

Mississippi PG3 Training

By Mark Waits
NCPP



Introduction into Pavement Preservation



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”.

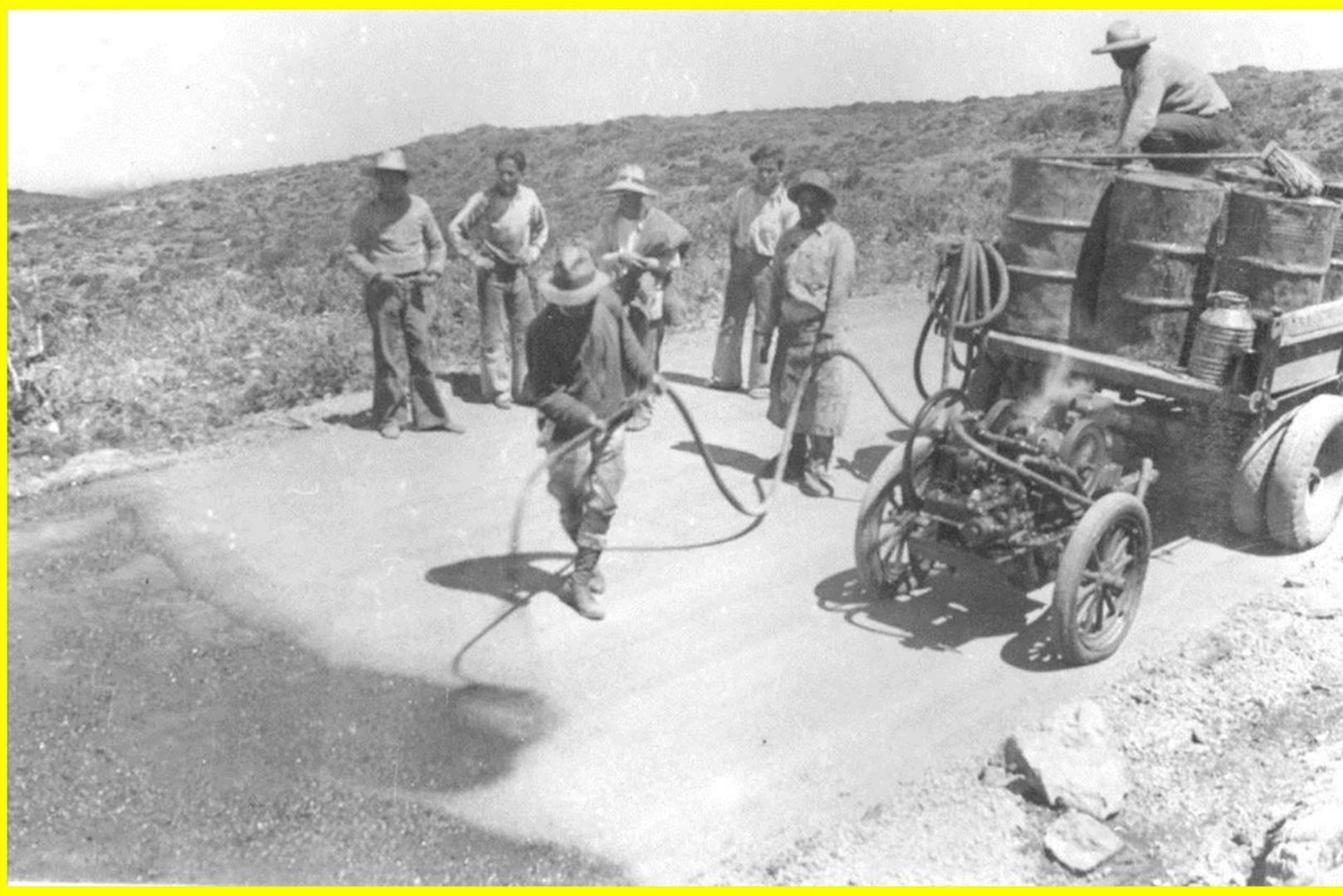
Source: Section 1507 of Public Law 112-141, “Moving Ahead for Progress in the 21st Century” Act (MAP-21).

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.

