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# Technical Advisory Committee

Monday, July 9, 2018

Regular Session

## Item H1

**Approval Recommendation of MPO Targets for NHS Travel Time  
Reliability and Freight Reliability Performance Measures**

Staff Contact: Allan Zafft, MPO Program Manager

**ISSUE**

VOTE: MPO Targets for NHS Travel Time Reliability and Freight Reliability Performance Measures

**BACKGROUND**

The current and previous federal transportation bills, FAST Act and MAP-21, respectively, included a series of requirements for Transportation Performance Management (TPM). Since the passage of MAP-21, USDOT has worked through the federal rulemaking process to establish a series of performance measures and corresponding target setting requirements. Generally, the performance measures relate to national goals of safety, infrastructure condition, air quality, and transportation system performance.

Final USDOT rules related to TPM established performance measures for system performance and freight (PM3), which are two performance measures for NHS Travel Time Reliability and one performance measure for Freight Reliability (see attached TPM fact sheet). State DOTs were required to establish performance targets for these measures by May 20, 2018. MPOs have the option of supporting the statewide targets, or establishing their own regional targets within 180 days of the establishment of state targets. Therefore, all Nebraska MPOs must adopt targets for NHS Travel Time Reliability and Freight Reliability performance measures by November 17, 2018. After two years there will be a mid-point review, at which point the targets could be adjusted for NDOT and MPOs based on collected data. State DOTs will establish targets every four years.

GIAMPO staff recommends the support of the NDOT NHS Travel Time Reliability and Freight Reliability performance targets (see attached Nebraska PM3 Performance Measures and Target Setting) as the most prudent alternative. The core reasons to not establishing regional targets include the following:

- GIAMPO region outperforms the State on all performance measures.
- Only a very small portion of the GIAMPO system is unreliable with regards to NHS Travel Time Reliability.
- Truck travel in the region is very reliable with a Freight Reliability value of 1.08.
- The Interstate and Non-Interstate NHS routes in the GIAMPO metropolitan planning area are State NHS routes.

**POLICY CONSIDERATIONS/DISCUSSION**

With supporting the statewide targets, GIAMPO is agreeing to plan and program projects in a manner that contributes towards the accomplishment of the NDOT NHS Travel Time Reliability and Freight Reliability performance targets. These targets will ultimately be integrated into the GIAMPO Long Range Transportation Plan and Transportation Improvement Program.

**BUDGET CONSIDERATIONS**

None.

**COMMITTEE ACTION**

None.

**RECOMMENDATION**

Approve to support state targets as the MPO NHS Travel Time Reliability and Freight Reliability performance targets for the GIAMPO metropolitan planning area.

