Transportation Funding Needs

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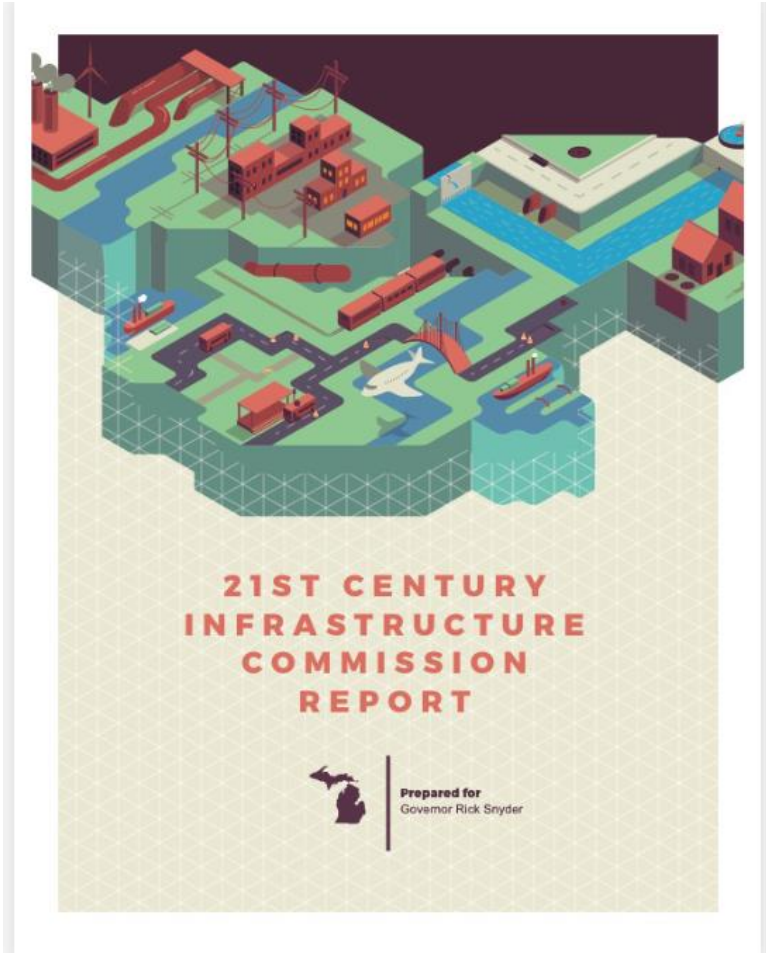
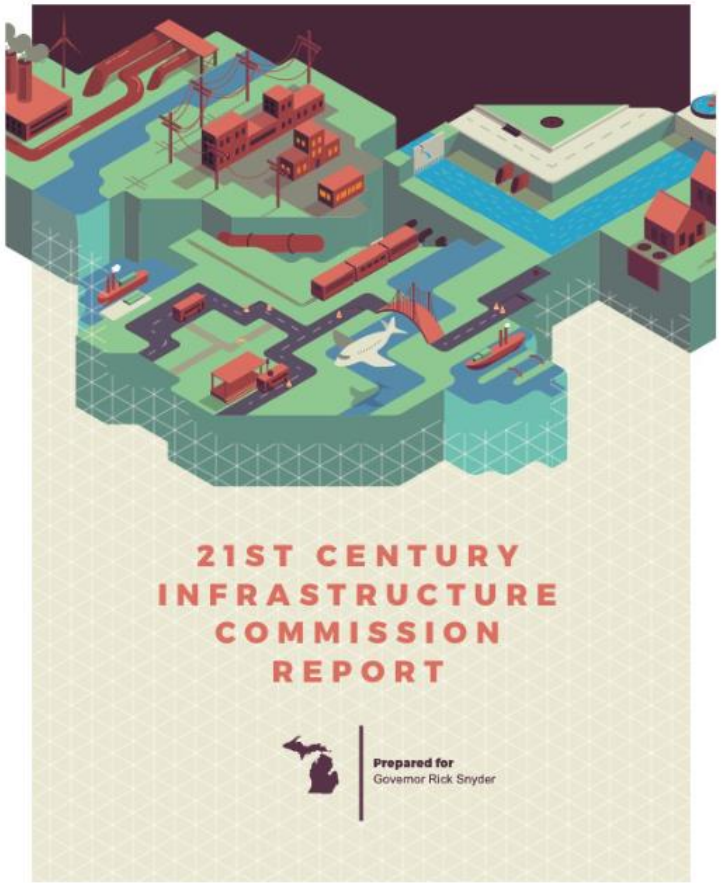
February 23, 2024

Understanding the Condition of Michigan's Infrastructure



21st Century Infrastructure Commission

- Commissioned by Governor Snyder to develop a long-term vision for Michigan's infrastructure and associated policy recommendations to achieve that vision
  - Communications
  - Energy
  - Transportation
  - Water



Key Transportation Related Recommendations

- Establish the Michigan Infrastructure Council
- Make Michigan a smarter state as it relates to infrastructure
- Utilize an asset management approach across all infrastructure planning
- Review transportation funding options to increase transportation investments by $2.2 billion annually
- Invest in alternative sources for transit (bus, passenger and freight rail systems)
- Make Michigan the hub for intelligent vehicle technology

2016 Infrastructure Investment Gap

	Transportation	Water	Communications	Energy
Forecasted Annual Investment Gaps	Approximately $2.7 billion	Approximately $1 billion	Approximately $70 million	N/A, largely private utility investment
Forecasted Investment Gaps Over the Next 20 Years	Approximately $40 billion	Approximately $19 billion	Approximately $600 million	N/A

