

# PERFORMANCE BASED PLANNING & PROGRAMMING (PBPP)

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## 2024 Update on Highway Asset and System Performance Measures

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TPB Technical Committee  
June 7, 2024



National Capital Region  
**Transportation Planning Board**

# Presentation Outline

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- Federal PBPP Overview, Areas, Cycle, Targets
- 2024 Update on PBPP Performance
  1. Pavement Condition
  2. Bridge Condition
  3. Travel Time Reliability
  4. Truck Travel Time Reliability
  5. Traffic Congestion: Peak Hour Excessive Delay
  6. Traffic Congestion: Mode Share (Non-SOV)
  7. CMAQ Emissions Reductions
- Upcoming Activities



# PBPP is a Federal Requirement

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- Federal surface transportation regulations require the implementation of performance based planning and programming (PBPP) by State DOTs, MPOs, and transit agencies

*“transition to a performance-driven, outcome-based program that provides for a greater level of transparency and accountability, improved project decision-making, and more efficient investment of federal transportation funds.”*
- State DOTs, MPOs, and providers of public transportation must link investment priorities to the achievement of performance targets in the TIP and the long-range transportation plan



# PBPP Performance Areas

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- Federal PBPP process requires State DOTs, MPOs and providers of public transportation to set targets (annually or every two/four years) for 26 performance measures
  - Highway Safety – *annual*
  - Highway Assets (Pavement and Bridge Condition) – *2/4-year*
  - Highway System Performance (Reliability, Freight, CMAQ Program) – *2/4-year*
  - Transit Assets – *annual / with TIP*
  - Transit Safety – *annual*



# Quadrennial Target Cycle

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- The last round of 2 and 4-year targets for the two areas of Highway Assets and Highway Systems Performance for the period 2022-2025 were set by State DOTs by ~~October 1~~ December 16, 2022\*
  - State DOTs must submit updates on actual performance to-date for 2022-2025 to the FHWA by October 1, 2024 in a *Mid Period Performance Progress Report*
- MPOs have up to 180 days afterwards to set targets
  - The TPB adopted targets for 2022-2025 for Highway Assets and Highway Systems Performance between June and October 2022

\* *Due to delays in HPMS data, FHWA extended the target reporting period by 2-1/2 months.*



# TPB Targets

Table of all TPB adopted targets, including for Highway Safety, Transit Safety, and Transit Assets.

Performance Area	Measure	Metric	Adopted Targets as of December 20, 2023
Highway Safety	Five-Year Rolling Average	# of Fatalities	253.0
	Five-Year Rolling Average	Rate of Fatalities	0.588
	Five-Year Rolling Average	# of Serious Injuries (SI)	1675.1
	Five-Year Rolling Average	Rate of Serious Injuries	3.222
	Five-Year Rolling Average	# of Non-Motorized Fatalities and SI	473.5
Highway Asset Condition	Percent Pavement Lane Miles Interstate / NHS (excl. Interstate)	In Good Condition	44.8% / 26.3%
	Percent Pavement Lane Miles Interstate / NHS (excl. Interstate)	In Poor Condition	1.6% / 7.3%
	Percent Bridge Deck Area	In Good Condition	25.7%
	Percent Bridge Deck Area	In Poor Condition	4.2%
Highway Reliability	Percent Person Miles Traveled Interstate / NHS (excl. Interstate)	Level of Travel Time Reliability	61.1% / 78.6%
Freight	Index	Truck Travel Time Reliability	2.56
Congestion	Annual Hours per Capita	Peak Hour Excessive Delay	22.7
	Percentage	Non-SOV Travel	37.7%
Vehicular Emissions	Total Emissions Reduction (kg/day)	VOCs / NOx	9.408 / 21.117
Transit Asset Management	Percentage	Revenue Vehicles exceeding Useful Life	6.9% (Bus)
	Percentage	Service Vehicles exceeding Useful Life	46.7% (Truck)
	Percentage	Track Segments with Performance Restrictions	3.5% (Heavy Rail)
	Percentage	Facilities rated Marginal or Poor	4.1% (Pass. Facilities)
Transit Safety	Number and Rate (per Revenue Vehicle Mile)	Fatalities by Mode (showing Urban Bus)	0 / 0
	Number and Rate (per Revenue Vehicle Mile)	Reportable Injuries by Mode (showing Urban Bus)	351 / 0.58
	Number and Rate (per Revenue Vehicle Mile)	Reportable Safety Events by Mode (showing Urban Bus)	356 / 0.59
	Mean Distance	Between Major Mechanical Failures by Mode (showing Urban Bus)	11378



# Highway Asset 2022-2025 Targets for the NCR

Interstate Pavement	2022 – 2025 Four Year Targets
(1) Percentage of pavements on the <b>Interstate System</b> in <b>Good</b> condition	<b>44.8%</b>
(2) Percentage of pavements on the <b>Interstate System</b> in <b>Poor</b> condition	<b>1.6%</b>
NHS (Non-Interstate) Pavement	
(3) Percentage of pavements on the <b>NHS</b> (excl. Interstate) in <b>Good</b> condition	<b>26.3%</b>
(4) Percentage of pavements on the <b>NHS</b> (excl. Interstate) in <b>Poor</b> condition	<b>7.3%</b>
Bridges	
(5) Percentage of <b>NHS Bridges</b> Classified as in <b>Good</b> Condition	<b>25.7%</b>
(6) Percentage of <b>NHS Bridges</b> Classified as in <b>Poor</b> Condition	<b>4.2%</b>