Pavement Preservation



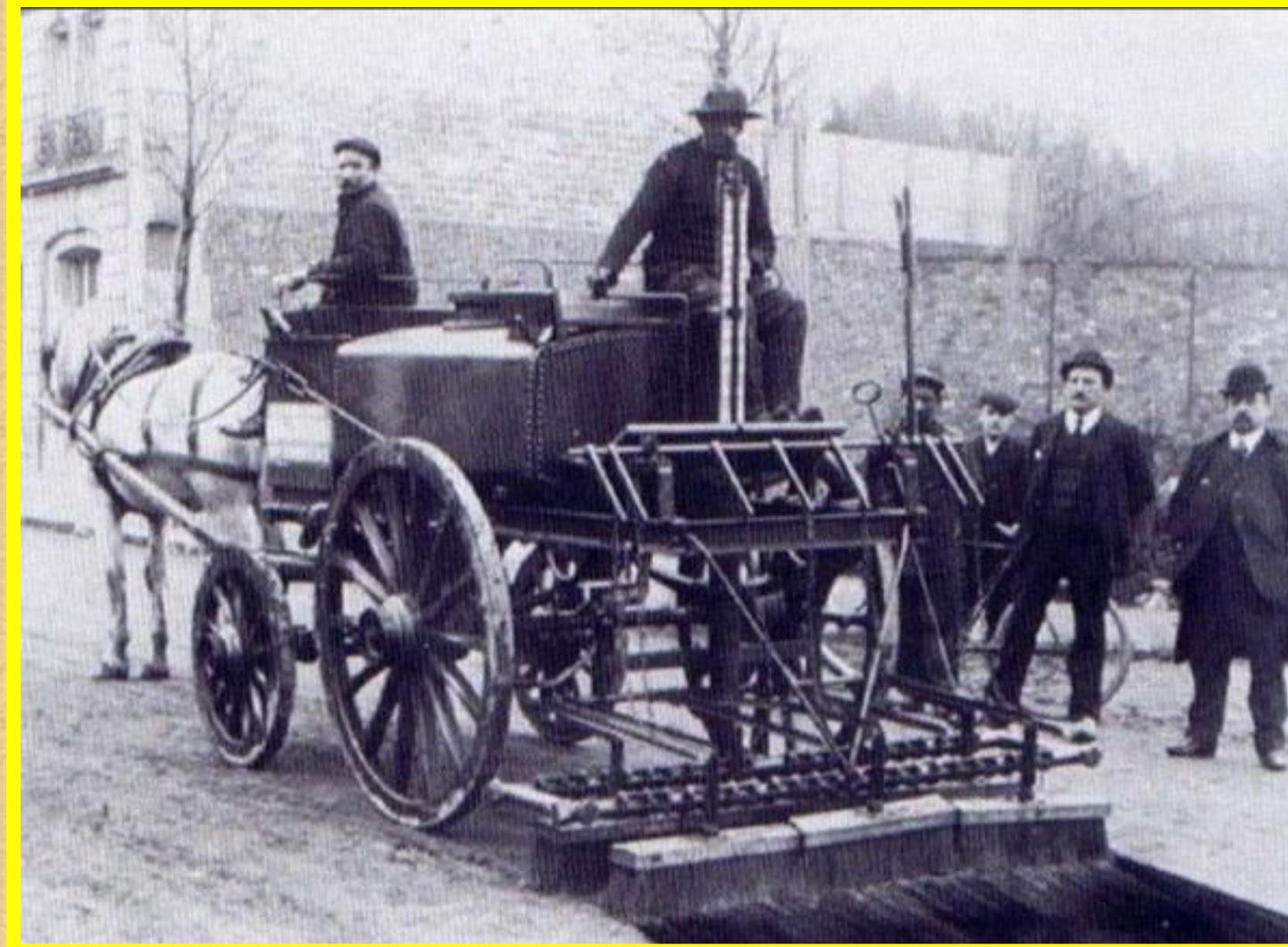
Pavement Preservation



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



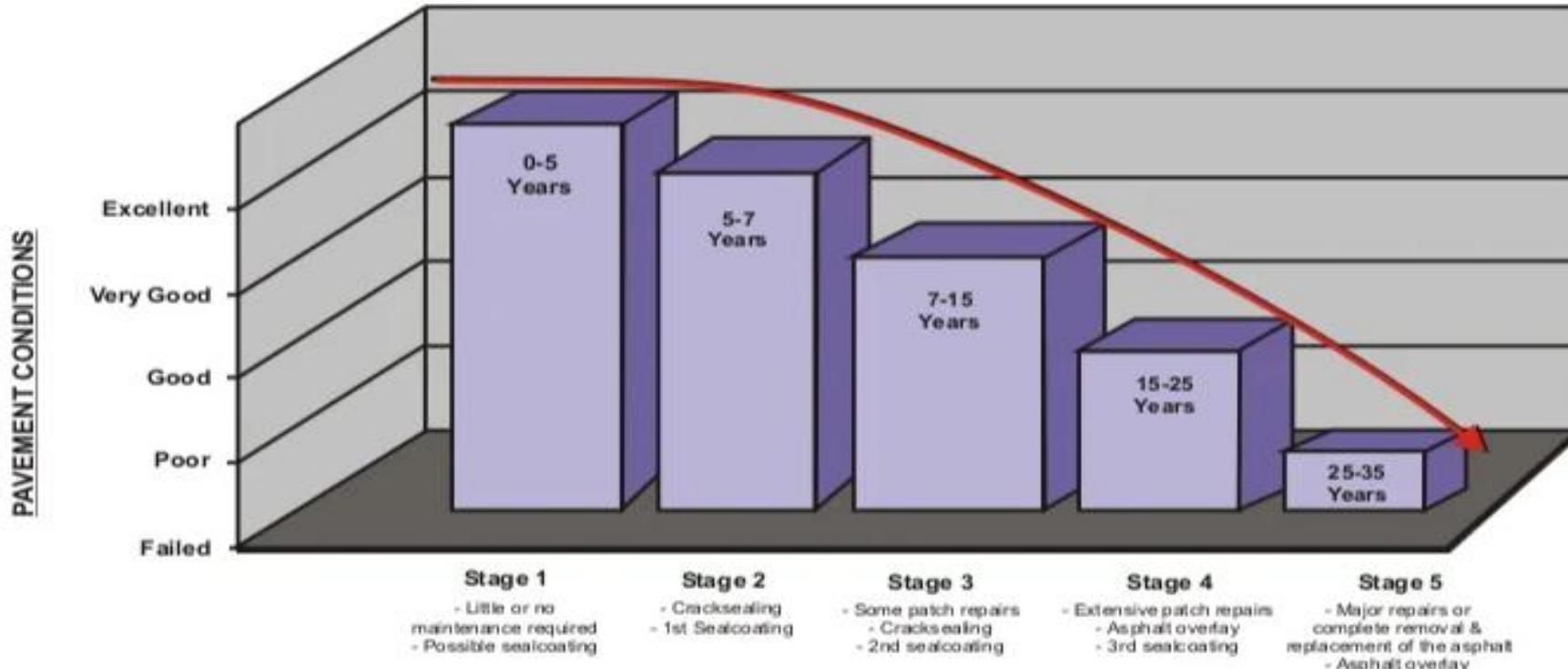