2016 Potential Funding Solutions

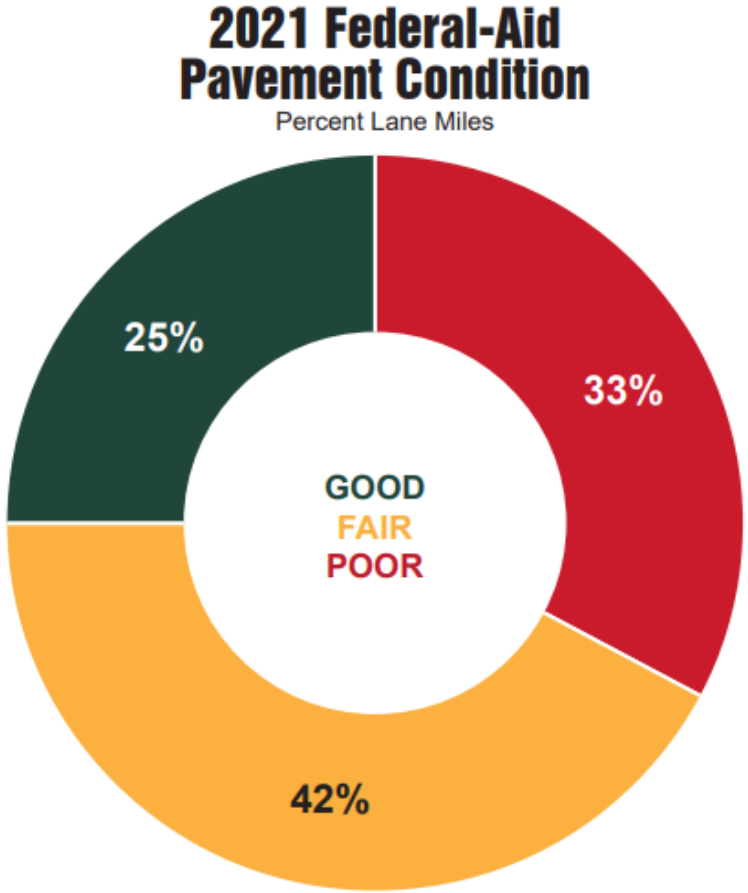
Potential Revenue Source	Asset Type	Example Scenario	Estimated Annual Revenue Generation Potential
Dedicated sales tax for infrastructure	All infrastructure	1 percent increase	$1.5 billion
Dedicated statewide property tax	All infrastructure	1 mill increase	$325 million
Fuel tax	Transportation	10 cent per gallon increase	$500 million
Local revenue generation options	Transportation	Up to $40 county-wide registration fee or ten-cent county-wide gas tax	$400-500 million
Mileage-based user fee	Transportation	1 cent per mile based on current average miles driven statewide	$970 million
Tolling	Transportation	5 cents per mile on 360 miles of US-23	$138 million
Vehicle registration fee	Transportation	20 percent increase	$200 million

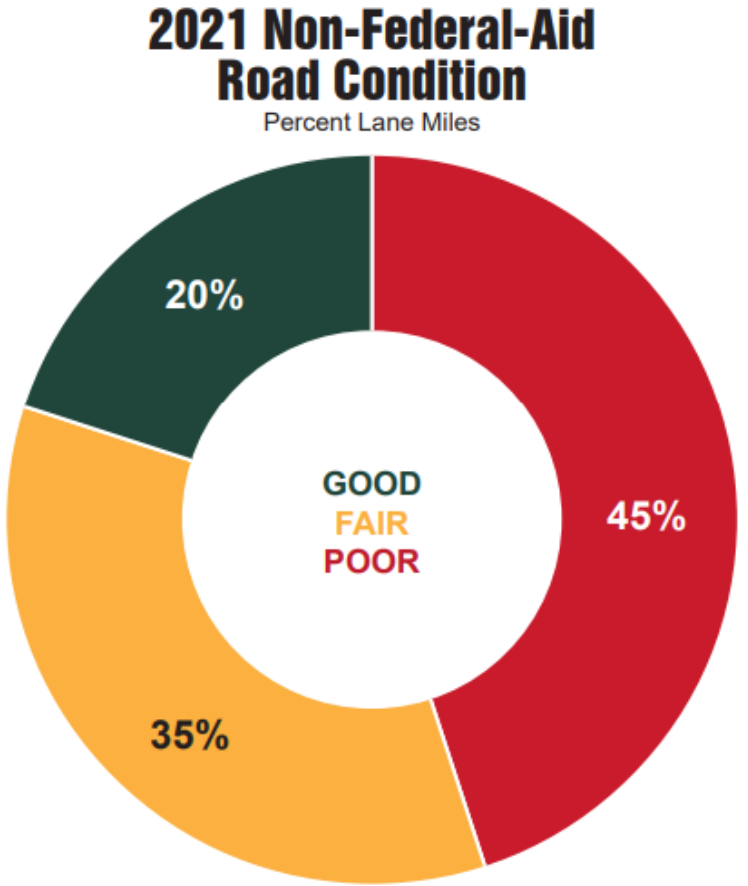
2023 MITA Report

The report covered:

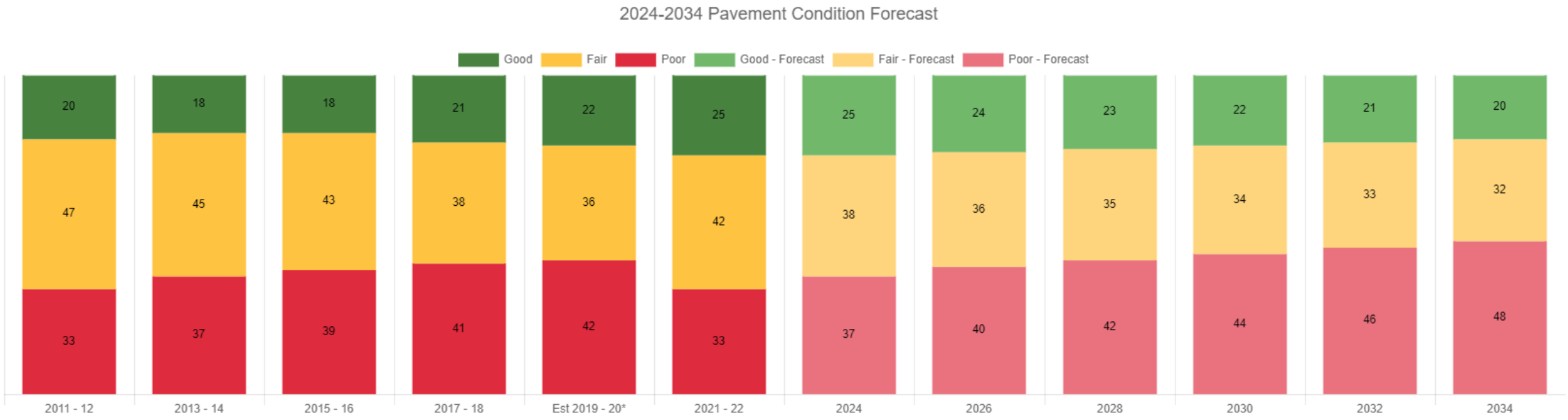
- The overall cost of Michigan's road system through PSC-developed estimates on the cost of maintaining Michigan's vast road network to examine future funding needs.
- The current road funding estimates, the revenue sources for funding roads, and long-term trends in transportation spending.
- The potential options for raising additional revenue to close the funding gap.

TAMC Pavement Conditions Assessment





TAMC Pavement Condition Forecast



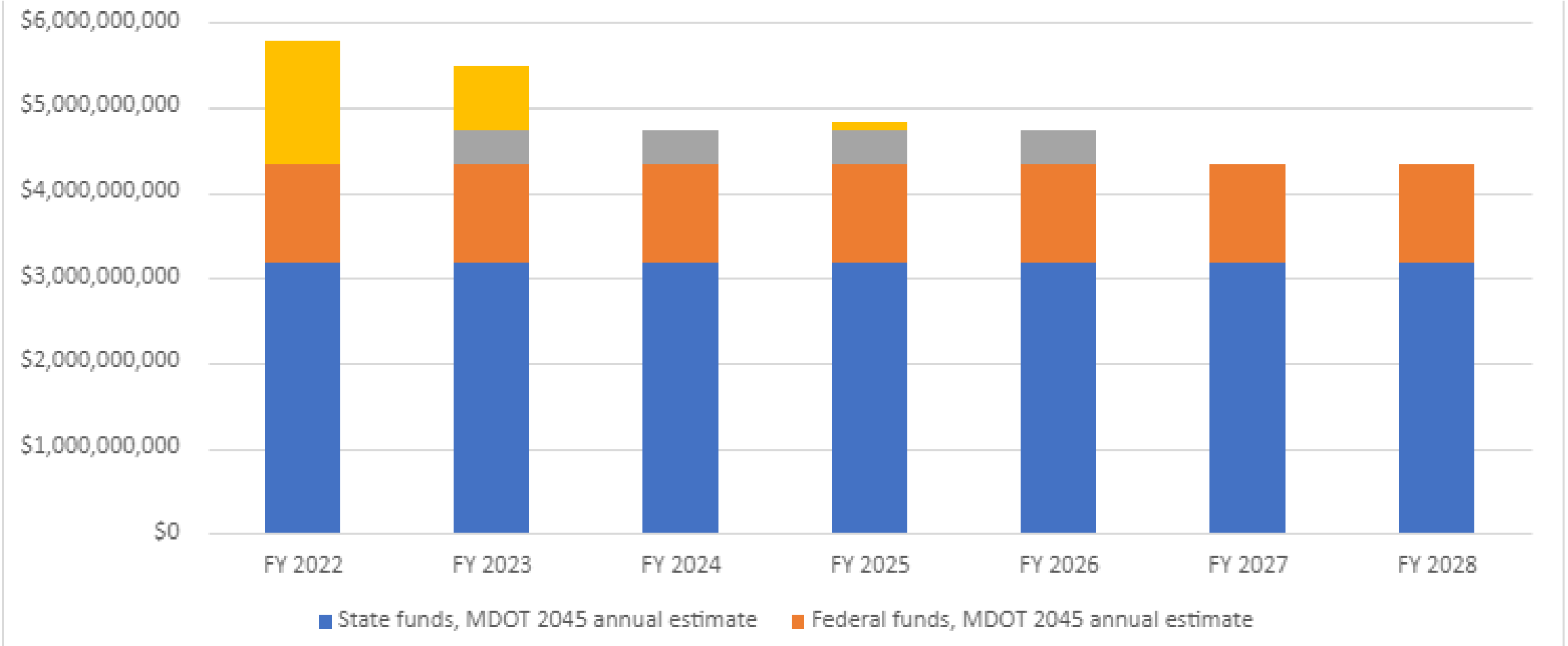
2021 Estimates for Preserving Michigan's Road Network

Combined Annual Estimated Cost of Preserving Michigan's Road Network, MDOT and CRA

