

Michigan Tolling Study

House Appropriations Subcommittee on Transportation

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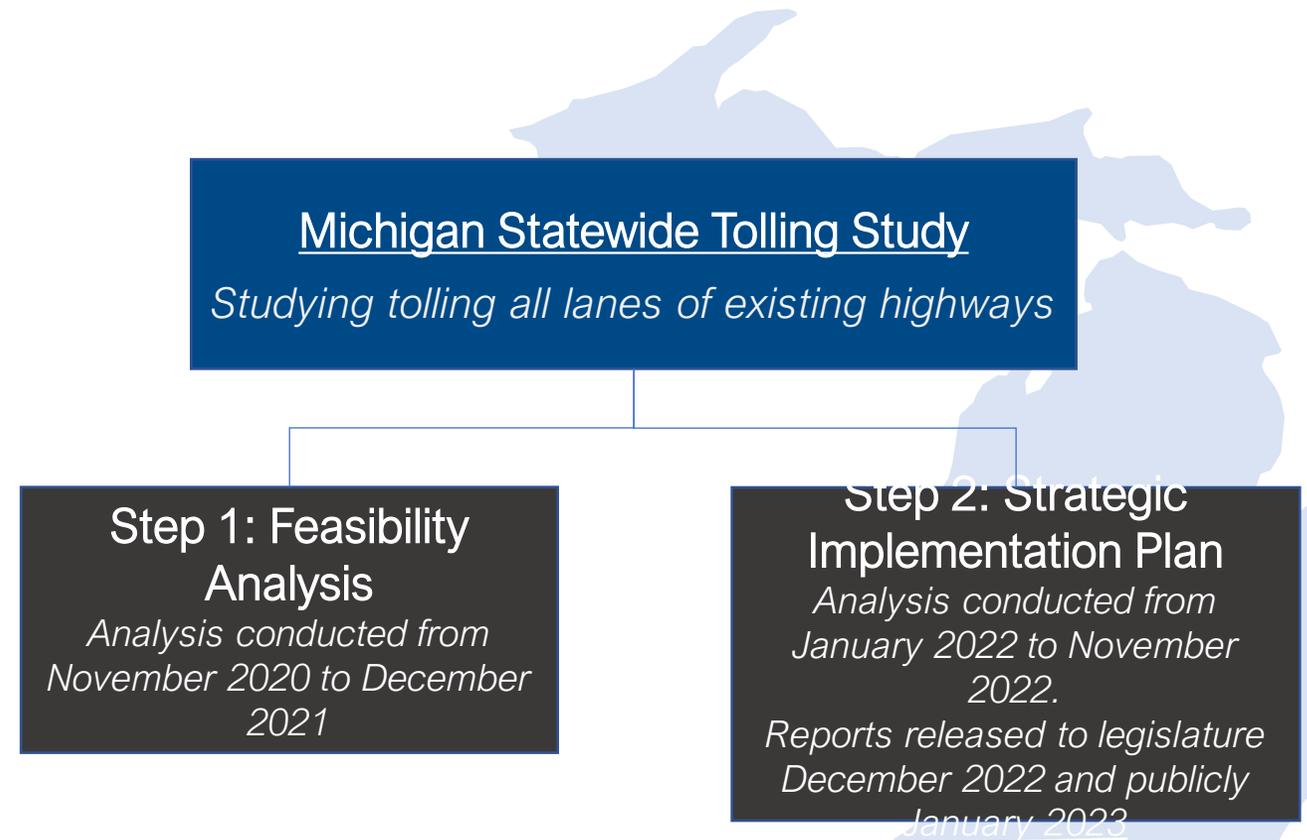
March 6, 2024



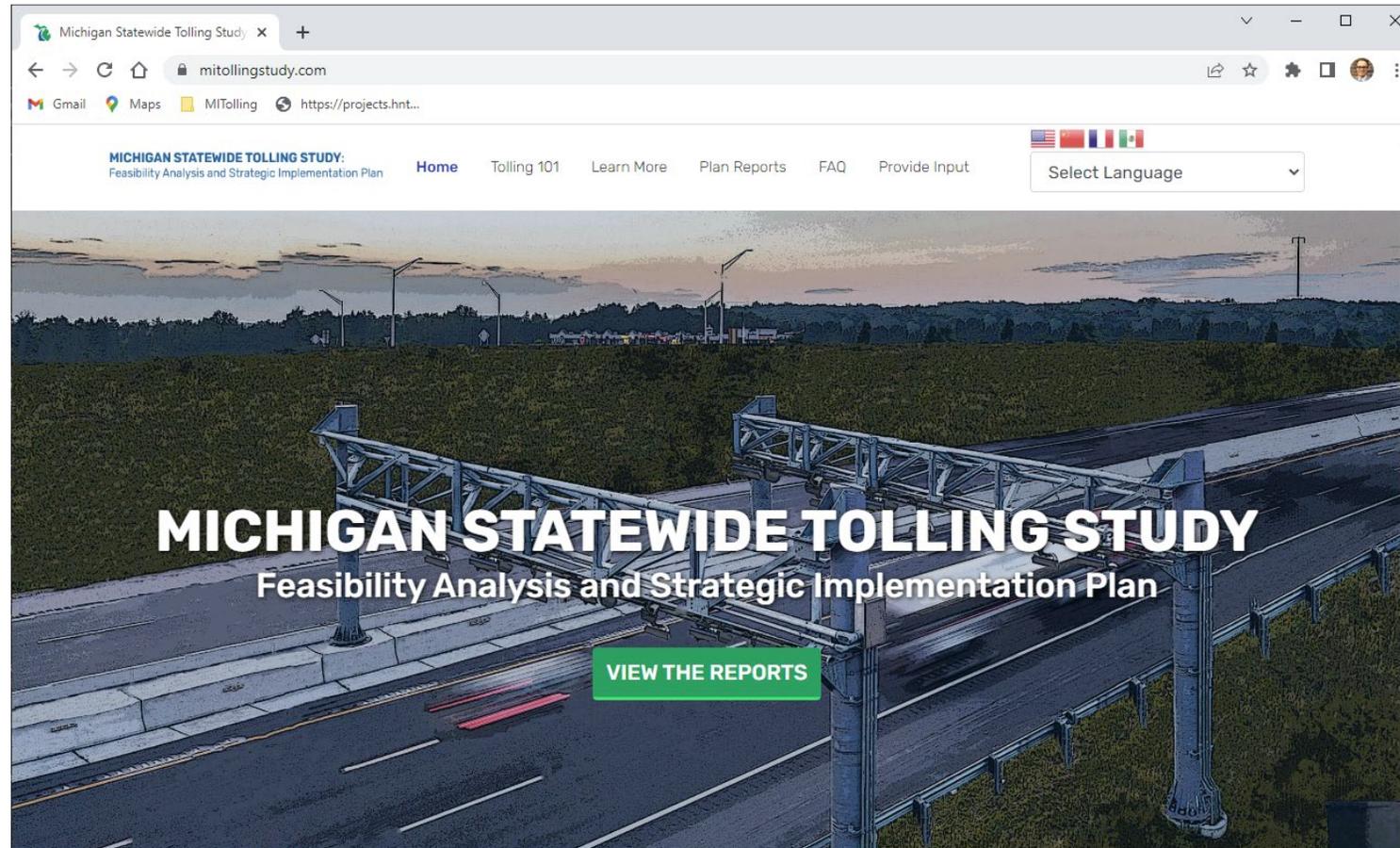
Overview

P.A. 140 of 2020 (July 8, 2020) and P.A. 73 of 2022 (May 10, 2022) required:

- MDOT to engage an outside consulting firm to conduct a feasibility study and strategic implementation plan
- Study must consider:
 - Economic impact and feasibility of tolling
 - Consideration of a discount program
 - Impact on out-of-state operators
 - Applicability for Federal tolling programs
 - Optimal toll rates
 - Identification of required tolling rules
 - Long-term financing opportunities
 - Identification of candidate corridors
 - Identify ways to maximize use of Michigan workers and products
- Feasibility study and implementation plan to be delivered by January 31, 2023. (*Only change in P.A. 73 of 2022 was deadline*)



Website: MiTollingStudy.com



Michigan Transportation Funding Options

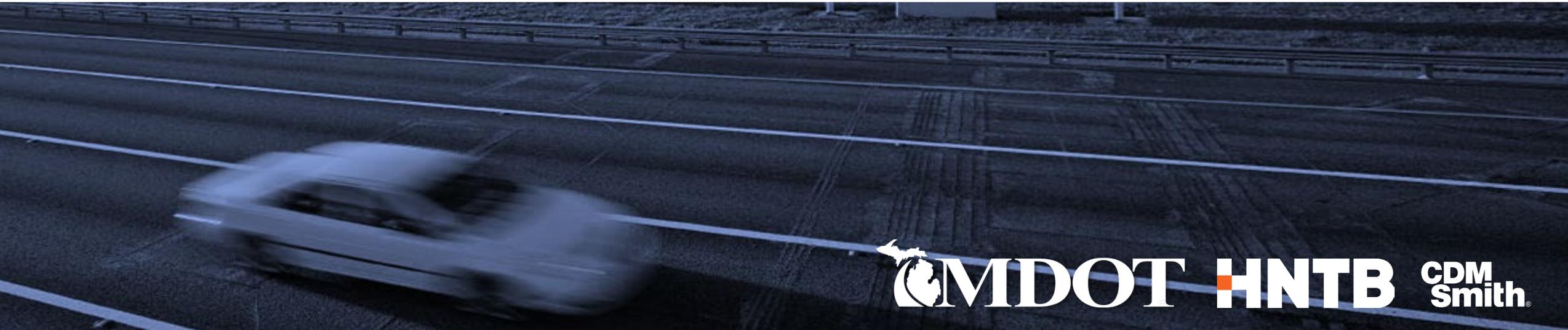
Option	Examples
Fuel Tax Increase	Increase fuel taxes on gasoline and diesel
Vehicle Registration Fee Increase and Reform	Increase fees; High mileage surcharges; Remove ambiguities between categories
Increased General Fund Transfers	Increase income tax and dedicate increase to transportation
General Sales Tax	Increase sales tax and dedicate increase to transportation; Redirect sales tax on motor fuels to transportation
Tolling	Add tolls to existing roads and/or bridges
Delivery Fees	Delivery fee, including for online purchases
Mileage Based User Fees (also called Vehicle Miles Traveled Fees and Road User Charges)	New fee per mile traveled for Michigan drivers using technology or odometer reading
Monetization of Assets	Leasing of state land; rest area commercialization

- Consider:
 - All options have tradeoffs and challenges to implementation
 - Relative burden on different vehicle classes
 - User fees versus non-user fees
 - Act 51 impacts

See also Table 1-1 on page 5 of Tolling Study Strategic Implementation Plan Report