**STAFF CONTACTS**

Allan Zafft

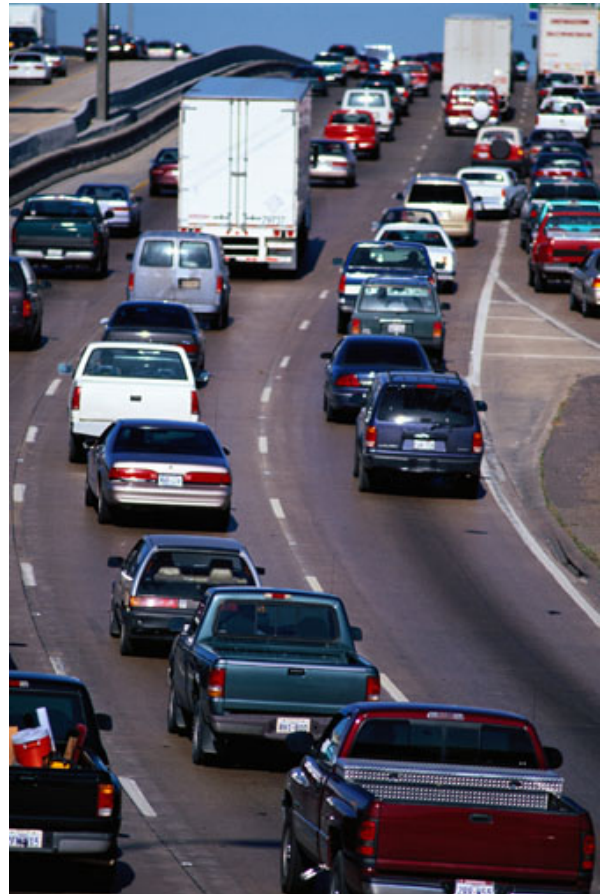
# TRANSPORTATION PERFORMANCE MANAGEMENT

The Federal Highway Administration (FHWA) has finalized six interrelated performance rulemakings to implement the TPM framework established by the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21) and the Fixing America’s Surface Transportation (FAST) Act.

Collectively, the rules address challenges facing the U.S. transportation system, including:

- improving safety
- maintaining infrastructure condition
- reducing traffic congestion
- improving efficiency of the system and freight movement
- protecting the environment and
- reducing delays in project delivery.

The rules establish national performance measures; State Departments of Transportation (DOTs)



and metropolitan planning organizations (MPOs) will establish targets for applicable measures. New and existing plans will document the strategies and investments used to achieve the targets; progress toward the targets will be reported through new and existing mechanisms.



Learn more at the FHWA TPM web site:  
[\(http://www.fhwa.dot.gov/tpm/](http://www.fhwa.dot.gov/tpm/)

# NHS Travel Time Reliability Measures



**WHAT:** Measurement of travel time reliability on the Interstate and non-Interstate National Highway System (NHS). Read the final rule in the [Federal Register](#) [82 FR 5970 (January 18, 2017)].

**WHO:** State DOTs, as well as MPOs with Interstate and/or non-Interstate NHS within their metropolitan planning area.

**WHY:** Through MAP-21, Congress required FHWA to establish measures to assess performance in 12 areas, including performance on the Interstate and non-Interstate NHS. [See 23 CFR 490.507(a)]

**WHEN:** Implementation differs for the Interstate and non-Interstate NHS measures for the first performance period. State DOTs must establish 2- and 4-year targets for the Interstate, but only a 4-year target for the non-Interstate NHS, by **May 20, 2018**. Those targets will be reported in the State's baseline performance period report due by **October 1, 2018**. The State DOTs have the option to adjust 4-year targets in their mid performance period progress report, due **October 1, 2020**. For the first performance period only, there is no requirement for States to report baseline condition/performance or 2-year targets for the non-Interstate NHS before the mid performance period progress report. This will allow State DOTs to consider more complete data. The process will align for both Interstate and non-Interstate measures with the beginning of the second performance period on **January 1, 2022**.

MPOs must either support the State target or establish their own quantifiable 4-year targets within 180 days of the State target establishment.

**HOW:** Level of Travel Time Reliability (LOTTR) is defined as the ratio of the longer travel times (80<sup>th</sup> percentile) to a "normal" travel time (50<sup>th</sup> percentile), using data from FHWA's National Performance Management Research Data Set (NPMRDS) or equivalent. Data are collected in 15-minute segments during all time periods between 6 a.m. and 8 p.m. local time. The measures are the percent of person-miles traveled on the relevant portion of the NHS that are reliable. Person-miles take into account the users of the NHS. Data to reflect the users can include bus, auto, and truck occupancy levels.

**Note: The FHWA is preparing guidance on how all rules should be implemented.**



U.S. Department of Transportation  
**Federal Highway Administration**

# Freight Reliability Measure



**WHAT:** Measurement of travel time reliability on the Interstate System (Truck Travel Time Reliability (TTTR) Index). Read the final rule in the [Federal Register](#) [82 FR 5970 (January 18, 2017)].

