COMMONWEALTH of VIRGINIA
Office of the
SECRETARY of TRANSPORTATION

Federal Transportation Performance Management

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Performance Management

- This presentation provides:
  - an overview of performance management – measures and targets;
  - an overview of federal requirements for target setting and performance reporting;
  - a performance summary for the performance period (2022-2025) for infrastructure condition and system performance measures;
  - an overview of the approaches used to develop targets for infrastructure condition and system performance measures for the next performance period (2026-2029); and
  - the recommended targets based on those approaches.
- The CTB will be asked to vote on the targets at the September meeting.

Performance Management - Agenda

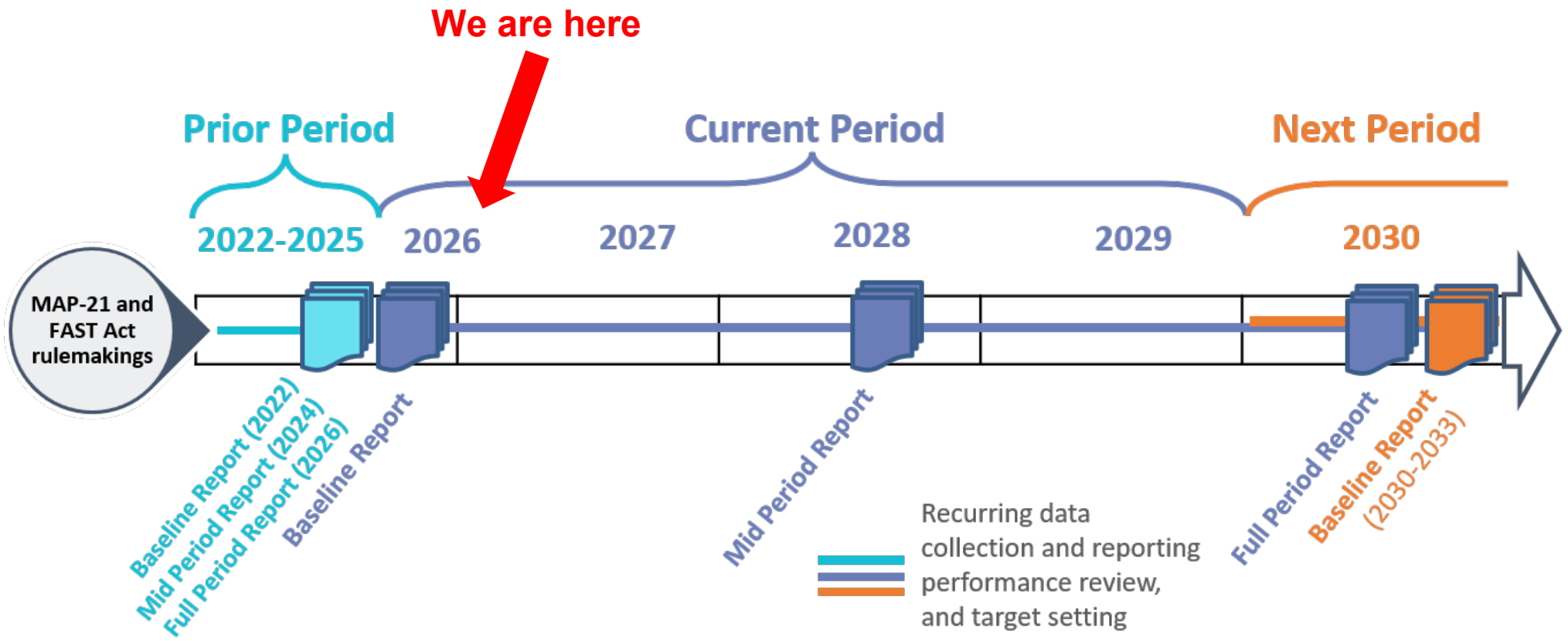
- Performance Management Overview
- Federal Performance Management Background and Requirements
- Performance by Measure for 2022-2025, and Proposed Targets through 2029
  - Bridges
  - Pavements
  - System Performance
  - Traffic Congestion and Air Quality (Limited to National Capital Region)
- Next Steps

