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OHIO TURNPIKE NEW VISION

Capital Improvement Forecast &
Toll Collection System Modernization

June 20, 2019

Ohio Turnpike – A Better Way To Travel

ACEC

AMERICAN COUNCIL OF ENGINEERING COMPANIES



Agenda

- Ohio Turnpike's New Vision
- Capital Program Forecast
- Future Construction Projects
- Future Design Projects
- Toll Collection System Modernization
- Q & A





New Vision

Ohio Turnpike – A Better Way To Travel

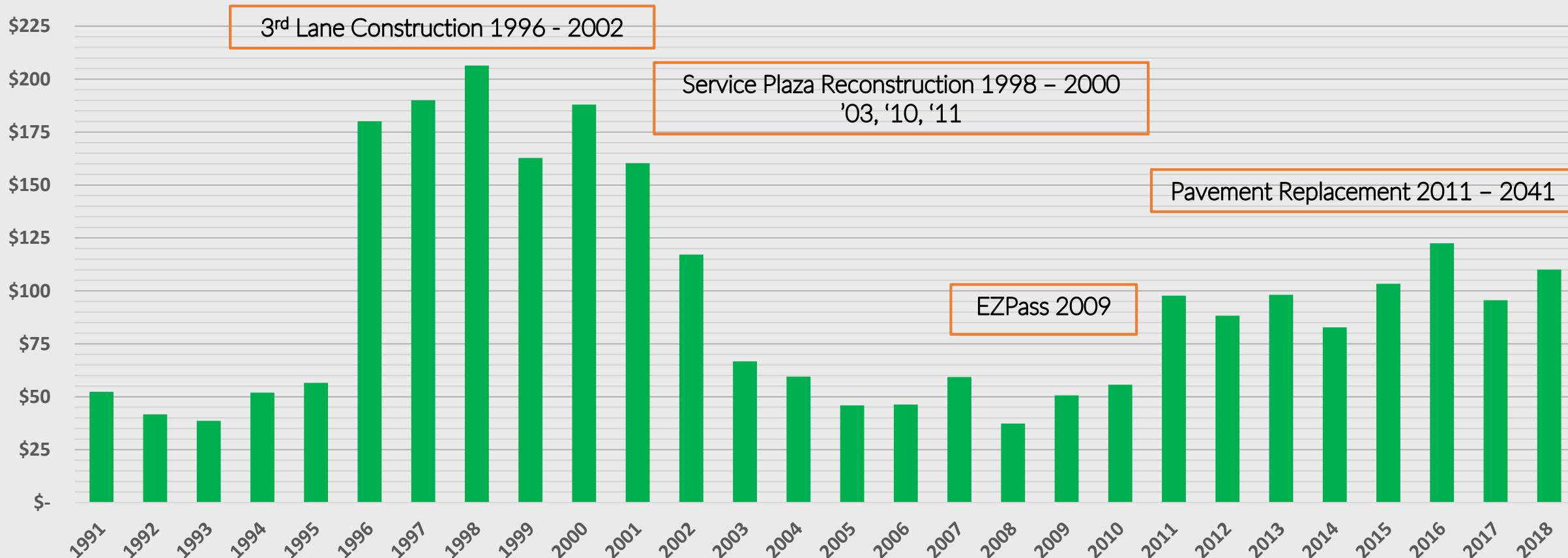


Capital Program Forecast



Historical Capital Program

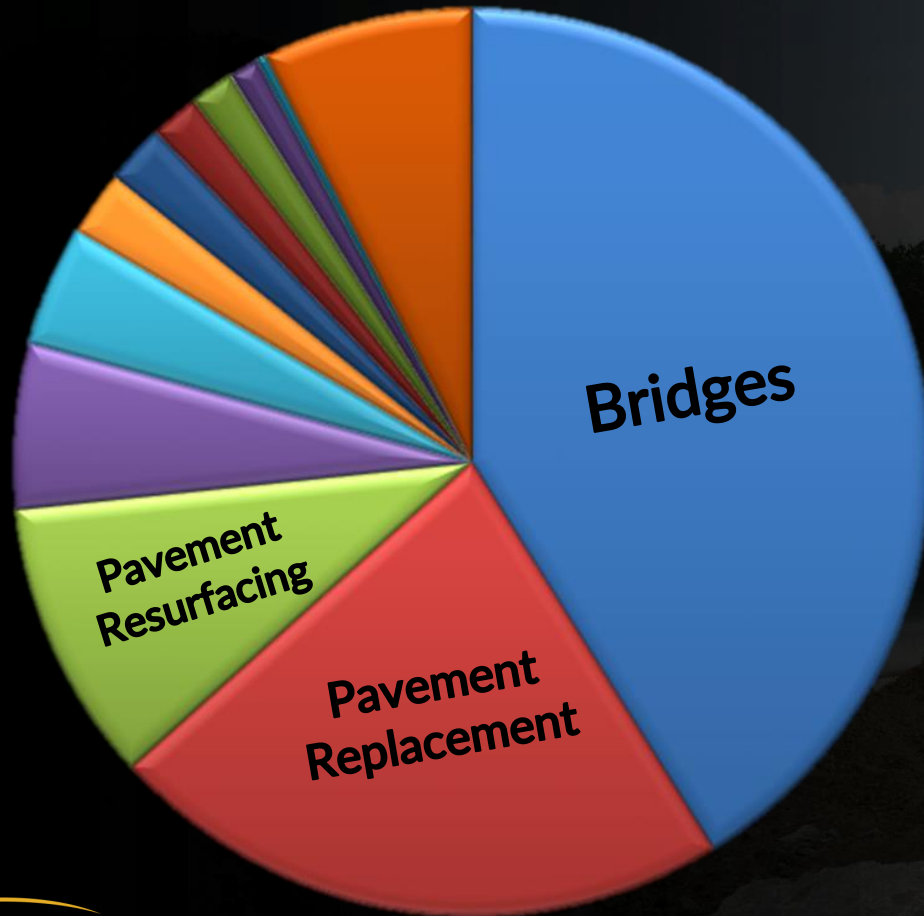
Expenditures by Year (in millions)