**WHO:** State DOTs and MPOs.

**WHY:** Through MAP-21, Congress required FHWA to establish measures to assess performance in 12 areas, including freight movement on the Interstate. The measure considers factors that are unique to this industry, such as the use of the system during all hours of the day and the need to consider more extreme impacts to the system in planning for on-time arrivals. [23 CFR 490.607]

**WHEN:** State DOTs must establish 2- and 4-year targets by **May 20, 2018**. Those targets will be reported in the State's baseline performance period report due by **October 1, 2018**. The State DOTs have the option to adjust 4-year targets in their mid performance period progress report, due **October 1, 2020**.

MPOs must either support the State target or establish their own quantifiable 4-year targets within 180 days of the State target establishment.

**HOW:** Freight movement will be assessed by the TTTR Index. Reporting is divided into five periods: morning peak (6-10 a.m.), midday (10 a.m.-4 p.m.) and afternoon peak (4-8 p.m.) Mondays through Fridays; weekends (6 a.m.-8 p.m.); and overnights for all days (8 p.m.-6 a.m.). The TTTR ratio will be generated by dividing the 95<sup>th</sup> percentile time by the normal time (50<sup>th</sup> percentile) for each segment. The TTTR Index will be generated by multiplying each segment's largest ratio of the five periods by its length, then dividing the sum of all length-weighted segments by the total length of Interstate.

State DOTs and MPOs will have the data they need in FHWA's National Performance Management Research Data Set (NPMRDS) as data set includes truck travel times for the full Interstate System. State DOTs and MPOs may use an equivalent data set if they prefer.

**Note: The FHWA is preparing guidance on how all rules should be implemented.**



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## Nebraska PM3 Performance Measures and Target Setting

Performance measures for system performance and freight (PM3) includes two performance measures for National Highway System (NHS) Travel Time Reliability (Percent of Person-Miles Traveled on the Interstate That Are Reliable and the Percent of Person-Miles Traveled on the Non-Interstate NHS That Are Reliable) and one performance measure for Freight Reliability (Freight Reliability on the Interstate).

The majority of Nebraska's highway system performs exceptionally well, with only minor reliability challenges in the State's largest metropolitan area: the Omaha-Council Bluffs region. At the statewide level, nearly 99 percent of Nebraska's Interstate system provides for reliable travel, nearly 93 percent of the Non-Interstate NHS provides for reliable travel, and freight reliability is measured at 1.10, which suggests that on average the worst truck travel times are only about 10 percent higher than median truck travel times.

Since historic travel time data was not available, internal and external factors were considered throughout the target-setting process. These include population and employment growth, vehicle miles traveled, and projects programmed in the 2018 – 2021 Statewide Transportation Improvement Program and MPO Transportation Improvement Programs. The target-setting approach assumes that although increased usage is expected on the system, existing high levels of performance and planned improvements will enable Nebraska Department of Transportation (NDOT) to maintain current performance levels through 2022.

As such, NDOT's highway system performance measure targets are as follows:

**Table 1 Nebraska 2018 PM3 Targets**

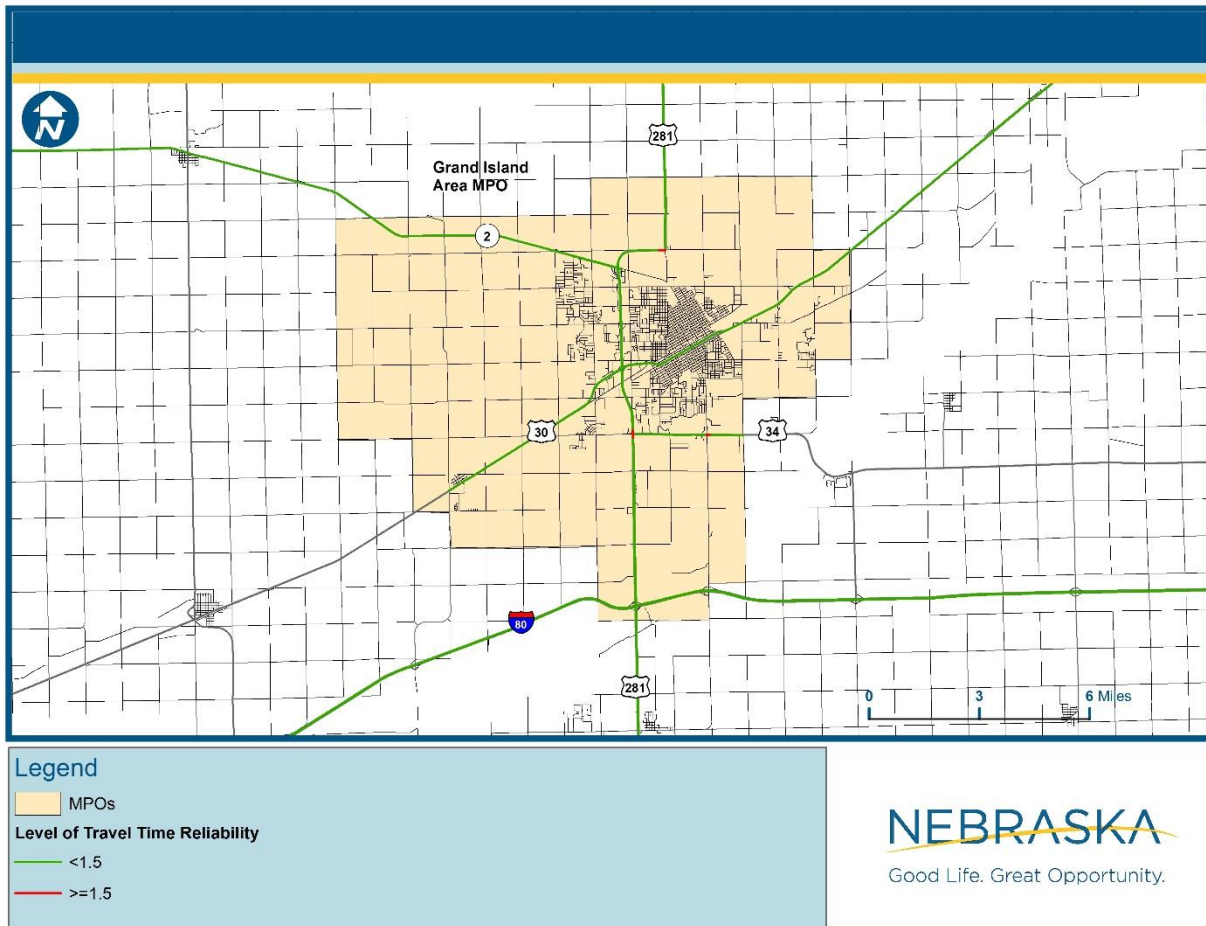
Performance Measure	Target
Percent of Person-Miles Traveled on the Interstate That Are Reliable	98.9%
Percent of Person-Miles Traveled on the Non-Interstate NHS That Are Reliable	92.6%
Freight Reliability	1.10

Source: Nebraska Department of Transportation; Cambridge Systematics, Inc. analysis, 2018.

## System Performance Measure Results – Grand Island Area MPO

The Grand Island Area MPO region outperforms the State on all performance measures. As shown in Figure 1, only a very small portion of the Grand Island Area MPO’s system is unreliable. These include the intersections of US 281 with Airport Rd. and US 281 with US 34. Figure 2 shows that truck travel in the region is very reliable with a Freight Reliability value of 1.08.