Pavement Preservation

Created By: Chris Sora

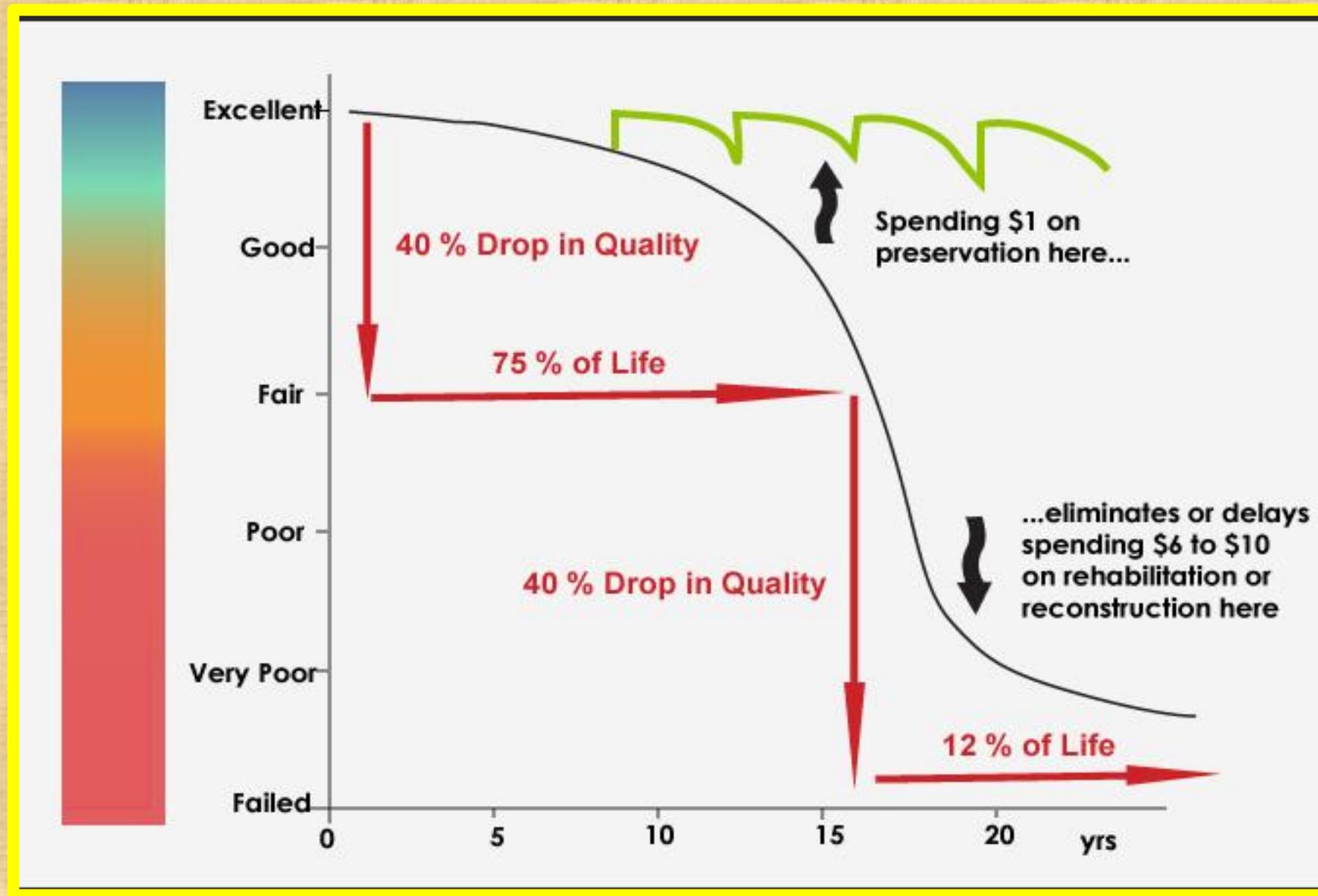
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PAVEMENT LIFE CYCLE