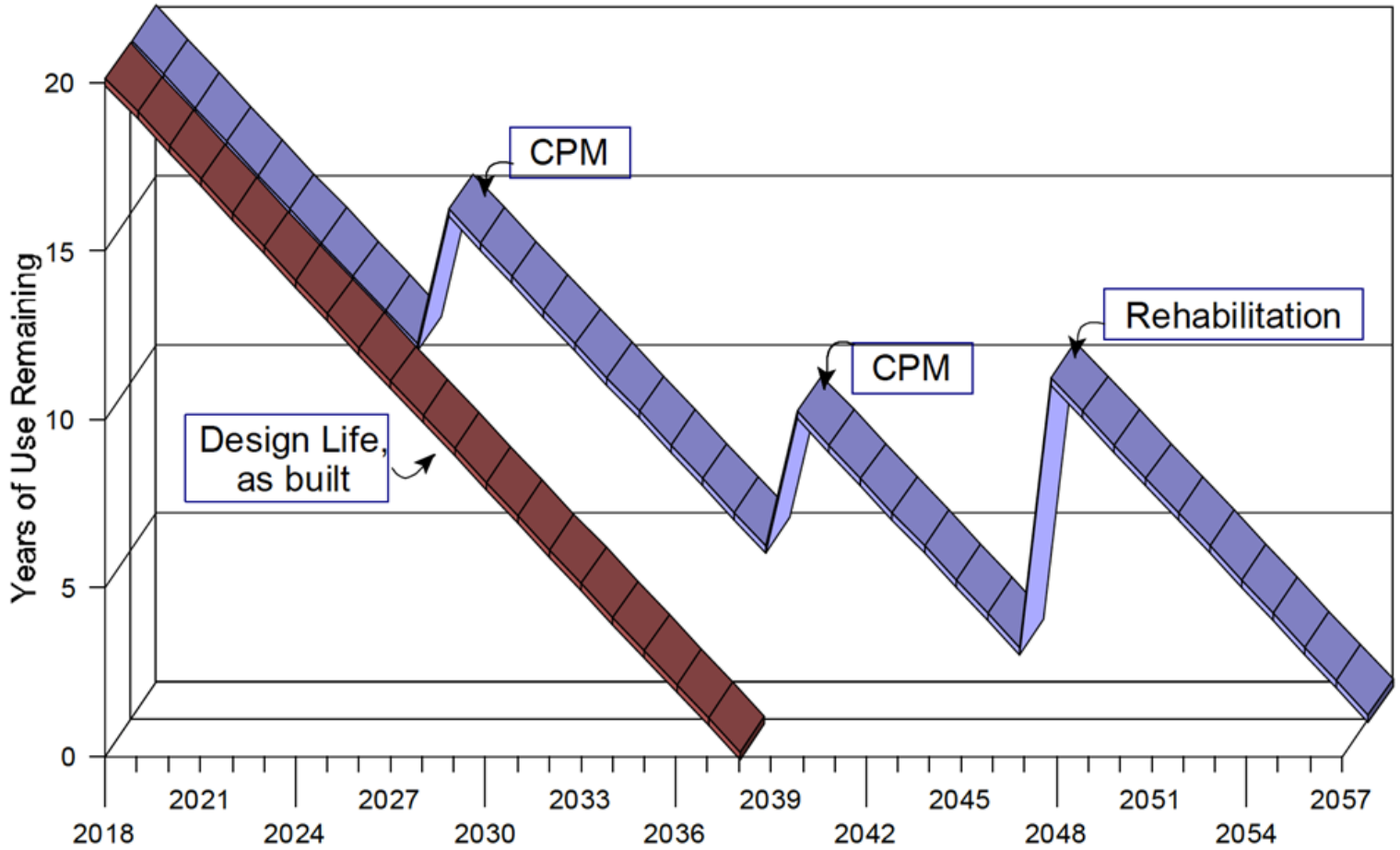
Road Type	Annual Average	Lane Miles	Percent of Road Network
Federal-aid roads Total	$4,940,000,000	85,590	33.4%
MDOT-owned federal-aid roads	$2,476,000,000	27,366	10.7%
Locally owned federal-aid roads	$2,464,000,000	58,224	22.7%
Non-federal-aid roads, CRA (15 percent per year)	$2,245,676,838	170,704	66.6%
MDOT and CRA Combined Estimated Total	$7,185,676,838	256,294	100%

