



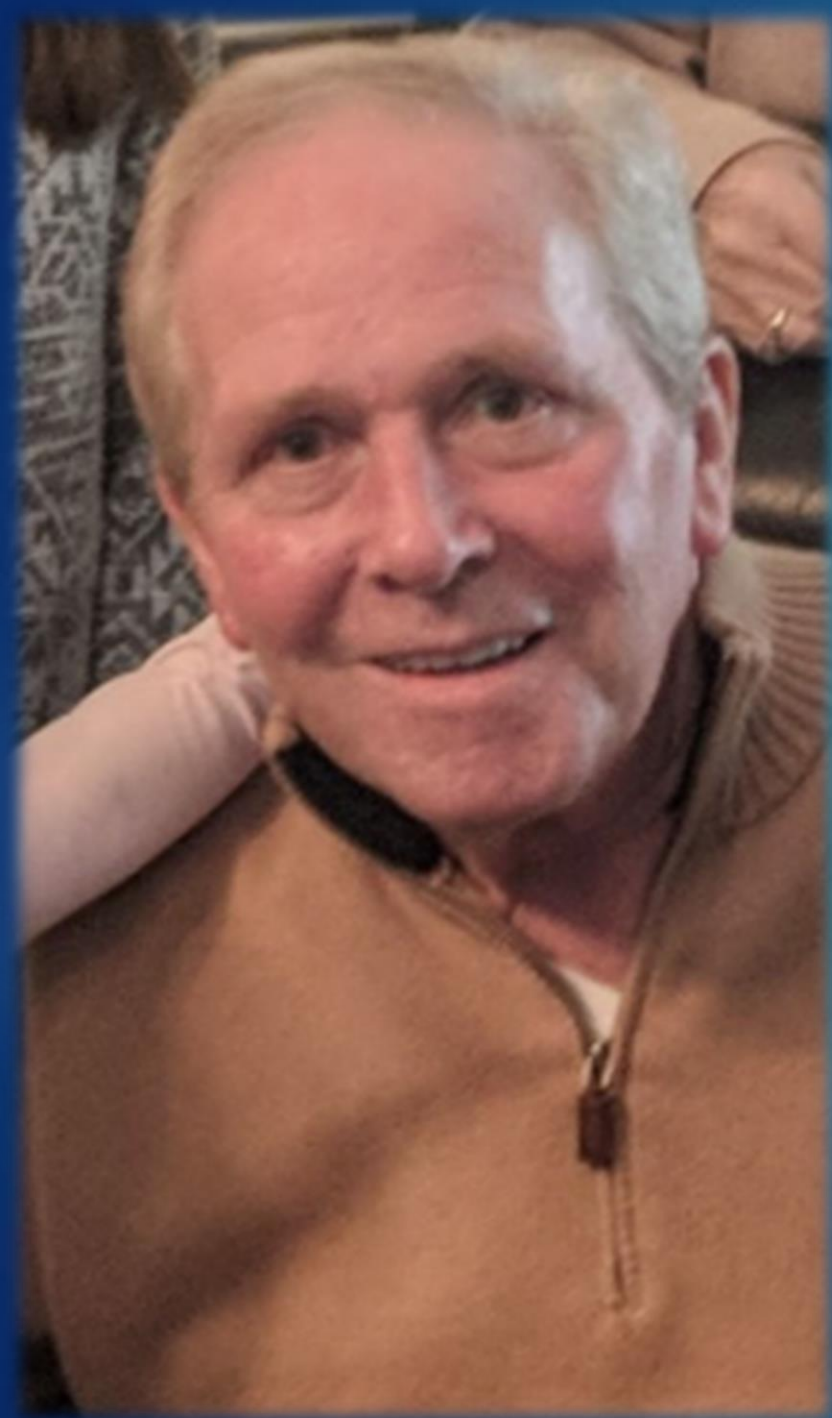
MDOT Perspective

Asphalt Pavement
Association of Michigan
March 7, 2019

Paul C. Ajegba, P.E.
Director

Michigan Department of
Transportation





In Memoriam
Frederick Hal Hillard Jr.
June 6, 1950 – March 4, 2019

Today's Topics

- ▶ 2020 Standard Specifications for Construction
- ▶ Projected Lettings
- ▶ Tons, Squares and Aggregate Estimates
- ▶ 30-Year Pavement PILOT
- ▶ Call to Action

2020 Standard Specifications for Construction



2019 FY Projected Lettings

01-Feb-19

Letting Month	Projects*	Construction Costs (\$ Millions)*
October, 2018	13	\$48.80
November, 2018	26	\$61.14
December, 2018	49	\$108.59
January, 2019	43	\$115.91
February, 2019	67	\$198.65
March, 2019	86	\$271.91
April, 2019	46	\$76.91
May, 2019	28	\$35.77
June, 2019	11	\$6.67
July, 2019	13	\$14.12
August, 2019	14	\$16.81
September, 2019	10	\$24.32
Total	406	\$979.61

** This information represents the total number of projects and dollars scheduled to be let in a given month. Therefore the sum of values will not directly correlate to program year budgets, and this information is always subject to change.*

Tons and Squares

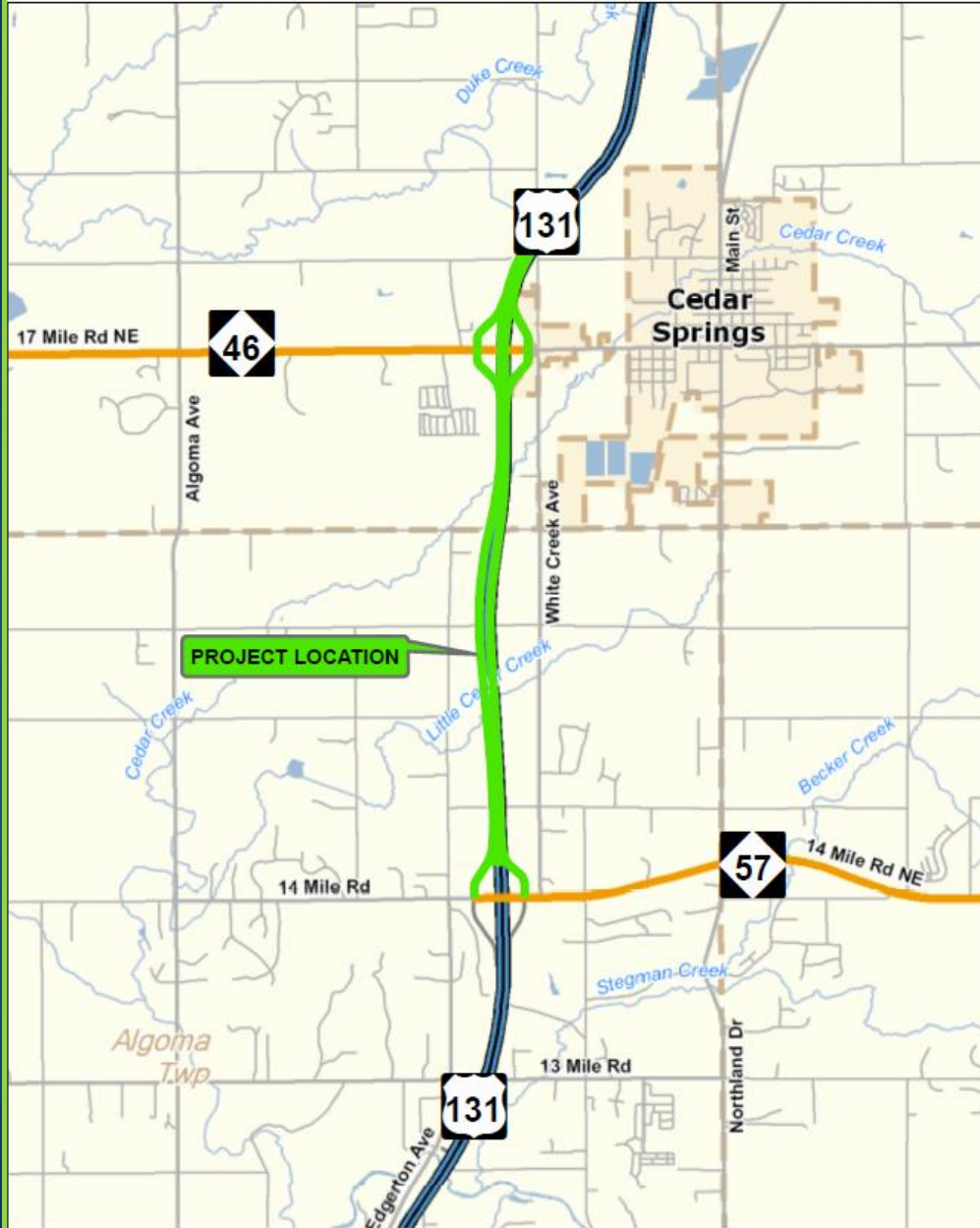
Item	2019	2020
Tons of HMA	2,795,371	1,232,594
Squares of Concrete	1,479,904	781,159
\$ of Bridge Work in Millions	\$211.84	\$207.30

This information is draft and may change as the program is developed.

