Resolution on Proposed Regional Targets for Travel Time Reliability Performance

March 28, 2023

System Performance Measures

- State DOTs and MPOs are required to assess the performance of the NHS under the National Highway Performance Program (NHPP)

- Two measures are related to Level of Travel Time Reliability (LOTTR):
  - percent of person-miles traveled on the Interstate System that are reliable
  - percent of person-miles traveled on the Non-Interstate NHS that are reliable

- One freight-related measure (TTTR):
  - The Truck Travel Time Reliability (TTTR) Index is a ratio showing Interstate System mileage providing for reliable truck travel times

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MOBILITY MEASURES

FHWA Measures for Assessing Mobility Performance
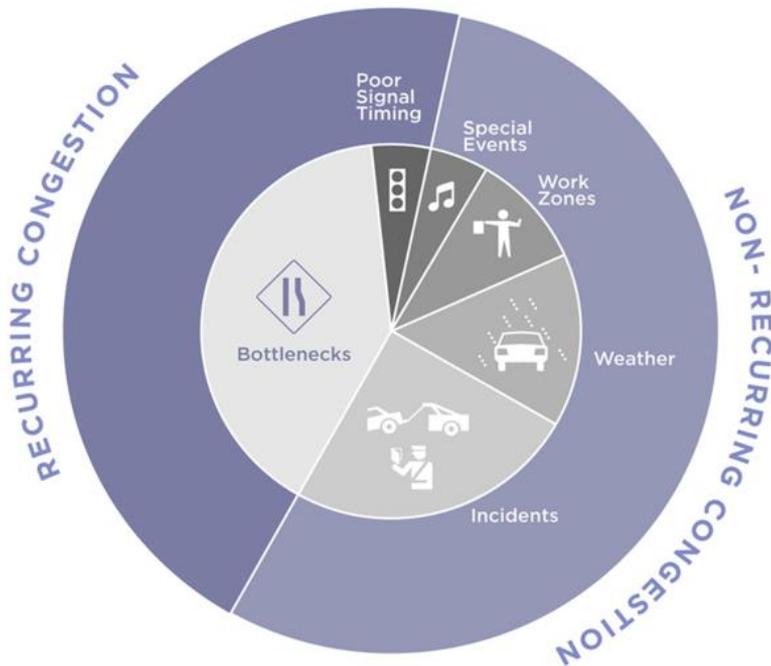
RELIABILITY MEASURES

- Recurrent congestion
- Percent of Travel on the Interstate and Non-Interstate NHS that is "Reliable"
- i.e. *Most Congested Day of the Week*

FREIGHT MEASURE

- Non-recurring and recurring congestion
- Distance weighted average of the 95th percentile truck travel time to the 50th percentile travel time.
- i.e. *Ratio of Extra Travel Time on Most Congested Day of the Month*

Figure Source: FHWA

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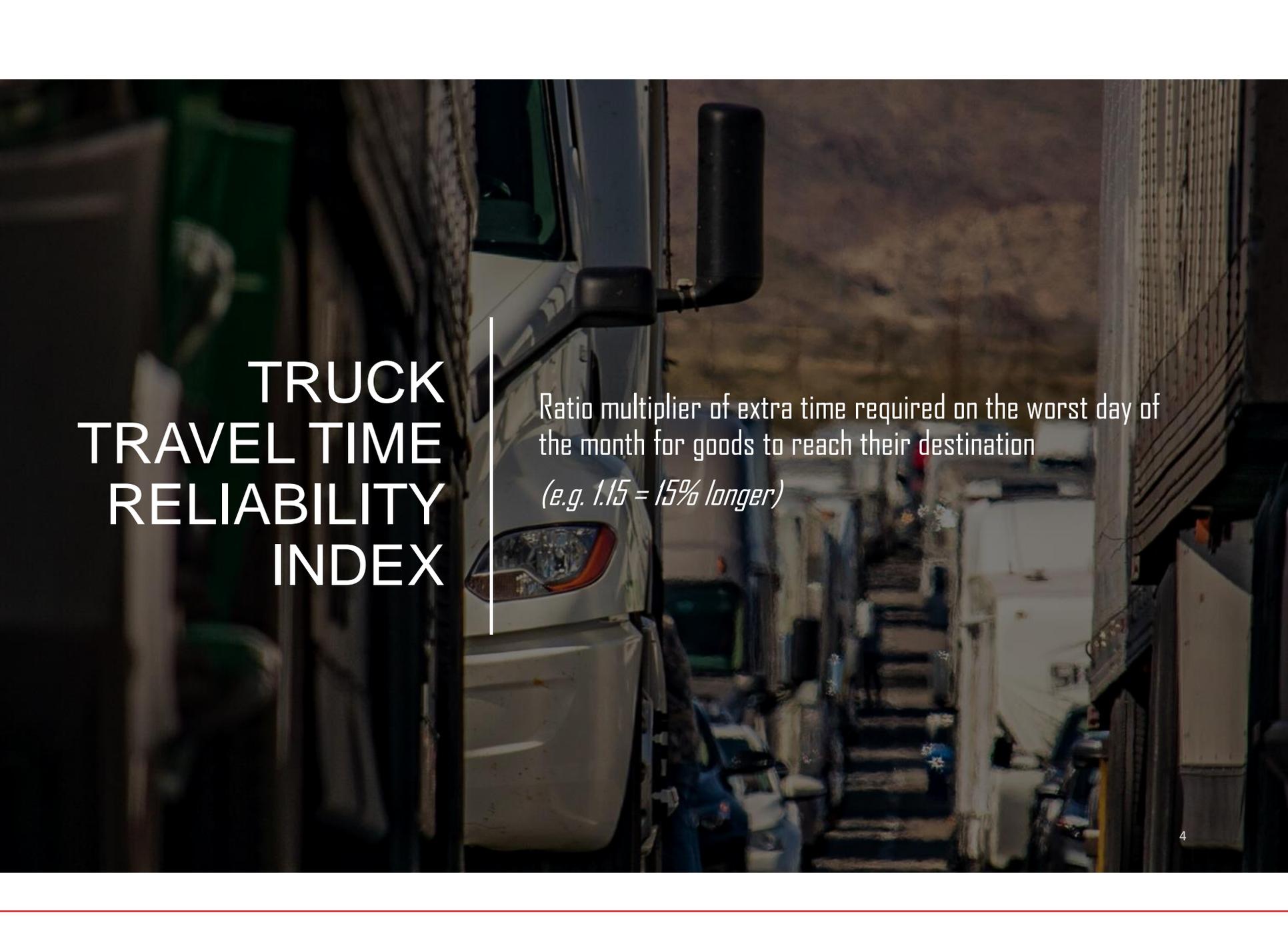
TRUCK TRAVEL TIME RELIABILITY INDEX

