

Truck Travel Time Reliability (TTTR)

TTTR is the amount of time it takes trucks to drive the length of a highway segment. This measure is *only* calculated for the Interstate System. The following steps are used to calculate the TTTR measure:

1. Collect travel times from the National Performance Management Research Data Set (NPMRDS).
2. Find the 50th and 95th percentile times for each time period.
3. Compute the TTTR by dividing the 95th percentile by the 50th percentile.
4. Repeat the above steps for all five time periods shown in **Figure 15**.
5. The TTTR Index is generated as a weighted average of the largest period for each segment and its weight.

Figure 15 is an example of how highway segments are calculated for their reliability.

Figure 15

Level of Truck Travel Time Reliability (TTTR) (Single Segment, Interstate Highway System)		
Monday - Friday	6am – 10am	$TTTR = \frac{55 \text{ sec}}{35 \text{ sec}} = 1.57$
	10am – 4pm	TTTR = 1.25
	4pm – 8pm	TTTR = 2.52
Weekends	6am – 8pm	TTTR = 1.2
All Days	8pm – 6am	TTTR = 1.05

MassDOT TTTR Targets and CMMPO Comparison

MassDOT followed FHWA regulation in measuring TTTR on the Interstate System using the NPMRDS provided by FHWA. These performance measures aim to identify the predictability of travel times on the major highway network by comparing the average travel time along a given segment against longer travel times. **Figure 16** shows the annual TTTR ratio results from 2017 to 2022 for both statewide and CMMPO region. The 2-year (2024) and 4-year (2026) LOTTR targets for the Interstate system are also shown. The first performance period target (2022) is also included for comparison. The TTTR ratio in 2020 is well below the previous three (3) years of data due to the COVID-19 pandemic as people were either required to stay at home and/or work from home, which generated far less vehicles on the Interstate System. The following statewide and CMMPO Interstate and Non-Interstate percentages are from the Probe Data Analytics Suite of the Regional Integrated Transportation Information System (RITIS) website.

Figure 16

Year	Statewide Interstate TTTR Ratio	CMMPO Interstate TTTR Ratio	Interstate TTTR Target		
			2022	2024	2026
2017	1.81	1.71	1.85	1.80	1.75
2018	1.88	1.79			
2019	1.84	1.77			
2020*	1.44	1.22			
2021	1.61	1.59			
2022	1.71	1.61			

**COVID-19 pandemic occurred during 2020*