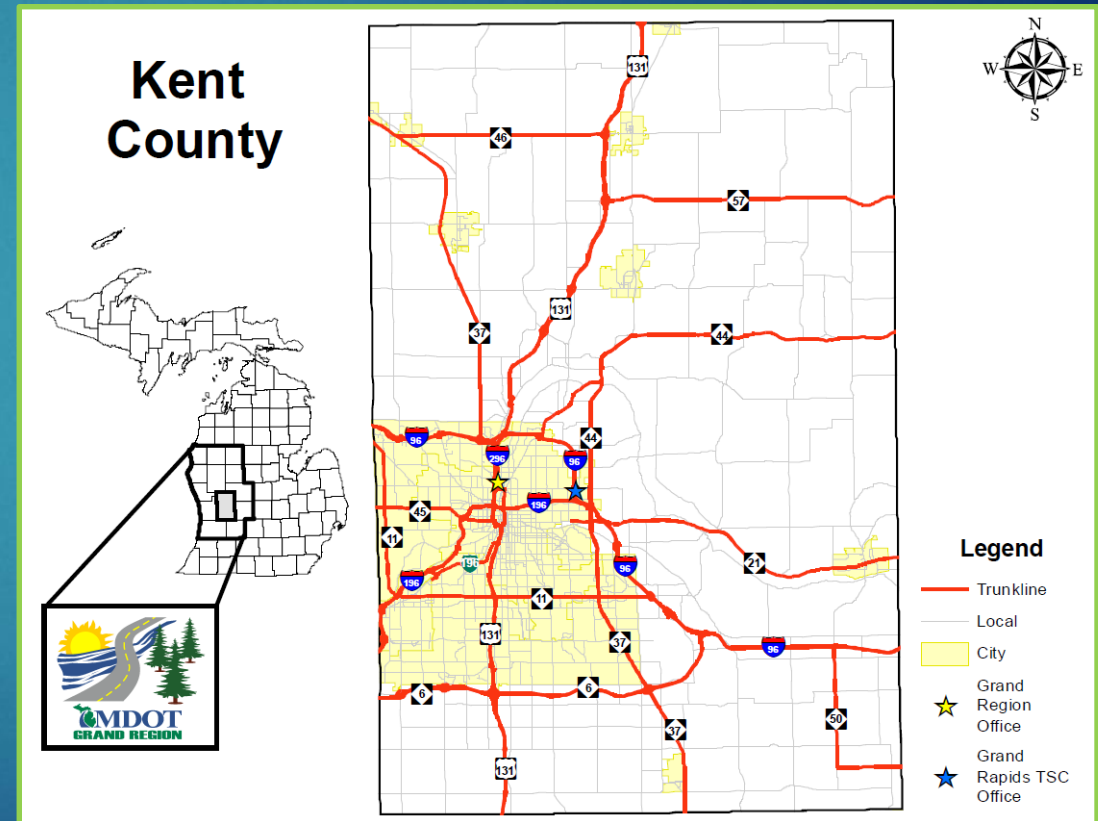
MDOT's Long-Life Pilot Projects

- ▶ Public Act 175 of 2015
 - ▶ Required establishment of Roads Innovation Task Force (RITF)
 - ▶ MDOT Proposed 4 Long Life Pavement Projects
- ▶ 30 year projects
 - ▶ HMA: US-131 from 14 Mile to White Creek in Grand Region
 - ▶ Concrete: I-69 from Ballenger Hwy to Fenton Rd. in Bay Region
- ▶ 50 year projects
 - ▶ HMA: I-475 from Carpenter Rd. to Clio Rd. in Bay Region
 - ▶ Concrete: US-131 from 10 Mile to 14 Mile in Grand Region

US-131 Reconstruction from 14 Mile Rd to White Creek Ave



RIFT 30 Year HMA Pavement



RIFT 30 Year HMA Pavement

- ▶ Enhancements to the HMA long-life designs
 - ▶ Use of ME for thickness design
 - ▶ Drainage improvements – increase free-board for underdrain outlets
 - ▶ Frost-protection – thicker base and subbase layers
 - ▶ Lowered target initial ride quality
 - ▶ Required use of material transfer device
 - ▶ Minimum binder film thickness
 - ▶ Fines to effective ratio reduced in production
 - ▶ Gap-Graded Superpave top course (no RAP allowed)
- ▶ Increased required density of the HMA
 - ▶ 30 year: 92.5%
 - ▶ 50 year: 94.0%