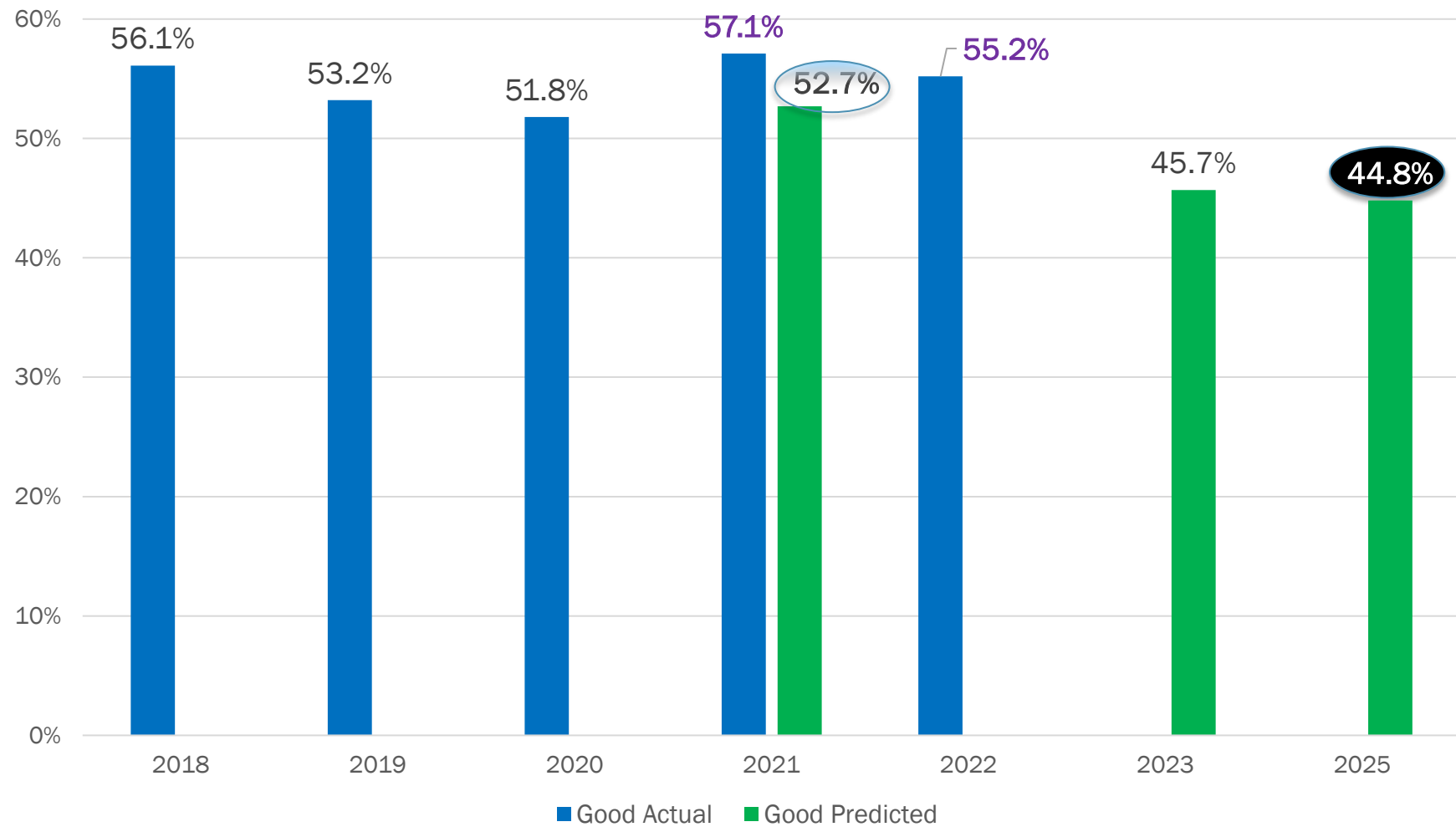
HPMS Pavement Condition Data for **2021** and **2022** now available

- **Can evaluate actual performance vs. 4-year targets for 2018-2021 period developed and adopted in 2017**