Sources: MDOT November 2021b, CRA 2021, US DOT FHA 2022

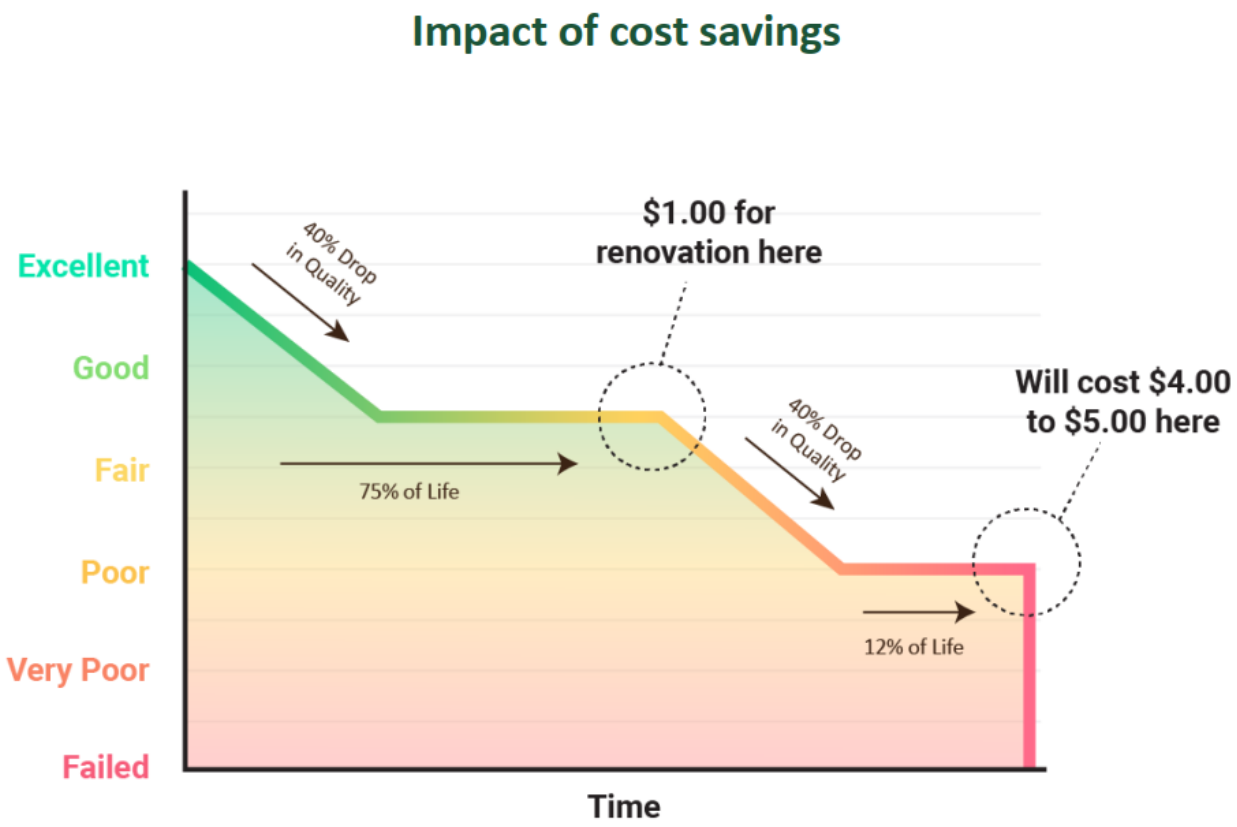
Road Funding Revenue (actual and estimated)



Pavement Life Cycle Model



Smart Pavement Management



Annual Cost of Maintaining the Road System

Annual Costs of Different Maintenance Techniques

	Prevention	Rehabilitation	Reconstruction
Federal-aid roads			
Average cost per lane mile	$109,000	$792,000	$3,216,000
Average life of investment	6.5	16	22
Average annual cost per lane mile	$16,769	$50,000	$136,364
Non-federal-aid roads (local)			
Average cost per lane mile	$21,372	$112,203	$402,648
Average life of investment	6.5	16	22
Average annual cost per lane mile	$3,288	$7,013	$18,302

Sources: MDOT March 2021, Siracuse 2019

PSC-Modeled Road Network Annual Costs

PSC Calculated Road Network Cost

Breakdown of Maintenance Costs	Costs
Federal-aid Roads	
Total cost per lane mile (life of the road)	$4,226,000
Average annual cost per lane mile	$86,245
Total lane miles	83,030
Total average annual cost	$7,160,940,012
Non-federal-aid Roads	
Total cost per lane mile	$557,595
Average annual cost per lane mile	$11,379
Total lane miles	165,000
Total average annual cost	$1,877,615,816
Average annual cost of the State of Michigan road system, all roads	**$9,038,555,828**

Cost to maintain FEDERAL- AID lane-mile road over a 50-year lifespan

Cost to maintain a LOCAL road lane mile over a 50-year lifespan

Inflation Impact

In dollars, we estimate that inflation could add $1.1 billion to the annual cost of operating and maintaining Michigan's road system.