RIFT 30 Year HMA Pavement



US-131: M-57 to White Creek Avenue

STANDARD PAVEMENT Southbound Lanes

9.25 inches Asphalt

6 inches Aggregate Base

18 inches
Sand Subbase

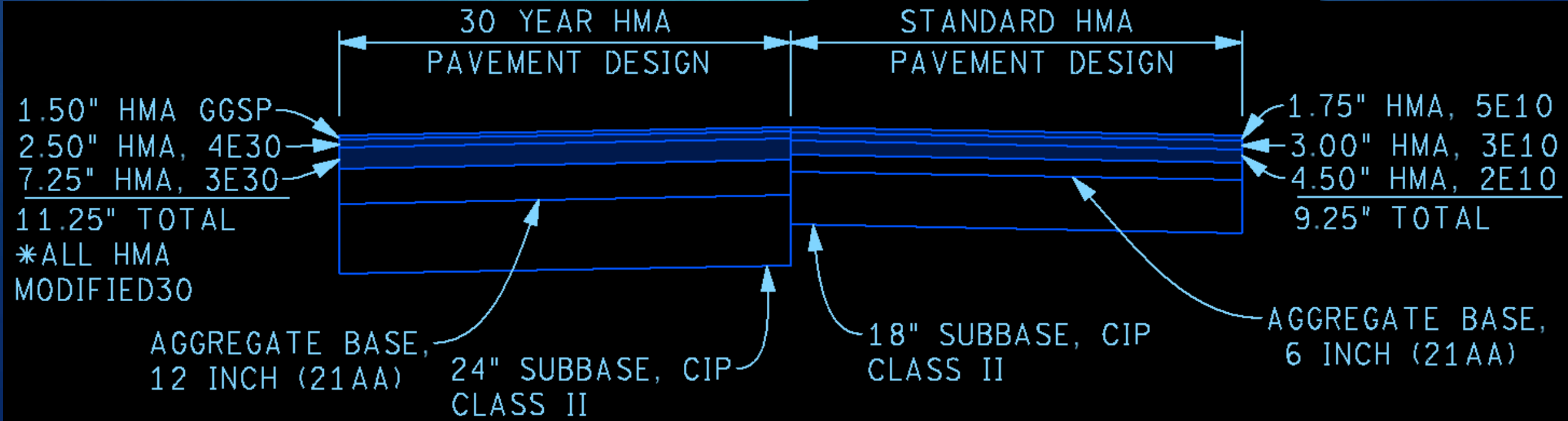
30-YEAR PAVEMENT Northbound Lanes*

1.5 inches GGSP Asphalt

9.75 inches Asphalt

12 inches
Aggregate Base

24 inches
Sand Subbase



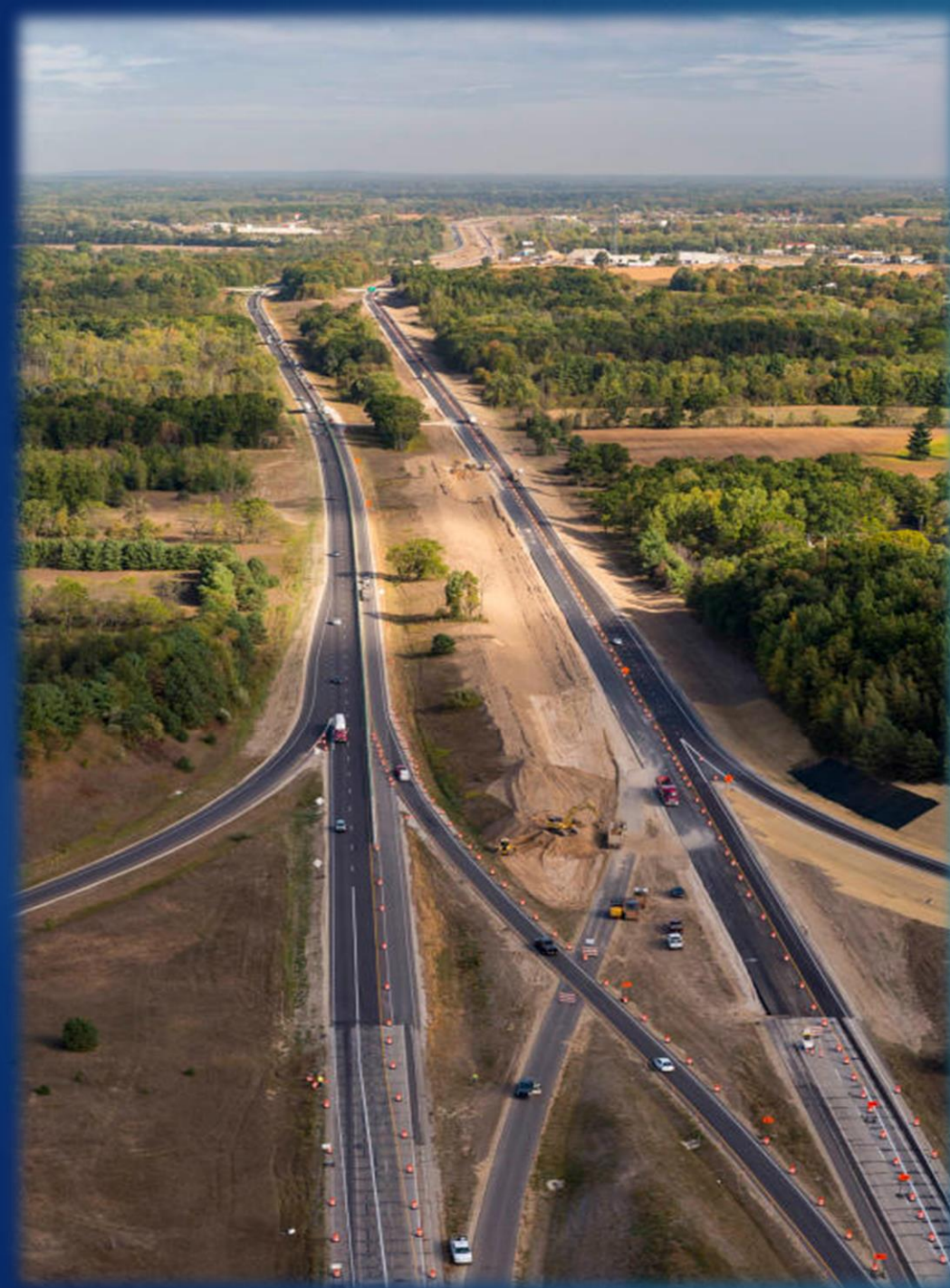
RIFT 30 Year HMA Pavement

Cost Estimate

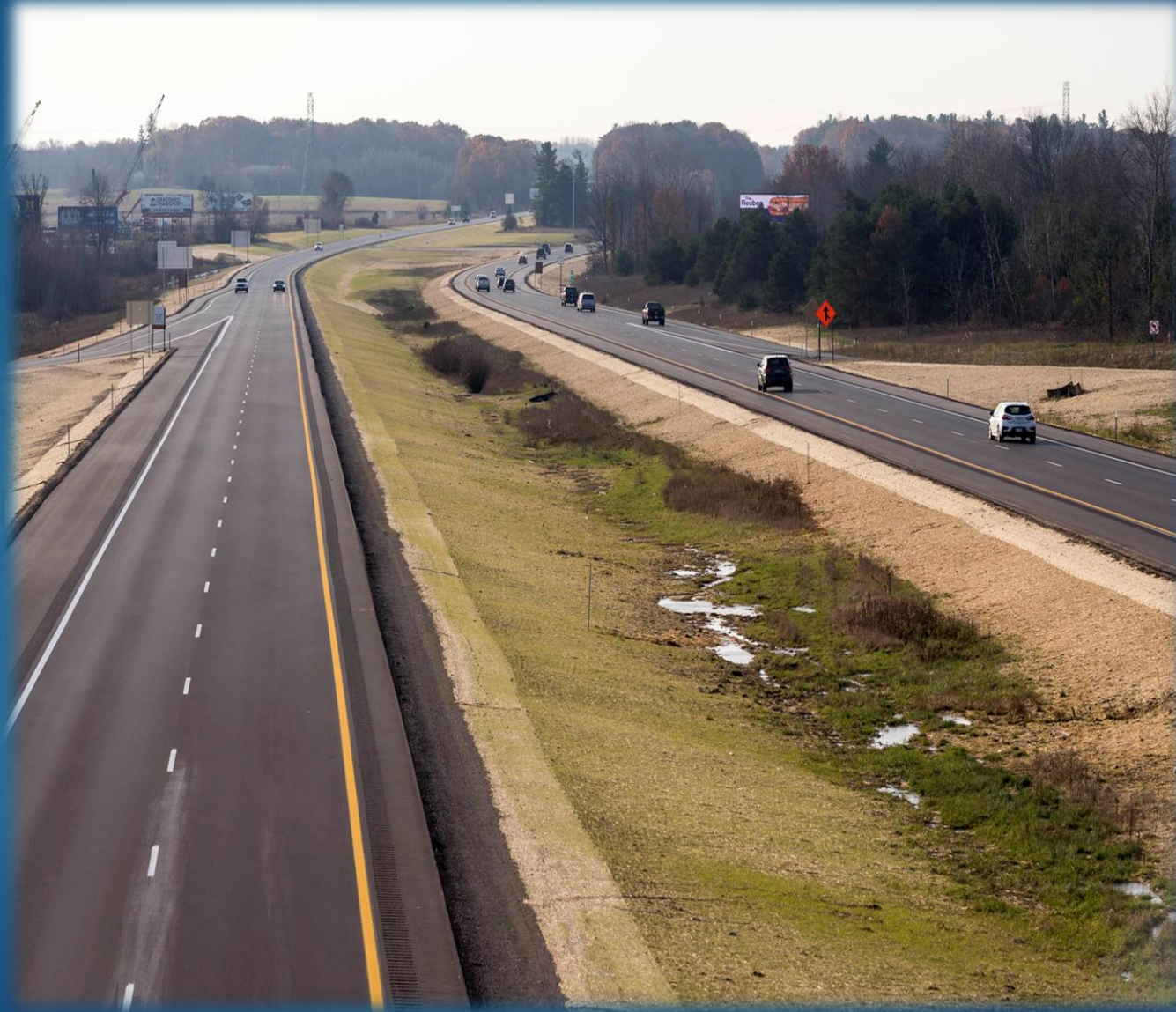
119012 US-131 Reconstruction

	Engineer Estimate	As-Bid Estimate	AS- Constructed Estimate	
20 Year	\$ 1,027,625.41	\$ 973,208.62	\$ 1,032,484.62	/ Lane Mile
30 Year	\$ 1,498,667.38	\$ 1,344,496.44	\$ 1,373,662.26	/ Lane Mile
% increase	146%	138%	133%	

Constructed along the southerly
2 miles of the US-131 NB roadway



RIFT 30 Year HMA Pavement



Design

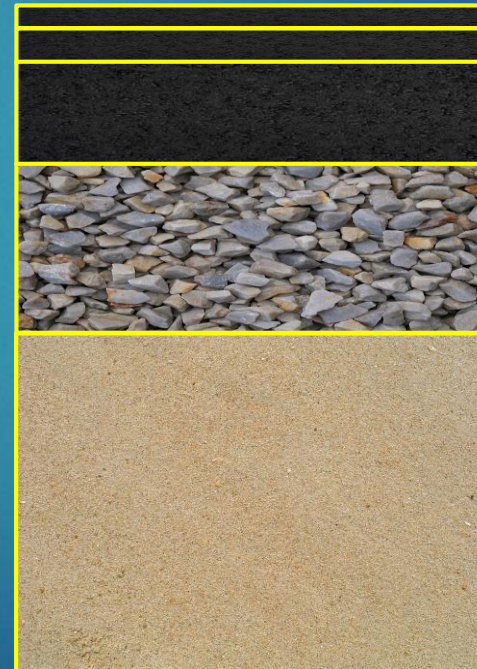
- ▶ US-131 from 14 Mile to White Creek
20 and 30 year HMA Designs

