	PM 2	MR	total
FY 2019	11	4	6	21
Amount Spent	\$40.60	\$46.10	\$92	\$178.70
FY 2020	7	6	6	20
Amount Spent	\$41.20	\$41.90	\$67.40	\$150.50
FY 2021	6	5	3	14
Amount Spent	\$26.50	\$54.60	\$42.30	\$123.40
FY 2022	8	8	2	18
Amount Spent	\$32.10	\$56.90	\$46.10	\$135.10
Total:	32	23	17	\$587.70

FY 2019 – FY 2022 Overview

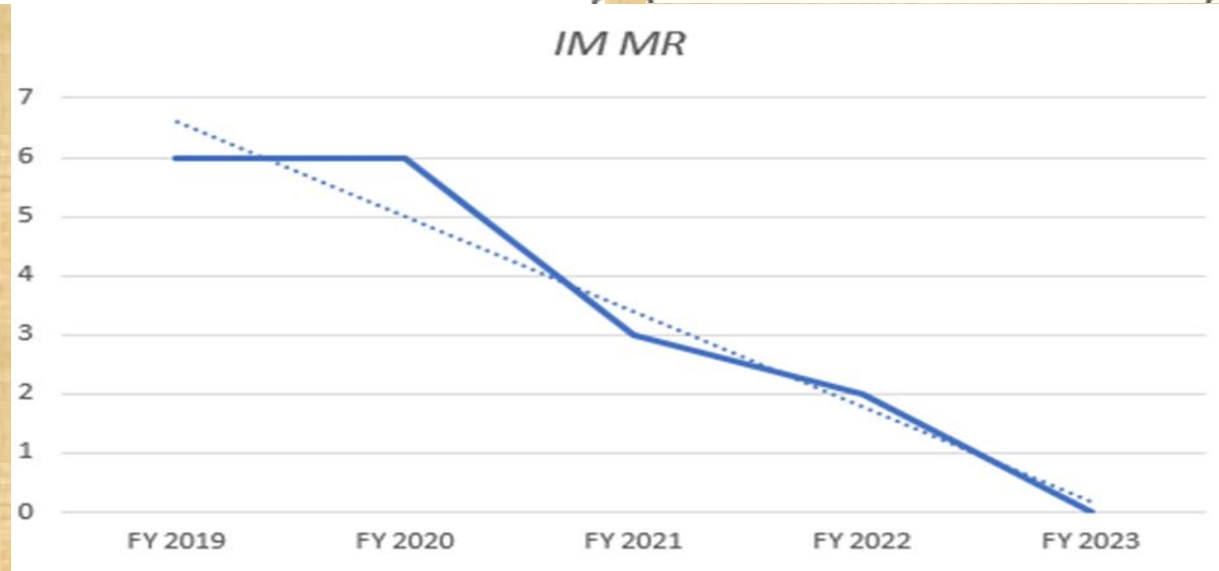
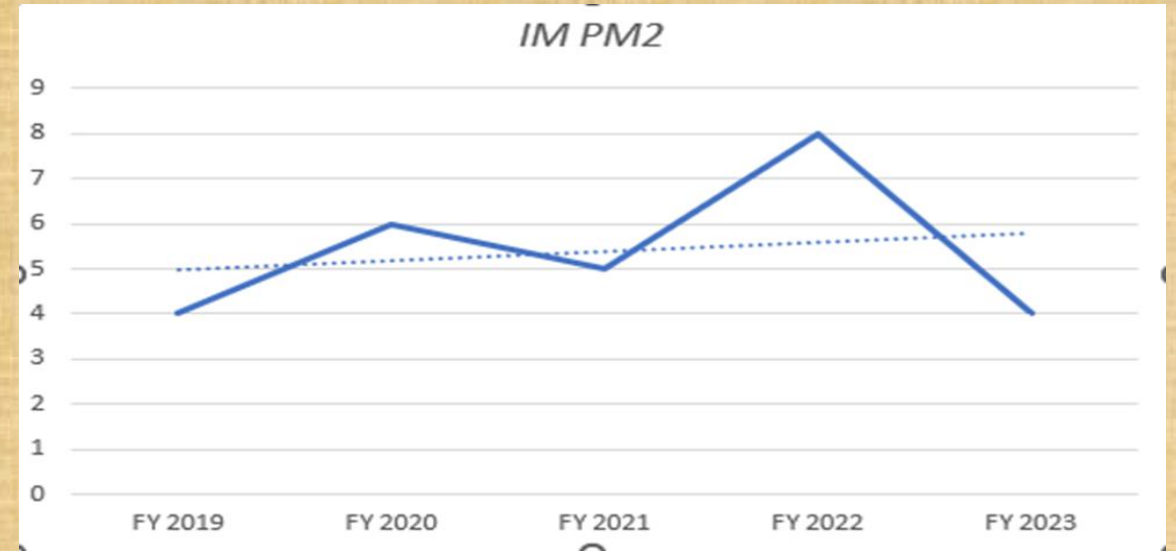
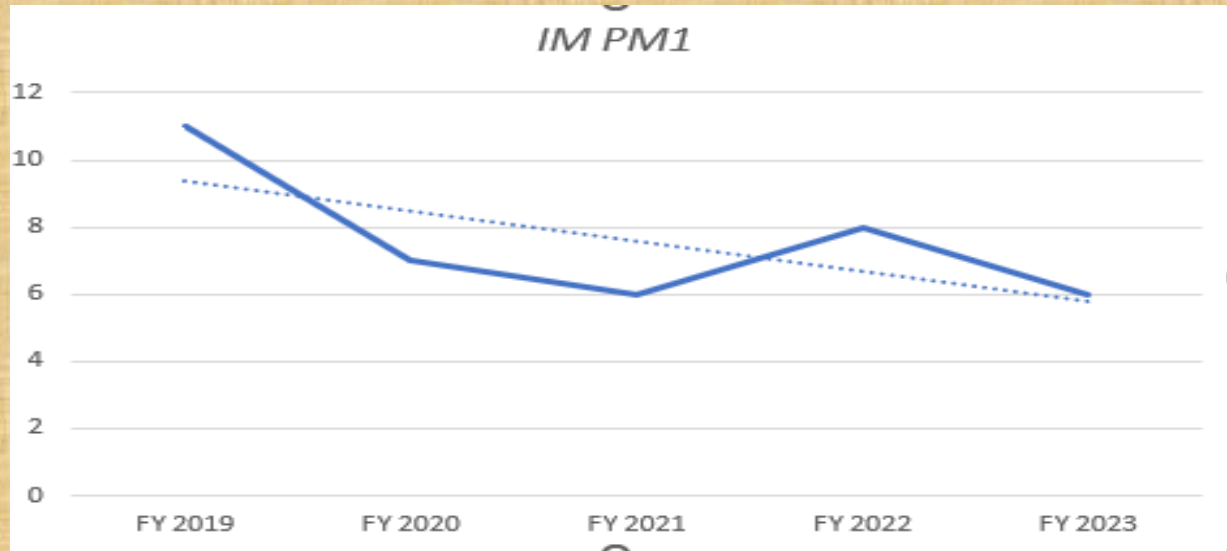
Amount spent on IM preservation projects