Key Toll Study Findings



Key Statewide Toll Study Findings

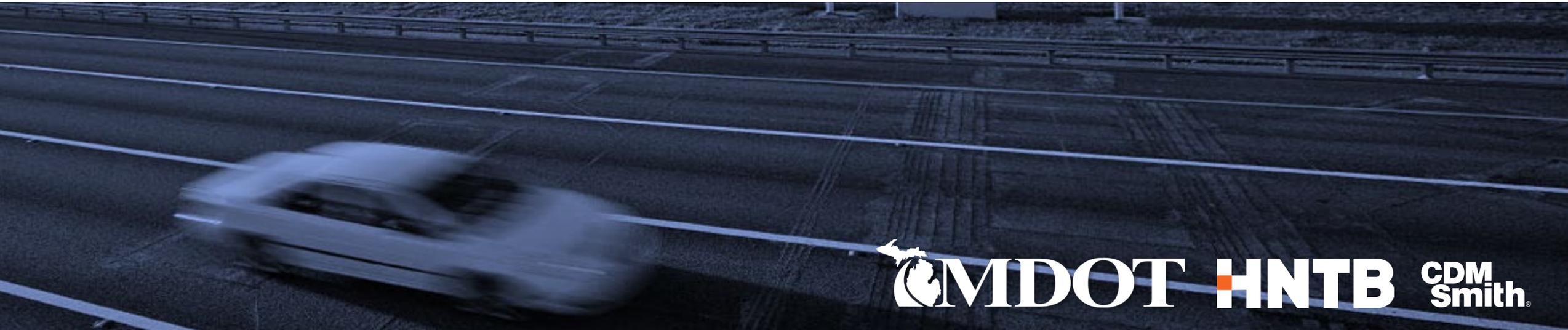
- A toll of 6-to-6.5 cents per mile¹ will cover all life cycle costs for 545 miles of highway at or above standard performance measures.
 - Supports \$8.5 billion capital investment for these tolled roads (2032)
- Tolling could:
 - Diversify revenue sources for transportation
 - Free up existing sources of federal and state transportation revenue for other road and bridge projects
- Require a careful approach to implementation

¹Rates in 2020\$ and assumed to be indexed for inflation.
Large trucks at 4x higher rate





Background



Federal Tolling Programs

PROGRAMS	DESCRIPTION/REQUIREMENTS	USE OF REVENUE?
<p>Section 129 Bridge and Tunnel MAINSTREAM PROGRAM</p>	<ul style="list-style-type: none"> Comply with the FHWA reconstruction guidance Bridge defined as a span > 20 feet Multiple bridges/tunnels for a “corridor” 	<p>Corridor, then any federal eligible project</p>
<p>ISRRPP (Reconstruction) PILOT PROGRAM</p>	<ul style="list-style-type: none"> Enables tolling of all reconstructed lanes 3 provisional slots; 3 available 	<p>Corridor only</p>
<p>VPPP (Value Pricing) PILOT PROGRAM</p>	<ul style="list-style-type: none"> Congestion and time-of-day toll rates MPO consultation Performance reporting 15 slots; slots are open 	<p>Corridor, then any federal eligible project</p>
<p>Congestion Relief Program PILOT PROGRAM</p>	<ul style="list-style-type: none"> Federal congestion relief grant program with total \$150M available in current round. Each grant at least \$10M. Urban areas with at least 1M population eligible NOFO posted 2/21/24. Applications due 4/22/2024 Strategy can include tolling. Must have applicable state/local tolling authority If tolling, toll rates may vary no more than 5x by vehicle class. Different toll rates by State residency are not allowed 	<p>Corridor, then any federal eligible project</p>

All Electronic Tolling at Highway Speeds



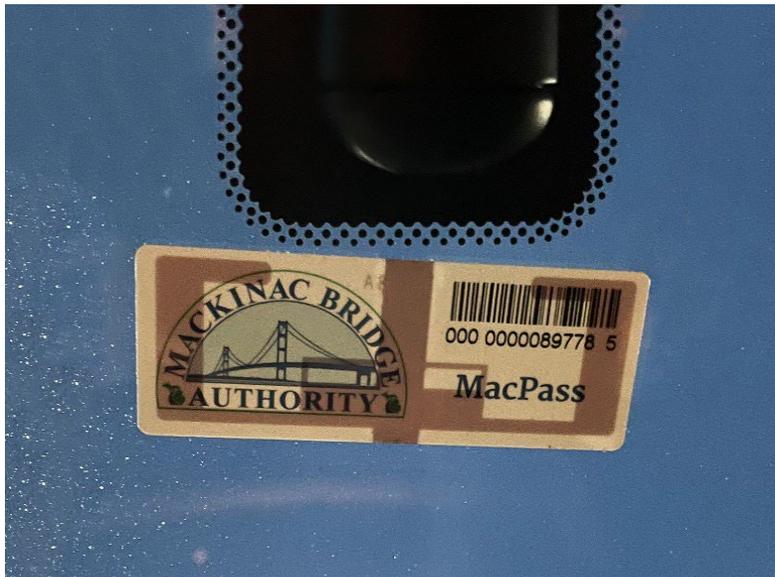
All-electronic toll gantry on the East End Crossing toll bridge over the Ohio River between Indiana and Kentucky



Conceptual all-electronic toll gantry in Michigan

All Electronic Tolling at Highway Speeds

- Payment using transponder account or video tolling invoice



Example of a transponder program: The MacPass sticker tag transponder already in use in Michigan

NTTA
NORTH TEXAS TOLLWAY AUTHORITY

ZipCash

ZipCash Invoice

	Amount Due \$7.60
	Payment Due Date 06/05/2014
	ZipCash Account ID 123456789
	Billing Period 04/06/2014 to 05/05/2014
	License Plate [REDACTED] (TX)

ZipCash Account Summary

Previous Balance	\$19.97
- Payments	- \$19.97
+ Adjustments	+ \$0.00
Unpaid Balance	\$0.00
+ New Tolls	+ \$7.60
+ New Fees	+ \$0.00
AMOUNT DUE	\$7.60

You would have saved \$2.58 with a TollTag

Already have a TollTag? Your account needs attention. If your account needs updates and/or has a negative balance, tolls are due at the ZipCash rate. (See reverse or visit www.NTTA.org for details.)

Pay Online www.NTTA.org
Customer Care: 972-818-6882 (NTTA) or 817-731-6882
Se Habla Español!

Pay by Mail
No staples/paperclips
972-818-6882
817-731-6882

Pay by Phone

ZipCash
Pay by Mail

JOHN DOE
1236 MAIN
CARROLLTON TX 75000

Please return payment to: North Texas Tollway Authority
P.O. Box 660244
Dallas, TX 75266-0244

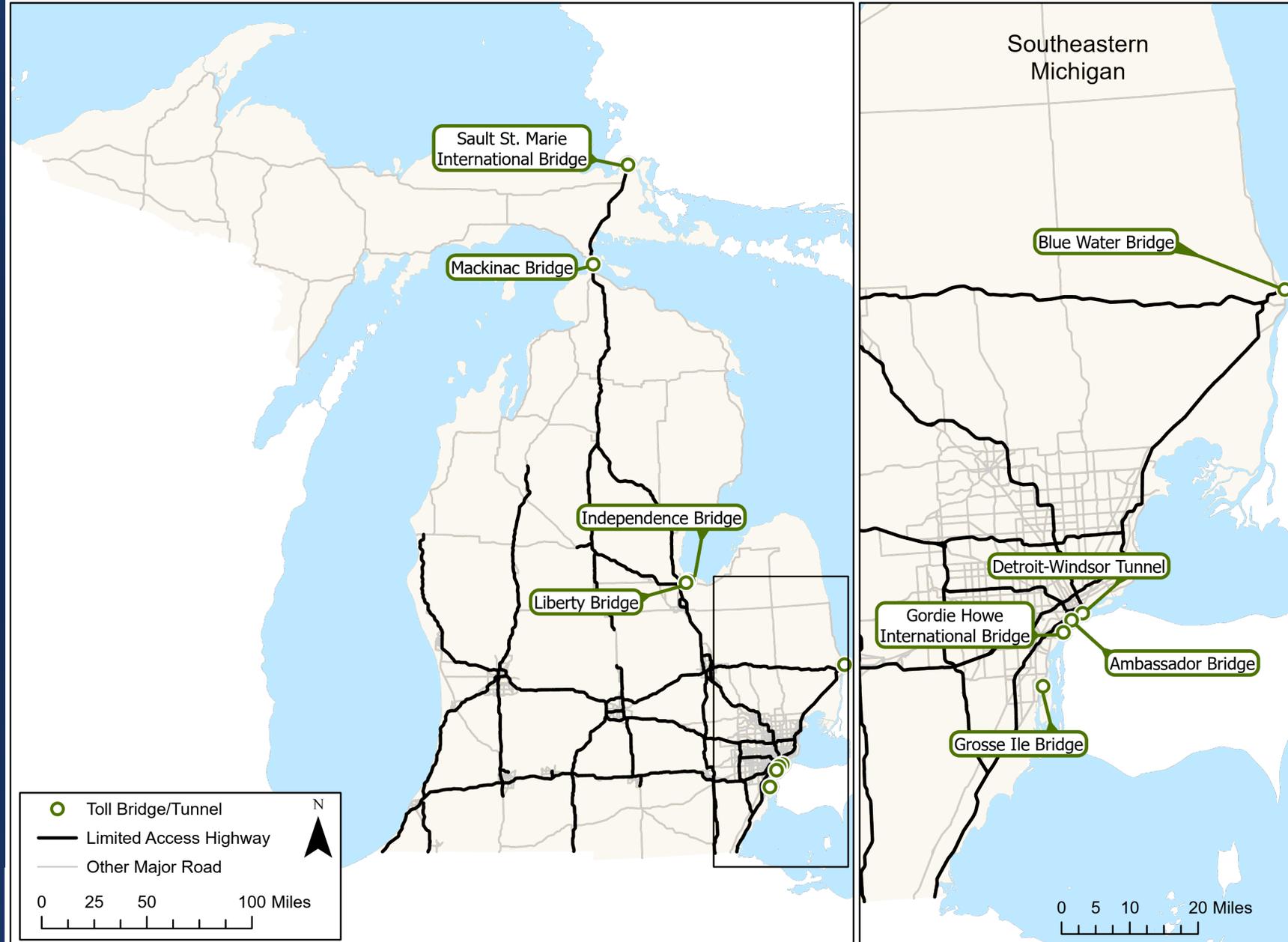
Address Change (see reverse)