Estimating the Funding Gap in Michigan

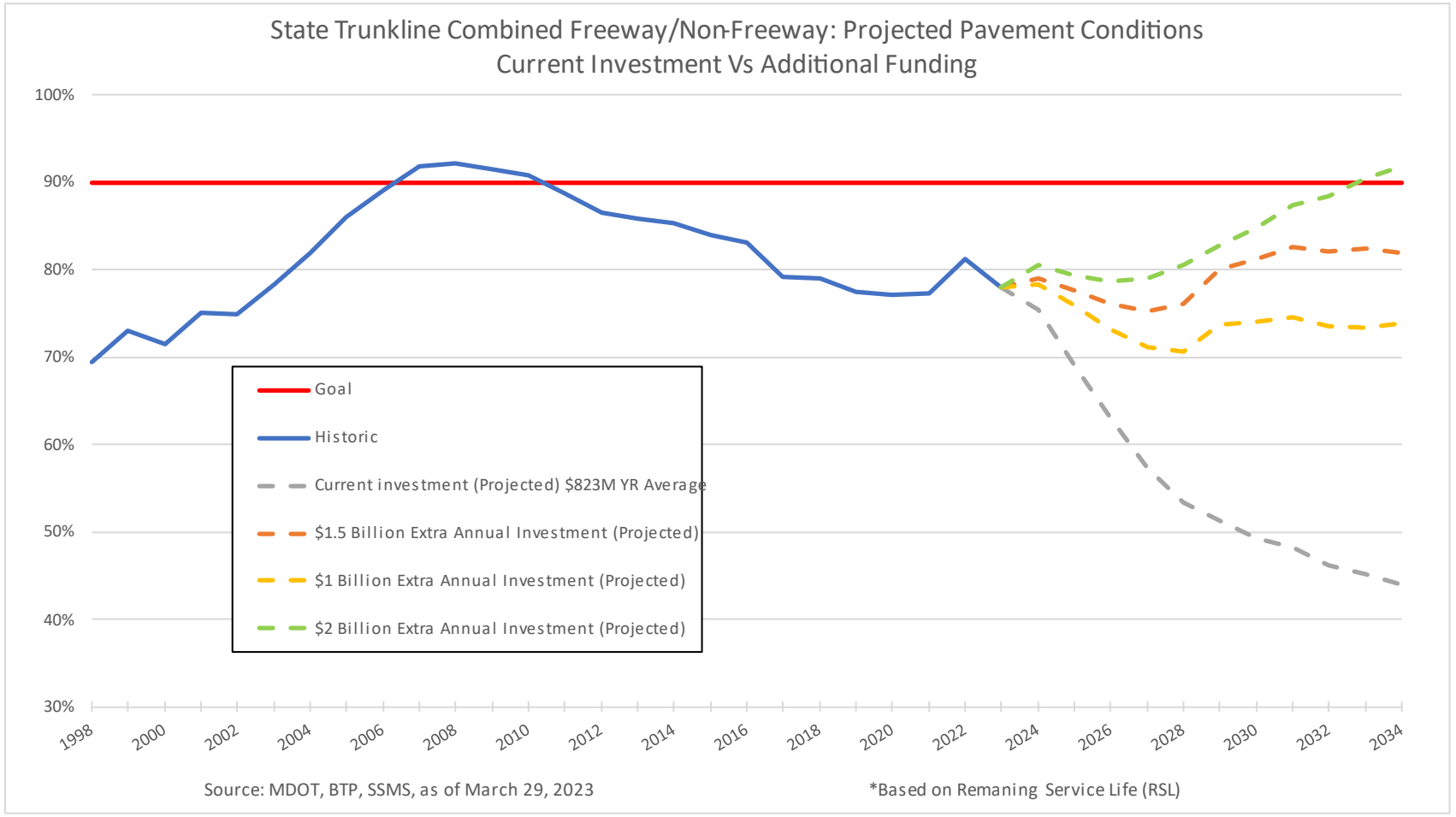
Funding Gap Estimate

Funding Source	PSC Estimate
Average annual cost of the State of Michigan road network, federal- and non-federal-aid roads	$9,038,555,829
MDOT state and federal annual estimate through 2045	$4,342,160,000
IIJA increase and RBMP through FY 2026	$764,640,000
Average annual deficit through FY 2026	**$3,931,755,829**

Note: These numbers are not adjusted for inflation.

This equates to an annual cost of $535 for all adults in Michigan.

MDOT Historic and Projected Trunkline Pavement in Good or Fair Condition, 1998–2034



So, how could we fill the gap?

PSC analyzed five different funding options:

- Increase the gas tax by 74 cents
- Change how taxes are assessed on gasoline to per dollar instead of per gallon
- Increase the sales tax by 3 percentage points and dedicate it to roads
- Allow locals communities to pursue local sales tax dedicated to local roads
- Assess a $0.05 fee per mile traveled for vehicles (commonly known as a VMT)
- *Convert or build out some of Michigan's highways for toll collection

*PSC did not analyze this approach, but other studies have been issued that assess tolling as an option for raising revenue.

Motor Fuel Tax Increase

- The current gas tax would need to be increased by $0.74 per gallon to meet the funding gap
- The new gas tax would be $1.01

	State	State Motor Fuel Tax	Other Taxes and Fees	Total State Taxes
1	California*	$0.54	$0.1120	$0.6510
2	Illinois*	$0.39	$0.2410	$0.6330
3	Indiana	$0.33	$0.3010	$0.6310
4	Pennsylvania	$0.58	$0.0110	$0.5870
5	Puerto Rico	$0.16	$0.3690	$0.5290
6	Washington*	$0.49	$0.0298	$0.5238
7	Michigan	$0.27	$0.2450	$0.5170
8	Maryland	$0.29	$0.1399	$0.4289
9	New Jersey	$0.11	$0.3195	$0.4245
10	North Carolina	$0.39	$0.0025	$0.3875

Gas Tax Increase + Change Assessment Model

- Gasoline is currently taxed by the gallon
- Some states have shifted from a per gallon tax to a per dollar tax
- This allows for more revenue to be collected when gas prices are higher but brings in less when gas prices are lowered.

Sales Tax Increase

- This option would raise the sales tax and dedicate the sales tax increase to transportation funding
- The sales tax would need to increase by 3 percentage points to cover the funding gap
- The new sales tax would be 9% (or $0.09 per dollar)