20 year, 8.5 million ESALs



1.75" 5E10 Top
3" 3E10 Level
4.5" 2E10 Base
6" Aggregate Base
18" Sand Subbase

30 year, 13.1 million ESALs



1.5" GGSP
2.5" 4E30 Level
7.25" 3E30 Base
12" Aggregate Base
24" Sand Subbase

Constructed in 2017

Design

- I-475 from Carpenter Rd to Clio Rd
20 and 50 year HMA designs

20 year, 4.1 million ESALs



1.75" 5E10 Top

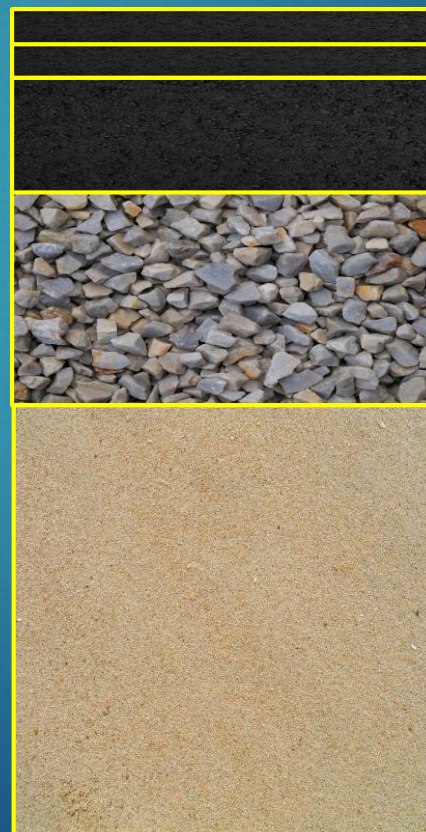
2.5" 4E10 Level

3.5" 3E10 Base

6" Aggregate
Base

18" Sand Subbase

50 year, 11.5 million ESALs



2" GGSP Top

2.5" 4E30 Level

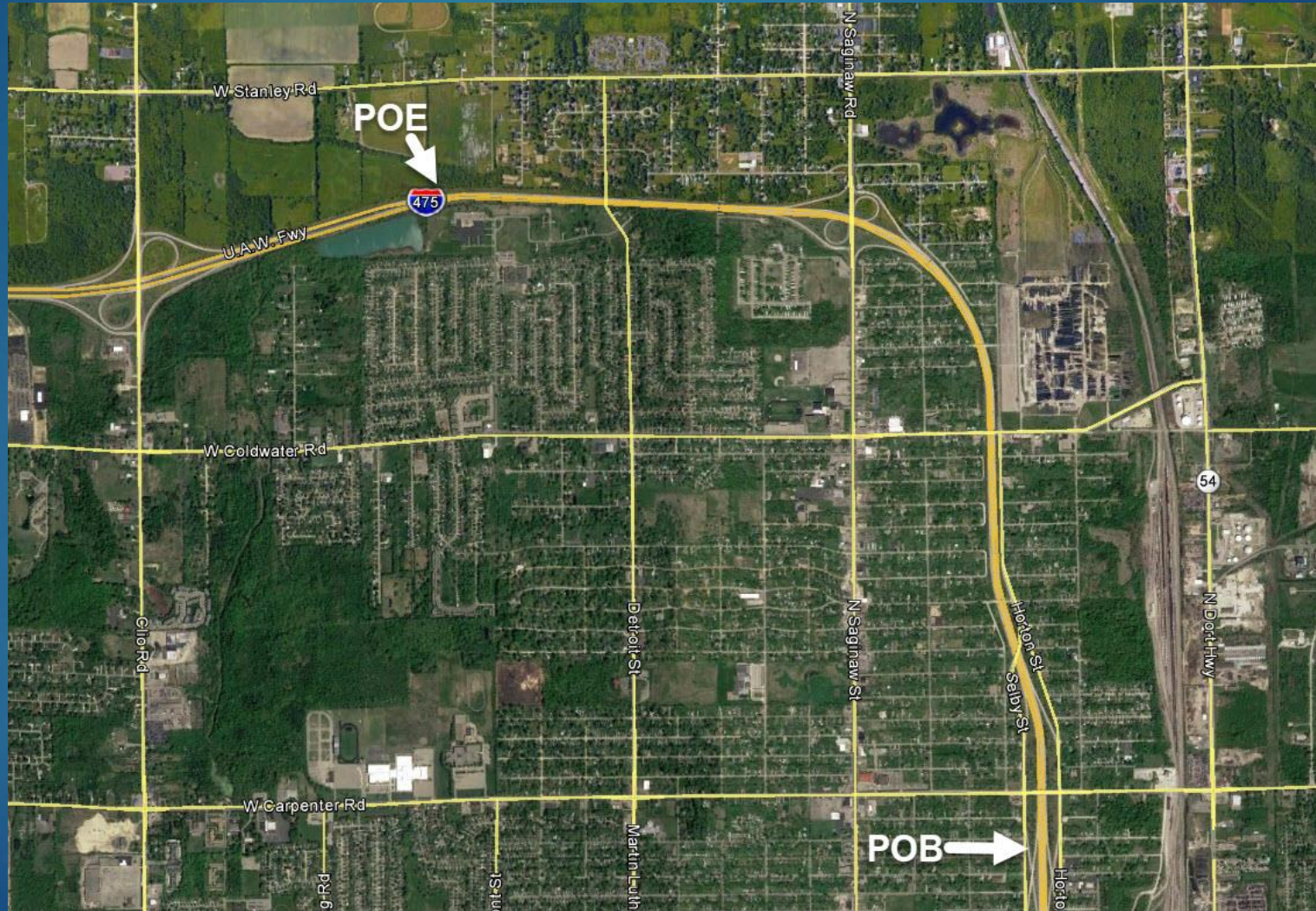
6.5" 3E30 Base

12" Aggregate
Base

24" Sand Subbase

2019 Construction

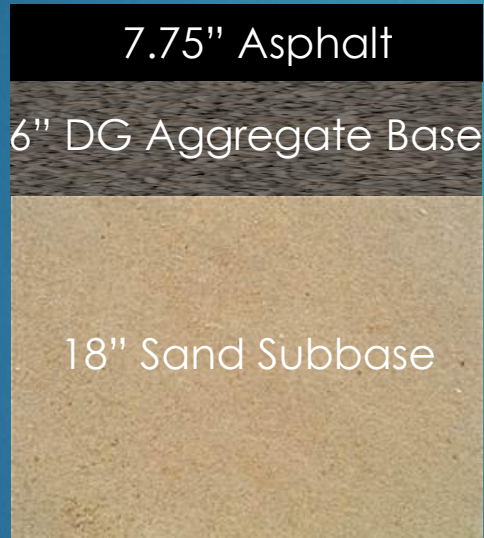
I-475 Reconstruction Carpenter Rd to Clio Rd



I-475 Reconstruction Carpenter Rd to Clio Rd.

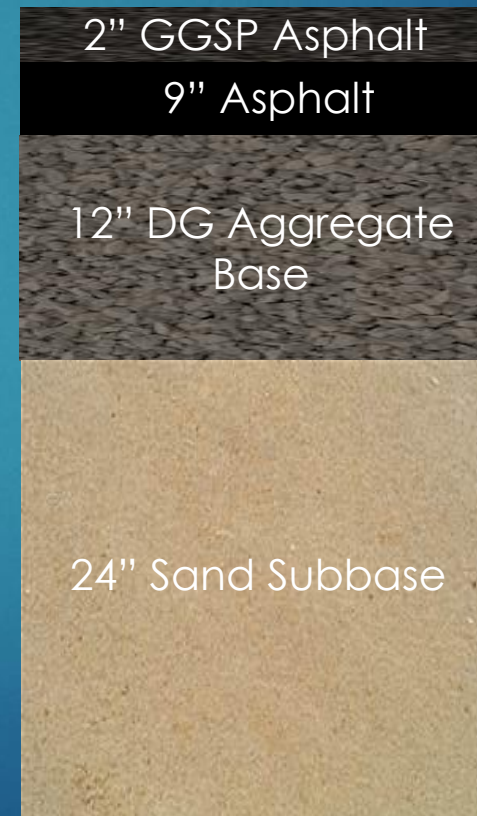
STANDARD PAVEMENT (Southbound Lanes)

5E10 @ 192.5 lbs
4E10 @ 275 lbs
3E10 @ 385 lbs



50 YEAR PAVEMENT (Northbound Lanes)

4E30, Mod @ 275 lbs
3E30, Mod @ 715 lbs

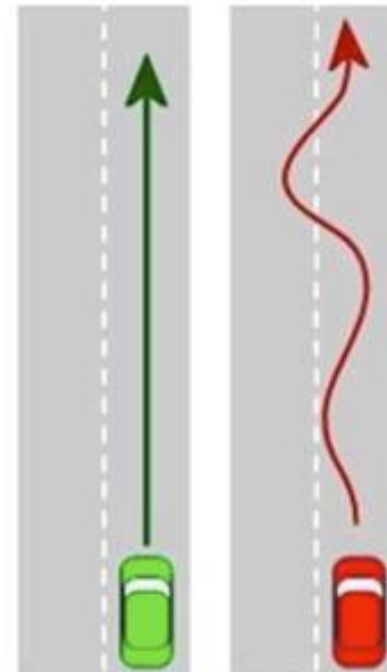


Call to Action

IN SOME EUROPEAN COUNTRIES, THEY
DRIVE ON THE LEFT. IN MICHIGAN,
WE DRIVE ON WHAT'S LEFT.