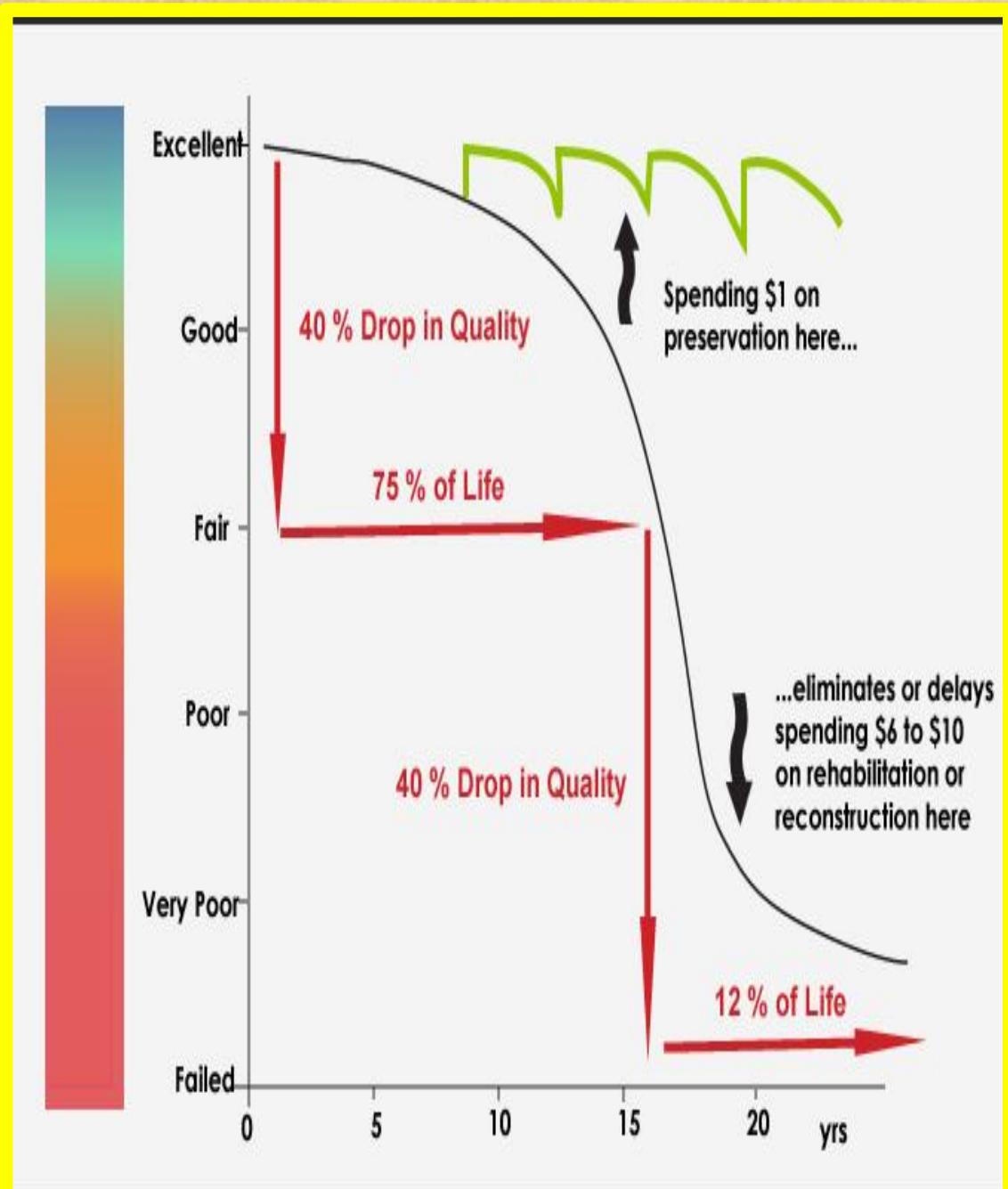
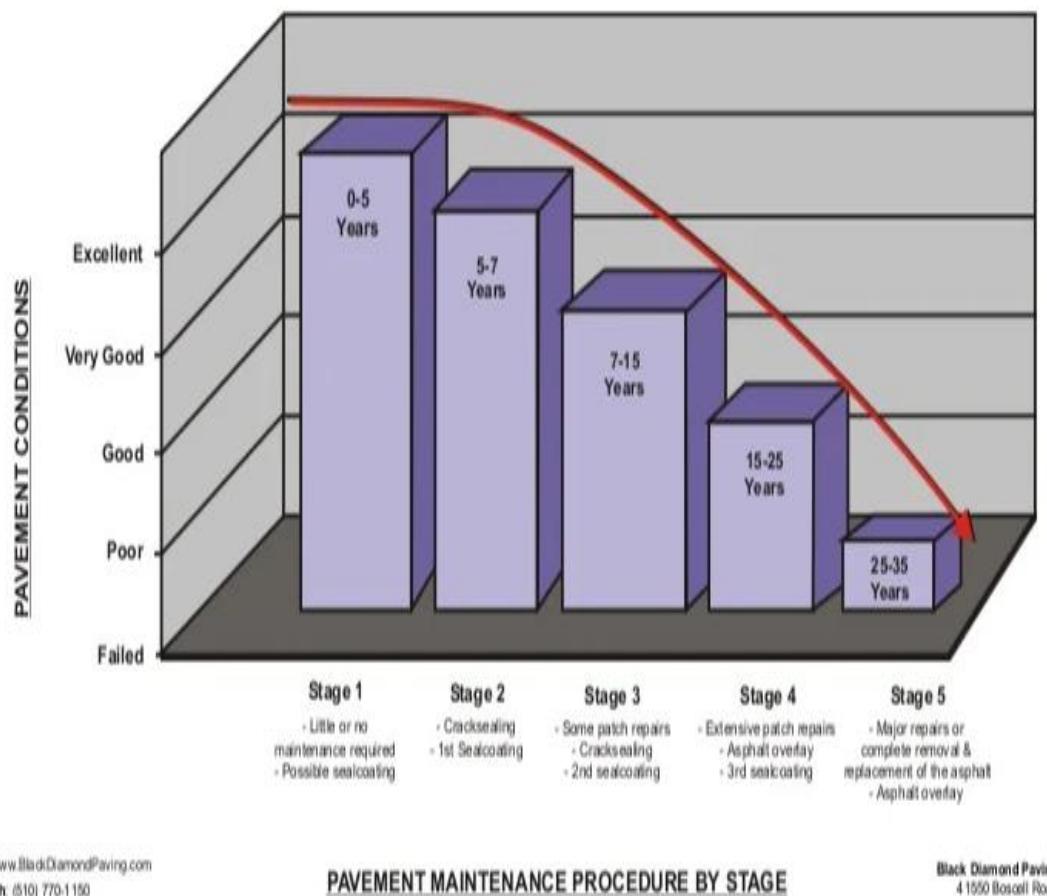


Pavement Preservation





PAVEMENT LIFE CYCLE



WHY PAVEMENT PRESERVATION?

WHY PRESERVATION?



WHY PRESERVATION?



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WHY PRESERVATION?



WHY PRESERVATION?