2019 Capital Program

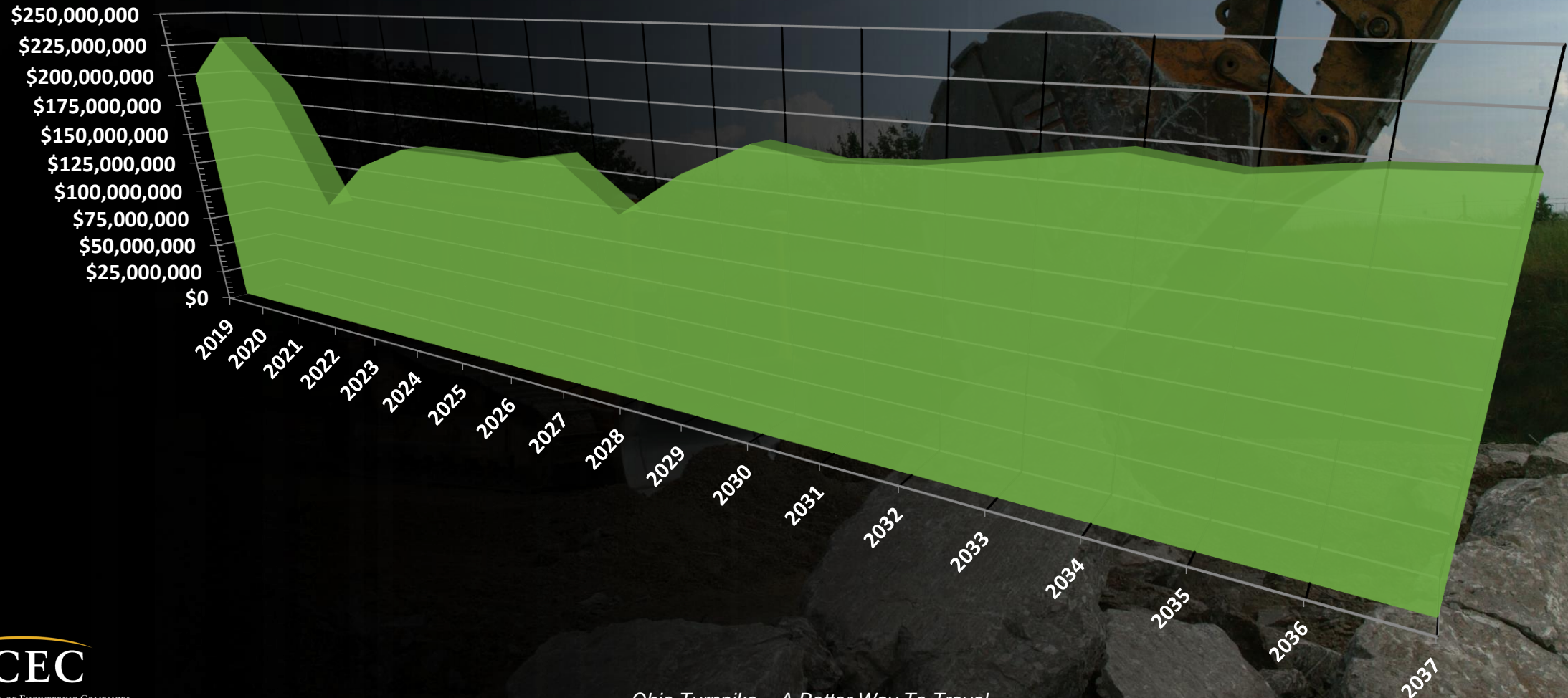
\$198 Million



- Bridges 39.4%
- Pavement Replacement 21.2%
- Pavement Resurfacing 9.6%
- Toll Collection System/CSC Upgrades 5.6%
- Computer & Communications Equipment 4.1%
- Maintenance Vehicles and Equipment 2.2%
- Engineering Services 2.0%
- Slope and Drainage Repair 1.6%
- Toll Plazas 1.5%
- Service Plazas 1.0%
- Maintenance and Other Buildings 0.4%
- Uncommitted Funds 7.0%



Future Capital Program





Future Construction Projects



Bridge Deck Replacement and Rehabilitation

2020 Construction

Design Project 71-18-06

Fulton County

- MP 31.4 (Tedrow-Morenci Road)
- MP 38.3 (Winnameg-Lyons Road)
- MP 39.3 (Heller-Lyons Road)