200012345678900123456771201406050000000760201406050000000760044

Example video tolling invoice from the North Texas Tollway Authority

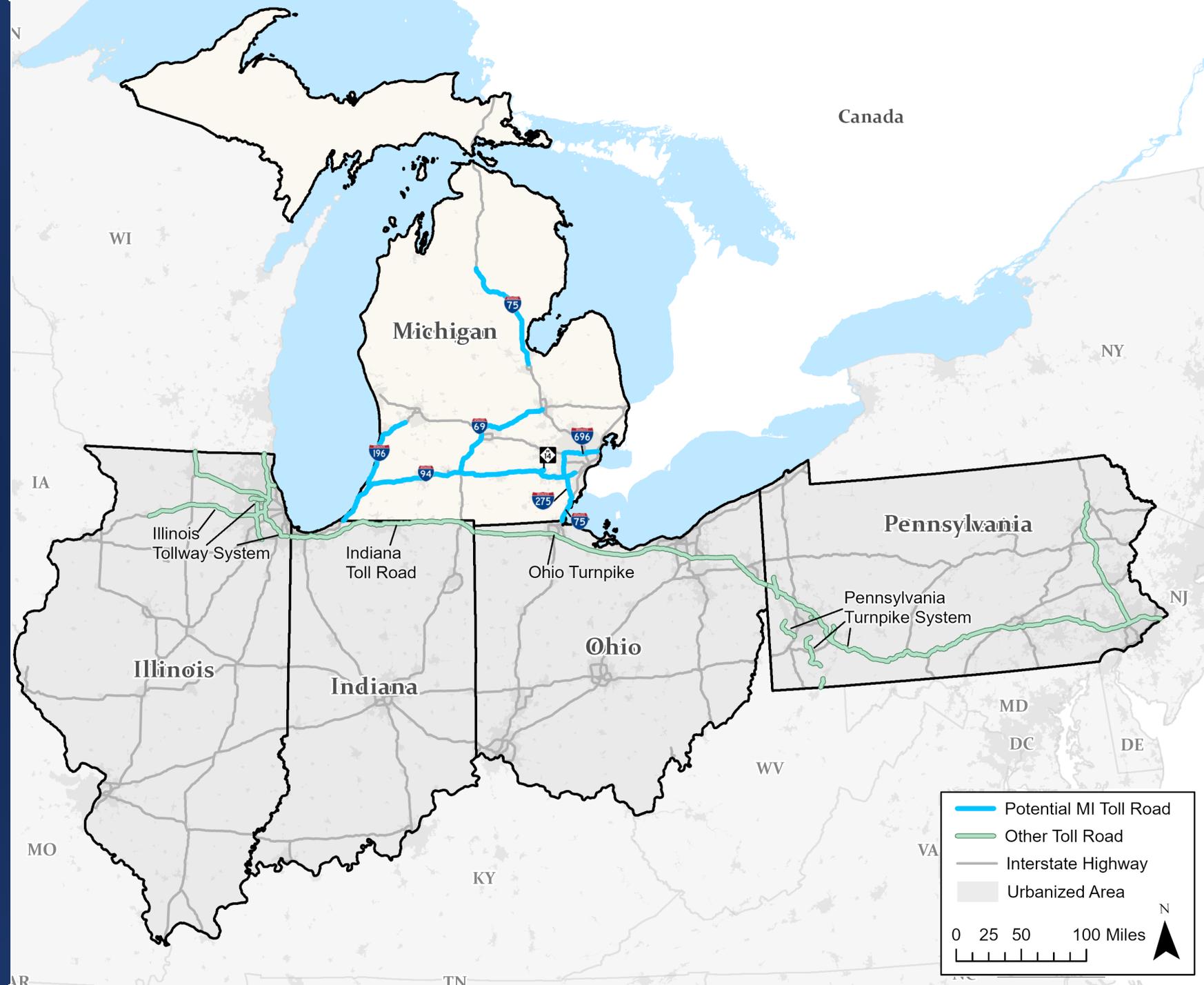
Existing and Approved Tolling in Michigan

Only Toll Bridges and a Tunnel (no roads)

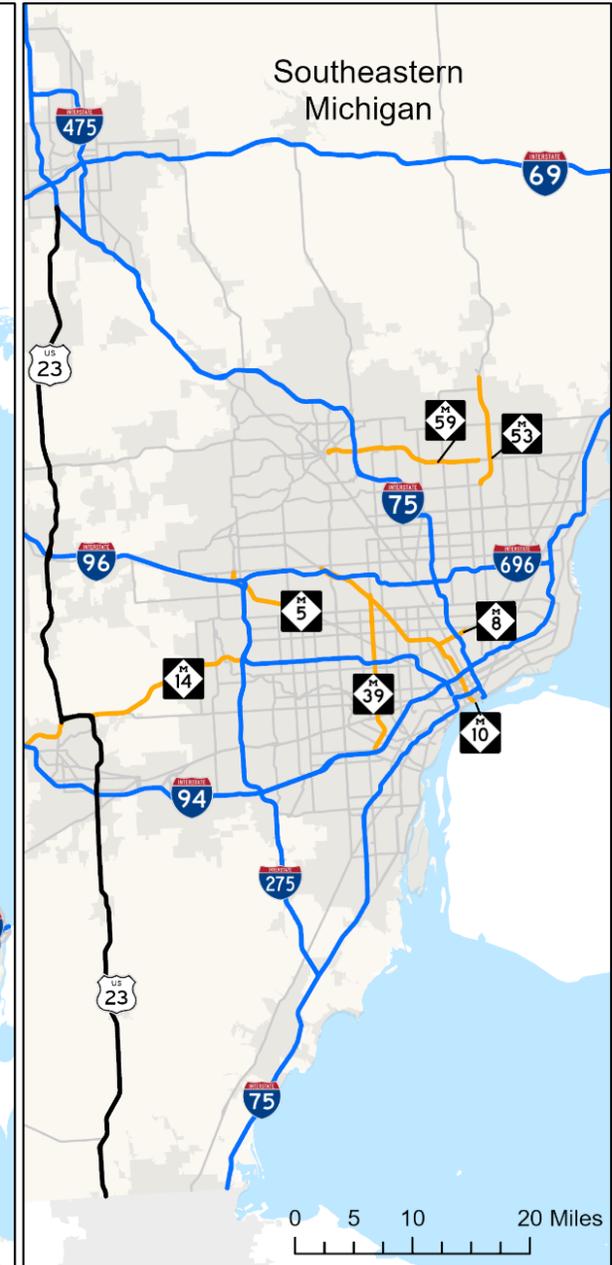
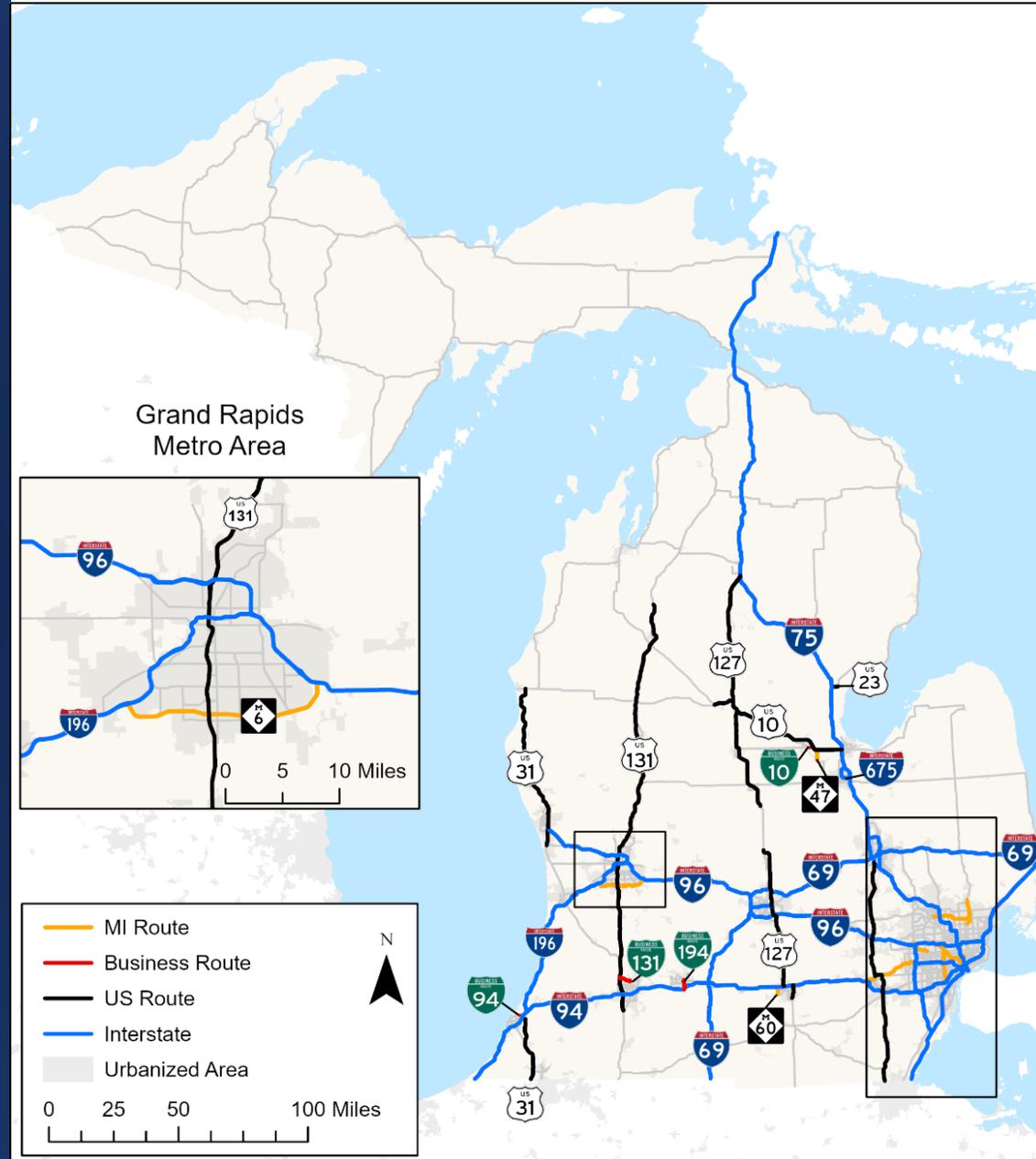


Innovative “Brownfield” Tolling Approach

Tolling Existing
Roads is Not
Common in the
Industry



All Limited Access Highways



Screening Criteria

Phase 1 Screening (Pass/Fail)

Existing limited access highway

Still limited access in the future?

Minimum length

Minimum total Average Annual Daily Traffic (AADT)

Minimum commercial AADT

Network connectivity

Economic connectivity

Roadway Condition

Gross Toll Traffic and Revenue

Phase 2 Screening (Quantitative and Qualitative)

