

TARGET SETTING

**FREIGHT RELIABILITY
PERFORMANCE MEASURE**



In accordance with 23 CFR 490, the Federal Highway Administration (FHWA) established performance measures for State Departments of Transportation (DOTs) to use in assessing freight movement on the Interstate System. The following is the required performance measure for freight reliability.

Performance Measure
Truck Travel Time Reliability on the Interstate System

CONDITION BASED PERFORMANCE MEASURES

- Measure is based on the Truck Travel Time Reliability (TTTR) Index.
- The TTTR is defined as the 95th percentile truck travel time divided by the 50th percentile truck travel time using data from FHWA’s National Performance Management Research Data Set (NPMRDS) or equivalent.
- The TTTR will be calculated for each of the following five time periods for each segment of Interstate known as a Traffic Message Channel (TMC):
 - 6:00 AM-10:00 AM Weekday
 - 10:00 AM-4:00 PM Weekday
 - 4:00 PM-8:00 PM Weekday
 - 6:00 AM-8:00 PM Weekends
 - 8:00 PM-6:00 AM All Days
- The maximum TTTR for each TMC will be multiplied by the length of the TMC. Then the sum of all length-weighted segments divided by the total length of Interstate will generate the TTTR Index.

TARGET SETTING REQUIREMENTS

State DOTs:

- Must establish targets for all Interstates.
- Must establish statewide 2- and 4-year targets by May 20, 2018 and report targets by October 1, 2018 in the Baseline Performance Period Report.
- May adjust the 4-year target at the Mid Performance Period Progress Report (October 1, 2020).
- State DOTs shall coordinate with relevant MPOs on the selection of targets to ensure consistency, to the maximum extent practicable.

Metropolitan Planning Organizations (MPOs):

- Shall support the relevant State DOT 4-year target or establish their own targets within 180 days after the State DOT target is established.
- Shall report their established targets to their respective State DOT in a manner that is documented and mutually agreed upon by both parties.
- Shall report baseline condition/performance and progress toward the achievement of their targets in the system performance report in the metropolitan transportation plan.

Other Information:

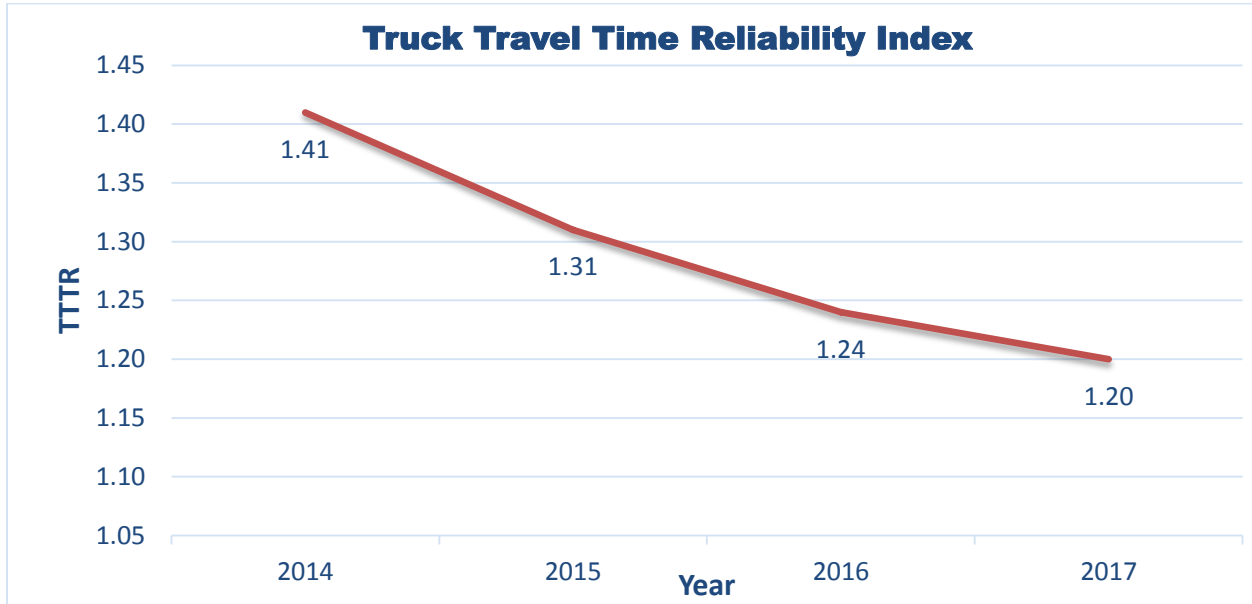
- FHWA began introducing the NPMRDS provided by HERE in August 2013. The data was considered largely as raw probe data.
- In February 2017, FHWA switched the NPMRDS vendor from HERE to INRIX. The change in vendor resulted in inconsistencies due to the different approaches in data processing.
- As of March 2018, nationally there is 85 percent freight probe data coverage for Interstates.
- Population growth and increasing travel will affect travel time reliability, particularly in fast growing urban areas.
- Urban congestion often affects freight reliability. For example, twenty of the highest 40 TTTR segments in Arkansas are located on urban Interstates where very little truck traffic exists.
- Arkansas is part a pooled fund project organized by AASHTO and led by the Rhode Island DOT to provide technical assistance for transportation performance management. As a member, Arkansas has direct access to the NPMRDS Analytics portal through the Regional Integrated Transportation Information System (RITIS) hosted by the University of Maryland.
- If FHWA determines that a state DOT has not made significant progress toward achieving the target, the State DOT shall include as part of the next performance target report an identification of significant freight trends, needs, and issues within the State as well as a description of the freight policies and strategies and an inventory of truck freight bottlenecks. There is no financial penalty for not meeting the proposed targets.

METHODOLOGY

In order to develop the performance targets, the current and past truck travel time reliability was reviewed for the Interstate system. As shown on the figure on the next page, truck travel times on Arkansas' Interstates are largely considered reliable. However, without additional historical data, setting 2- and 4-year targets is difficult. Due to the data variation between vendors, historical trend was not considered appropriate for target setting.

After the review of the travel time reliability condition for 2014-2017, targets were developed by first identifying significant construction projects located on the Interstates. All TMCs within the anticipated project limits were assigned an assumed TTTR of 5 to account for a potential decrease in reliability for those segments during construction. TTTR of 5 represents the travel time on the worst day of the week

is five times greater than the travel time on an average day. Based on a freight trend analysis (Arkansas State Freight Plan, 2017), it is anticipated that the freight growth by truck will increase by 44 percent by 2040. To account for the anticipated growth, the maximum TTTR for each TMC was increased by five percent.



It is anticipated with additional data becoming available and analytics continuously to improve, estimates would become more refined in the future.

TARGETS

The proposed targets are not intended to be “aspirational”, but rather reflect a “realistic” approach to understanding system reliability in an environment where available resources are less than optimal and various additional factors could affect freight movement such as the economy, trade policies, population growth, and land development patterns.

The proposed targets reflect a best estimate to account for major construction projects, anticipated freight growth, data quality and availability, and other uncertainties.

Performance Targets		
	2-year	4-year
Truck Travel Time Reliability on the Interstate System	1.45	1.52