NBI Bridge Condition Data for 2022 and 2023 now available



# Interstate Pavement: Performance and Target (Good Condition)



Desired Direction



52.7%

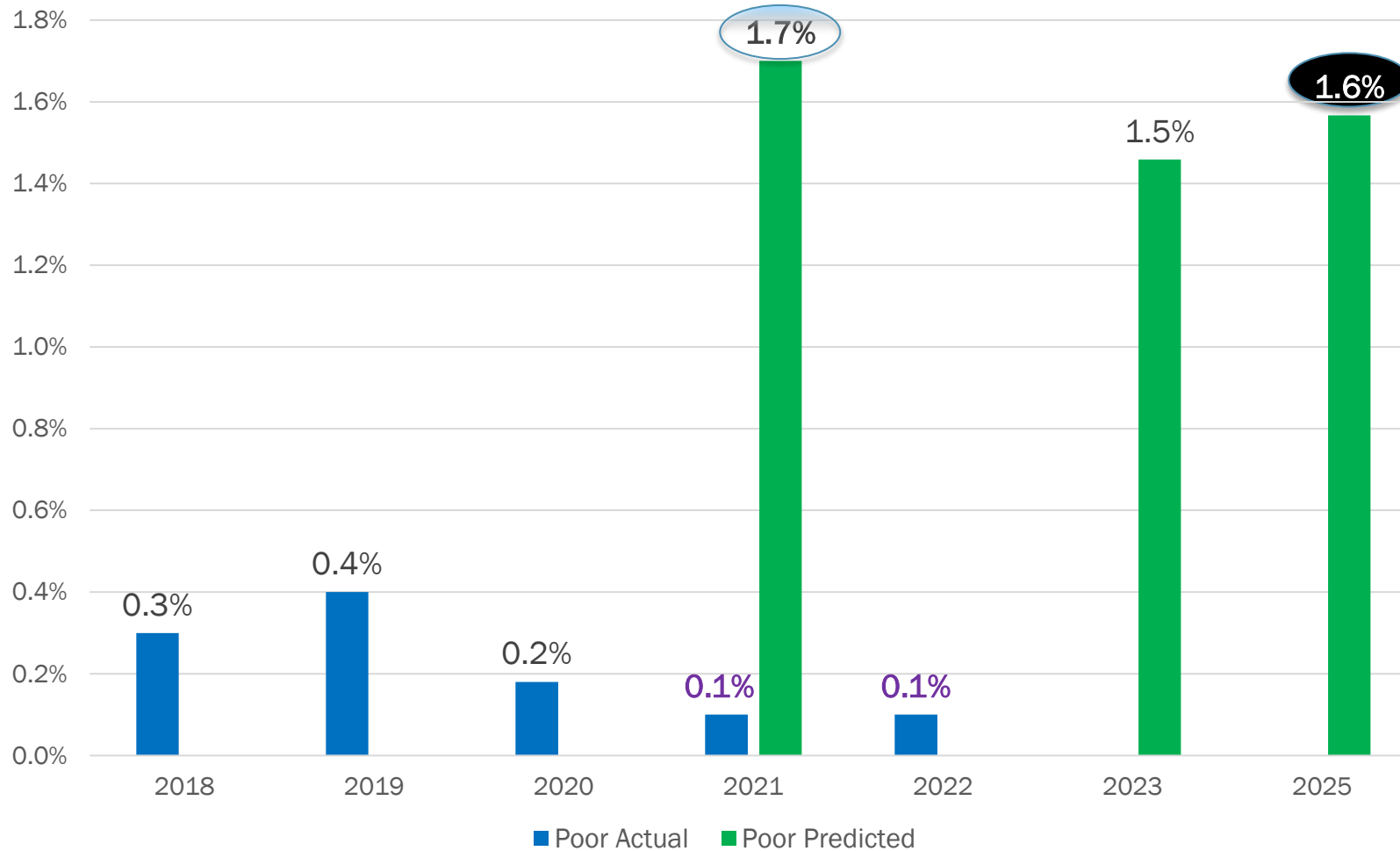
2021 4-year Target

44.8%

2025 4-year Target



# Interstate Pavement: Performance and Target (Poor Condition)



Desired Direction



1.7%

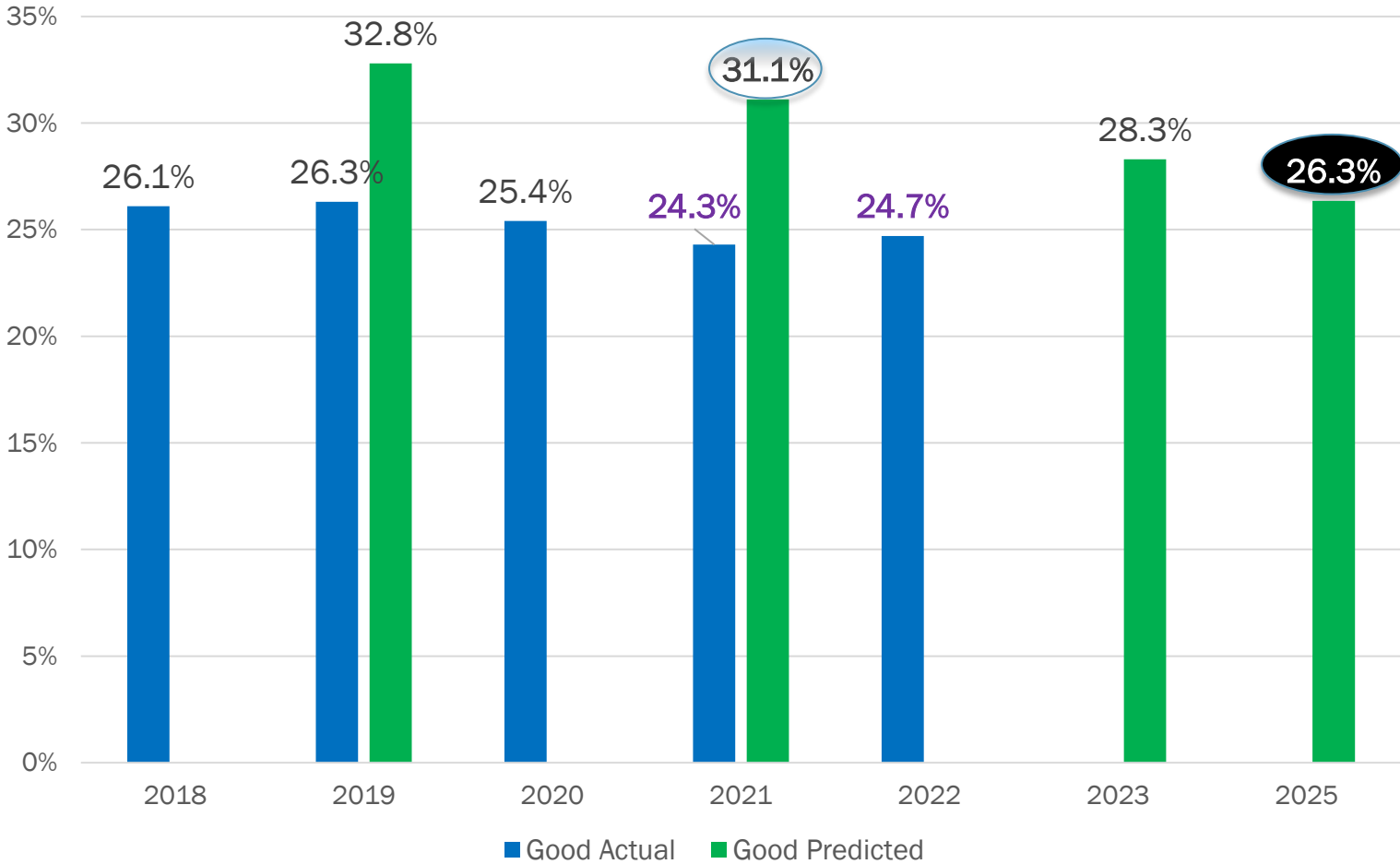
2021 4-year Target

1.6%