Financial performance

Gross and net revenue

Roadway condition

Bridge condition

Operational issues

Safety issues

Disadvantaged communities

System continuity

Interchange density

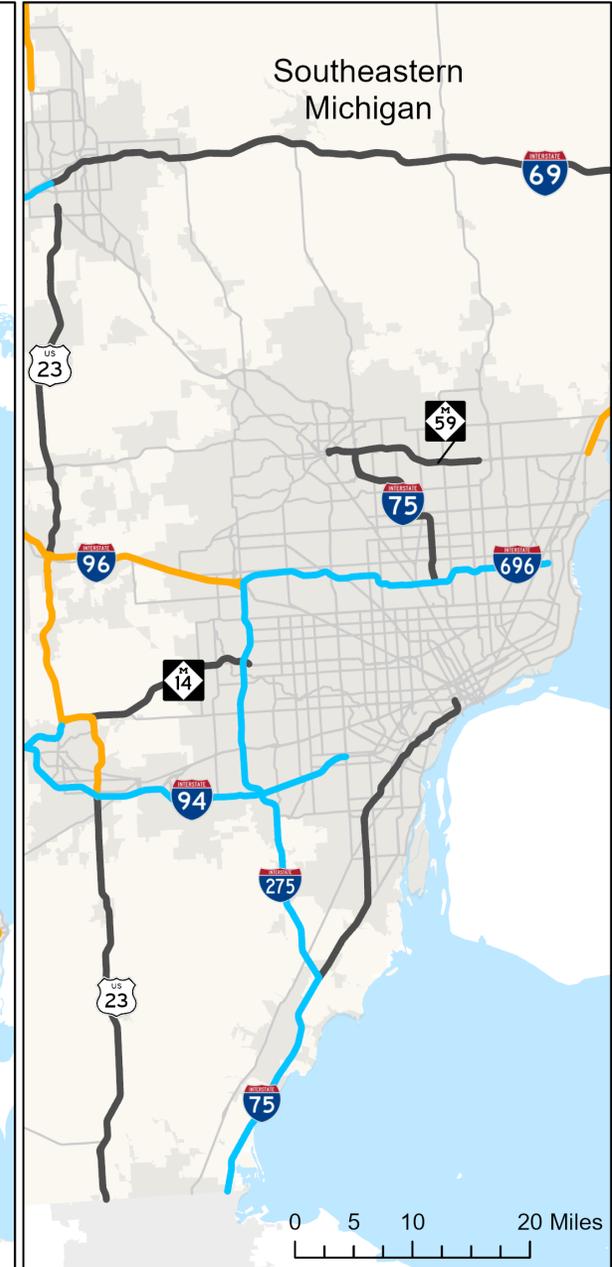
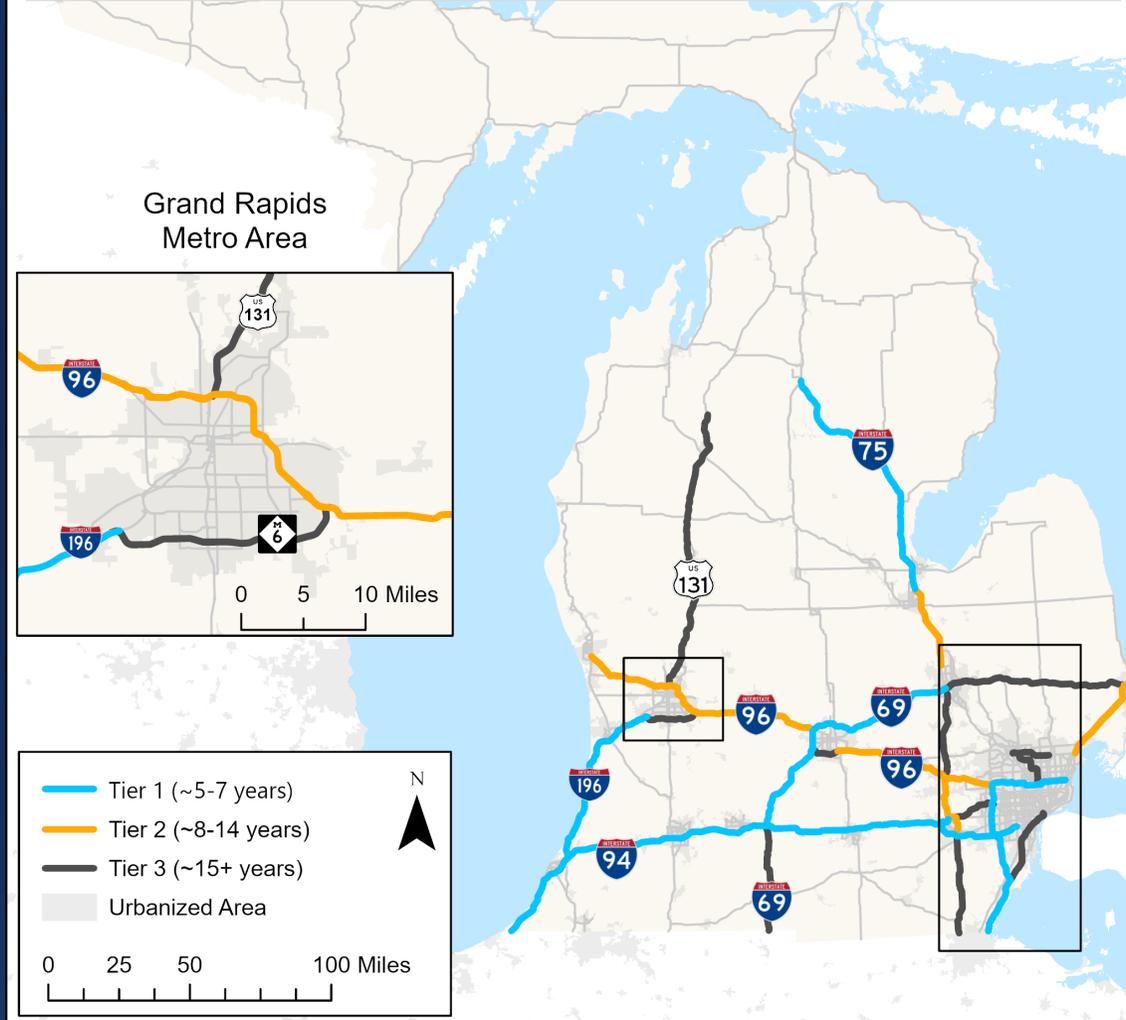
Geographic equity

Outreach group feedback

Tolling Eligibility

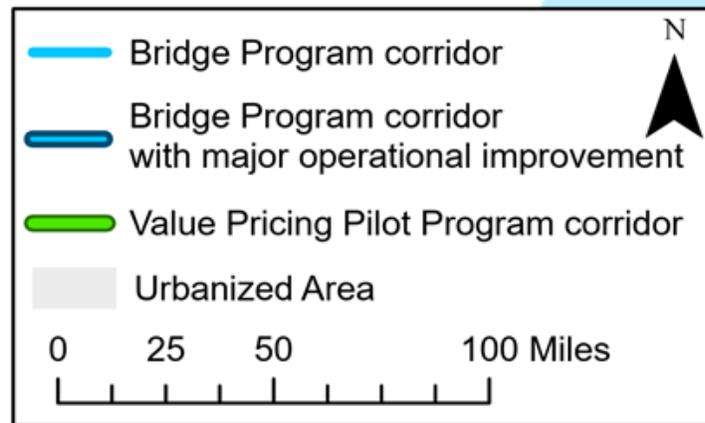
Toll System Resulting from Feasibility Analysis

- Where possible, avoid toll corridors adjacent to environmental justice communities
- Tiering was based on readiness for tolling deployment and considerations of financial performance, road condition, bridge condition, and geographic equity



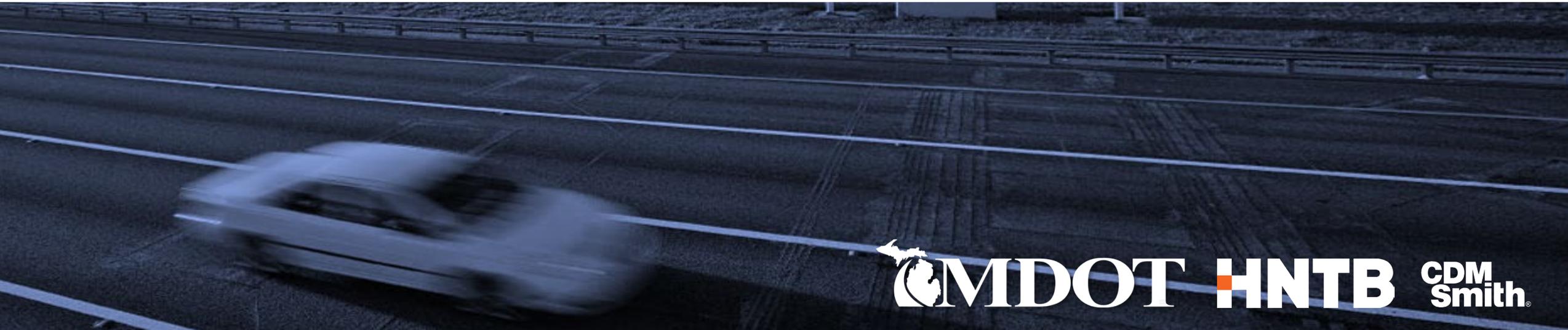
Tier 1 Corridors

- The gross revenue potential of the entire Tier 1 system represented on this slide is \$1.3 billion (in year of collection dollars).





Financials



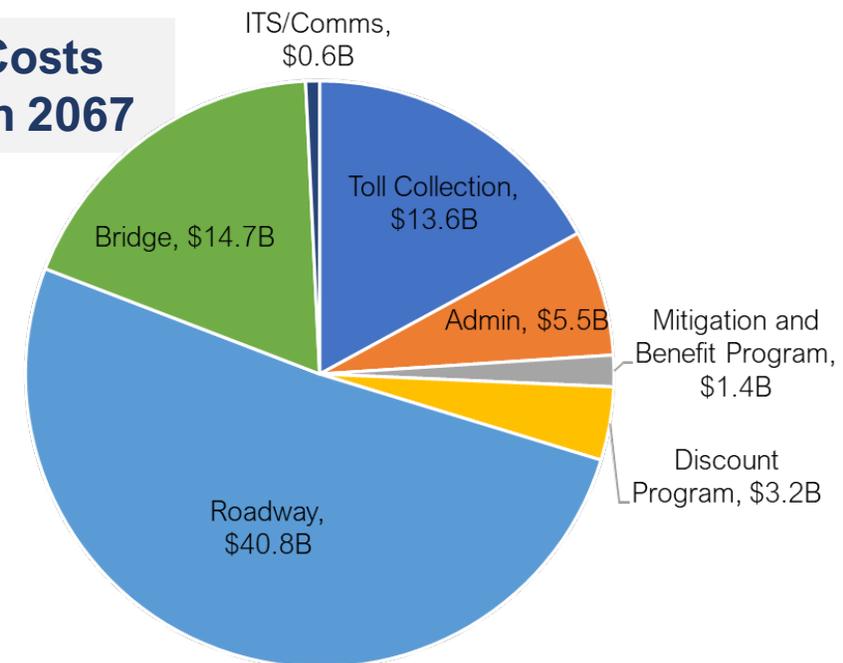
Costs – 545 Mile System

- **Initial capital program: \$8.5B**
 - ✓ Improving all roads and bridges from current condition to meet or exceed performance standards
 - ✓ Operational improvements
 - ✓ Installing toll system
- **All costs covered through 2067: \$80B**
 - ✓ All road, bridge, tolling, and communications, including capital investment, operations, and maintenance
 - ✓ Management and project development for the highway system
 - ✓ Enhanced roadway operations and maintenance
 - ✓ Discount, benefit, and mitigation program



*By using toll bond financing, all initial road and bridge improvements on a segment would be completed **before** tolling starts on that segment.*

Total Costs Through 2067

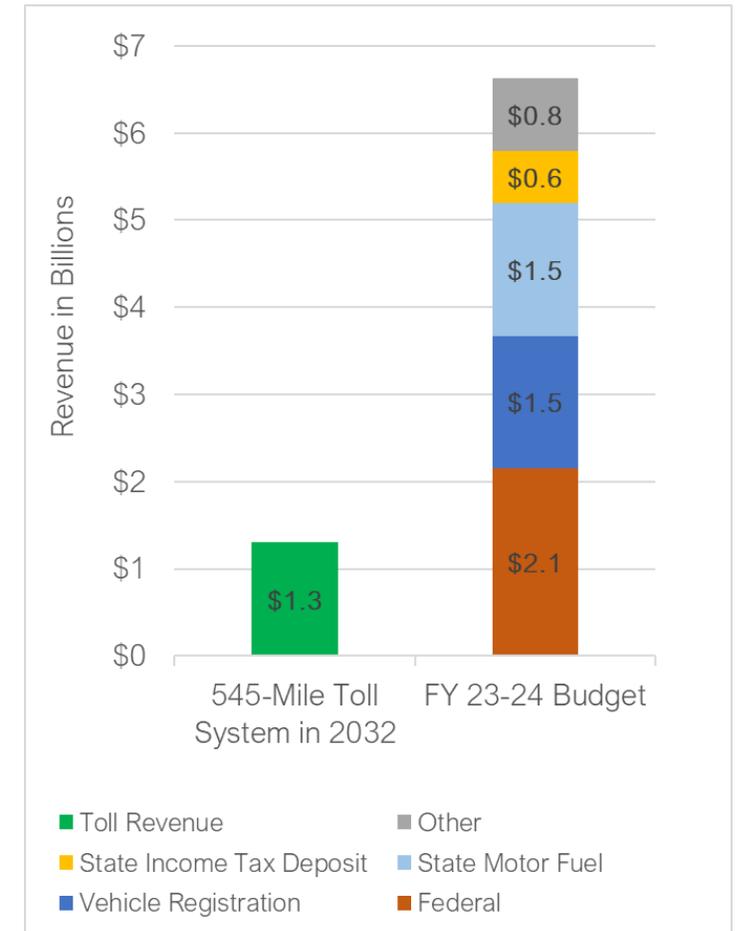


Revenue – 545 Mile System

- Phased implementation over a 4-year period
- Toll rate assumptions:
 - 6 to 6.5 cents per mile (2020\$) for passenger cars paying with transponder
 - 4x higher for large commercial trucks
 - Indexed to inflation
- **\$1.3B revenue estimated for full system (2032):**
 - ✓ Covers all costs (see “Costs” slide)
 - ✓ Covers debt service on toll bonds
 - ✓ Allows use of existing funding for other uses
 - ✓ About 20% of current transportation funding¹ (see chart)
- **Average cost of collection: 13% of gross toll revenue**