Ratio multiplier of extra time required on the worst day of the month for goods to reach their destination

(e.g. 1.15 = 15% longer)

Travel Time Reliability Targets

- State DOTs are required to set performance targets for travel time reliability by October 1, 2022

- MPOs are required to set performance targets for travel time reliability by March 31, 2023

- MPOs can adopt their state's targets or set their own regional targets

- Data from FHWA's National Performance Management Research Data Set (NPMRDS)

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Travel Time Reliability Targets − Methodology

LOTTR − expressed as a threshold (percentage)

– 80th percentile travel time divided by 50th percentile travel time

– A ratio < 1.5 indicates "reliable" condition

– e.g., if 80th percentile = 45 minutes and 50th percentile = 30 minutes, then 45 minutes / 30 minutes = 1.5

– What percentage of the system is operating in this reliable condition (e.g., a trip that normally takes 30 minutes will take no longer than 45 minutes)?

Travel Time Reliability Targets – Methodology

TTTR – expressed as an index (average)

- 95th percentile travel time divided by 50th percentile travel time

- e.g., if 95th percentile = 55 minutes and 50th percentile = 30 minutes, then 55 minutes / 30 minutes = 1.83

- FHWA decided not to apply a reliable condition threshold of 1.5. Instead, this method determines the average of the segments measured.

- Why different upper percentiles (80th for LOTTR and 95th for TTTR)?

- From final rule: "FHWA believes that the 95th percentile travel time needs to be considered in the freight measure to account for the events that could impact on-time delivery as shippers, carriers and receivers desire on-time/just-in-time delivery of goods and plan their trips by building in enough time to meet delivery requirements. For these reasons, FHWA elected to maintain the 95th percentile in the truck reliability calculation."

BRTB Target Setting Approach

- In 2018, BRTB adopted MDOT SHA statewide targets for 2019 and 2021
- Reliability has improved significantly across all three measures 2020-2022 due to the pandemic
- Regional traffic volumes and congestion are trending towards pre-pandemic levels
- BMC recommends using actual results from 2017 and 2019 (see table below) to set targets for 2023 and 2025
- Targets can be revised in 2024

	Baseline	2 Year	4 Year	2 Year	4 year
Transportation Perfromance Measurement (TPM) Targets - state	**2017**	**2019**	**2021**	**2023**	**2025**
Interstate TTR	71.5%	72.1%	72.1%	76.8%	76.4%
non-Interstate TTR	82.0%	N/A	81.7%	87.2%	87.2%
Truck TTR	1.87	1.87	1.88	1.8	1.81
TPM Actual results - region					
Interstate TTR	74.1%	71.6%	88.4%		
non-Interstate TTR	79.8%	78.9%	91.3%		
Truck TTR	2.08	2.03	1.64		
*BMC adopted the statewide targets (2017-2021)					

Travel Time Reliability Targets for the Baltimore Region

Performance Measure	Baseline 2017	2-Year Targets* (2019)	4-Year Targets* (2021)	2-Year Targets (2023)**	4-Year Targets (2025)**
LOTTR (Interstate) measure: Percent of person-miles traveled on the Interstate System that are reliable	71.5%	72.1%	72.1%	72.9% 76.8%	72.9% 76.4%
Observed – region	74.1%	71.6%	88.4%		
LOTTR (non-Interstate) measure: Percent of person-miles traveled on the non-Interstate NHS that are reliable	82.0%	Not applicable	81.7%	79.4% 87.2%	79.4% 87.2%
Observed - region	79.8%	78.9%	91.3%		
TTTR Index: Ratio of Interstate System mileage indicating reliable truck travel times	1.87	1.87	1.88	2.06 1.80	2.06 1.81
Observed- region	2.08	2.03	1.64		

* set in 2018 using 2017 as baseline year – region adopted statewide targets
** - regional targets are average of 2017 and 2019 observed values
76.8 – MDOT SHA targets

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For More Information

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