Design Project 71-18-08

Mahoning County

- MP 222.7 (ML EB & WB Over Turner Road / SR 103)
- MP 222.8 (ML EB & WB Over Kirk Road / SR 146)

Design Project 71-18-07

Sandusky County

- MP 91.1 (Fangboner Road)
- MP 91.6 (Ohio Turnpike Ramp Over Ohio Turnpike)
- MP 92.0 (Ohio Turnpike Ramp Over State Route 53)



Bridge Deck Replacement and Rehabilitation

2021 Construction

Design Project 71-19-01

Fulton County

- MP 40.3 (ML EB & WB Over SR 109)
- MP 40.5 (ML EB & WB Over DT&I Railroad)

Design Project 71-19-02

Sandusky County

- MP 98.9 (ML EB & WB Over Norfolk Southern Railroad)
- MP 99.1 (ML EB & WB Over SR 510)

Design Project 71-19-03

Lorain and Cuyahoga Counties

- MP 151.3 (Ohio Turnpike Ramp Over French Creek)
- MP 152.3 (Ohio Turnpike Ramp Over Lorain Road)
- MP 153.9 (Jennings Road)

Design Project 71-19-04

Cuyahoga and Summit Counties

- MP 169.6 (East Edgerton Road)
- MP 172.9 (Brecksville Road / SR 21)



Pavement Replacement / Toll Collection Modernization

Design Project 71-18-01

Williams County

- Milepost 0.0 to 7.2

Schedule:

Advertise for Bids: Jul 2020

Construction: Oct 2020 – Oct 2023

Design Project 71-18-03

Trumbull County

- Milepost 208.18 to 213.76

Schedule:

Advertise for Bids: Aug 2020

Construction: Nov 2020 – Dec 2022

Design Project 71-18-02

Fulton and Lucas Counties

- Milepost 46.5 – 50.9

Schedule:

Advertise for Bids: Oct 2019

Construction: Feb 2020 – Dec 2021

Design Project 71-18-04

Mahoning County

- Milepost 236.4 to 241.25

Schedule:

Advertise for Bids: Sep 2020

Construction: Dec 2020 – Dec 2022



Toll Collection System Modernization

Design Project 71-18-05

Williams County

- New Toll Plaza – 4

Lucas County

- New Toll Plaza – 49

Schedule:

Advertise for Bids: Jan 2021

Construction: Sep 2021 – Nov 2022

Design Project 71-18-05

Trumbull County

- New Toll Plaza – 211

Mahoning County

- Renovation Toll Plaza - 239

Schedule:

Advertise for Bids: Feb 2021

Construction: Sep 2021 – Nov 2022



Future Design Projects



Future Design Projects

Advertise

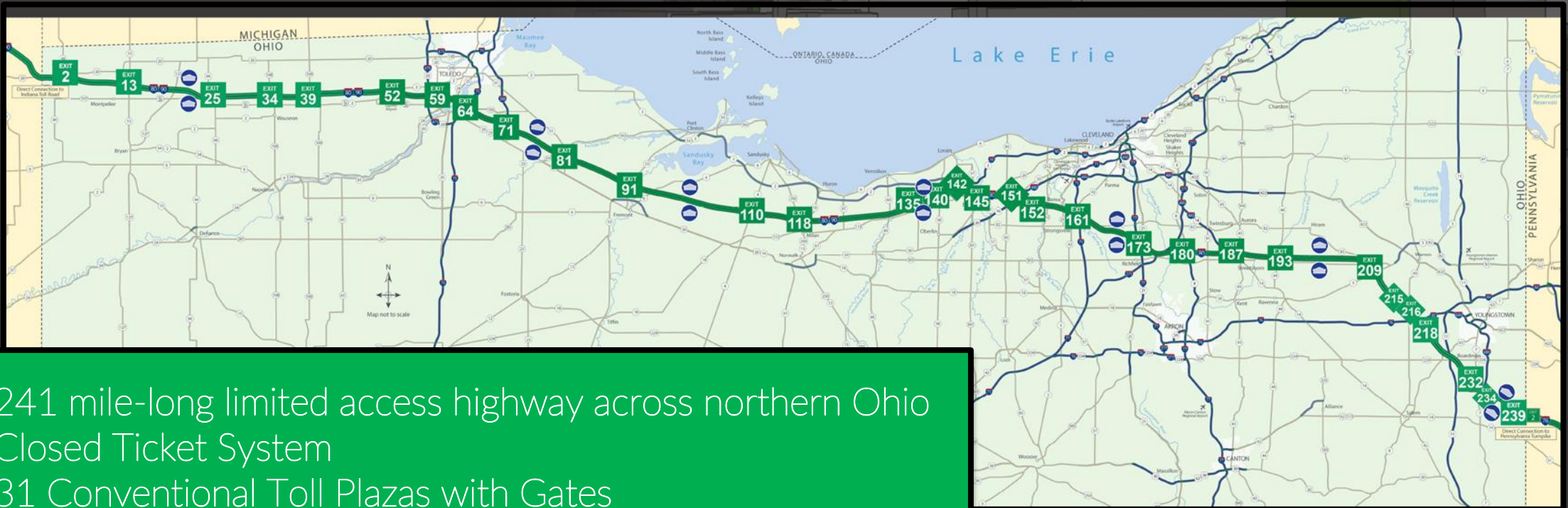
- Soon
 - 3rd Qtr. 2019
 - 3rd Qtr. 2019
 - 3rd Qtr. 2019
 - 1st Qtr. 2020
 - 2nd Qtr. 2020
 - 2nd Qtr. 2020
 - 2nd Qtr. 2020
- Program Manager for Toll Collection Modernization
Traffic & Revenue Forecasting Services
Autonomous Vehicle / Connected Vehicle On Call
ITS On Call
Bridge Deck Replacement/Rehab. (2022 Construct.)
Pavement Replacement - Design
Pavement Replacement - Geotech/Pavement Design
Pavement Replacement - CM