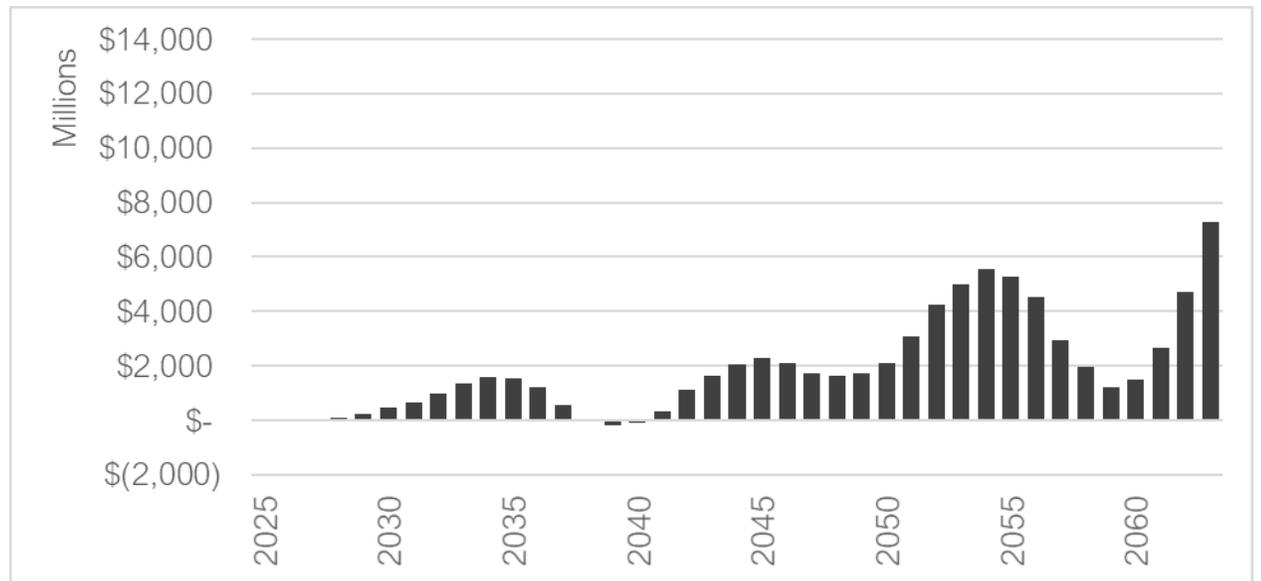
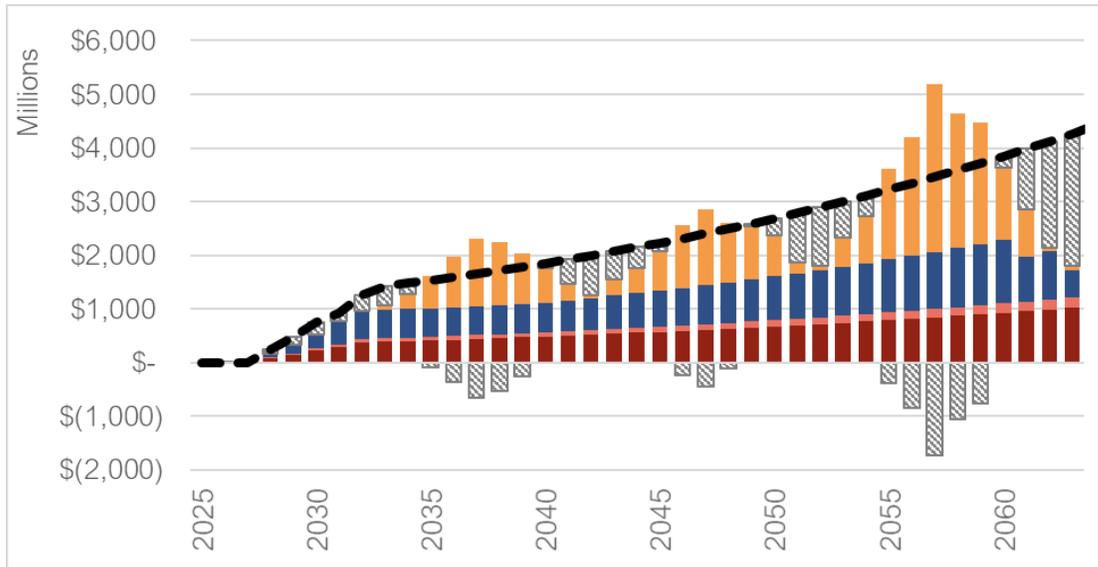
¹State level funding in budget is before Act 51 distributions. Source: https://www.house.mi.gov/hfa/PDF/Briefings/MDOT_BudgetBriefing_fy23-24.pdf

Comparison with Current Michigan Transportation Funding¹



Financial Analysis – 545 Mile System

- Financially viable toll system

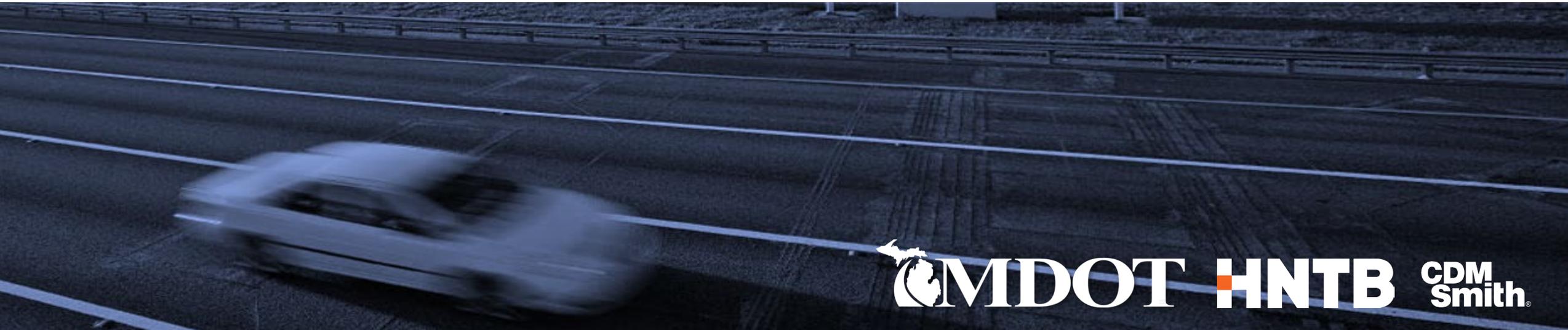


- Gross toll revenue
- Operations, maintenance, and administrative costs for roadway, bridge, and toll systems
- Tolling Discount, Mitigation, and Benefit Programs
- Debt service for bonding to support the 2026 to 2031 implementation period
- Renewal and replacement costs for roadway, bridge, and toll systems
- ▨ Annual revenue excess or shortfall

- Cumulative general reserve fund balance



Other Results



Outreach Group Feedback

1 or 2 Meetings with 20+ Groups Including:

Small Business Association of Michigan

Motor Carrier Advisory Board

Michigan Trucking Assoc.

Michigan Municipal League

Detroit Regional Chamber

Business Leaders for Michigan

Michigan Chamber of Commerce

UAW-CAP

NAACP

Grand Rapids Chamber

Pure Michigan

Funding

- *Vehicle Miles Traveled/Road User Charges/Mileage Based User Fees* – These concepts versus tolling?
- *Toll Revenue* – Fund non-transportation purposes? Displace existing funds?
- *Stakeholders* – Support anything that provides stable transportation/road revenue
- *One-time Funding Influx* – Distracts from sustainable solutions (peak/valley funding approach)
- *Geographic* – Funding impacts to Detroit versus northern Michigan

Discount Program

- *Structure* – What would it look like?
- *Avoid Burdens* – Don't add another layer of complexity to access discount programs

Equity

- *Low-Income Population* – Should programs alleviate tolling burden? How?
- *Geographic Equity* – Down state versus up north

Traffic

- *Diversion* – Local community impact variations (positive/negative)?
- *Economic Sector* – Effect on gas stations, mechanics, etc.

Legislative Feedback

Meetings Included:

House Transportation Chair O'Malley

Sen. Hollier

Rep. Roth

Sen. Lauwers

Rep. Sneller

Rep. Berman

Rep. Puri

Rep. Liberati

Rep. LaFave

Rep VanSingel

Sen. Outman

Sen. Schmidt

Sen. McBroom

Sen. Victory

Sen. Bizon

Rep. Griffin

Sen. Geiss

Sen. Bullock

Sen. Barrett

House Policy Staff

Senate Policy Staff

Senate T&I Hearing

Funding

- *Motor Fuel Tax* – future revenue concerns
- *Electric vehicle* – future transportation budget implications
- *Road User Charges* – likelihood and significance
- *Tax Structure* – double taxation and other considerations

Toll Technology

- *Agency Infrastructure* – new and operable between states
- *Users* – existing devices (GPS/car/phone) and/or new transponders (affordable, portable)

Traffic Effects

- *Diversion* – local business/tourism
- *Equity* – fair and equitable for everyone

Operations

- *Violations* – how to handle
- *Enforcement* – red-light-running concerns and license plate technology

Other

- *Legislators* – E-ZPass/I-PASS holders are familiar with tolling technology
- *Timing* – the timing of the study and election cycles