- 24% of the \$587.7m used for IM Pavement management, from 2019-2022, was spent on PM1

IM Resurfacing FY 2019 - FY2022				
	PM 1	PM 2	MR	total
FY 2019	11	4	6	21
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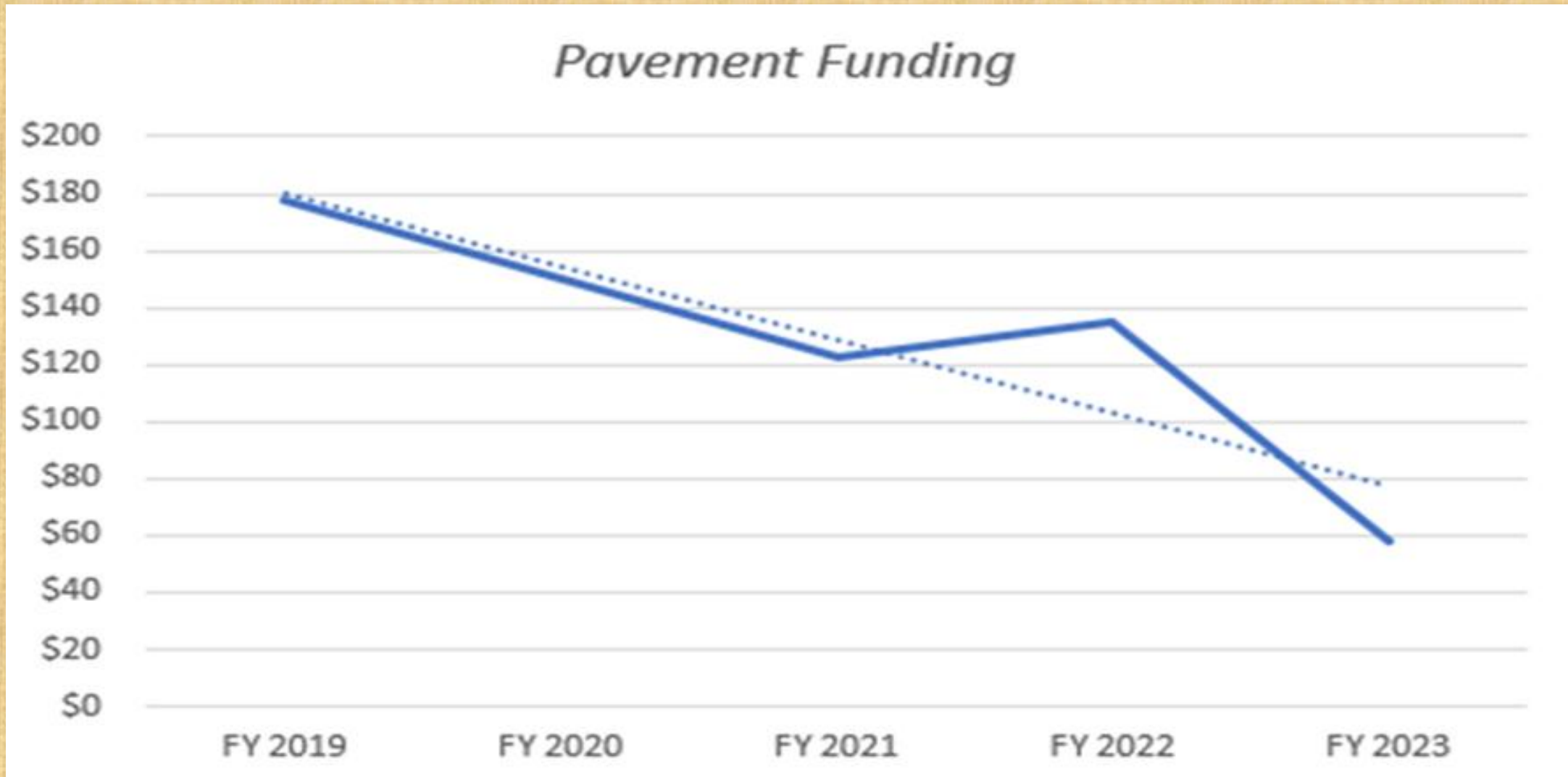
FY 2019 – FY 2022 Overview