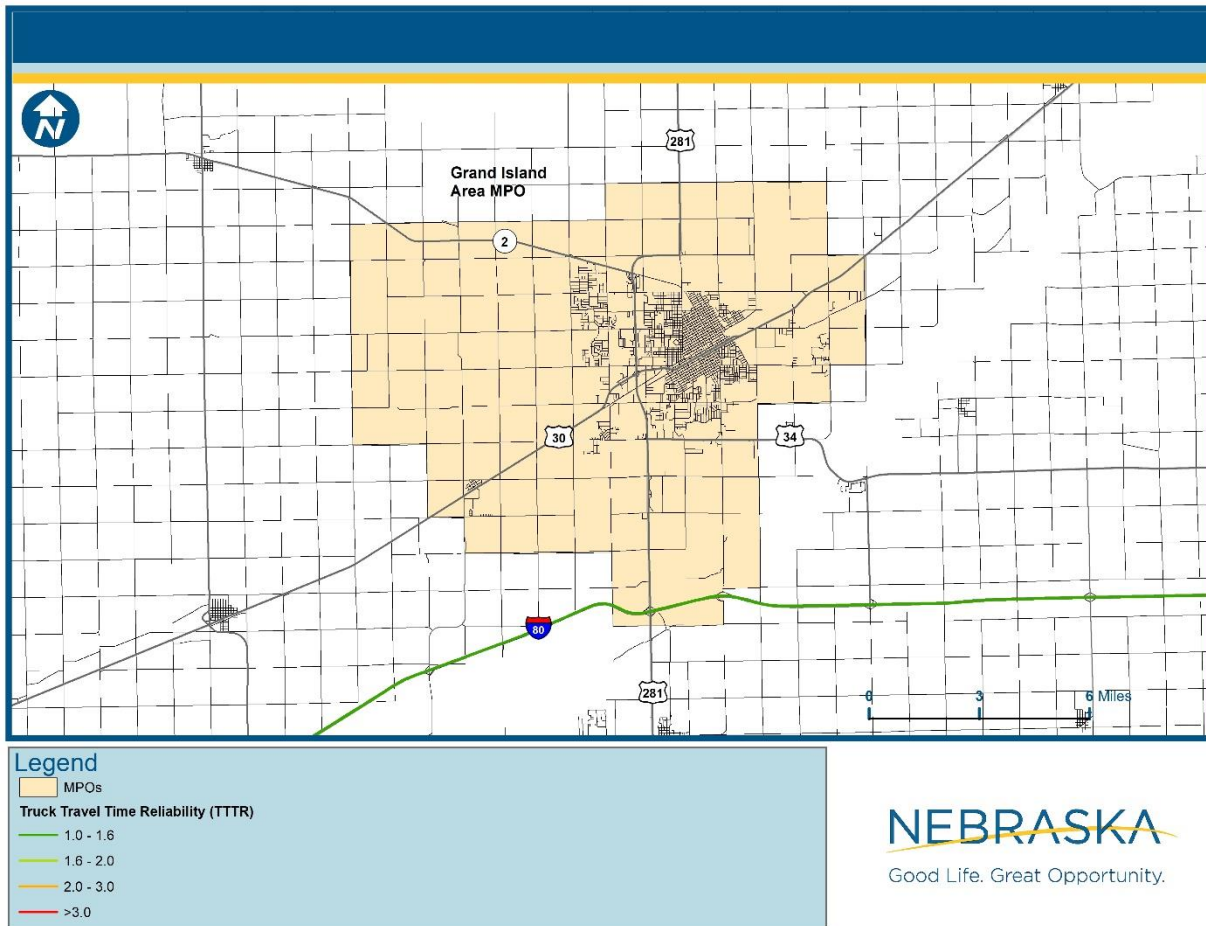
**Figure 1** Maximum Level of Travel Time Reliability (LOTTR) Across Time Periods in the Grand Island Area MPO Region



Source: National Performance Management Research Data Set; Cambridge Systematics, Inc. analysis, 2018.



**Figure 2 Maximum Truck Travel Time Reliability (TTTR) Across Time Periods in the Grand Island Area MPO Region**



Source: National Performance Management Research Data Set; Cambridge Systematics, Inc. analysis, 2018.