2025 4-year Target



# NHS (Non-Interstate) Pavement: Performance and Target (Good)

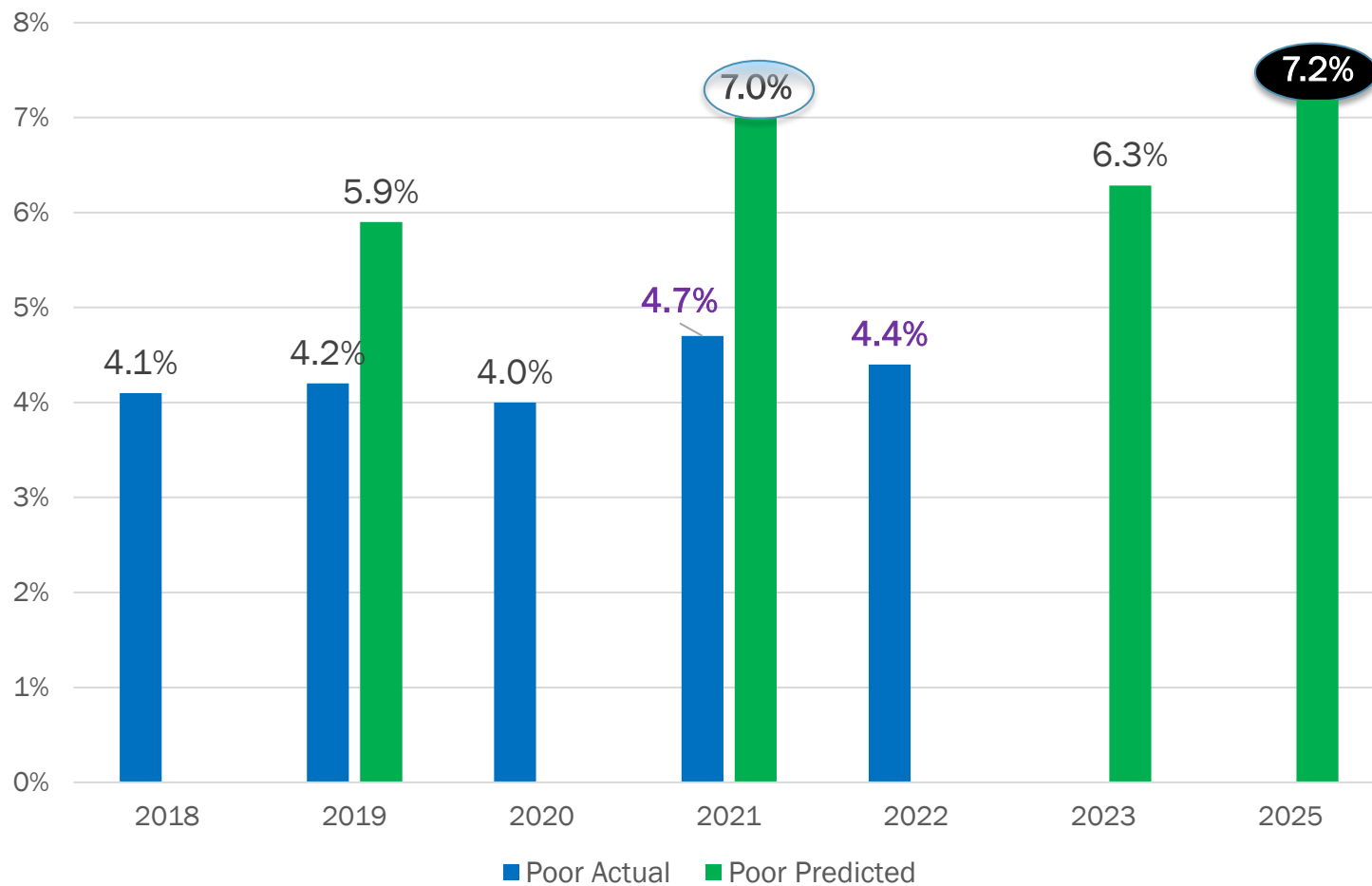


  
**Desired Direction**

✓   
2021 4-year Target

  
2025 4-year Target

# NHS (Non-Interstate) Pavement: Performance and Target (Poor)



Desired Direction



7.0%

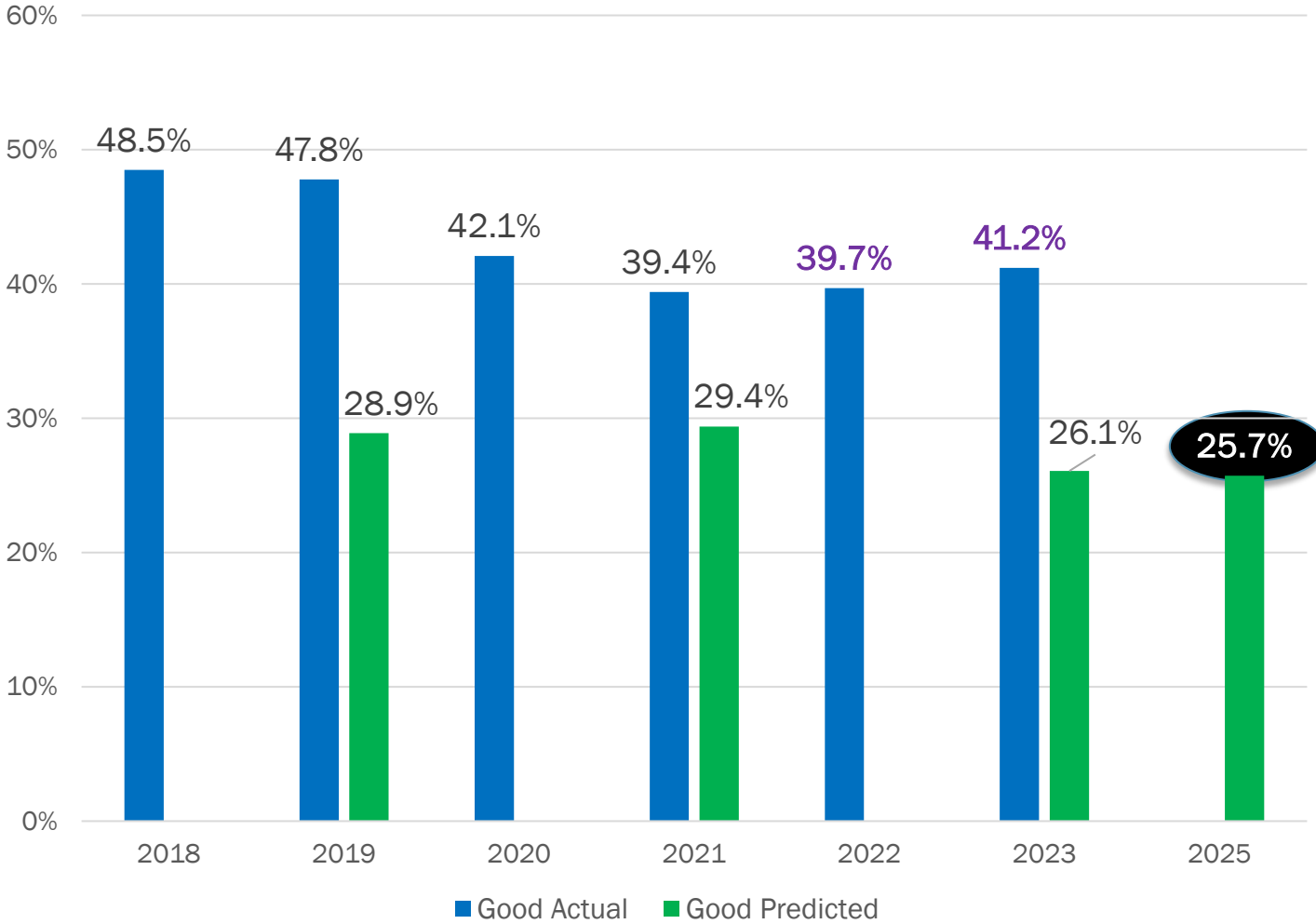
2021 4-year Target

7.2%

2025 4-year Target



# Bridges: Performance and Target (Good)



Desired Direction