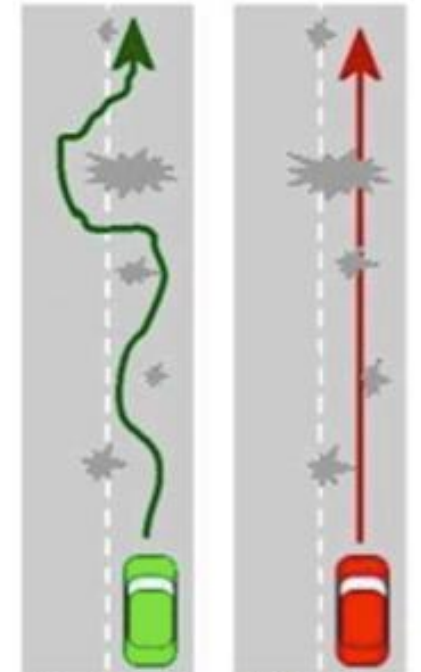
AMERICA



Driving
sober

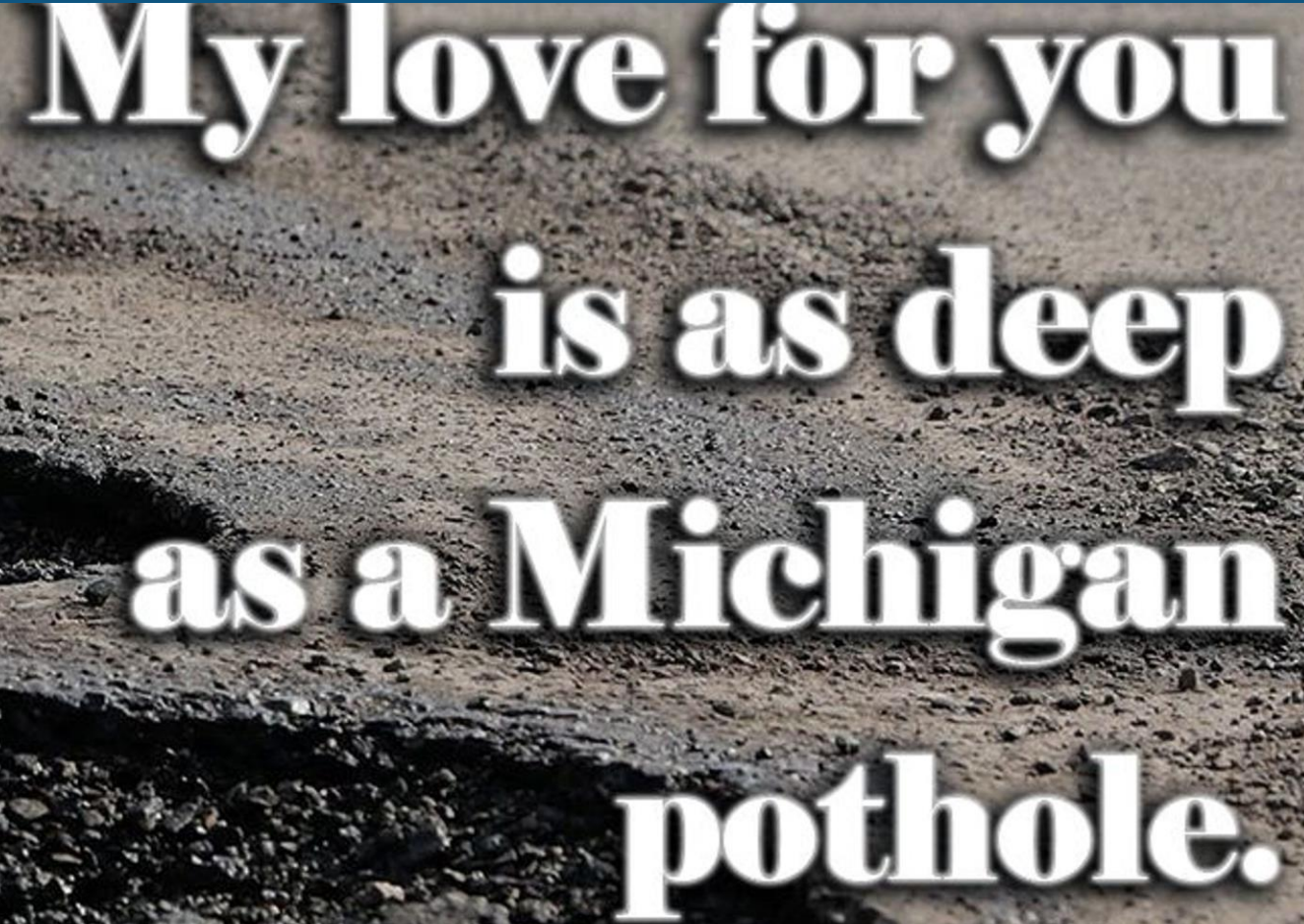
Driving
drunk

MICHIGAN

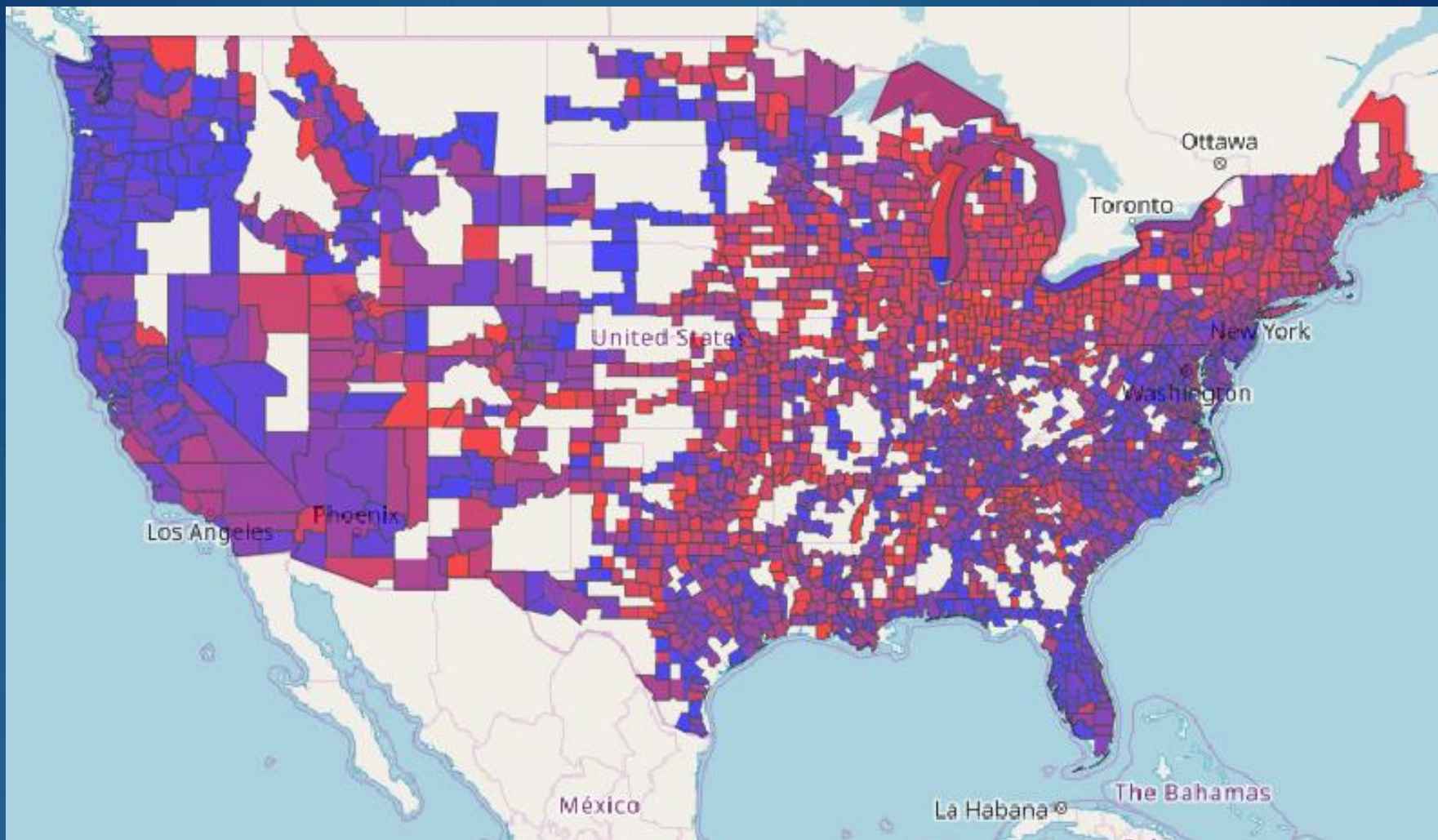


Driving
sober

Driving
drunk

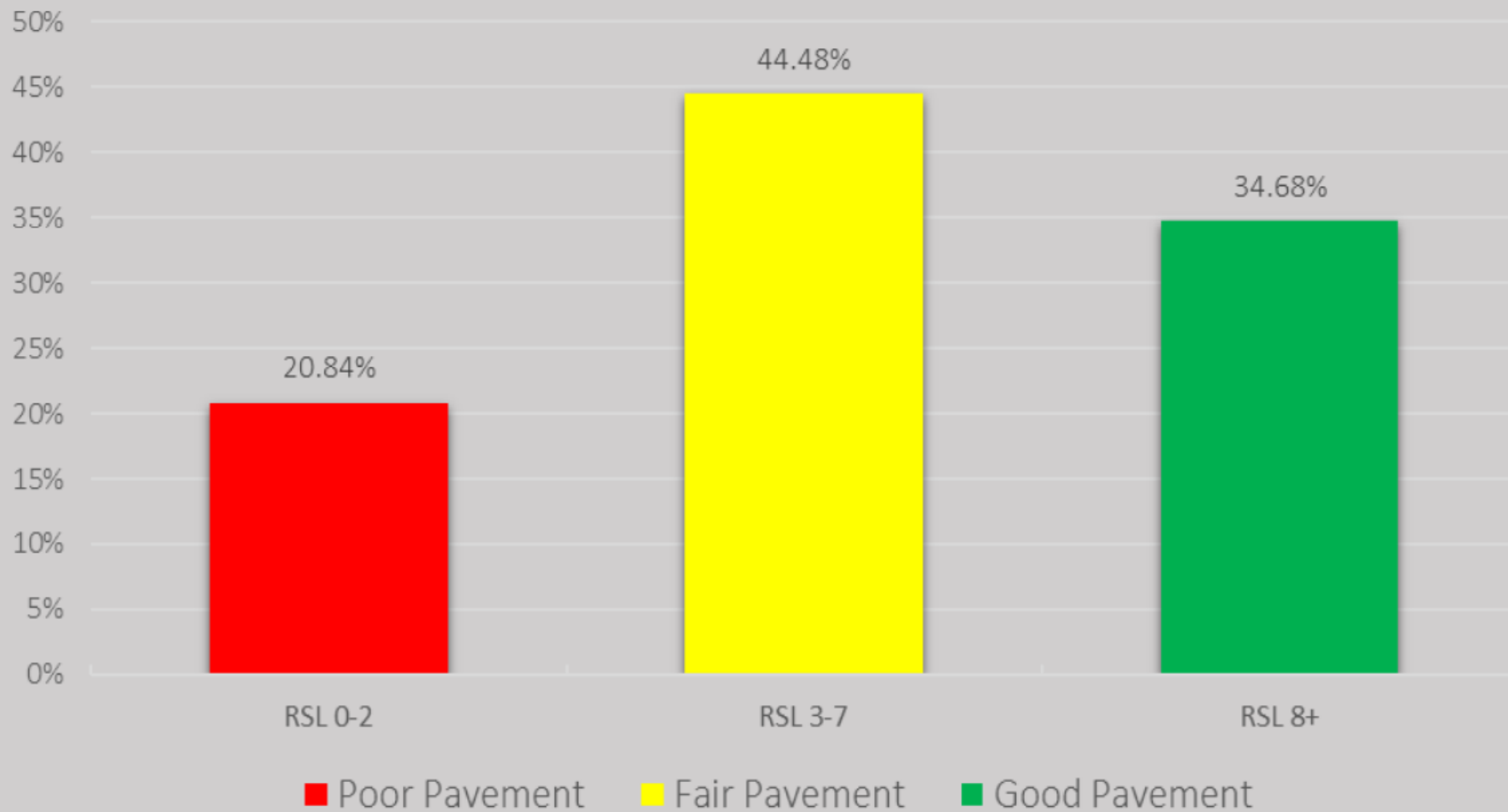


**My love for you
is as deep