DAVE911.COM

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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| 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 % |
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| 2014 | 124 | 3/2% | 29/23% | 92/75% |
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| 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 | \$160K | \$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**

| FY | PCR | Budget | PM 1 | PM 2 | MR | Actual IM Budget |
|------|-------------|--------|---------------|---------------|---------------|---|
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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

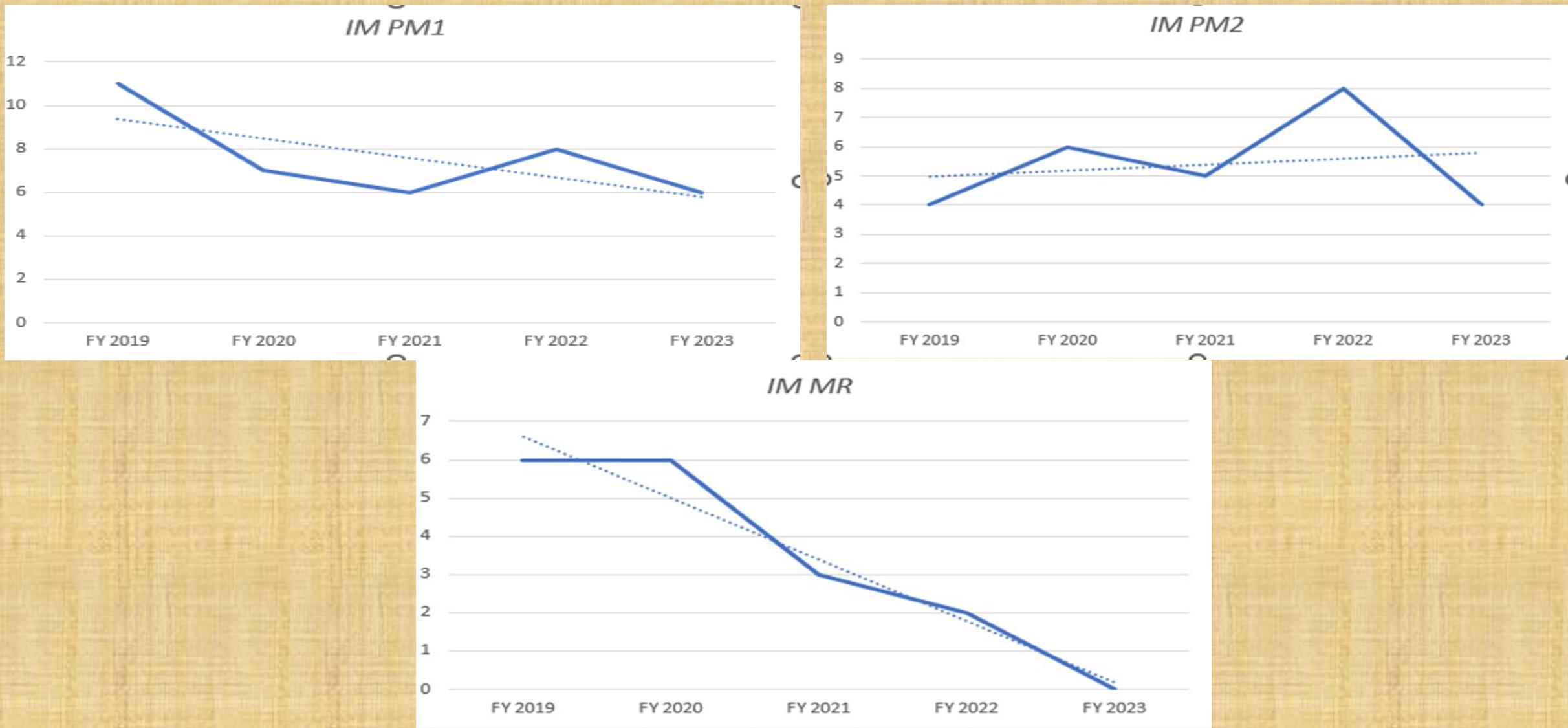
Amount spent on IM preservation projects

- 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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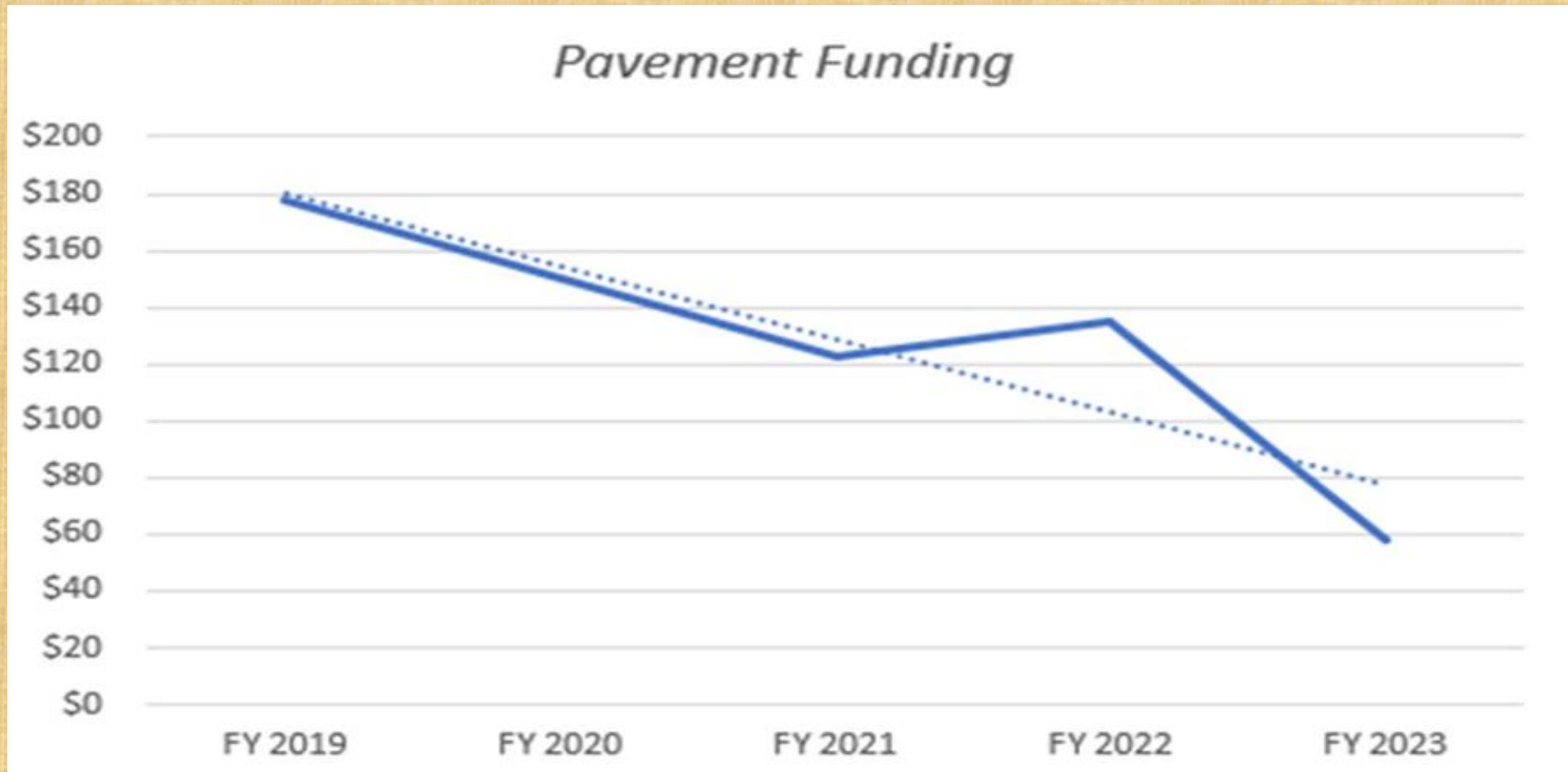
FY 2019 – FY 2022 Overview