Amount spent on IM preservation projects



FY 2019 – FY 2022 Overview

Amount spent on IM preservation projects



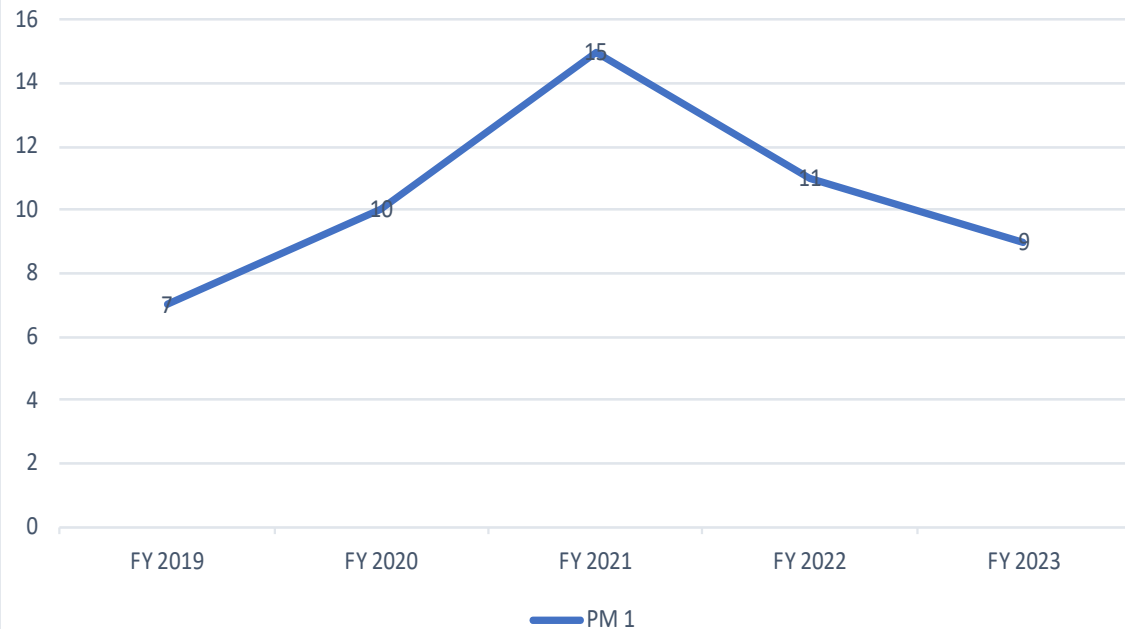
Impact of 2017 PP Training

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

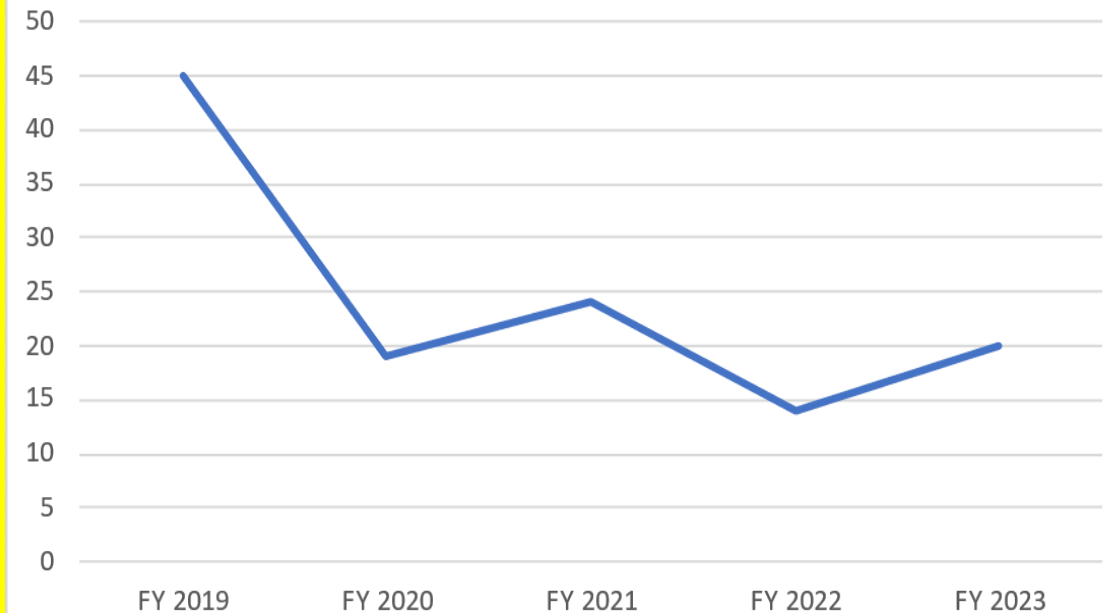