as a Michigan
pothole.**

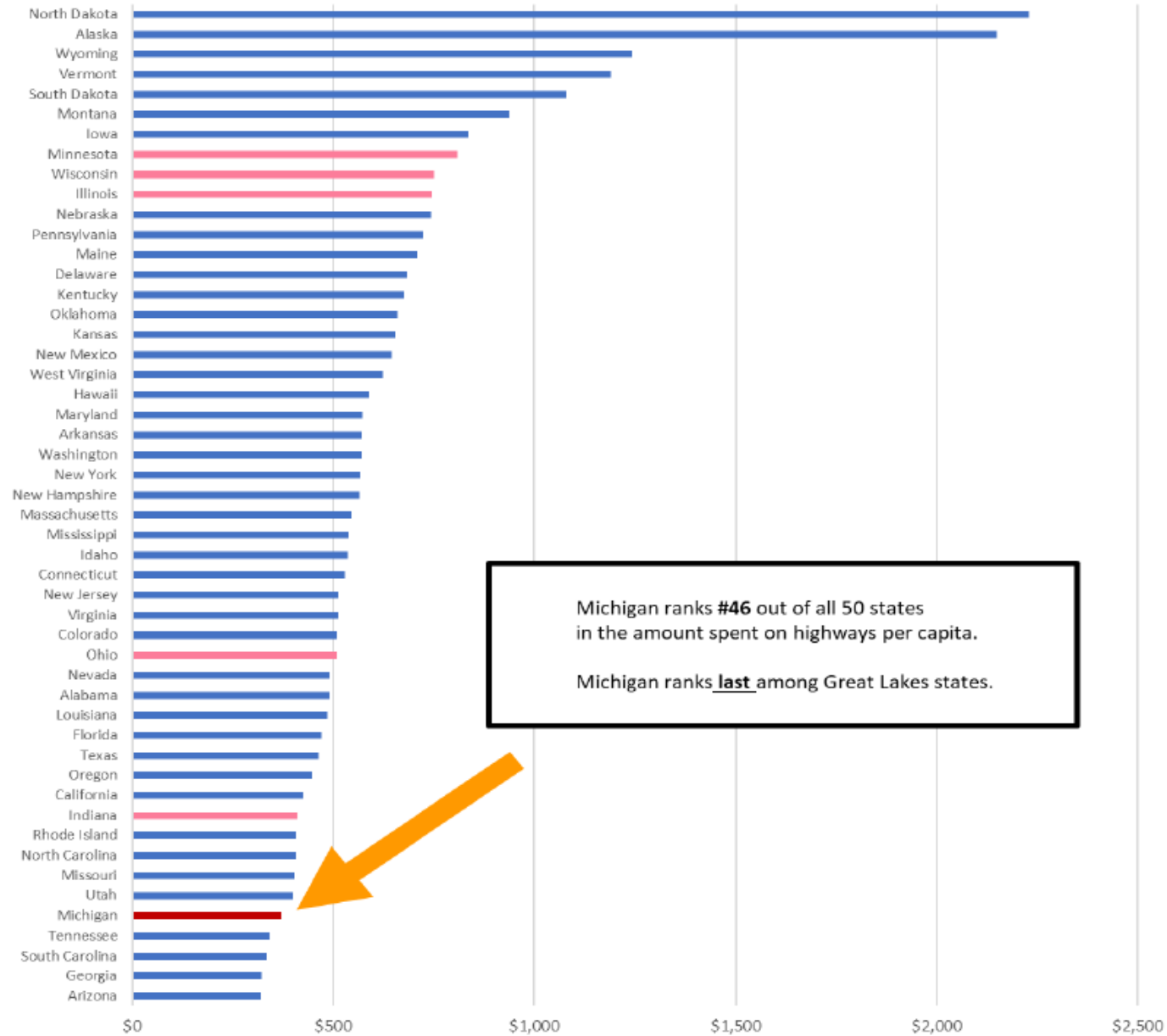


- ▶ Last year, the American Society of Civil Engineers gave Michigan a D+ for the state of our infrastructure.
- ▶ Also last year, a privately-funded study found that Michigan has the worst roads in the nation.