Amount spent on IM preservation projects



FY 2019 – FY 2022 Overview

Amount spent on **IM** preservation projects

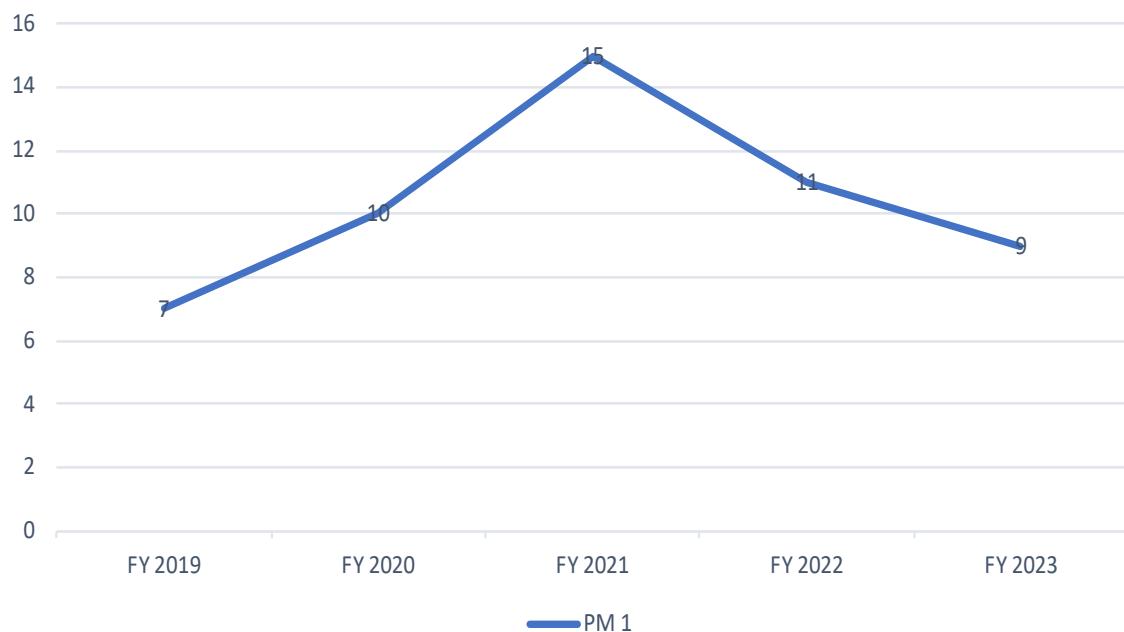


Impact of 2017 PP Training

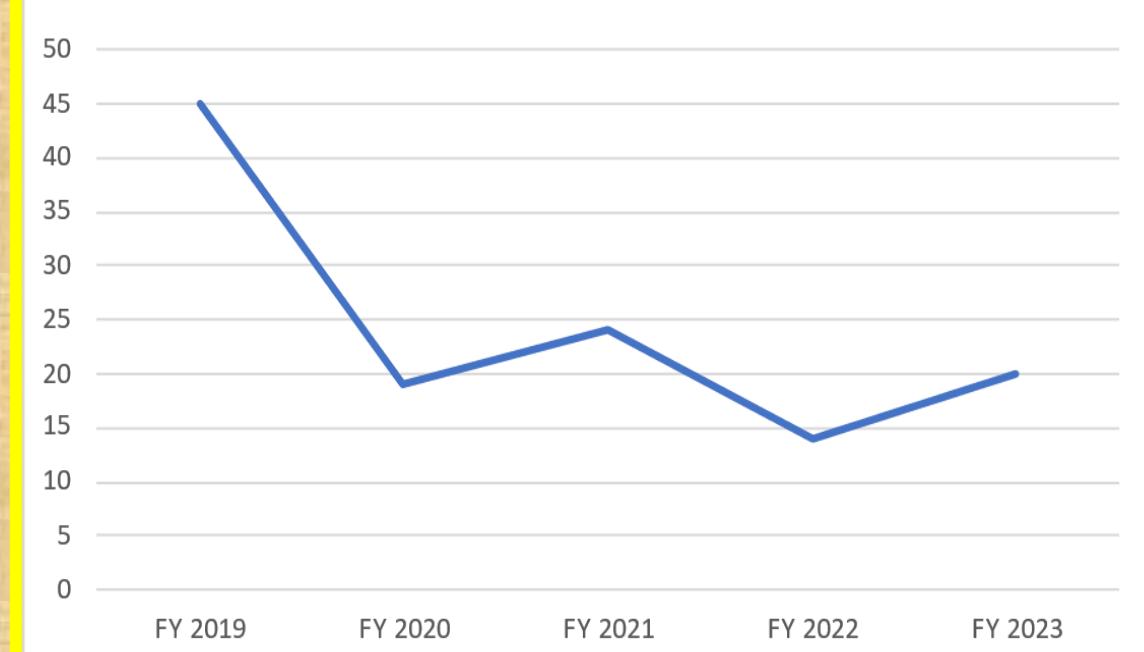
| FM Resurfacing Program | | | |
|-------------------------------|-------------|-------------|-----------|
| | PM 1 | PM 2 | MR |
| FY 2019 | 7 | 55 | 45 |
| FY 2020 | 10 | 76 | 19 |
| FY 2021 | 15 | 70 | 24 |
| FY 2022 | 11 | 72 | 14 |
| FY 2023 | 9 | 63 | 20 |