Federal Performance Management Background

- MAP-21 Federal Law – established performance measures for:
  - ✓ Safety - (CTB adopted targets in June 2026)
  - – Infrastructure Condition (CTB to adopt in September)
    - – Bridge
    - – Pavement
  - – System Performance (CTB to adopt in September)
    - – Highway and Freight Reliability
    - – Traffic Congestion
    - – Emission Reduction

October 1 Submission Deadline
2022-2025 Performance Period Final Report
2026-2029 Performance Period Baseline Report

Federal Performance Management Background
Performance Period Requirements



FHWA Determination of "Significant Progress"

- Biennially, FHWA makes a determination of **Significant Progress** towards meeting the 2- and 4-year targets
- **Significant Progress** determination
  - Actual performance is equal to or greater than targets OR
  - Actual performance is better than baseline performance
- If **Significant Progress** is not made, the state must:
  - Document actions to achieve targets, and
  - Depending on performance measure, may have funding and/or reporting impacts

Infrastructure Condition

Federal Target Setting for Infrastructure (Pavement and Bridges)



We set our federal targets based on calculating what will be the outcome of the statewide plan on the subset of roads and bridges that are Federal.

We optimize our planning and spending for Statewide targets using our statewide plan (presented in this meeting)

Fed targets (just, infrastructure condition, system perf.) on 12% roads, 18% of bridges. Last update 2022

State VTRANS target set by CTB. Cover many topics, 100% of roads (Code of Virginia, Section 2.2-229).

Fuller overview in VTrans and SGR presentations today. Last update 2025.

Federal Performance Measure Requirements
Infrastructure Condition

Measures	Scope
• Percentage of Bridges in Good Condition • Percentage of Bridges in Poor Condition	NBI on NHS
• Percentage of Pavements in Good Condition • Percentage of Pavements in Poor Condition	Interstate
• Percentage of Pavements in Good Condition • Percentage of Pavements in Poor Condition	Non-Interstate NHS

The National Highway System (NHS) represents

- 12% of VDOT maintained roads on the Interstate, Primary and Secondary road systems (16,200 lane miles out of 130,500 lane miles)
- 18% of bridge inventory (3,750 out of 21,240 bridges)

Note: Bridge targets and performance includes bridges “owned by others” i.e. Federal, Private, and Border Bridges

NHS – National Highway System
NBI – National Bridge Inventory, Bridges over 20 feet in length

Infrastructure Condition: Bridge Performance Measures

In 2019, CTB adopted Statewide pavement and bridge performance measures and targets based on Maintenance and Operations Comprehensive Review (**Comprehensive Review**) and investment strategy

State Performance Measures	Federal Performance Measures
1. GCR (General Condition Rating) 2. Percent non-Poor (Sufficient) Structures	1. Percent in Good Condition 2. Percent in Poor Condition
Applicable to entire network	Applicable to National Highway System portion only
Provides an overall characterization of the general condition of the entire bridge, used on all bridges	Based only on good and poor condition
Drives maintenance decisions, emphasizes long term sustainability and preservation of fair bridges	Used for reporting as required by the FHWA

Infrastructure Condition
Pavement Performance Measures

In 2019, CTB adopted Statewide pavement and bridge performance measures and targets based on Maintenance and Operations Comprehensive Review (**Comprehensive Review**) and investment strategy

State Performance Measures	Federal Performance Measures
1. CCI (Critical Condition Index) 2. Percent Sufficient (CCI 60 or greater)	1. Percent in Good Condition 2. Percent in Poor Condition
Applicable for entire network by system	Applicable to National Highway System portion only
Based on ten or more distresses for each pavement type	Based on two or three distresses for each pavement type
Drives maintenance decisions and focuses on long term sustainability	Used only for reporting as required by the FHWA

Infrastructure Condition
Federal Bridge Performance and Targets

Green means meeting/exceeding targets. Red means failure to meet. Yellow shaded cells are proposed targets.

Desired Trend	Measure	Prior Period CTB Adopted Targets (percent)		Actual Annual Performance (percent)					Future Proposed Targets for CTB Vote in September (percent)	
		2-yr (2023)	4-yr (2025)	2021	2022	2023*	2024	2025*	2-yr (2027)	4-yr (2029)
↑	Percentage of NBI Bridges on the NHS in GOOD Condition	27.2	25.1	29.8	29.2	28.8	29.5	29.5	25.1	24.9
	Percentage of NBI Bridges on the NHS in FAIR Condition	n/a	n/a	67.2	68.0	68.5	67.6	67.6	n/a	n/a
↓	Percentage of NBI Bridges on the NHS in POOR Condition	3.3	3.6	3.0	2.8	2.7	2.9	2.9	3.8	3.9

*Virginia made **Significant Progress** toward its 2- and 4-year targets.