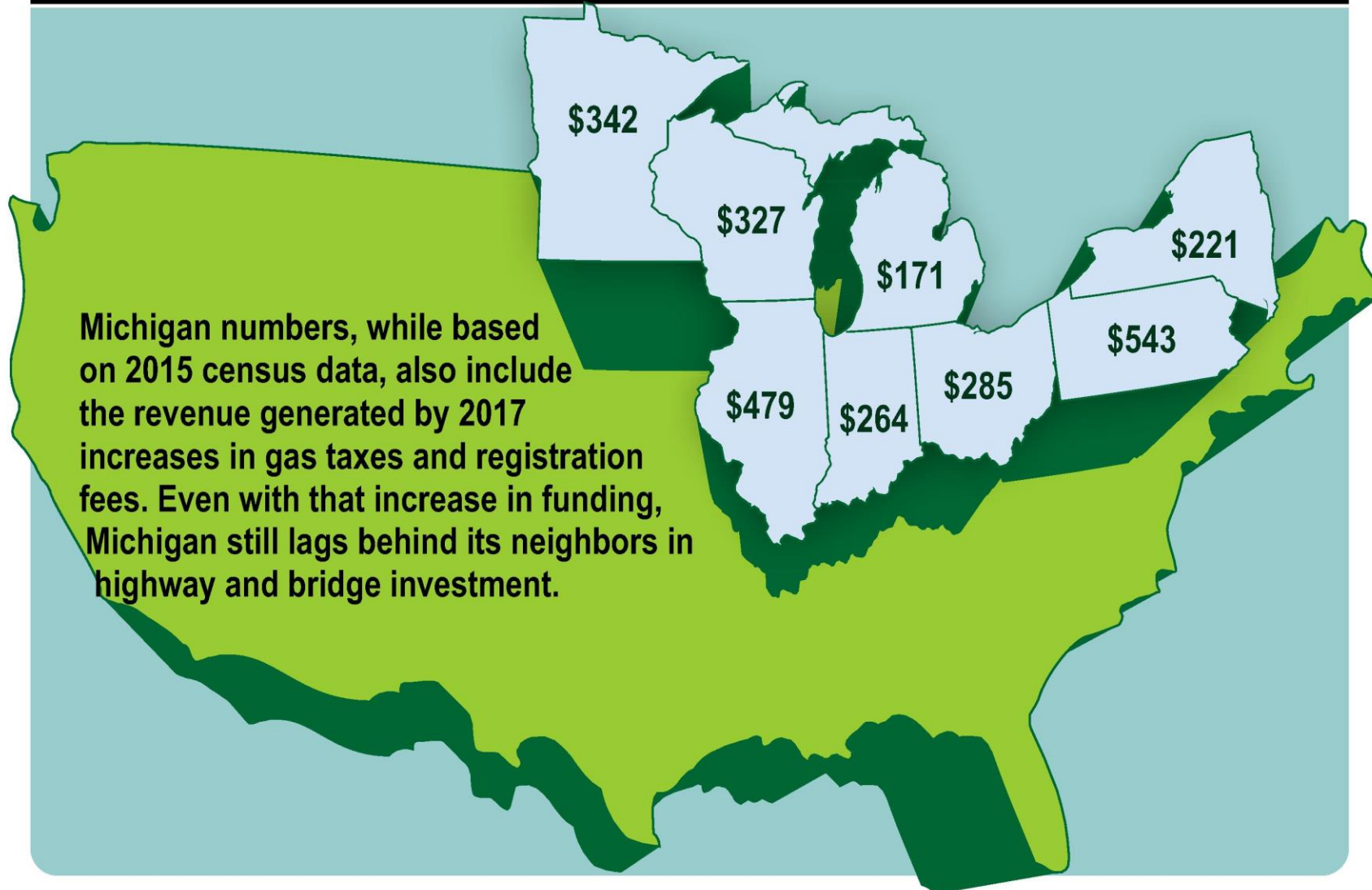
REMAINING SERVICE LIFE (RSL) YEARS

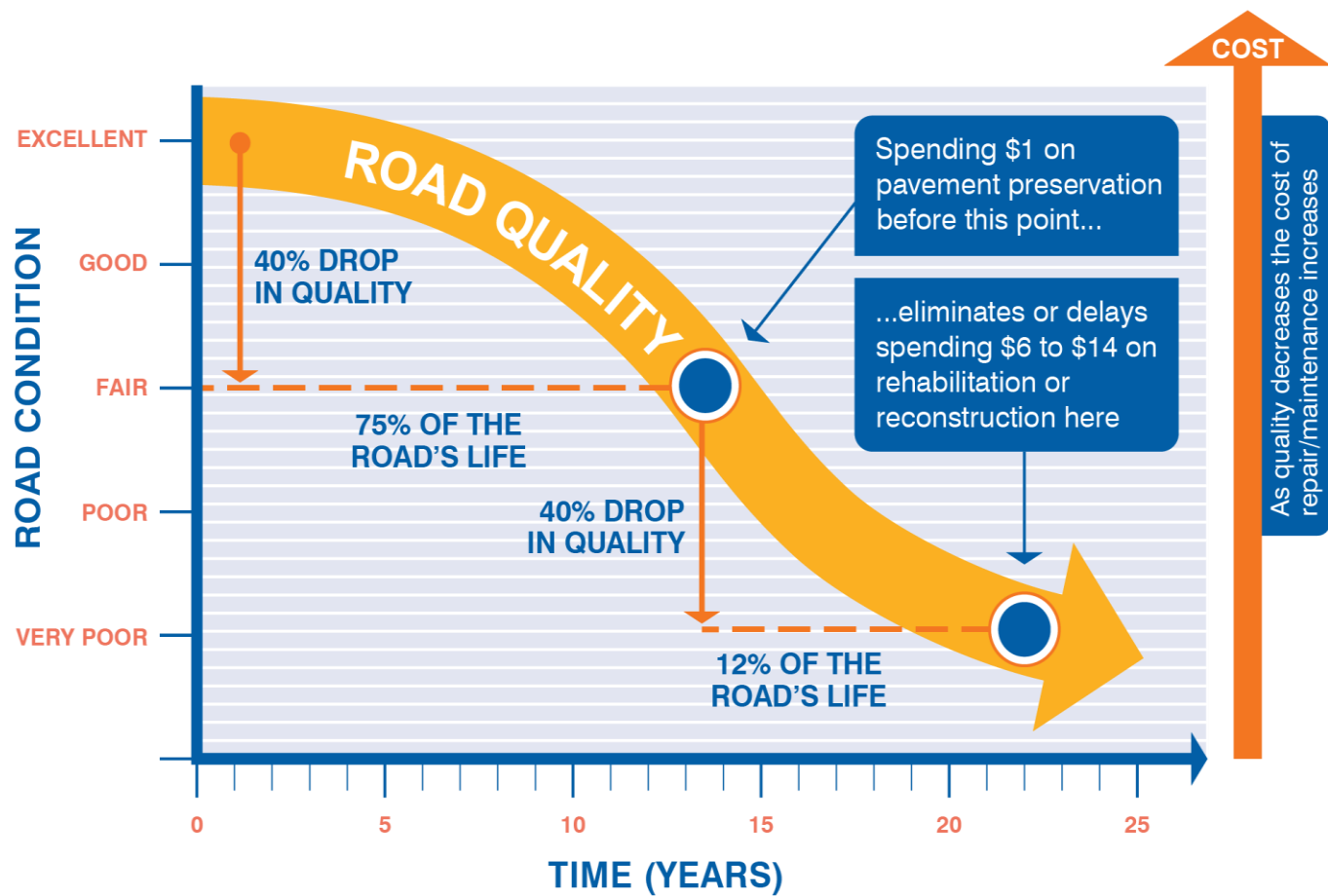


FY 2015 Per Capita State and Local Expenditures on Highways



Per Capita State Investment in Roads





Michigan's Road Quality and Cost of Maintenance Over Time

WHY WE INVEST IN FLORIDA

MICHIGAN

122,286
MILES
PUBLIC ROADS



39%
POOR
CONDITION

11,156
BRIDGES



11%
STRUCTURALLY
DEFICIENT

FLORIDA

122,659
MILES
PUBLIC ROADS



11%
POOR
CONDITION

12,313
BRIDGES



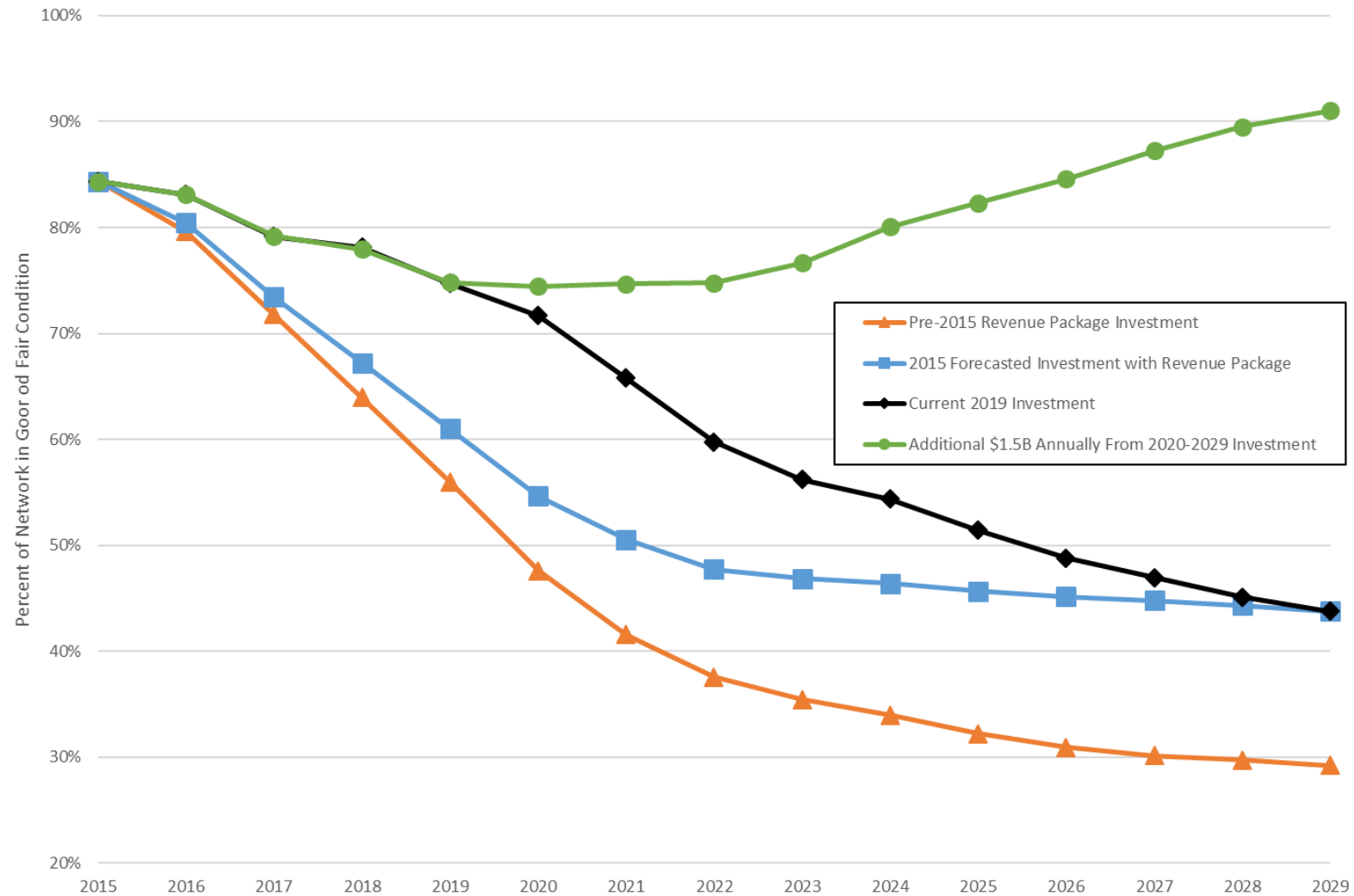
2.1%
STRUCTURALLY
DEFICIENT

Recently Florida's population has grown at a rate of **1%**, adding **1 million people**, plus 126 million people visited Florida in 2018. **Which means greater strain on infrastructure yet they have better roads.**

ASCE. (2016). Florida 2016 Report. Retrieved from Infrastructure Report Card: <https://www.infrastructurereportcard.org/state-item/florida/>

ASCE. (2018). 2018 Michigan Infrastructure Report Card. Retrieved from Infrastructure Report Card: <https://www.infrastructurereportcard.org/state-item/michigan/>