Toll Collection Modernization

OHIO TURNPIKE

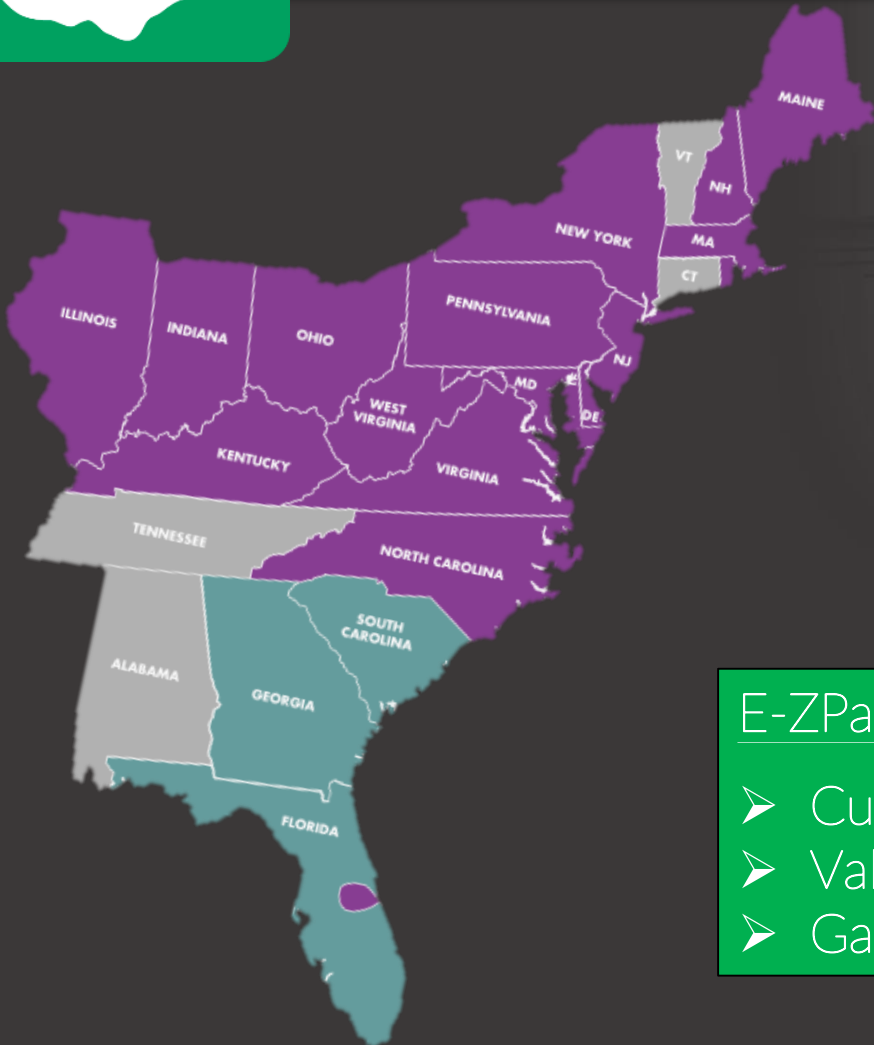
Existing Toll Collection System



- 241 mile-long limited access highway across northern Ohio
- Closed Ticket System
- 31 Conventional Toll Plazas with Gates
- MP 0 at Indiana State Line, MP 241 at Penn State Line

**OHIO
TURNPIKE**

Current Toll Collection System (TCS) Payment Option #1 E-ZPass



E-ZPass Entry & Exit

- Customer pulls through toll lane at 10 mph
- Valid E-ZPass is detected by radio signal
- Gate opens

Current Toll Collection System (TCS) Payment Option #2 Cash



Non-E-Zpass Entry ("cash-payer")

- Customer pulls up to tollbooth w/ gate
- Machine issues a ticket
- Customer retrieves ticket
- Gate opens

Paying with Cash or Credit on Exit

- Customer pulls up to tollbooth w/ gate
- Customer presents ticket to collector or automated payment machine
- Customer provides payment
- Gate opens



2016 Strategic Plan – Existing TCS Evaluation Findings

TCS Continues to Perform as Designed but Components are
Nearing End of Useful Life

Lack of Available Spare Parts

Need for New Technologies such as Multiprotocol Readers, Credit
Card Tokenization and Real-Time Disaster Recovery