Allow for local municipalities to charge taxes

Top 15 States Plus Michigan Combined Sales Tax Rates, 2021

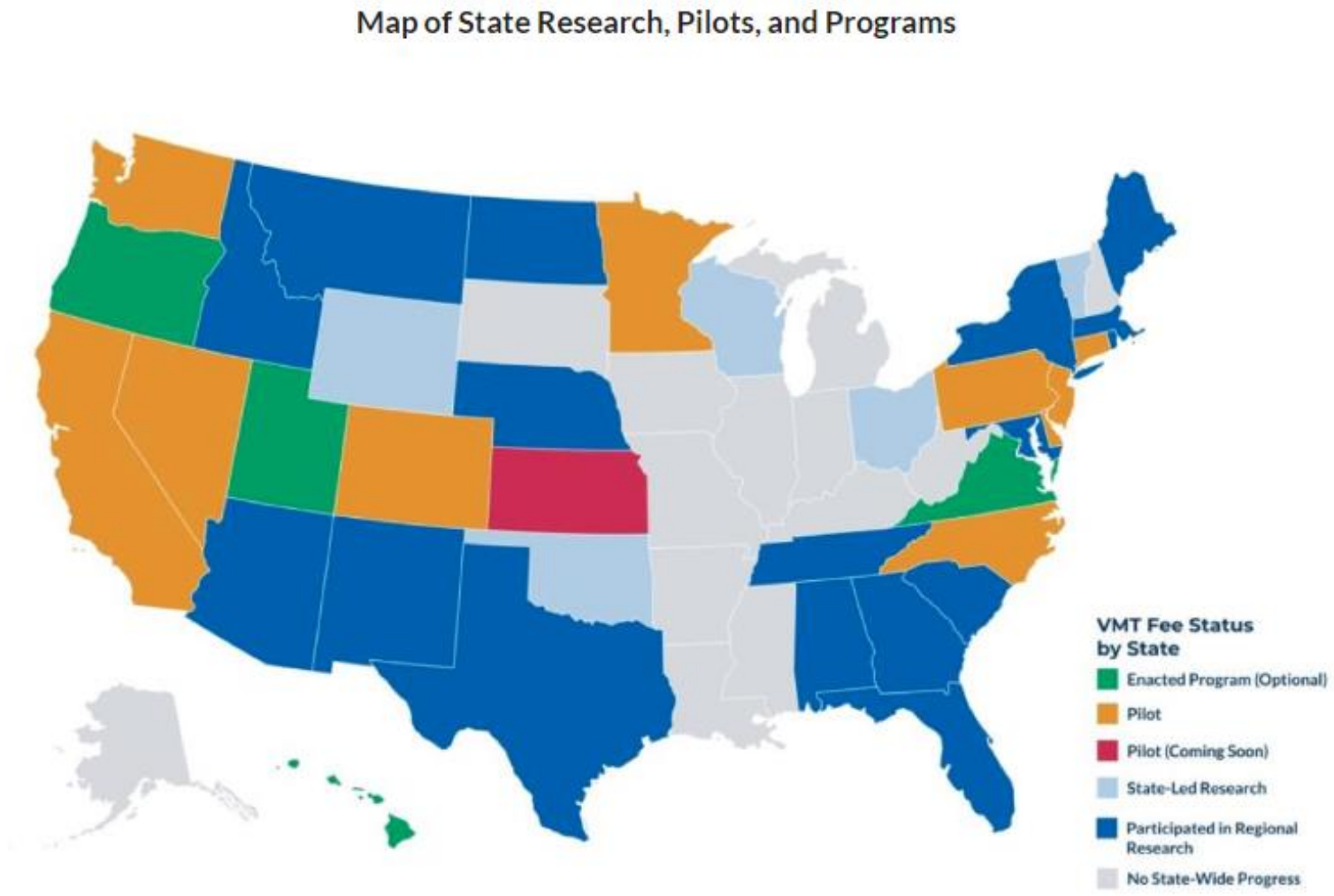
State	State Sales Tax Rate	Rank	Avg. Local Sales Tax Rate	Combined Sales Tax Rate	Rank	Max Local Sales Tax Rate
Tennessee	7.00%	2	2.55%	9.55%	1	2.75%
Louisiana	4.45%	38	5.07%	9.52%	2	7.00%
Arkansas	6.50%	9	3.01%	9.51%	3	5.13%
Washington	6.50%	9	2.73%	9.23%	4	4.00%
Alabama	4.00%	40	5.22%	9.22%	5	7.50%
Oklahoma	4.50%	36	4.45%	8.95%	6	7.00%
Illinois	6.25%	13	2.57%	8.82%	7	9.75%
Kansas	6.50%	9	2.19%	8.69%	8	4.00%
California	7.25%	1	1.43%	8.68%	9	2.50%
New York	4.00%	40	4.52%	8.52%	10	4.88%
Arizona	5.60%	28	2.80%	8.40%	11	5.60%
Missouri	4.23%	39	4.03%	8.25%	12	5.76%
Nevada	6.85%	7	1.38%	8.23%	13	1.53%
Texas	6.25%	13	1.94%	8.19%	14	2.00%
Michigan	6.00%	17	0.00%	6.00%	38	0.00%

[1] City, county, and municipal rates may vary; these rates are weighted by population to compute an average local tax rate for the state.
[2] Three states levy mandatory, statewide, local add-on sales taxes at the state level: California (1%), Utah (1.25%), and Virginia (1%). These rates are included in the state sales tax.

Vehicle Miles Traveled

- Vehicle Miles Traveled (VMT) charges a fee based on the miles traveled on Michigan roads
- PSC calculated what it would take to replace the motor fuel tax ($0.27) and its estimated annual revenue ($1.3 billion) and fill the funding gap not covered by other estimated state and federal revenue sources ($3.9 billion)
- Michigan would need to charge drivers $0.05 per mile travelled
- This is not a new model or concept- already implemented in trucking

VMT Implementation



Tolling

Figure 9-5: Annual Cash Flows[1]