MDOT Trunkline Pavement Condition Forecast Comparison
2015-2029



Funding for Roads

Funding 10-Year Plan

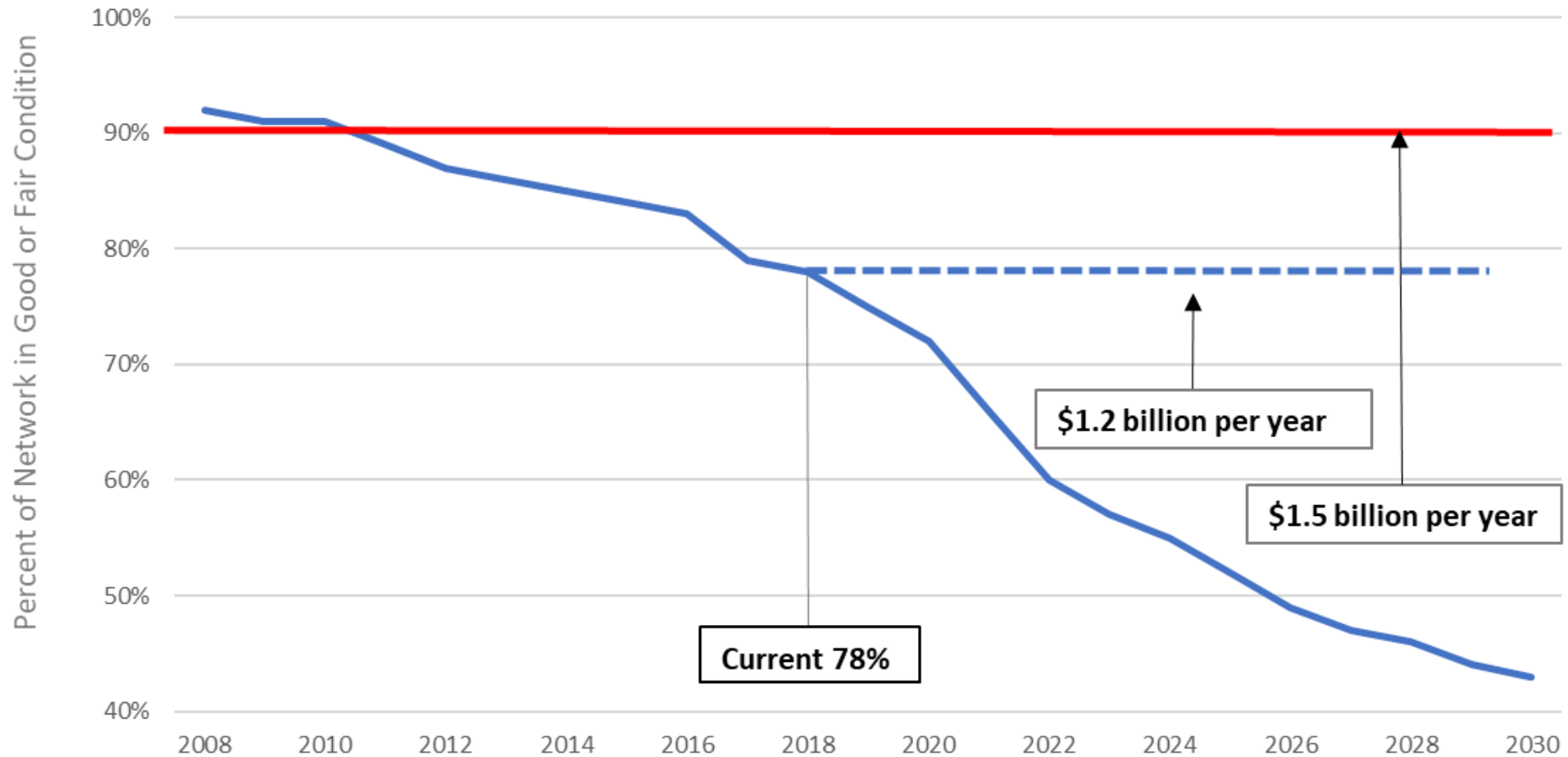
- ▶ Return to predictable, constitutionally dedicated road funding model:
 - ▶ Phase in gas and diesel tax increase of 15 cents per gallon every six months through Oct. 1, 2020.
 - ▶ Eliminate less reliable Individual Income Tax earmark for roads.

Gas and Diesel Tax Phase In	
Oct 1, 2019	15 cents
April 1, 2020	15 cents
October 1, 2020	15 cents

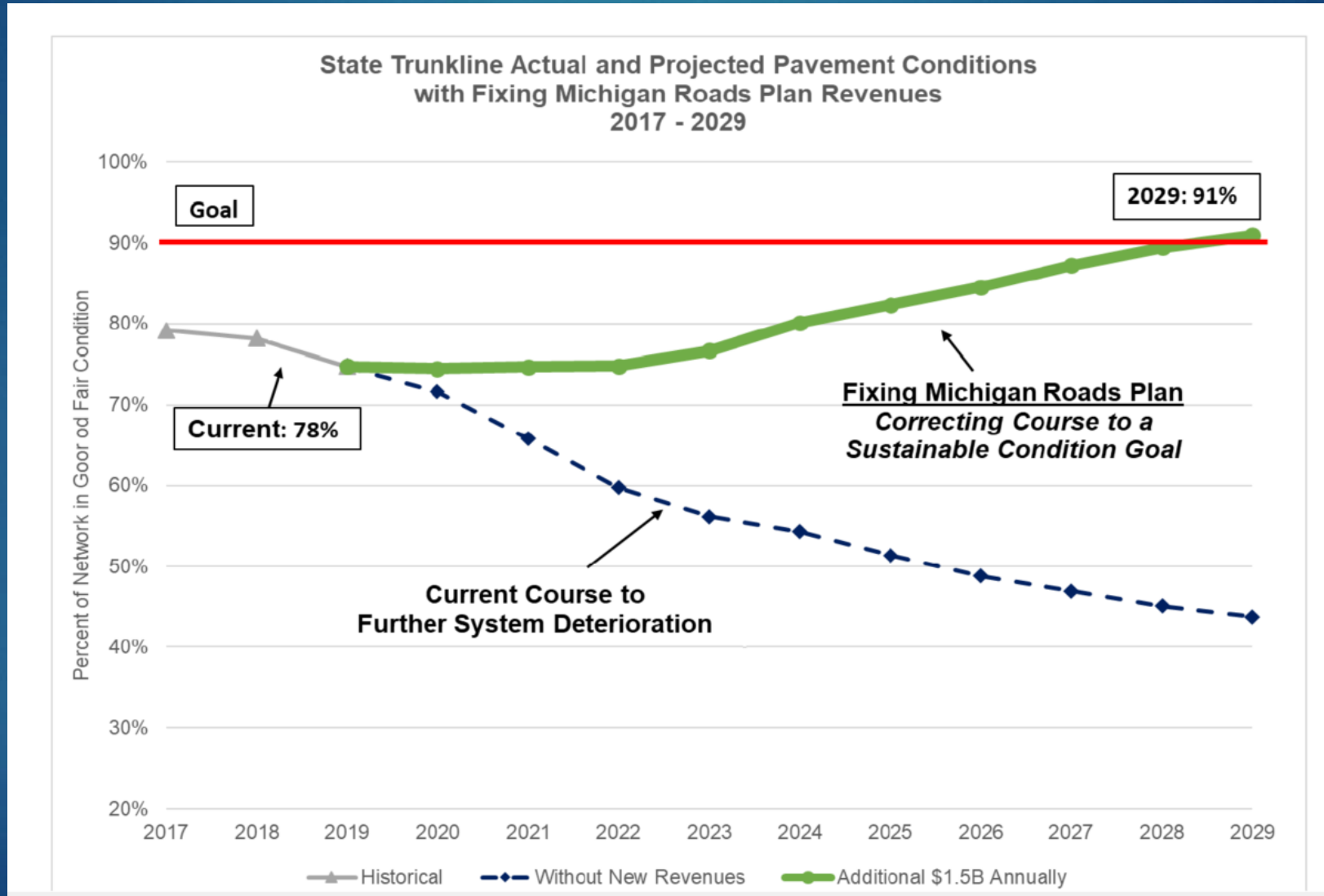
Fixing Michigan Roads Plan - State and Local Distribution* (In Millions)		
	FY 2020	FY 2021
State-Owned Roads (70%)		
State Road Projects	\$645.6	\$1,503.7
TOTAL State-Owned Roads	\$645.6	\$1,503.7
Local Road Agencies (27%)		
Local Road Projects	\$189.3	\$441.0
Local Bridges	\$36.7	\$85.5
Local Rural Economic Corridors	\$18.3	\$42.7
TOTAL Local Road Agencies	\$244.3	\$569.2
Multi-Modal Innovation Projects (3% - State and Local)		
Transit and Mobility	\$16.6	\$38.5
Rail and Port Investments	\$11.0	\$25.6
TOTAL Multi-Modal Innovation Projects	\$27.6	\$64.1
TOTAL Distribution of New Transportation Revenues	\$917.5	\$2,137.0

State and Local Distribution

Historical and Projected State Trunkline Pavement Condition 2008-2030



Fixing Michigan Roads Plan





“Michigan, we have a problem...our infrastructure is failing. This problem doesn’t just affect some of us, it affects all of us.”

FixMIState is a statewide public relations campaign to raise awareness for Michigan’s massive unmet infrastructure needs. Help us spread the word, and get yourself informed, by joining the conversation today.

On the FixMIState website, www.fixmistate.org, you can get the latest news, reports, videos and information, as well as sign up to receive an e-newsletter that covers specific infrastructure issues in your part of the state.



FixMIState



@FixMIState



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Questions?