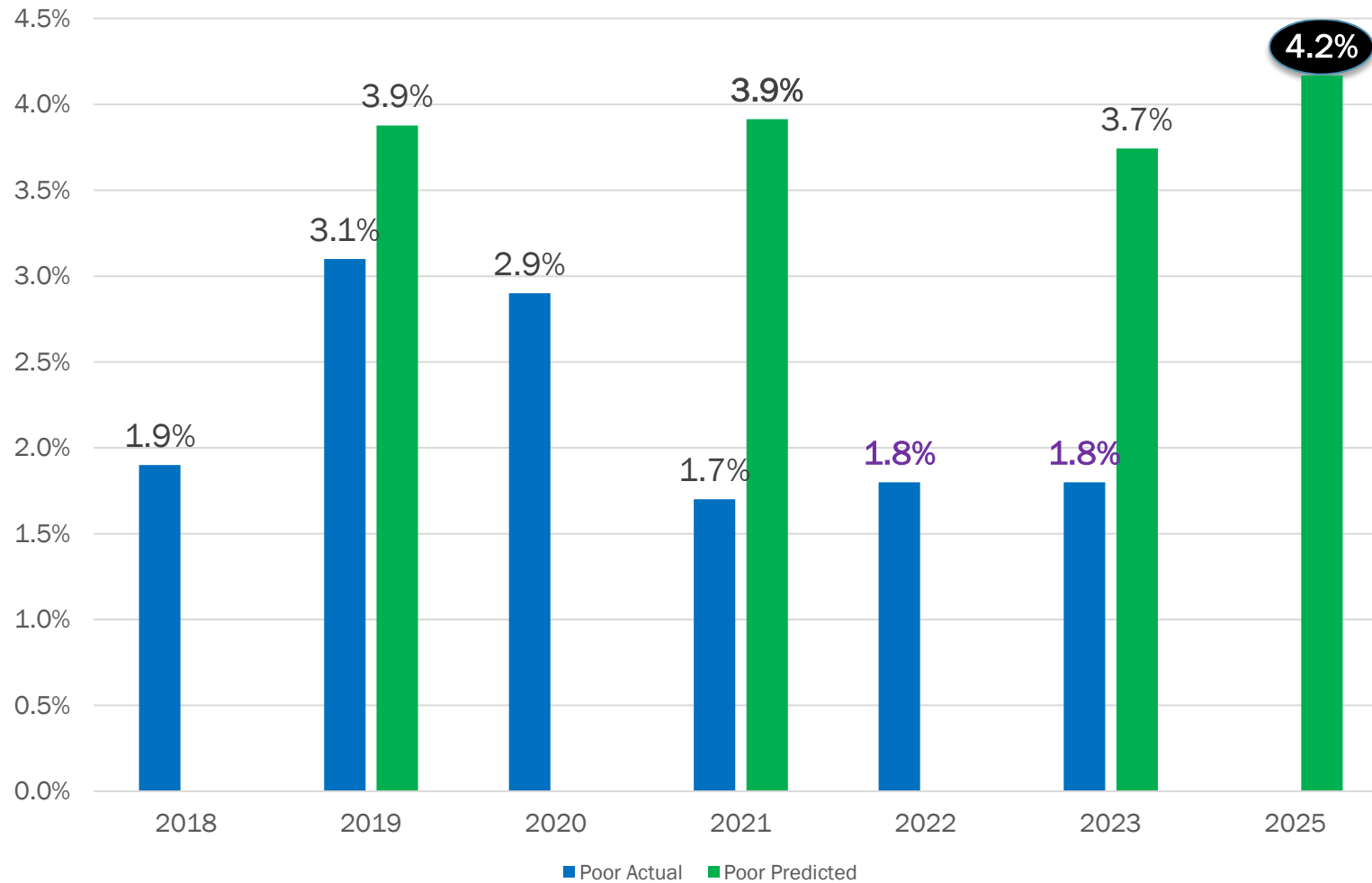
25.7%

2025 4-year Target

Bridge condition performance vs 2021 target previously presented.



# Bridges: Performance and Target (Poor)



Desired Direction

4.2%

2025 4-year Target



# Highway System Performance: Travel Time Reliability Targets



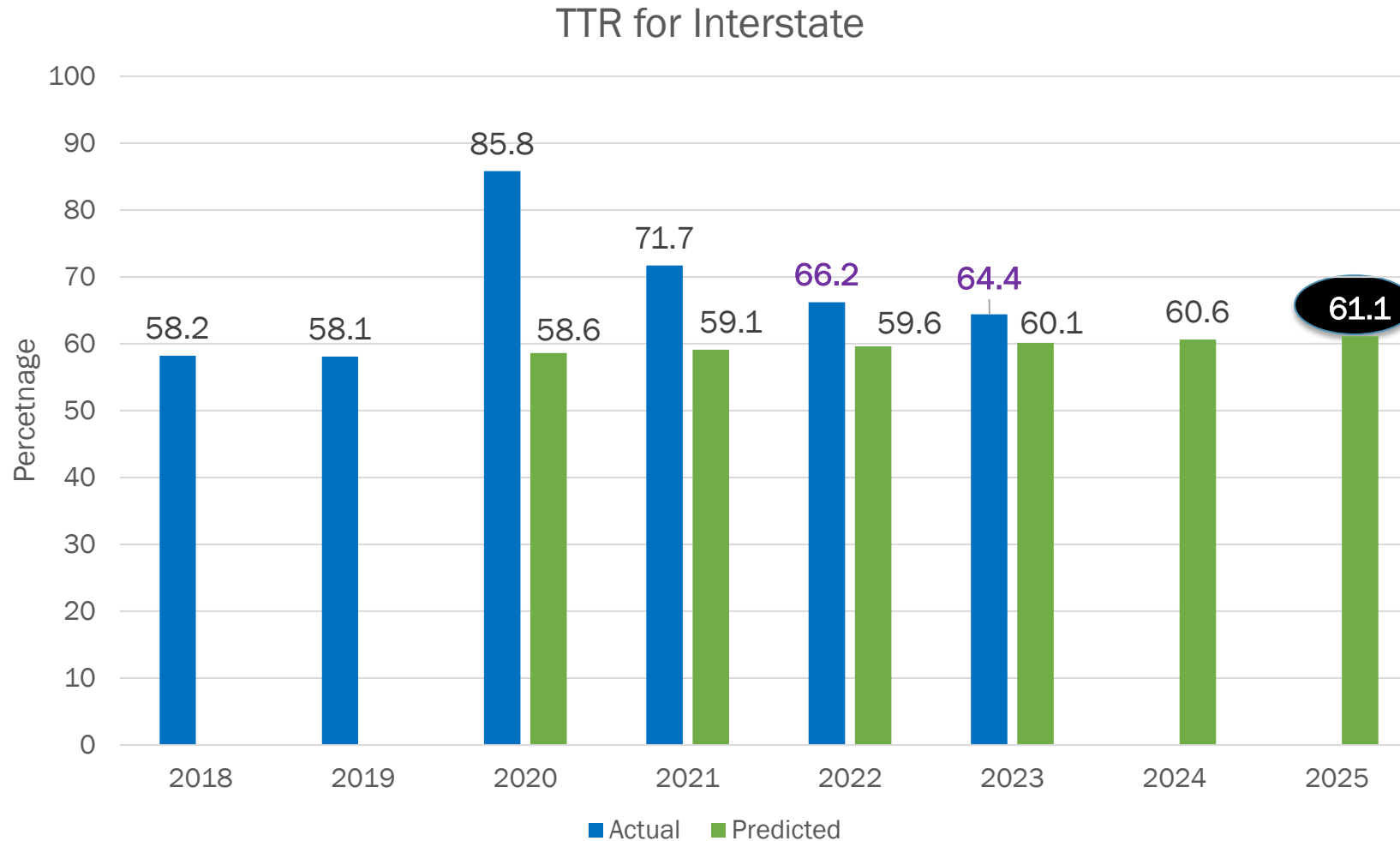
# Highway System Performance: Travel Time Reliability