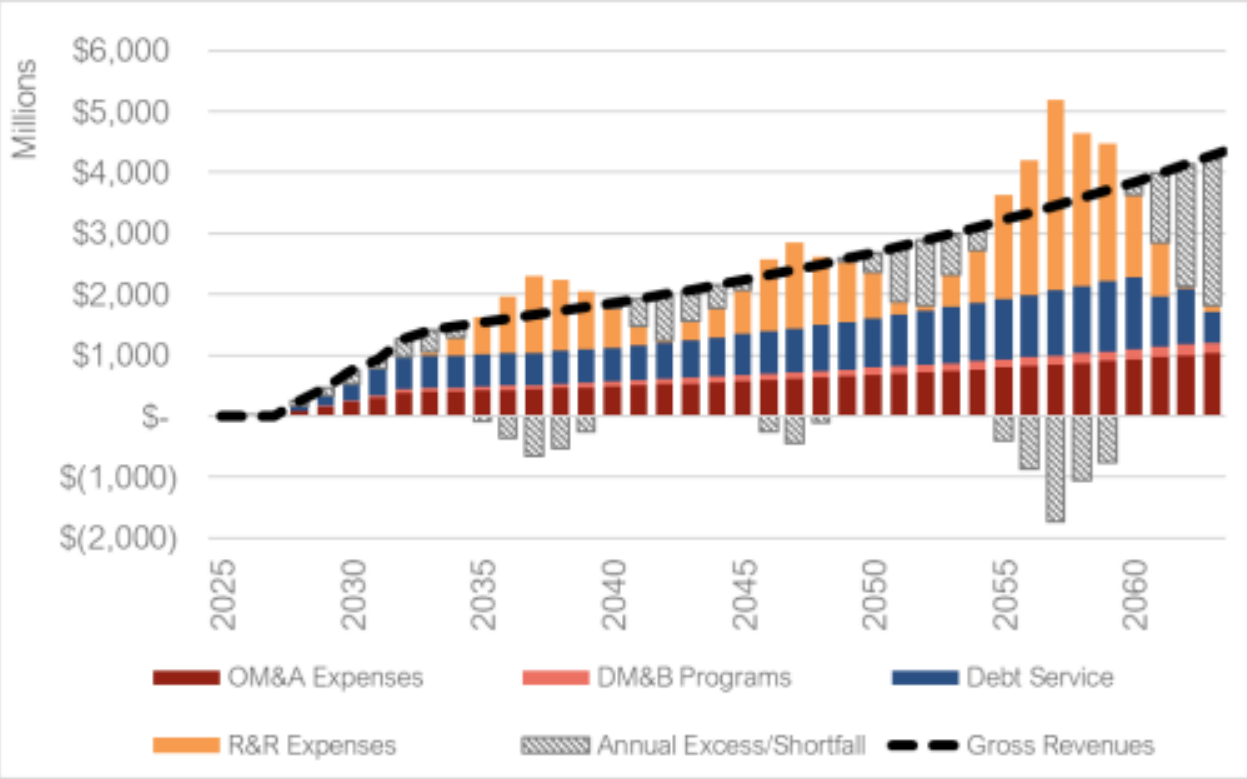
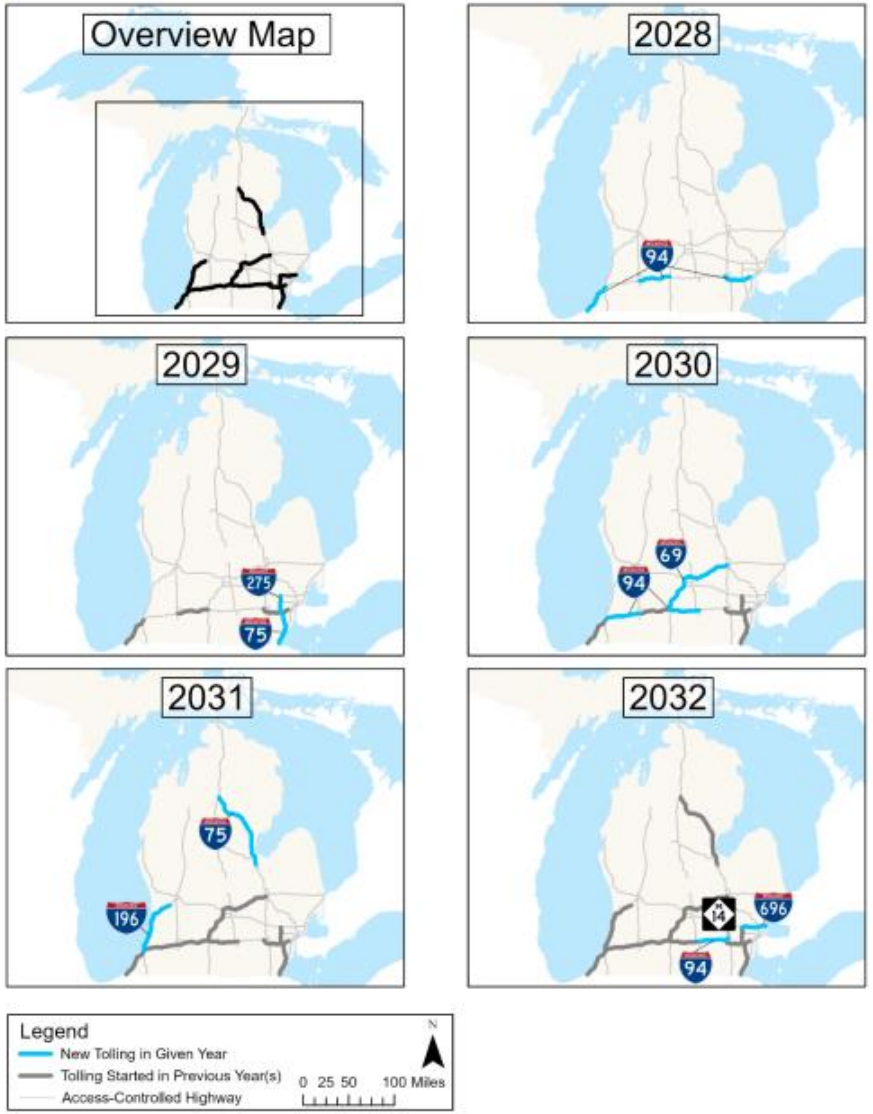


Figure 9-1: Sequencing Plan



Final Thoughts

- There is no easy, or cheap solution
- The cost of inaction is incredibly expensive as our roads continue to deteriorate faster than we can fix them
- Using proper asset management and the right fix at the right time approach may cost more in the short-term, but produces long-term savings
- Competing priorities for tax revenue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