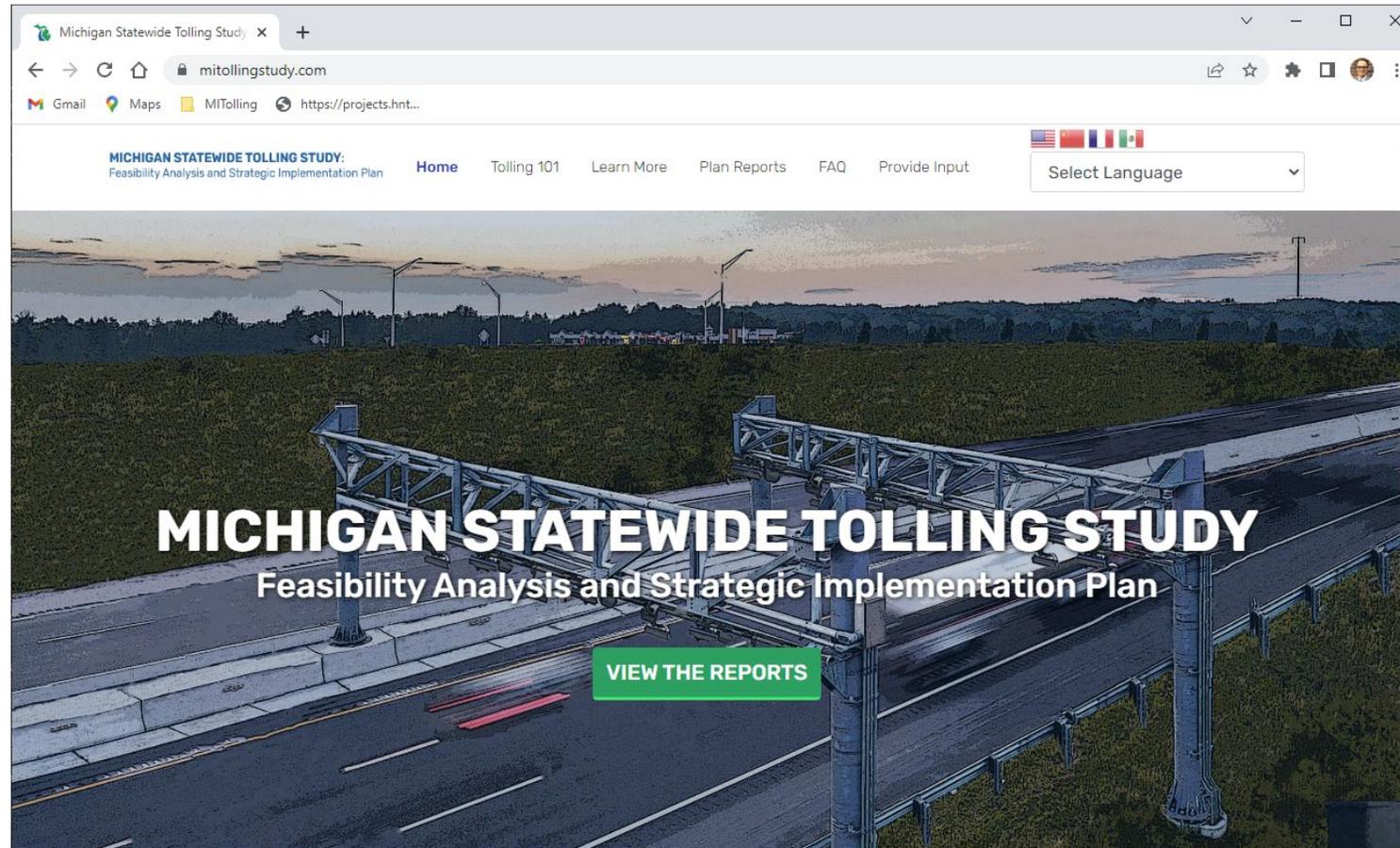
Toll Implementation

As of Jan 2023 Report: Potential Timeline to Beginning of Tolling on Initial Segments

Phase	2023	2024	2025	2026	2027	2028
Toll Program Development and Planning	Main Phase	Main Phase	Main Phase			
Legislation - Toll Authority and Collection	Main Phase	Main Phase				
Legislation - Rate-Setting and Enforcement		Main Phase	★ Legislation Complete			
Discount, Mitigation, and Benefit Advisory Board	Main Phase	Main Phase	Main Phase	Main Phase	Main Phase	Main Phase
Project Environmental Review	Main Phase	Main Phase				
Early Preliminary Design		Main Phase				
Back Office & Customer Service Center Integration and Testing			Procurement	Main Phase	Main Phase	
Roadside Toll System Integration and Testing			Procurement	Procurement	Main Phase	
Investment Grade Traffic and Revenue		Main Phase	Main Phase			
Financing			Main Phase			
Design and Construction			Procurement	Main Phase	Main Phase	
Start of Tolling						★ Start of Tolling

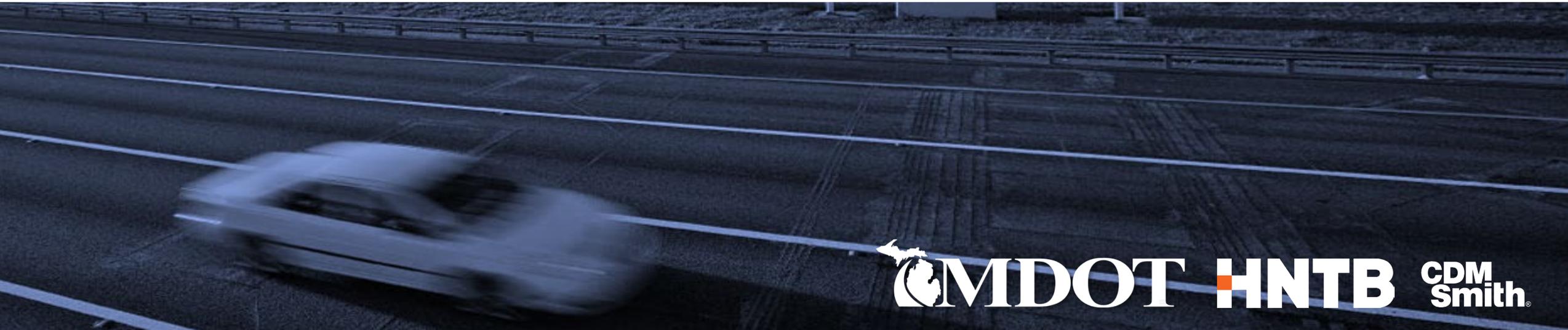
Legend			
 Main Phase	 Procurement	 Legislation Complete	 Start of Tolling

Website: MiTollingStudy.com



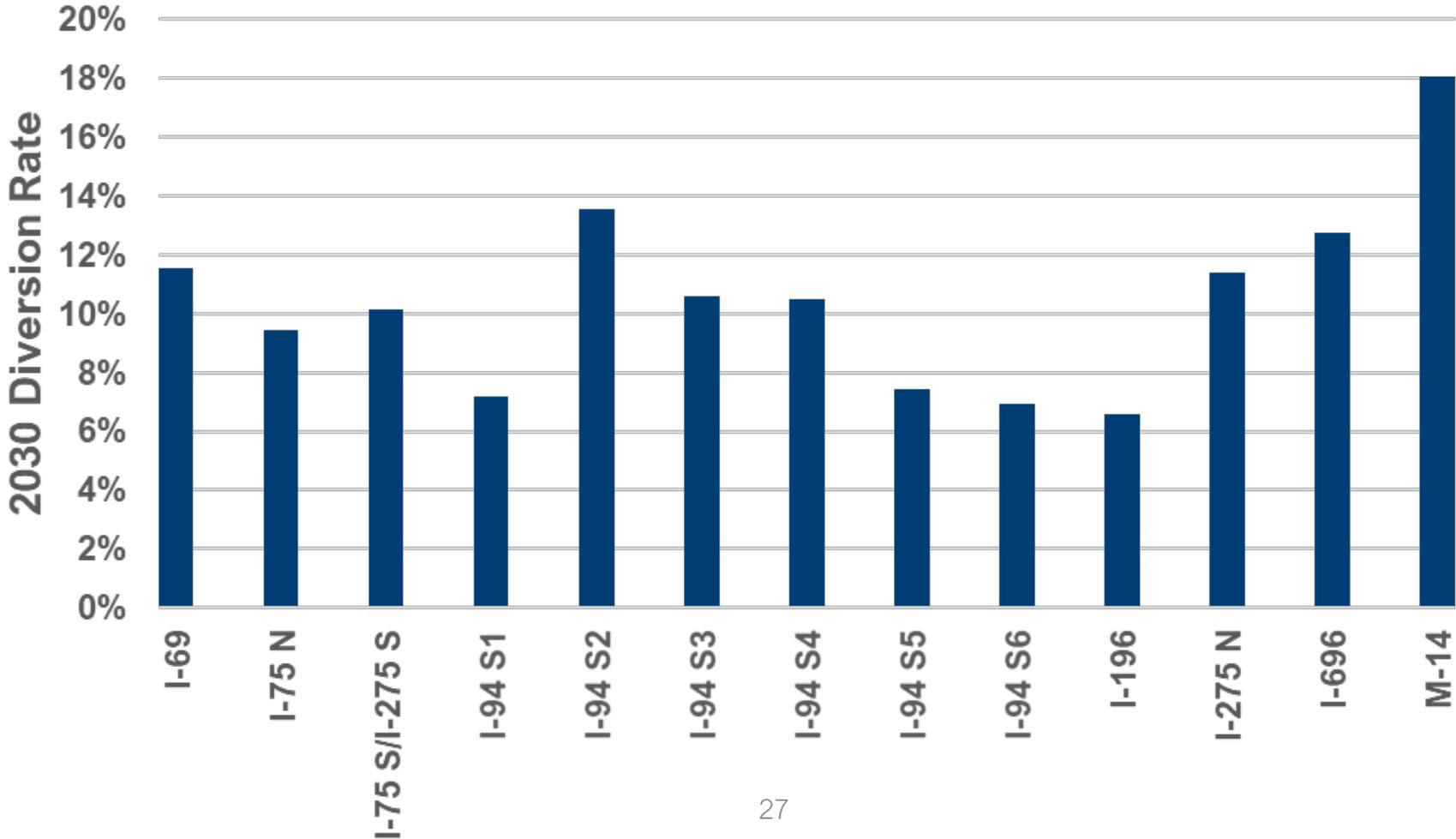


Appendix: Other Reference Slides



Diversion

Total Diversion Rate By Corridor



Total System: 10%



545-mile Tier 1 toll system

Environmental Justice

Tolling Discount, Benefit, and Mitigation Program

Advisory Board

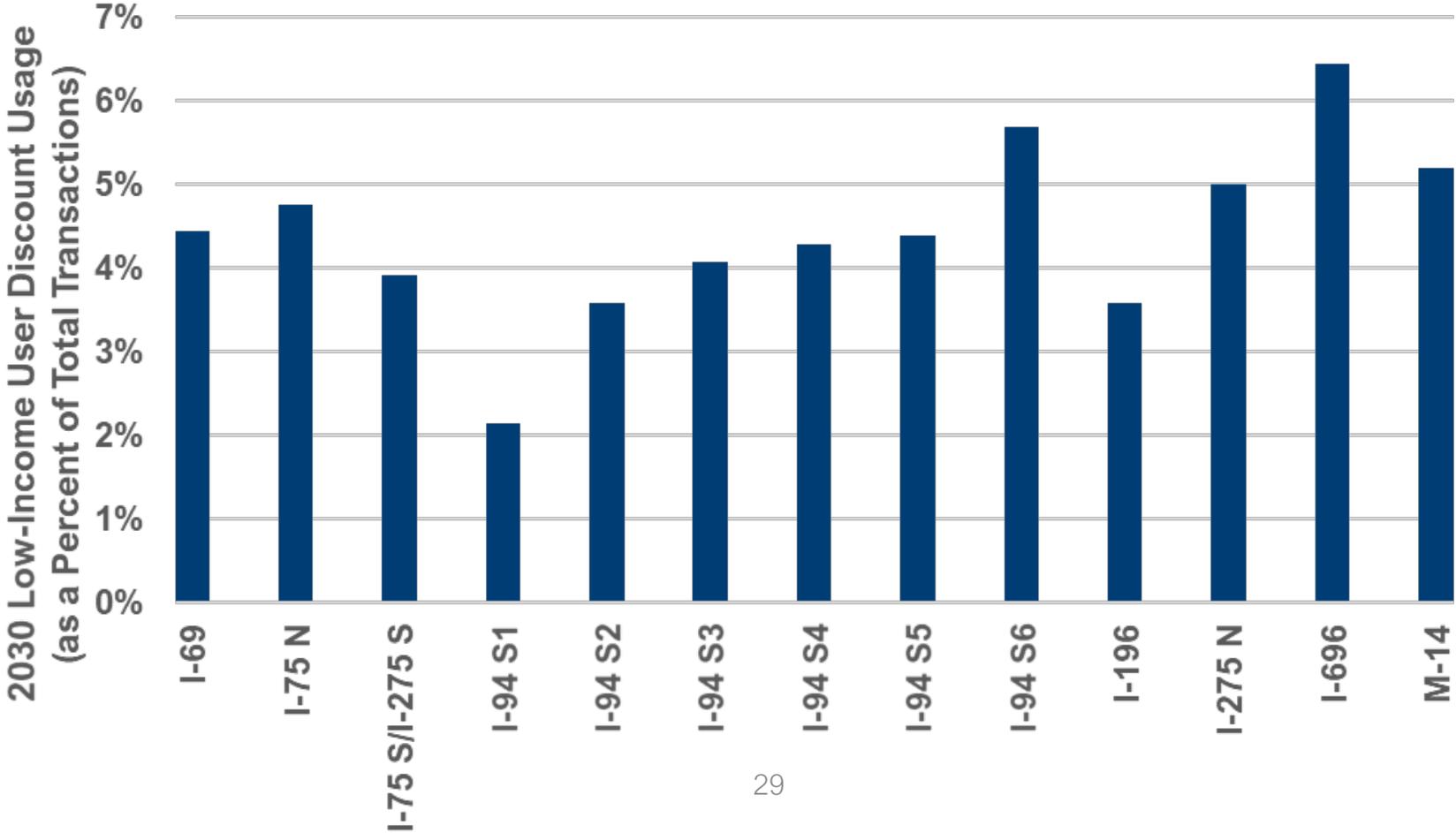
**Local community
transportation mitigations**
(Analyzed 1% of gross revenue)