TCS Replacement Should be Considered

Customer and Stakeholder Survey Results



Online Survey of 13,989 Customers and 96 Stakeholders



68% of responding customers use *E-ZPass* (59% Ohio and 9% non-Ohio)



30% of responding customers pay w/ cash; 2% pay w/ a credit card



89% of responding customers and 94% of stakeholders support removing gates



66% of responding customers and 76% of stakeholders would consider an increase to the minimum toll amount of \$0.50



89% of responding customers and stakeholders are satisfied with *E-ZPass*



Our Customer Base

Conducted manual license plate survey of 12 toll plazas with interstate connections (late July-early August 2016)

Approximately 38% to 51% of cash paying cars are from outside of Ohio

Approximately 66% to 73% of cash paying trucks are from outside of Ohio

Alternatives Screening & Evaluation

Screening
and
Evaluation
Matrix

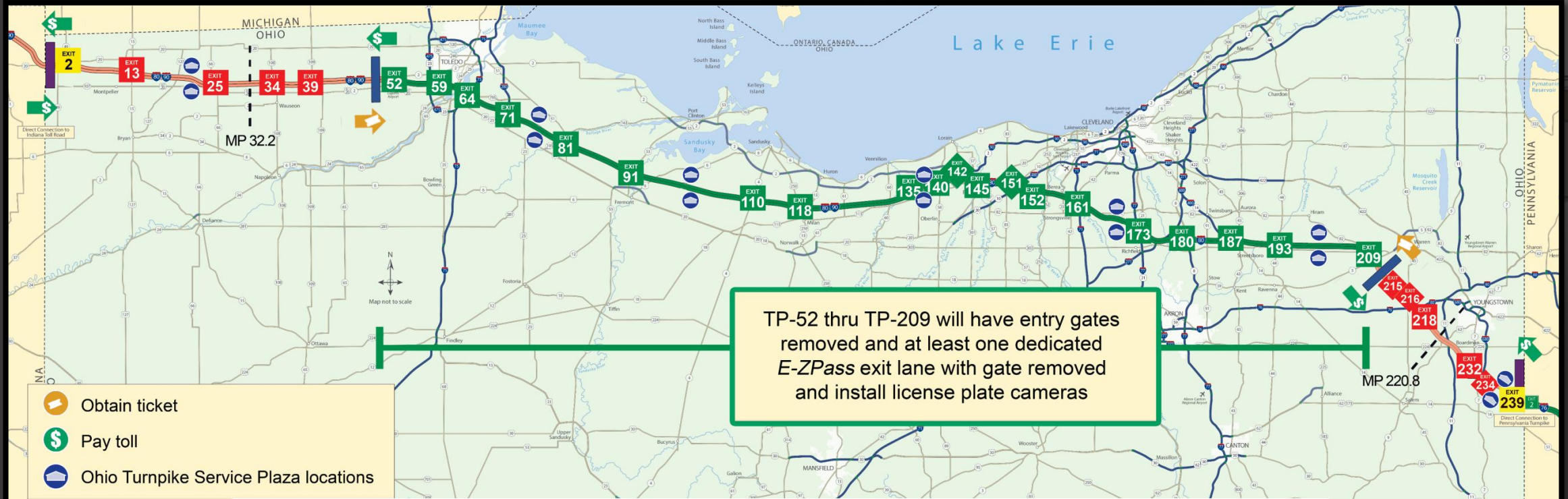
Gross and
Net
Revenue
Analysis

Direct and
Indirect
Benefits

Capital
and
Operating
Costs

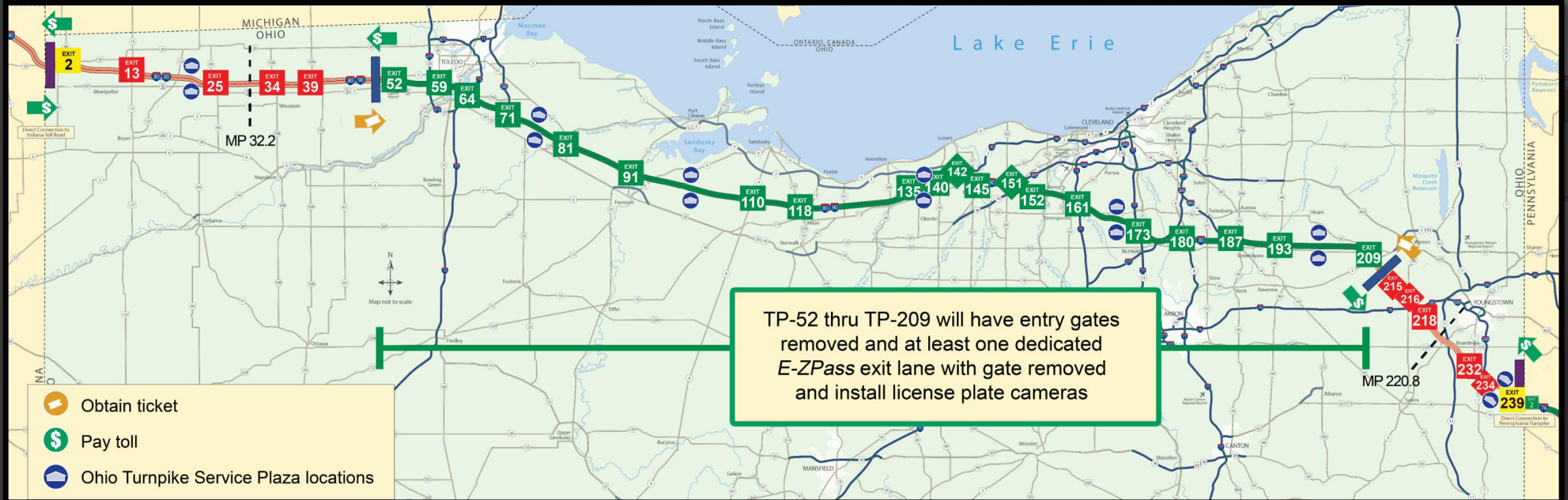
Options	Brief Description	Benefit/Acceptance	Fiscal	Success	Forward Compatibility	Total	Rank
6B - Hybrid System - Open Barrier System at Eastgate (One-Way WB) & Westgate (Two-Way), Closed Ticket System from MP 49 to MP 214, Highway Speed E-ZPass at mainline plazas, Low Speed E-ZPass at ramp plazas	6B - Hybrid System (East Gate One Way)	1.00	1.32	0.75	0.30	3.37	1
3B - Closed Ticket System, Conventional Plazas with Higher Speed Gateless E-ZPass Lanes, Entry Only	3B - Higher Speed Gateless, Entry Only	0.63	1.44	1.15	0.10	3.32	2
2B - Closed Ticket System, Conventional Plazas with Low Speed Gateless E-ZPass Lanes, Entry Only	2B - Low Speed Gateless, Entry Only	0.50	1.46	1.15	0.10	3.21	3