NHS – National Highway System
NBI – National Bridge Inventory

Infrastructure Condition
Federal Pavement Performance and Targets
Interstate

Desired Trend	Measure (Percentage of)	Prior Period CTB Adopted Targets (percent)		Actual Annual Performance (percent)					Future Proposed Targets for CTB Vote in September (percent)	
		2-yr (2023)	4-yr (2025)	2021	2022	2023*	2024	2025*	2-yr (2027)	4-yr (2029)
↑	Pavement on the Interstate in GOOD Condition	**45**	**45**	57.3	58.2	60.4	61.6	66.5	45.0	45.0
	Pavement on the Interstate in FAIR Condition	n/a	n/a	42.6	41.7	39.4	38.3	33.3	n/a	n/a
↓	Pavement on the Interstate in POOR Condition	**3.0**	**3.0**	0.1	0.1	0.2	0.1	0.2	3.0	3.0

*Virginia made **Significant Progress** toward its 2- and 4-year targets.

Infrastructure Condition
Federal Pavement Performance and Targets
Non-Interstate National Highway System

Desired Trend	Measure (Percentage of)	Prior Period CTB Adopted Targets (percent)		Actual Annual Performance (percent)					Future Proposed Targets for CTB Vote in September (percent)	
		2-yr (2023)	4-yr (2025)	2021	2022	2023*	2024	2025*	2-yr (2027)	4-yr (2029)
↑	Pavement on the Non-Interstate NHS in GOOD Condition	**25**	**25**	33.5	36.5	35.1	36.1	35.2	25.0	25.0
	Pavement on the Non-Interstate NHS in FAIR Condition	n/a	n/a	66.0	63.1	64.5	63.4	64.3	n/a	n/a
↓	Pavement on the Non-Interstate NHS in POOR Condition	**5.0**	**5.0**	0.5	0.4	0.4	0.5	0.5	5.0	5.0

*Virginia made **Significant Progress** toward its 2- and 4-year targets.

Reliability / System Performance

Federal Performance Measure Requirements
System Performance - Reliability

System Performance Measures*	Scope
Percentage of Person-Miles Traveled that are Reliable (PMTR)	Interstate
Percentage of Person-Miles Traveled that are Reliable (PMTR)	Non-Interstate NHS
Truck Travel Time Reliability Index (TTTR)	Interstate

Reliability: the consistency or predictability in travel times, as measured from day-to-day and/or across different times of the day

***FHWA requires a specific data set for the analysis of Travel Time Reliability – National Performance Management Research Data Set (NPMRDS).**

System Performance
Federal Reliability Performance and Targets

Desired Trend	Measure	Prior Period CTB Adopted Targets (percent)		Actual Annual Performance (percent)					Future Proposed Targets for CTB Vote in September (percent)	
		2-yr (2023)	4-yr (2025)	2021	2022	2023*	2024	2025*	2-yr (2027)	4-yr (2029)
↑	Person-Miles Traveled that are Reliable - Interstate (%)	**85.0**	**85.0**	86.3%	85.5%	86.0%	85.1%	83.6%*	77%	75%
↑	Person-Miles Traveled that are Reliable - Non-Interstate NHS (%)	**88.0**	**88.0**	95.0%	95.2%	93.9%	95.3%	91.3%	85%	80%
↓	Truck Travel Time Reliability Index	**1.64**	**1.64**	1.49	1.45	1.43	1.48	1.48	1.58	1.58

*Virginia did not make **Significant Progress** toward its 4-year target for Interstate PMTR. **It should be noted there are year over year network inaccuracies from the Federally required data set and 2025 data was missing ALL express lanes – some of Virginia's most reliable roadway segments.**