## 2022-2025 Targets for the NCR

Highway System Performance: Travel Time Reliability for the NCR	2022 – 2025 Four Year Targets
Travel Time Reliability (TTR) – Interstate	61.1%
Travel Time Reliability (TTR) – Non-Interstate NHS	78.6%
Truck Travel Time Reliability (TTTR) Index	2.56



# 2022-2025 TTR (Interstate) Performance and Target

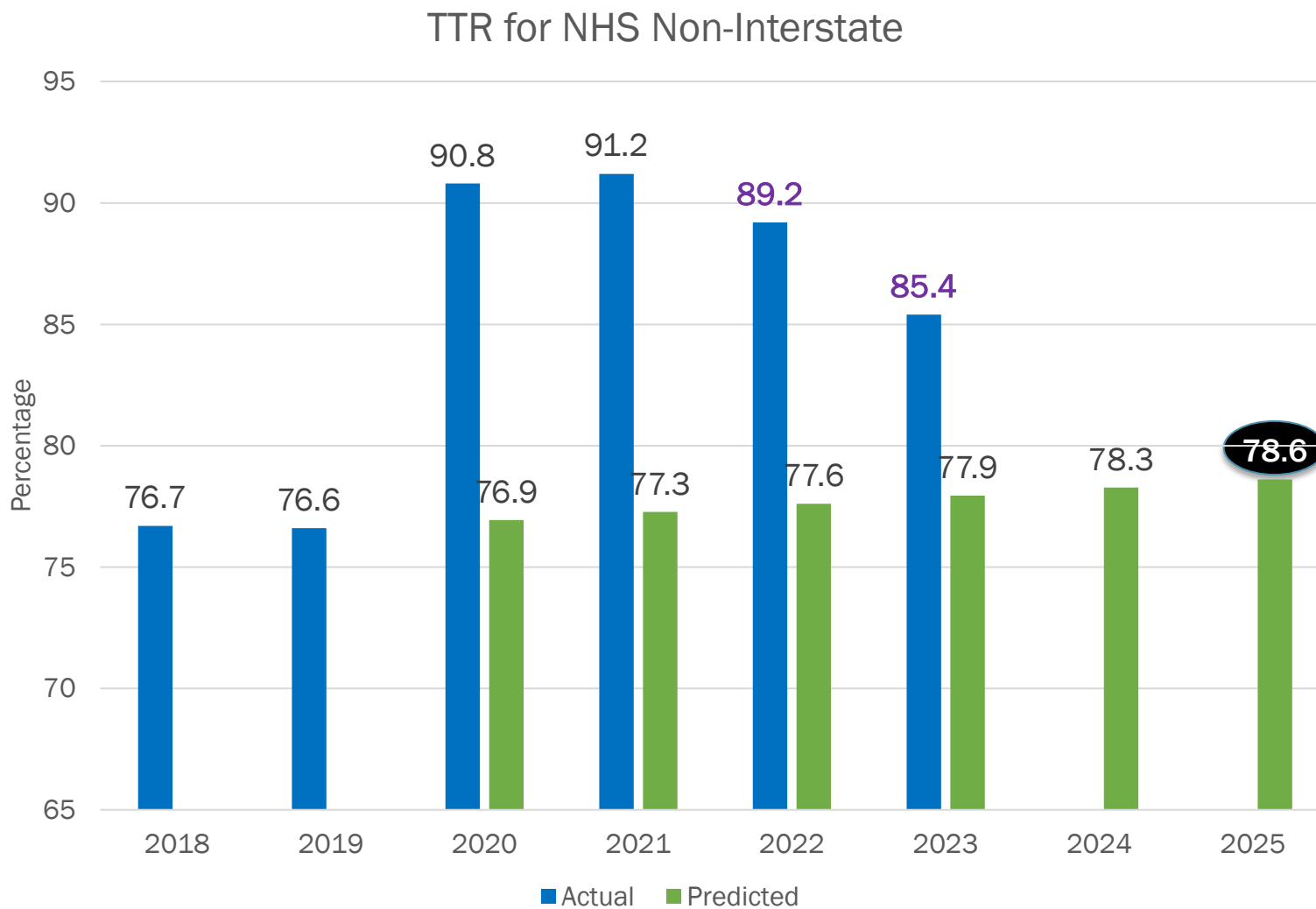


**61.1%**  
2025  
4-year Target





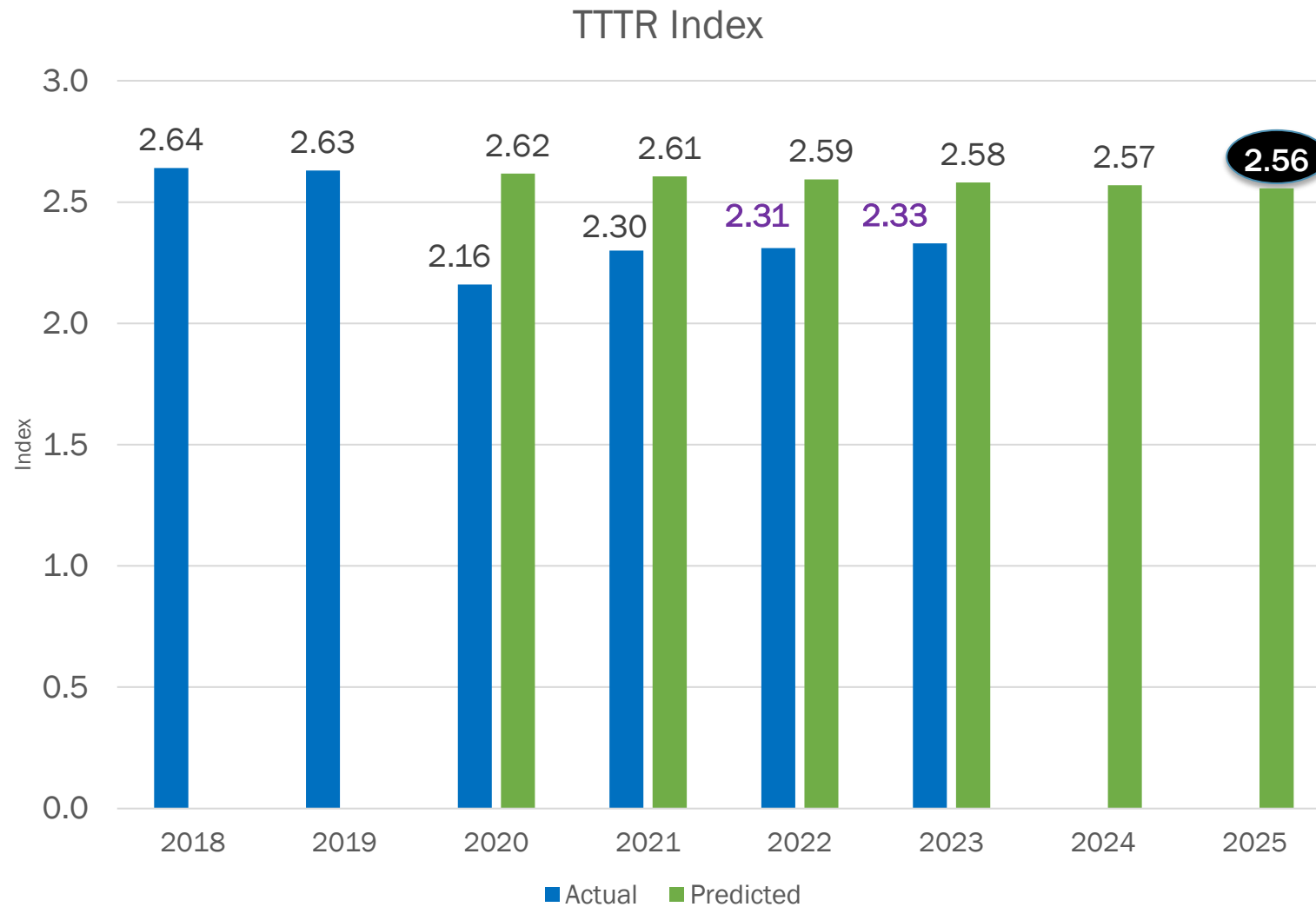
# 2022-2025 TTR (NHS Non-Interstate) Performance and Target



**78.6%**  
2025  
4-year Target



# 2022-2025 TTTR Index Performance and Target



Desired Direction