- Impact of 2017 PP Training
- *Time for training again?*

FM Resurfacing Program



MR



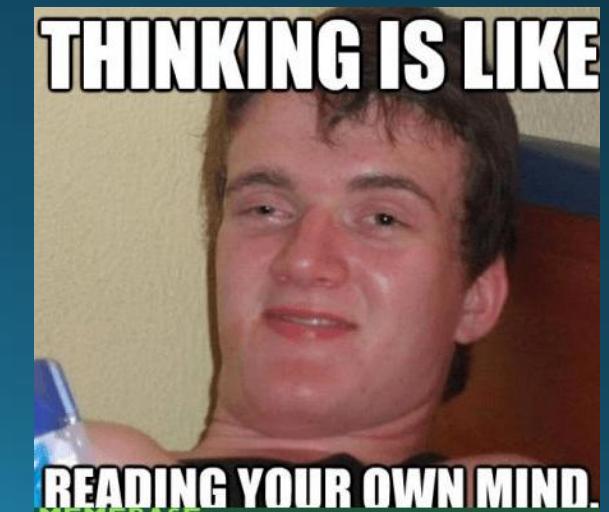
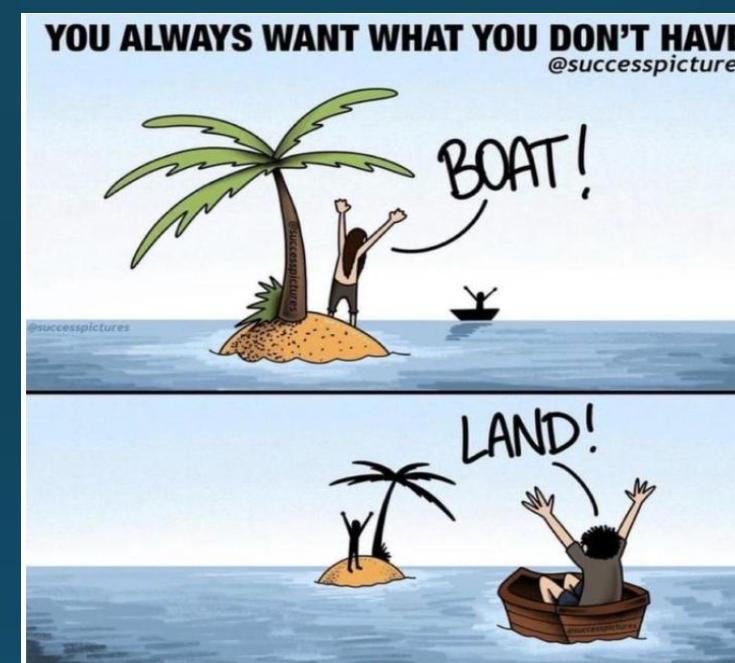
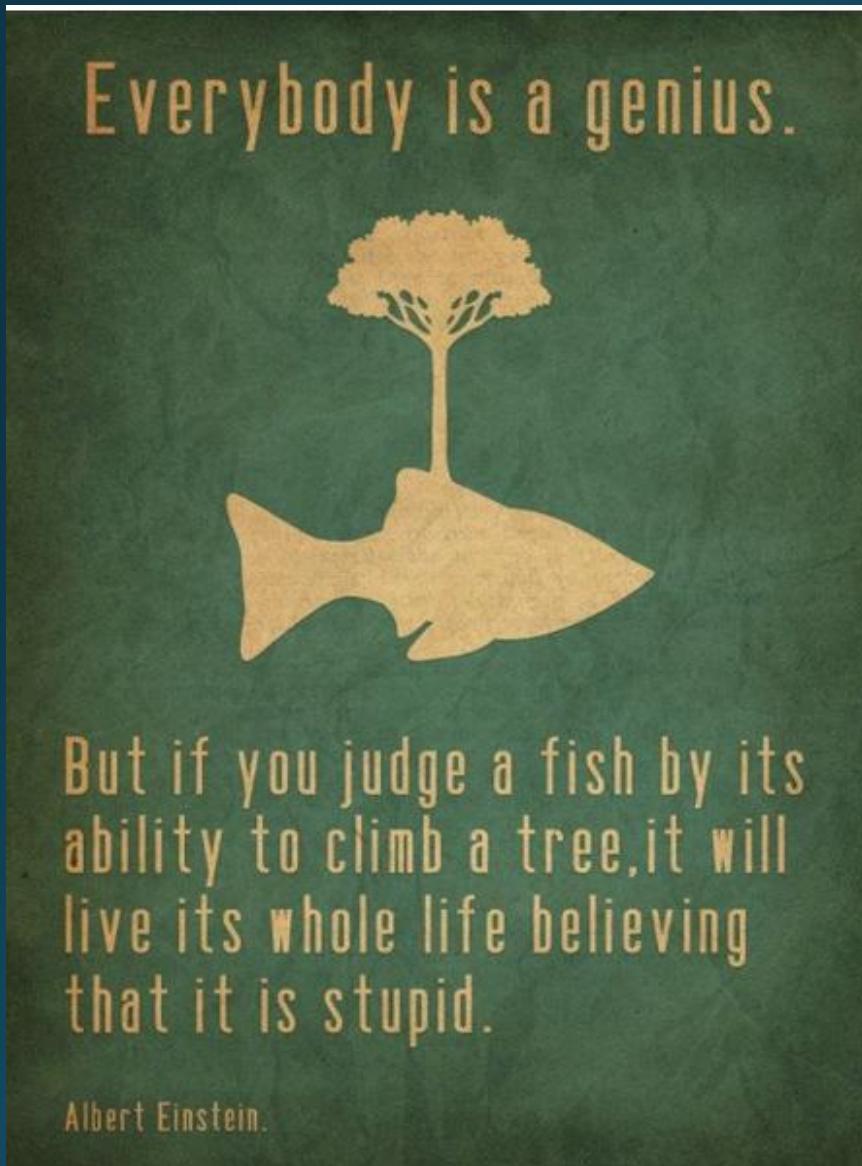
FY 2024 FM submittal