- Impact of 2017 PP Training

- *Time for training again?*

FM Resurfacing Program



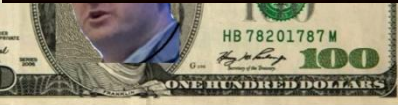
MR



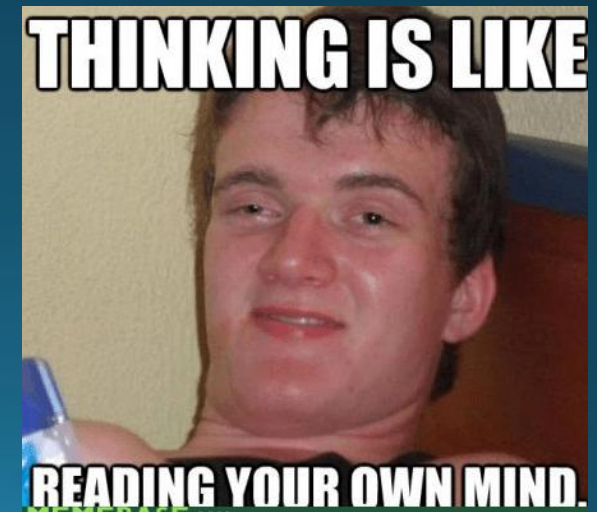
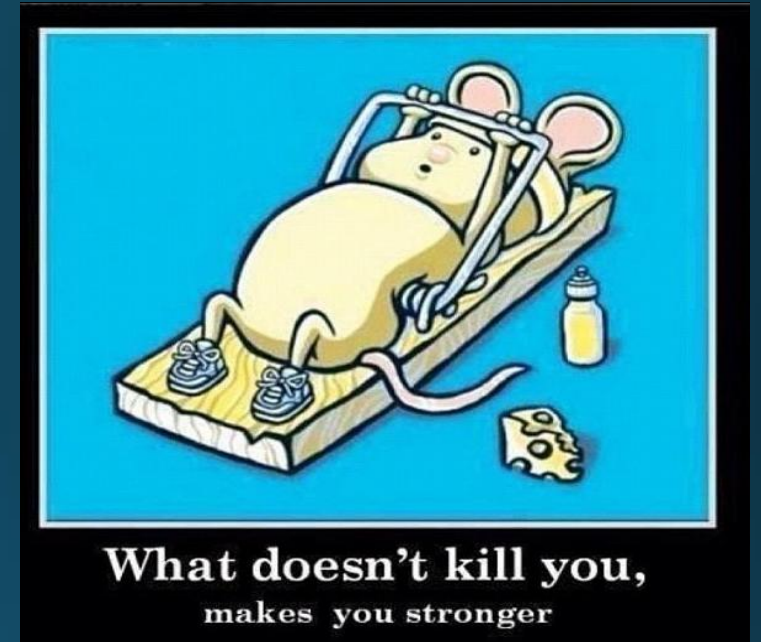
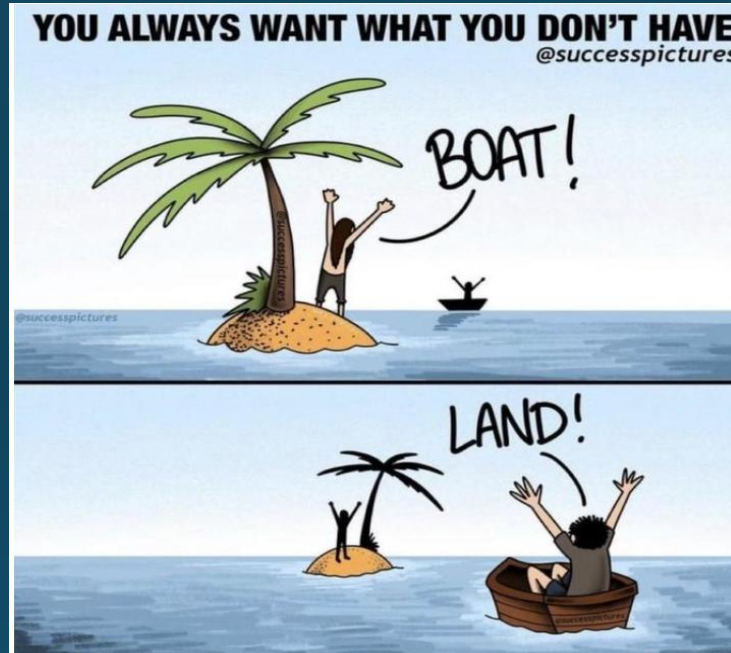