6A - Hybrid System - Open Barrier System at Eastgate & Westgate, Closed Ticket System from MP 49 to MP 214, Highway Speed E-ZPass at mainline plazas, Low Speed E-ZPass at ramp plazas	6A - Hybrid System (East Gate Two Way)	1.00	1.14	0.75	0.30	3.19	4
5B - Open Barrier System, Free Flow Cashless Tolling Lanes	5B - Free Flow Cashless, Open Barrier	0.75	1.53	0.40	0.48	3.16	5
1 - Closed Ticket System, Conventional Plazas with Gated Lanes, Entry and Exit (Existing Model)	1 - Existing TCS Model	0.31	1.47	1.25	0.10	3.13	6
7 - Hybrid System - 6B for first 10 years, then convert to 5B	6A - Hybrid System (East Gate Two Way) for 10 years, then convert to 5B - Free	0.81	1.43	0.40	0.48	3.12	7
4B - Open Barrier System, Conventional Toll Plaza with Highway Speed Gateless E-ZPass Lanes	4B - Highway Speed Gateless, Open Barrier	0.75	1.36	0.65	0.34	3.10	8
2A - Closed Ticket System, Conventional Plazas with Low Speed Gateless E-ZPass Lanes, Entry and Exit	2A - Low Speed Gateless, Entry and Exit	0.75	1.12	0.85	0.18	2.90	9
3A - Closed Ticket System, Conventional Plazas with Higher Speed Gateless E-ZPass Lanes, Entry and Exit	3A - Higher Speed Gateless, Entry and Exit	0.88	0.94	0.85	0.20	2.86	10
2C - Closed Ticket System, Conventional Plazas with Low Speed Gateless E-ZPass Lanes, Exit Only	2C - Low Speed Gateless, Exit Only	0.50	1.16	0.85	0.18	2.69	11
5A - Closed Ticket System, Free Flow Cashless Tolling Lanes, Entry and Exit	5A - Free Flow Cashless, Entry and Exit	0.75	1.01	0.45	0.48	2.69	12
3C - Closed Ticket System, Conventional Plazas with Higher Speed Gateless E-ZPass Lanes, Exit Only	3C - Higher Speed Gateless, Exit Only	0.63	1.00	0.85	0.20	2.68	13
4A - Closed Ticket System, Conventional Plazas with Highway Speed Gateless E-ZPass Lanes, Entry and Exit	4A - Highway Speed Gateless, Entry and Exit	1.00	0.58	0.75	0.30	2.63	14

Preferred Alternative Illustration Modernizing the Ohio Turnpike's Toll Collection System