System Performance
NPMRDS Data Analysis – Interstate Only

Year	NPMRDS Mileage	NPMRDS Express Lanes Mileage	Actual Miles of Express Lanes	PMTR Based on Provided NPMRDS Network	Targets
2017	2,331	86.20	116.4	82.5%	
2018	2,395	105.8	116.4	82.6%	
2019	2,344	107.4	116.4	83.6%	82.2%
2020	2,234	0.0	116.4	93.8%	
2021	2,383	105.8	116.4	86.3%	82.0%
2022	2,283	44.3	116.4	85.5%	
2023	2,241	21.2	160.6	86.0%	85.0%
2024	2,253	10.6	180.3	85.1%	
2025	2,236	0.0	180.3	83.6%	85.0%

- 2025 Target = 85.0% Person-Miles Traveled Reliable (PMTR)
- Using FHWA data, 2025 PMTR is 83.64% - which is below the target
- Recalculating including Express Lanes is 85.19% - indicating target was achieved
- Conservative approach used to propose targets for 2027 and 2029 to account for historical network inaccuracies

Traffic Congestion and Air Quality (Capital Region Only)

Federal Performance Measure Requirements
Traffic Congestion and Air Quality – only required for Capital Region

Measures	Scope
Annual Hours of Peak Hour **Excessive Delay** (PHED) Per Capita	NHS
Percent of Non-Single Occupancy Vehicle (SOV) Travel (Mode Share)	Urbanized Area
Total Emission Reductions	CMAQ-funded projects

- Traffic Congestion and Air Quality Targets are set regionally
- Targets for PHED and Mode Share must be identical between the three state DOTs (Virginia, Maryland, District of Columbia) as well as the adjoining Metropolitan Planning Organizations (National Capital Region – Transportation Planning Board (TPB), Fredericksburg and Baltimore Regions)
- **Excessive delay** is travel below 60% of the posted speed limit or 20mph, whichever is greater on NHS routes.

System Performance
Federal Traffic Congestion and Air Quality
Target Setting Approach

- *Annual Hours of Peak Hour **Excessive Delay** (PHED) Per Capita
  - Utilized an average of both observed trends and modeled changes in peak congestion levels and applied a Covid-era adjustment factor.
- *Percentage of Non-SOV Travel
  - Based on trend line analysis from data in the American Community Survey and post-Covid growth rate adjustments.
- Total Emissions Reduction is the cumulative 2- and 4-year reported emission reductions for:
  - All new programmed CMAQ funded projects in Northern Virginia
  - Applicable criteria for pollutants
    - Applicable Pollutants: Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx)
  - TPB combines the Total Emissions Reduction estimates from each DOT to establish the target for the National Capital Region

***Targets for PHED and Non-SOV are developed in coordination across multiple DOTs and MPOs. TPB leads this effort.**

System Performance - Federal Traffic Congestion and Air Quality Performance and Targets

Desired Trend	Measure *	Prior Period CTB Adopted Targets (percent)		Actual Annual Performance (percent)					Future Proposed Targets for CTB Vote in September (percent)	
		2-yr (2023)	4-yr (2025)	2021	2022	2023	2024	2025	2-yr (2027)	4-yr (2029)
↓	Annual Hours of Peak Hour Excessive Delay Per Capita (hrs/capita)	**22.5**	**22.7**	13.1	13.1	16.0	17.3	21.9	24.2	26.3
↑	Percentage of Non-SOV Travel	**37.4%**	**37.7%**	39.5%	42.2%	44.3%	46.4%	48.1%	49.4	50.3
↑	Cumulative reported emissions reductions - Volatile Organic Compounds**	**0.323**	**3.013**	7.884	1.636	2.478	3.791	4.637	0.382	0.442
↑	Cumulative reported emissions reductions - Nitrogen Oxides**	**0.612**	**4.911**	10.894	1.69	2.665	13.451	17.517	3.425	3.495

*Only required for the National Capital Region.
**Performance values are for Virginia portion and each individual year. Baseline data is cumulative for 2018-2021. Performance period data are cumulative for 2022-2025 (meaning 2022 is actual, 2023 is 2022 + 2023, etc.).

Next Steps, Q&A

Next Steps

- Today's presentation and discussion
- CTB adoption of Federal targets in September
- By October 1, 2026
  - Develop and submit 2022-2025 Performance Period Final Performance Report
  - Develop and submit 2026-2029 Performance Period Baseline Report with 2- and 4-year Targets

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Thank you.

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