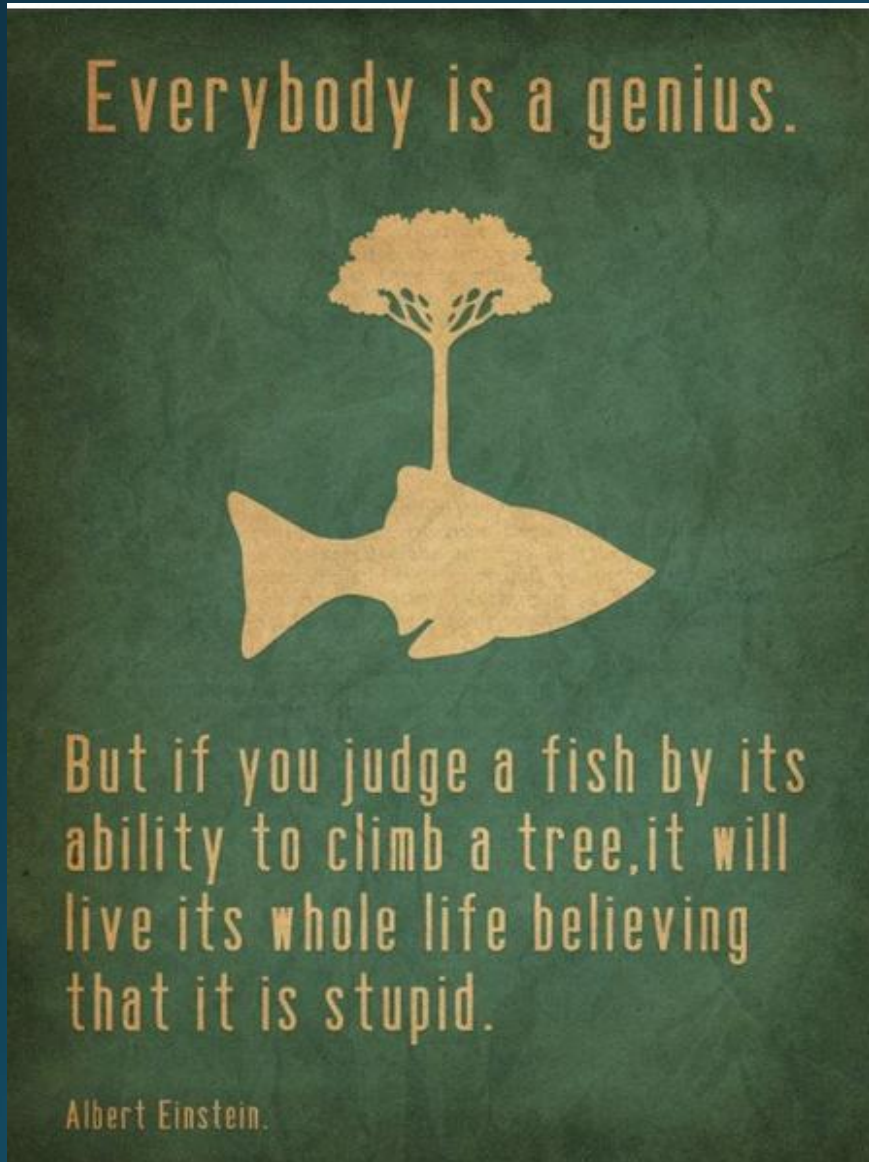
FY 2024 FM submittal

FY 2024 FM Program

Type	Number	Est. Total	% of program	% of Budget
PM1	19	\$29.2m	18%	11%
PM2	77	\$168m	72%	67%
PMR	12	\$54m	11%	22%
Total	108	\$251m	100%	93%



Food For Thought



We Must be doing something right?