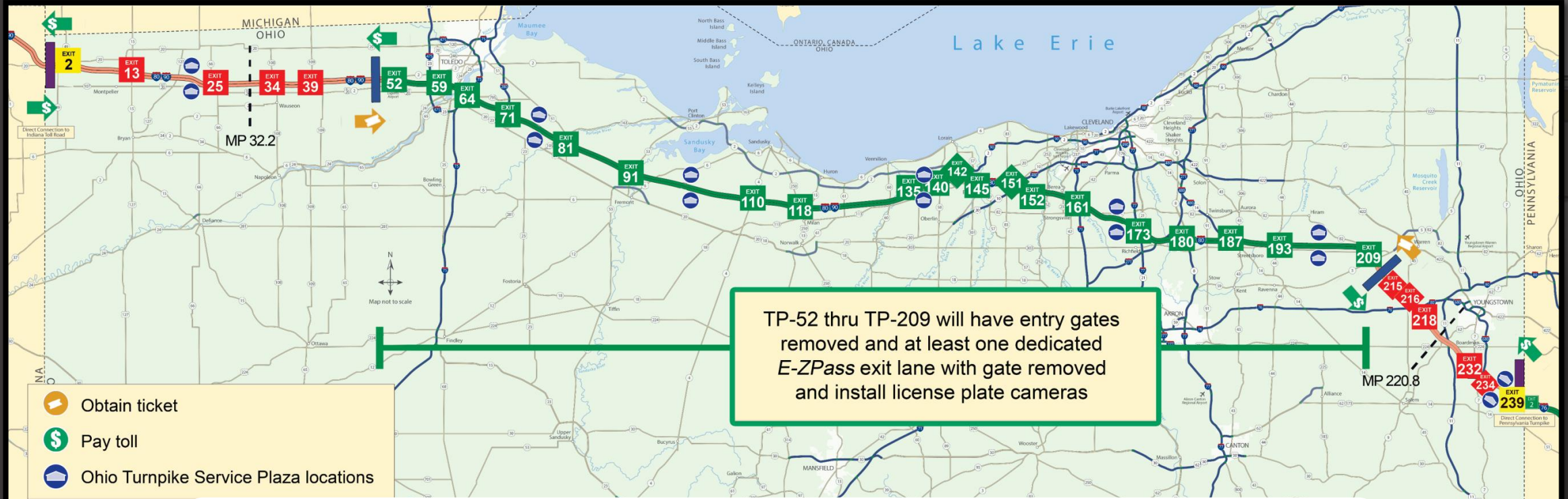
Implement highway speed E-ZPass lanes at Eastgate and Westgate and collect flat tolls by vehicle class

Preferred Alternative Illustration Modernizing the Ohio Turnpike's Toll Collection System



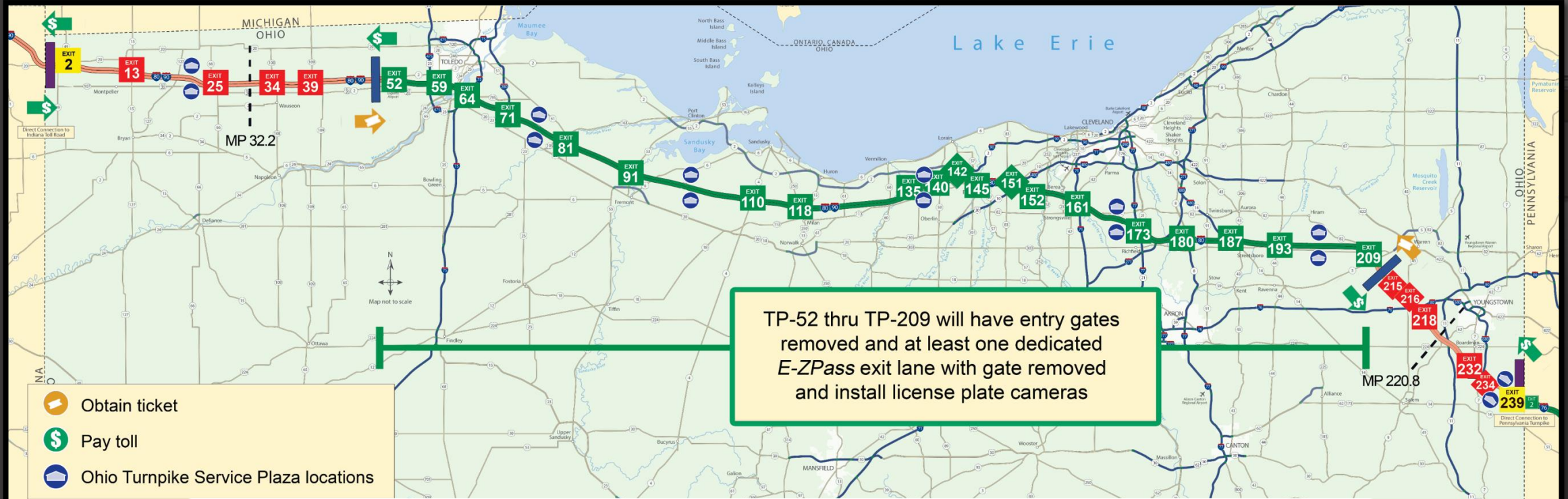
Convert Eastgate toll collection to one-way WB (into Ohio and opposite to Penn Turnpike Gateway which is tolled one-way EB)

Preferred Alternative Illustration Modernizing the Ohio Turnpike's Toll Collection System



Construct two new mainline plazas with highway speed E-ZPass lanes at MP 49 and MP 211 (new ends of closed ticket system)

Preferred Alternative Illustration Modernizing the Ohio Turnpike's Toll Collection System



Remove 9 Selected Toll Plazas but maintain interchange access to the Turnpike (TP 13, 25, 32, 39, 215, 216, 218, 232, 234)

Preferred Alternative Description



Remove all entry toll lane gates as well as exit gates in *E-ZPass* Only lanes and install new license plate image capture cameras

Retain toll lane gates in non-*E-ZPass* exit lanes

Replace TCS and CSC hardware/software including *E-ZPass* Ohio website (www.ezpassoh.com)