**Local community non-
transportation benefits**
(Analyzed 0.5% of gross revenue)

**Income-based equity
discount**
(Analyzed 100 percent discount for 1.5x
federal poverty level. Recommend
linking to existing MI program)

Environmental Justice

Share of Passenger Cars Using Low-Income Discount Program



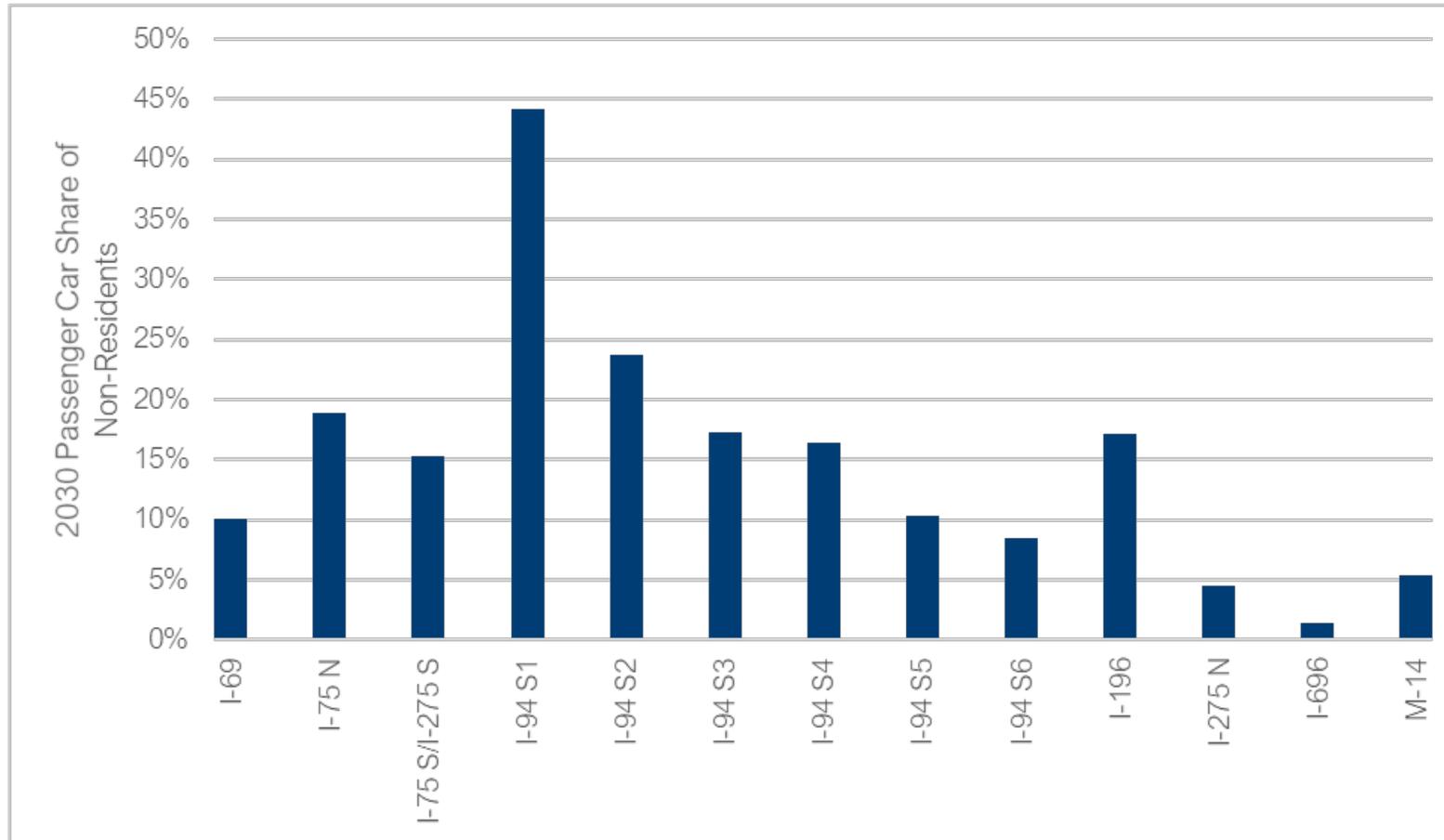
Total System: 5%



545-mile Tier 1 toll system

Non-Residents

Share of Passenger Car Non-Residents by Corridor



*Total System:
9%*



545-mile Tier 1 toll system

Governance and Policy Recommendations

Governance Model



- A “hybrid” governance model like the Mackinac Bridge Authority.
- Independent toll rate-setting authority, the ability to sell its bonds and procure its toll-specific systems while still sharing staff and resources with MDOT.
- The ability to hire necessary tolling-specific leadership and staff as new agency staff/consultants at industry-competitive salary levels should be further evaluated.

Project Selection



- Use existing project selection processes but with considerations for revenue, financing, and tolling-related equipment and software.

Financing Structure



- Finance toll projects as a complete system.
- Support all the infrastructure, staffing, and tolling costs on the included toll roads with toll revenue.
- Provide bonding authority to the new toll agency with debt policies consistent with legacy toll systems in other states.

Toll Rate Setting



- Program indexing of toll rates to inflation or a similar metric.
- Program a specific budget (“soft cap”) for toll rate discount/mitigation/benefit programs. Costs above programmed levels would require higher base toll rates or other funding.

Governance and Policy Recommendations

Environmental and Outreach

- 
- Incorporate tolling at a programmatic level into existing planning processes.
 - Perform project-level environmental clearance as required based on project characteristics.

Equity

- 
- Establish a Toll Discount, Mitigation, and Benefit Program Advisory Committee.
 - Provide a 100 percent discount to low-income users.
 - Set aside one percent of gross toll revenue for local community transportation mitigations.
 - Set aside 0.5 percent of gross toll revenue for local community non-transportation benefits.

Procurement

- 
- Allow for the procurement of toll-specific systems including toll collection equipment, the back-office software, and customer service center to be led by the new Michigan Toll Authority
 - Use the Michigan Department of Technology, Management and Budget to support toll systems procurements

Collection and Enforcement

- 
- Use current toll industry best practices with toll collection and enforcement.
 - Initially consider all toll road users as customers. If they do not pay a bill, then they would be considered violators.

Tier 1 Corridors- For Reference

Corridor and Segment		From	To	Centerline Miles	Existing Lane Miles	Future Lane Miles	Toll Program ¹
I-69	-	I-94	I-75	94.2	401.7	401.7	Bridge
I-75	North	I-675	US-127	94.3	409.2	409.2	Bridge
I-75 ²	South	Ohio border	I-275	20.3	122.4	122.4	Bridge
I-94	1	Indiana border	I-196	34.1	204.7	204.7	Bridge
	2	I-196	US-131	39.4	157.6	236.5	Bridge
	3	US-131	I-69	34.3	146.1	214.8	Bridge
	4	I-69	US-127 (NE of Jackson)	33.7	134.8	134.8	Bridge
	5	US-127 (NE of Jackson)	M-14	29.1	126.4	126.4	Bridge
	6	M-14	US-24/ Telegraph Road	30.9	169.7	186.8	Bridge
I-196	-	I-94	M-6	64.2	256.9	256.9	Bridge
I-275	North	Eureka Road	I-96/I-275/ I-696/M-5	22.2	148.7	147.8	VPPP
I-275 ²	South	I-75	Eureka Road	14.6	83.0	83.0	Bridge
I-696	-	I-96/I-275/ I-696/M-5	I-94	28.9	211.3	211.3	VPPP
M-14	-	I-94	West US-23/ M-14 split	4.7	18.8	18.8	Bridge
Total				544.9	2,591.3	2,755.1	

¹Section 129 Bridge Program or Value Pricing Pilot Program (VPPP)

²I-75 South and I-275 South were combined in the analysis since they are connecting and have the same toll program assumption.

Toll Rates – 545 Mile System

- Set rates to achieve financing objectives (funding the capital program)
- Charge tolls at specific toll gantry locations based on mileage between gantries
- Recommend index toll rates annually starting from 2020 analysis year

Transponder Toll Rates in Cents Per Mile for Michigan and Peer States

Toll Road System	Miles	Rate as of	Passenger Car Rate	Large Commercial Vehicle Rate	Annual Toll Rate Indexing?
Illinois Tollway	289	2021	6.7	56.3	Commercial vehicle only
Indiana Toll Road	157	2021	7.7	41.4	Yes
Ohio Turnpike	241	2021	5.8	17.9	Yes
Pennsylvania Turnpike	567	2021	13.0	62.2	Yes ¹
Michigan Tier 1 System	545	2020	6 to 6.5²	24 to 26	Yes

¹Have had some type of increase every year since 2009 but the increase is not necessarily applied to all classes or payment types. Increases are expected to continue in the future.

²Six cents per mile (in 2020 dollars) was assumed for 2028 to 2032 and 6.5 cents per mile (in 2020 dollars) was assumed beginning in 2033

Gross Toll Revenue – 545 Mile System

- Estimated gross toll revenue through 2067 (40 years after tolling start):
 - \$44B (2022 dollars)
 - \$104B (Year of collection dollars)
- **Share of gross toll revenue for toll collection: 13%**