Nov 7, 2023,
AL.COM
article

<https://www.al.com/news/2023/11/alabama-has-the-third-best-roads-in-the-us-survey-says.html>

Alabama has the 3rd best roads in the US, survey says

Updated: Nov. 07, 2023, 11:26 a.m. | Published: Nov. 07, 2023, 11:22 a.m.



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By [William Thornton](#) | wthornton@al.com

Alabama has the third best road system in the United States, according to [a new analysis by Insider Monkey, a financial services website](#).

The survey compiled a list of 15 states with the best roads, with four of the top five in the South.

Leading the way was Georgia, followed by Florida, then Alabama. North Carolina placed fourth, followed by Nevada.

According to the analysis, Alabama's urban pavement has a roughness of 5%, while its rural roughness is 1%.



Stories by **William Thornton**

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We Must be doing something right?

Updated: Nov. 07, 2023, 11:26 a.m. | Published: Nov. 07, 2023, 11:22 a.m.



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According to the analysis, Alabama's urban pavement has a roughness of 5%, while its rural roughness is 1%.

According to the analysis, the state has undertaken 140 road improvements since 2020.

To rank the states, the site looked at 2020 highway statistics from the Federal Highway Association dealing with road quality, according to the International Roughness Index, which is calculated using several data points.

The analysis studied both rural and urban roads, with priority to rural pavement roughness, as urban roads are generally in better condition and crashes on rural roads also tend to be severe.


We Must be doing something right?



March 20,
2023,
Consumer
Affairs article

<https://www.al.com/news/2023/11/alabama-has-the-third-best-roads-in-the-us-survey-says.html>

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Since 1999, the National Road & Transportation Builders Association (NRTBA) and the Federal Highway Administration, has provided seminars, workshops and training throughout the state to fulfill its mission of fostering "a safe, efficient, and environmentally sound surface transportation system by improving the skills and knowledge of the municipal transportation workforce and decision makers." And it seems to be paying off.

Vermont's per-capita highway expenditure is \$1,082 annually, nearly doubling New England's average highway funding per capita (\$584). Only about 9% of the Green Mountain State's urban roads and 4% of its rural roads are in poor condition, according to the IRI.

According to the ASCE, Vermont's roads might be doing OK right now, but the state needs to account for "increasingly severe winter storms" in its future infrastructure budgets and planning.

4. Alabama

According to the International Roughness Index, only about 1% of Alabama's rural roads and 5% of its urban roads are in poor condition, putting it just after Minnesota for the state with the least-rough roads.

One driver in Huntsville said, "99% of the roads I travel have few potholes," even if there are some roads that "need some work." A Theodore motorist thought the state's roads were just OK, arguing that "we need lotto and casinos, [then] we would have more money to spend on roads."

The recently implemented Rebuild Alabama and the Alabama Transportation Rehabilitation Improvement programs are at work solving new traffic congestion problems in the state, and they've already tackled more than 140 road improvements since 2020.

5. Idaho

Idaho is known as the Gem State, and we can count its highway system as one of its jewels. The state spends \$787 per capita on its highways per year, exceeding average U.S. expenditures by about 28% and the Rocky Mountain region's by 6%.

According to the [Deseret News](#), Idaho was the fastest-growing state from 2020 to 2021, with a population growth of 2.9% during that time. As of publishing, about 11% of Idaho's urban roads are in poor condition, based on pavement roughness, but the ASCE warns that the state needs to do more for its infrastructure sooner rather than later to keep up with the growing population.

We Must be doing something right?

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**March 20, 2023,
Consumer Affairs
article**

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Questions!



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