2.56

2025 4-year Target



# CMAQ Program: Performance Measures

	Performance Measures
<b>CMAQ Program: Traffic Congestion</b>	<b>Peak Hour Excessive Delay (PHED)</b> – Annual hours of peak hour excessive delay per capita
	<b>Mode Share</b> - Percent of Non-SOV Travel on the National Highway System (NHS)
<b>CMAQ Program: Emissions Reduction</b>	<b>Emissions</b> - CMAQ-funded projects on-road mobile source total emission reductions for each applicable criteria pollutant and precursor

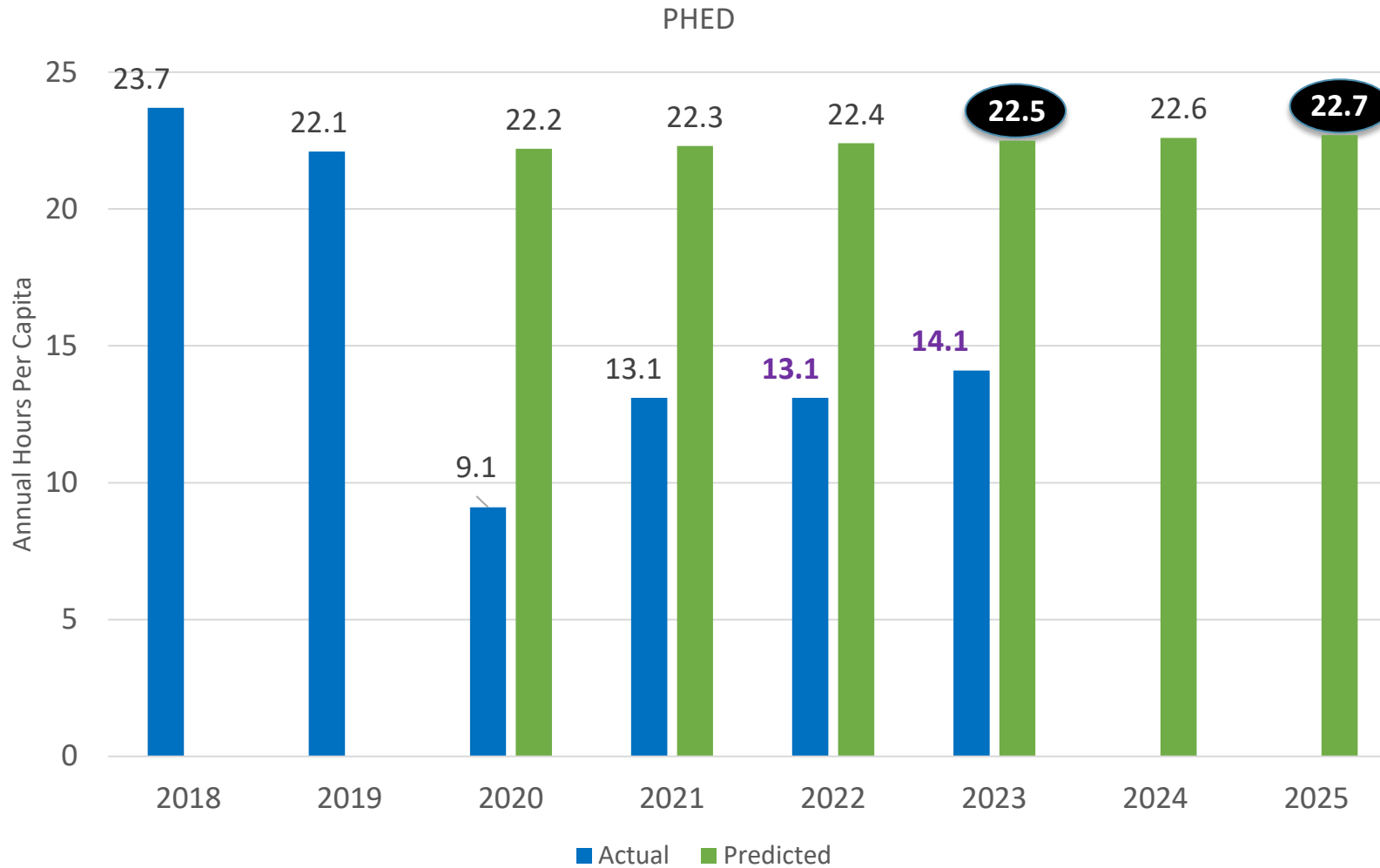
The three CMAQ Program targets are set regionally:

1. PHED and Mode Share (Non-SOV) are set for the Washington DC-VA-MD urban area
2. CMAQ Program Emissions Reductions - VOCs and NOx are set for the non-attainment area

- ❖ TPB must complete a biennial MPO CMAQ Performance Plan with performance updates and submit to State DOTs by September 2024



# 2022-2025 PHED Graph and Targets



Desired Direction



**22.5 hours**

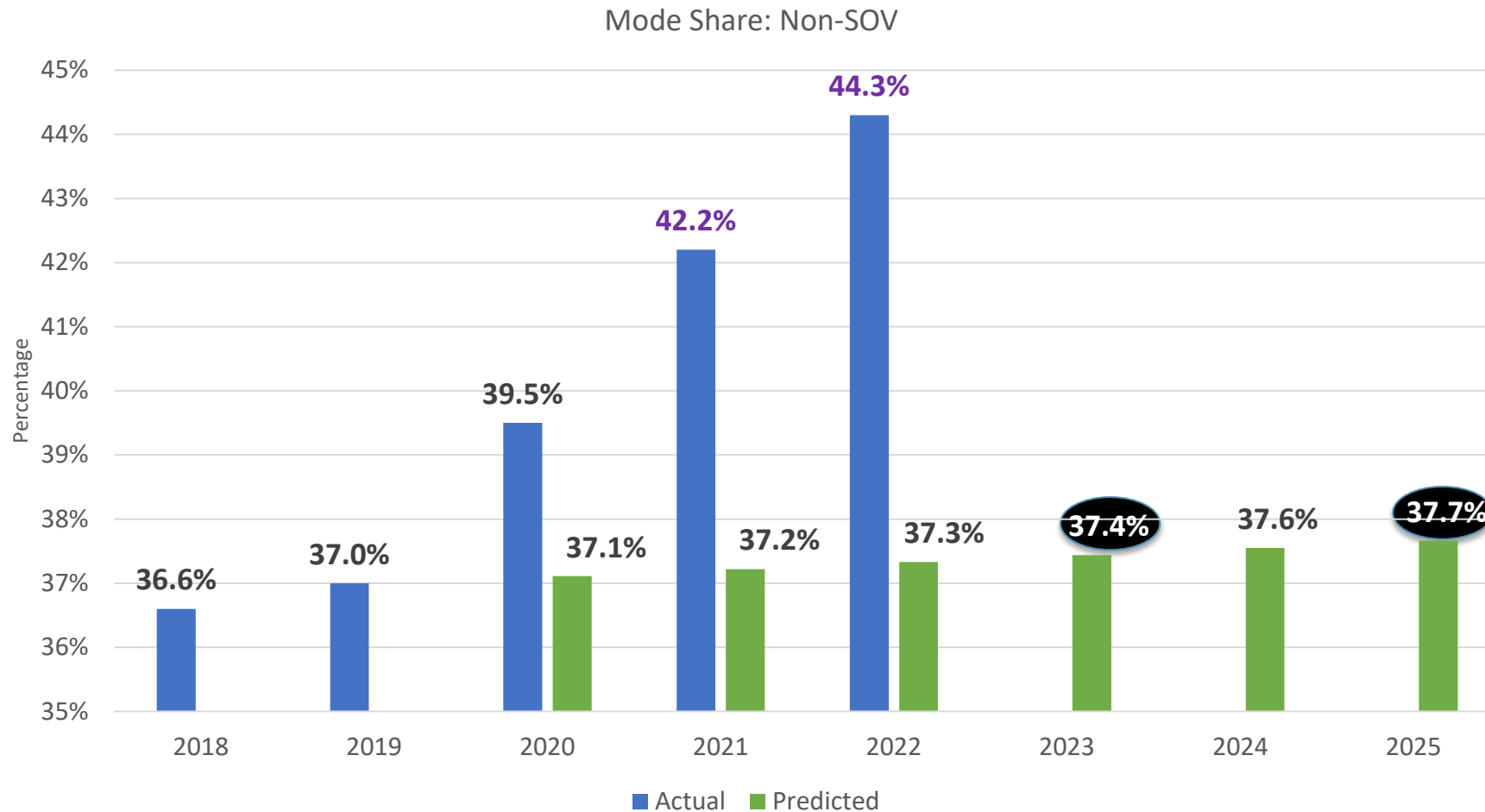
2023 2-year Target

**22.7 hours**

2025 4-year Target



# 2022-2025 Mode Share (Non-SOV) Graph and Targets



**37.4%**  
2023 2-year Target

**37.7%**  
2025 4-year Target



# 2022-2025 CMAQ Emissions Reduction Performance

Performance based on quantitative data for emissions reductions of CMAQ projects reported to the FHWA CMAQ Public Access System (CPAS)

- 2022-2025 CMAQ Emission Reduction forecasting and target-setting was based on past trends and advance data for planned projects, though not all have quantitative emissions calculated
- 2022 Data now available in CPAS; 2023 Data based on State DOT submissions to CPAS, which are still in review

	FFY 2022 – 2023 Two Year Target	FFY 2022 – 2025 Four Year Target	FFY 2022 – 2023 Two Year Data	Preliminary
Volatile Organic Compounds (VOCs)	0.610 Kg/Day	9.408 Kg/Day	2.866 Kg/day	✓
Nitrogen Oxides (NOx)	2.830 Kg/Day	21.117 Kg/Day	3.093 Kg/day	✓

# Upcoming Activities

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- TPB staff must complete the biennial MPO CMAQ Performance Plan and submit to State DOTs by September 1.
- TPB staff will also assist State DOTs as they prepare Mid-Period Performance Reports (2022-2023) due to FHWA by October 1, 2024.
  - Questions on regional performance (CMAQ Program measures).
- The Visualize 2050 long range transportation plan must include an overall PBPP system performance report
- The FY 2026-2029 TIP must discuss the impact of projects on performance
  - The Plan and TIP will include data on recent performance for Highway Assets and Highway System Performance



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