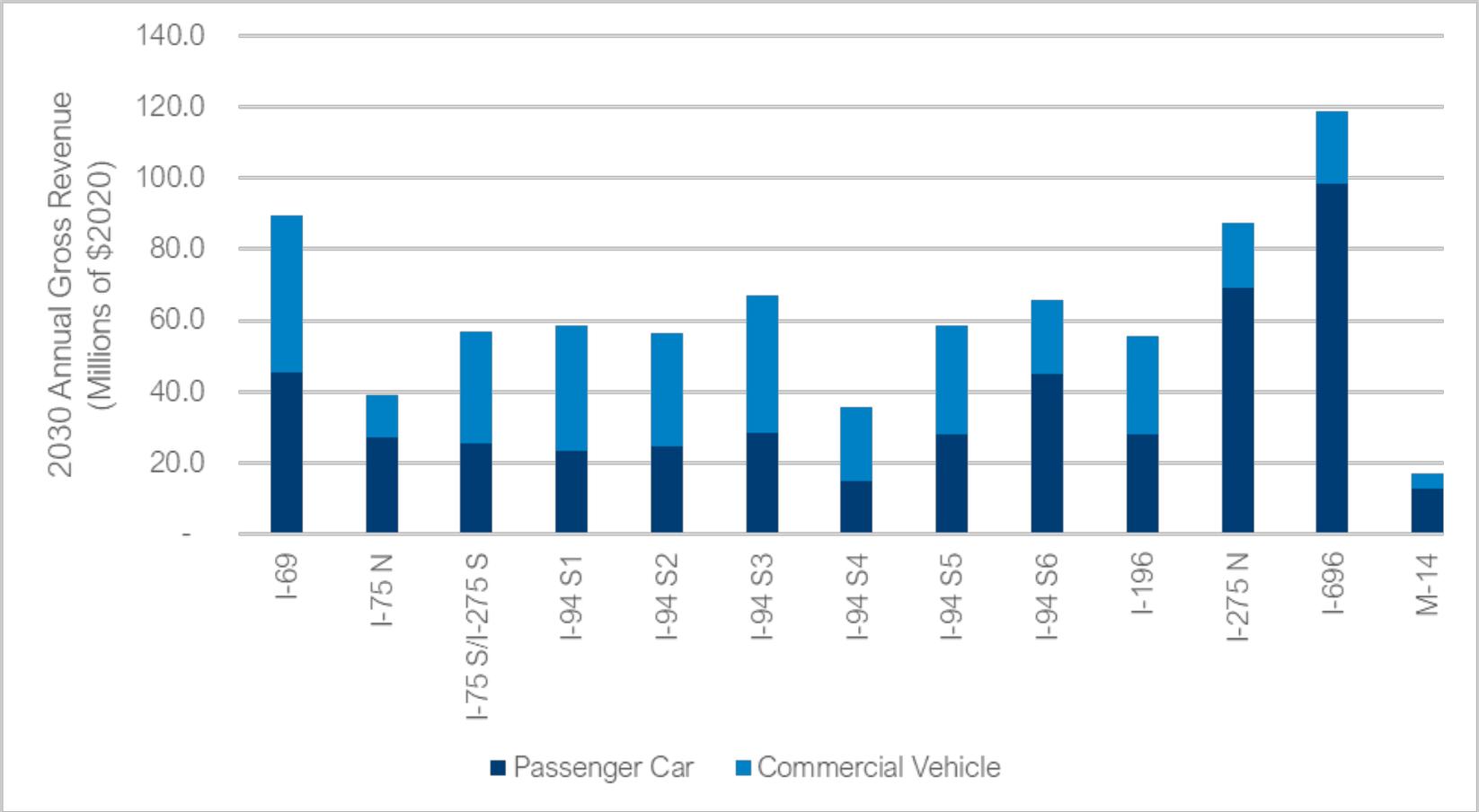
Annual Gross Toll Revenue for Michigan and Peer States

Toll Road System	Miles	Revenue as of	Revenue (billions)	Revenue Per Mile (millions)
Illinois Tollway	289	Year ended Dec 31, 2021	\$1.3	\$4.5
Ohio Turnpike	241	Year ended Dec 31, 2021	\$0.3	\$1.4
Pennsylvania Turnpike	567	Year ended May 31, 2022	\$1.6	\$2.8
Michigan Tier 1 System	545	Year ended Dec 31, 2032	\$1.3 ¹	\$2.3 ¹

¹In year of collection dollars

Revenue

Annual Gross Revenue by Corridor (2020\$)



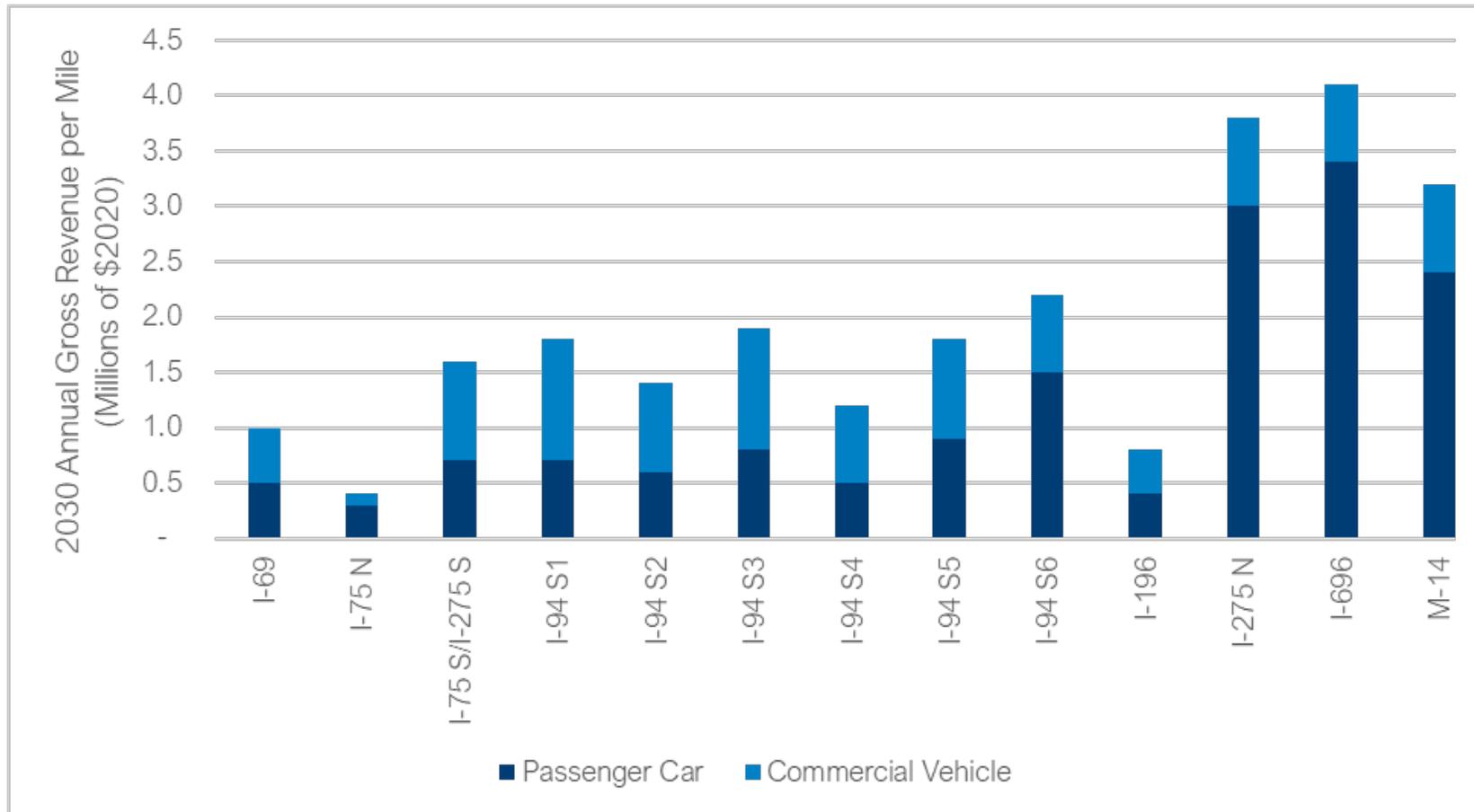
*Total
Commercial
Vehicle
Share: 42%*



545-mile Tier 1 toll system

Revenue per Mile

Annual Gross Revenue per Mile by Corridor (2020\$)



545-mile Tier 1 toll system

COVID-19 Traffic Impacts

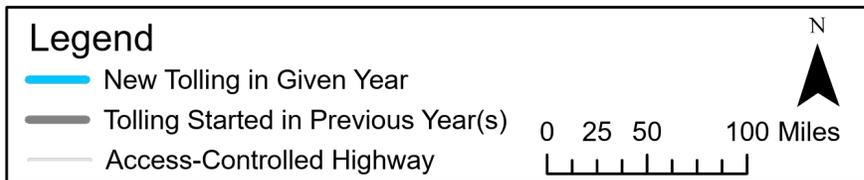
- As of late 2022
 - Passenger Cars
 - Have yet to fully recover
 - Exception is vacation/tourism-oriented highways, which have recovered
 - Commercial Vehicles
 - More than fully recovered from pandemic losses
- *Adjustments were incorporated into the analysis to account for impacts.*

Financial Uncertainty

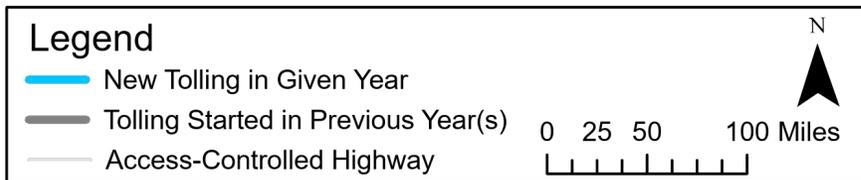
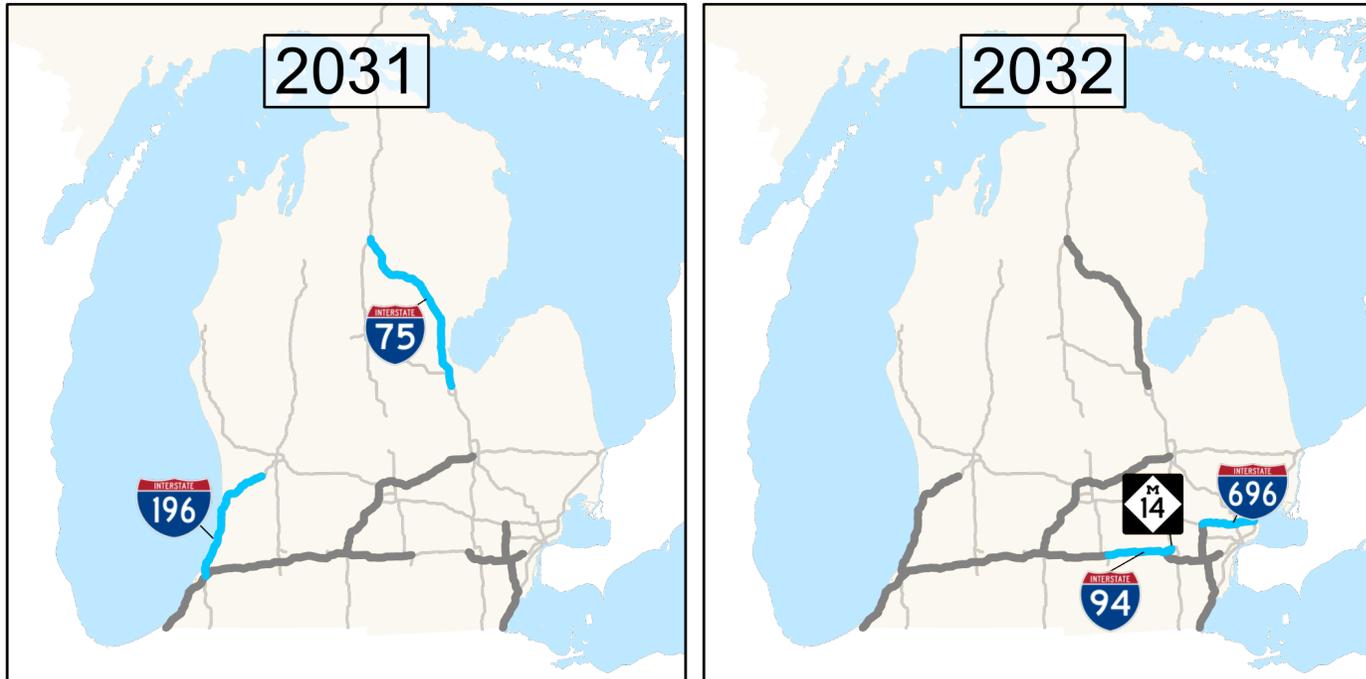
- External Factors:
 - Construction cost inflation
 - Financing rates
 - Traffic levels
- Mitigations:
 - Toll rate changes
 - Construction program changes



Sequencing 2028 - 2030



Sequencing 2031 - 2032



Toll Program - Project Development

Two-Level Approach

1. Incorporate system toll financing into existing planning processes in Michigan.

- Long-range transportation plan
- Five-year plan
- Call for projects

2. Project-level environmental reviews in accordance with federal and state laws to determine appropriate impacts and mitigations.