Continue to staff and operate in-house *E-ZPass* Ohio CSC

Contract with vendor(s) for license plate image review, processing and collections

Preferred Alternative Benefits & Impacts

- Provides technology and customer service improvements without introducing significant revenue risk
- Approximately 80% of our transactions and 85% of our revenue will still be collected within the ticketed portion of the system (MP 49 through MP 211)
- Provides non-stop travel at highway speeds (70 mph) for E-ZPass customers traveling the full length of the Ohio Turnpike
- Provides non-stop travel at low speeds (10-15 mph) for E-ZPass customers at all interchange plazas (TP 52 through TP 209)
- Provides non-tolled trips for local travelers within TP 13 through TP 39, within TP 215 through TP 234, and eastbound at TP 239

Preferred Alternative Benefits & Impacts

Barrier toll includes per mile cost for a portion of the non-tolled section (MP2 thru MP49 & MP211 thru MP239)

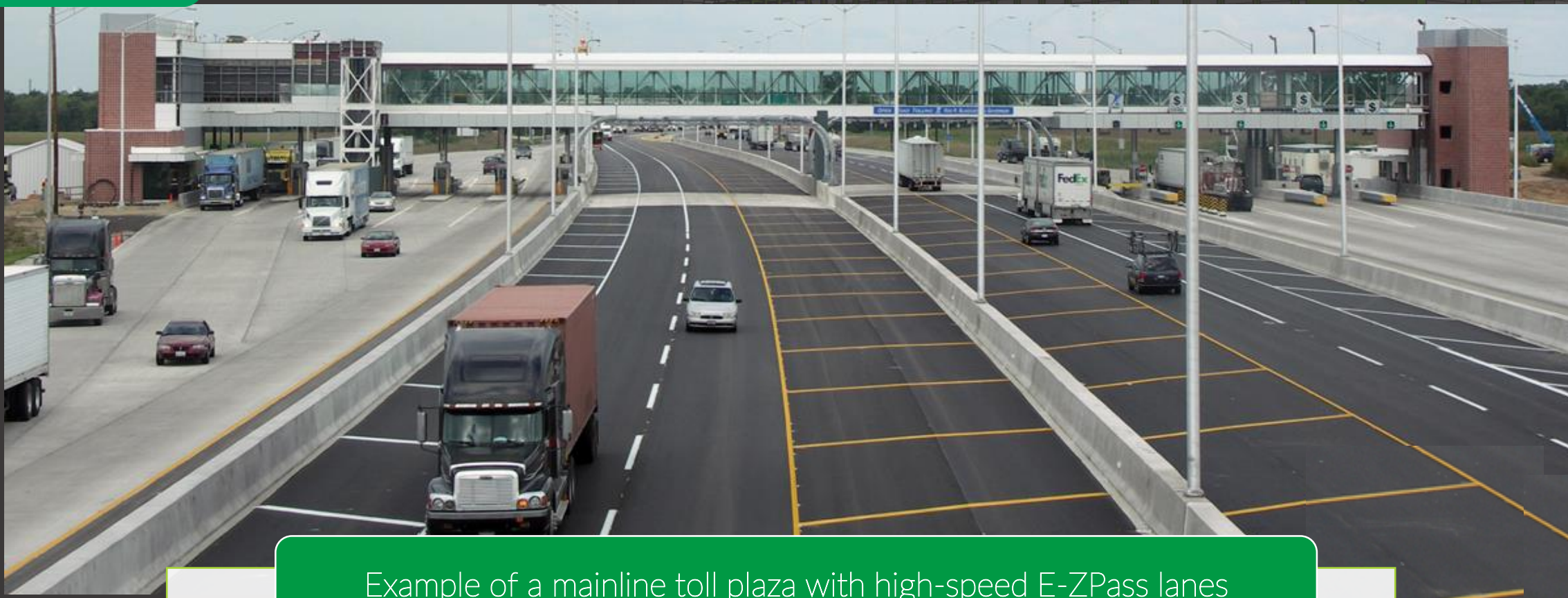
Full length trip cash customers will stop 3x (EB) or 4x(WB) instead of 2x as they currently do

Approximately \$257 Million in Operating Cost Savings over 30 years

Approximately \$241 Million increase in Net Revenue over 30 years

Approximately \$189 - \$217 Million in capital implementation Costs (2017 costs)

Modernized System



Example of a mainline toll plaza with high-speed E-ZPass lanes

Modernized System



Example of a mainline toll plaza with high-speed E-ZPass lanes

Modernized System



Example of a mainline toll plaza with high-speed E-ZPass lanes



TCS Modernization Timeline

Schedule

- Strategic Plan Developed (2016-2017)
- Commission Resolution Adopted Strategic Plan (2017)
- Develop Legislative and Rule Making Changes (2017-2019)
- Procure Contracts (2018-2019)
- Design Infrastructure Requirements (2018-2019)
- Construct Infrastructure Upgrades (2020-2022)
- Modernized Toll System Go-Live (2022 Q4)

2016

2017

2018

2019

2020

2021

2022

2023

Develop Strategic Plan

Adopt Strategic Plan

Legislation & Rule Making

Construct Infrastructure Upgrades

Turn on New System



Thank You