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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['Screw him. He lost,' Democrat says of Tuberville plan to end military promotion blockade](#)

[Feds: Koch Foods unfairly charges penalties to growers who switched to rivals](#)

[Former Alabama sheriff asks to spend rest of jail sentence in community corrections](#)

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

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

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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.

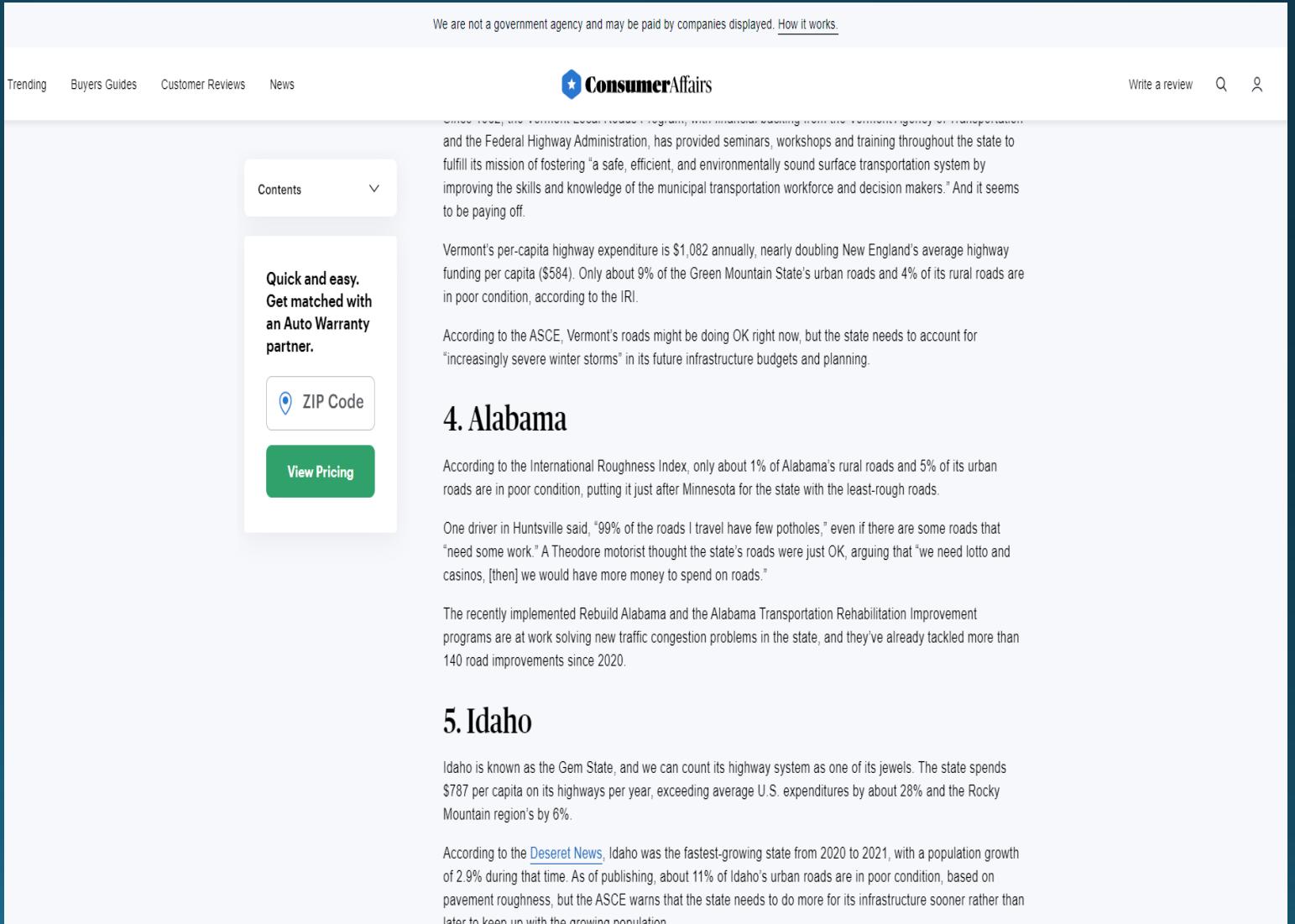
To rank the states, the site looked at 2020 highway statistics from the Federal Highway Association dealing with road quality, according to the International Roughness Index, which is calculated using several data points.

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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and the Federal Highway Administration, has provided seminars, workshops and training throughout the state 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!