

## ADDRESSING PERFORMANCE MEASURE TARGETS IN THE 2019-2022 TRANSPORTATION IMPROVEMENT PROGRAM (TIP)

### Background

Pursuant to Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21) (and carried through into the Fixing America's Surface Transportation (FAST) Act), Metropolitan Planning Organizations (MPOs) must employ a transportation performance management approach in carrying out their federally required planning and programming activities. Chapter 23 part 150(b) of the *United States Code* [[23 USC 150\(b\)](#)] includes the following seven national performance goals for the Federal-Aid Highway Program:

- **Safety** To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- **Infrastructure Condition** – To maintain the highway infrastructure asset system in a State of Good Repair (SGR).
- **Congestion Reduction** – To achieve a significant reduction in congestion on the National Highway System.
- **System Reliability** – To improve the efficiency of the surface transportation system.
- **Freight movement and economic vitality** – To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- **Environmental sustainability** – To enhance the performance of the transportation system while protecting and enhancing the natural environment.
- **Reduced project delivery delays** – To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practice.

On the public transportation side, transportation performance management shall be utilized to advance the general policy and purposes of the public transportation program as included in 49USC§5301(a) and (b).

The Texarkana Metropolitan Planning Organization (MPO) 2019-2022 TIP was developed and is managed with in cooperation with Texas Department of Transportation (TxDOT). It reflects the investment priorities established in the 2040 Metropolitan Transportation Plan (MTP) and then again in the 2045 Metropolitan Transportation Plan (MTP), which incorporates comments and input from affected agencies and organizations and the public.

TIPs “shall include, to the maximum extent practicable, a description of the anticipated effects of the transportation improvement program toward achieving the performance targets established in the metropolitan transportation plan, linking investment priorities to those

performance targets” [[23 USC 134\(j\)\(2\)\(D\)](#)]. MTP’s adopted or amended after the following dates must include performance targets for the associated measures:

- May 27, 2018 – Highway Safety Improvement Program (HSIP) and Highway Safety
- October 1, 2018 – Transit Asset Management
- October 1, 2018 – Public Transportation Safety Program
- May 20, 2019 – Pavement and Bridge Condition
- May 20, 2019 – System performance/Freight/Congestion Mitigation & Air Quality Improvement Program

MPOs that do not adopt or amend their MTP prior to these dates are still required to support statewide performance targets or establish their own for the measures discussed above and include “a description of the anticipated effects of the transportation improvement program toward achieving” said targets. This portion of the amended TIP meets these requirements of [23 USC 134\(j\)\(2\)\(D\)](#).

### **HSIP and Highway Safety**

#### *Performance Targets*

On March 15, 2016, Federal Highway Administration (FHWA) published the final rule for the HSIP and Safety Performance Management (Safety PM) Measures in the Federal Register with an effective date of April 14, 2016.

The 2019 Texas Strategic Highway Safety Plan (SHSP) is intended to reduce the number of fatalities and serious injuries resulting from motor vehicle crashes on public roads in Texas. The SHSP guides TxDOT, the MPOs, and other safety partners in addressing safety and defines a framework for implementation activities to be carried out across Texas. The TxDOT Highway Safety Plan Annual Report documents the statewide performance targets.

The Texarkana MPO Policy Board agreed to support the TxDOT statewide 2018 targets for the following Safety PM measures based on five year rolling averages per [23 USC 490.207](#) of the Code of Federal Regulations on November 13, 2018 via Resolution #6-2019.

**TABLE 1: PM 1 Texas 2019 Safety Performance Management Targets**

<b>2019 Safety Targets</b>	<b>Number of Fatalities (FARS/CRIS/ARF DATA)</b>	<b>Rate of Fatalities (FARS/CRIS/ARF DATA)</b>	<b>Number of Serious Injuries (FARS/CRIS DATA)</b>	<b>Serious Injury Rate (CRIS DATA)</b>	<b>Total Number of Non-Motorized Fatalities and Serious Injuries (FARS/CRIS DATA)</b>
<b>2015</b>	3,582	1.39	17,110	6.63	2,036
<b>2016</b>	3,776	1.39	17,602	6.49	2,301
<b>2017</b>	3,726	1.36	17,546	6.39	2,148
<b>2018</b>	3,891	1.46	18,130	6.64	2,309
<b>2019 Target</b>	3,980	1.47	18,367	6.60	2,394
<b>2019 Target as a 5-year Average:</b>	3,791.0	1.414	17,751.0	6.550	2,237.6

*Anticipated Effects*

Safety is a critical component of the Texarkana MPO, and the projects on the TIP are consistent with the need to address safety. Safety is a primary consideration in the selection of projects to be included in the 2019-2020 TIP. The Texarkana MPO project selection process includes safety as an integral part. “Reduce the number of conflict points between vehicles and active transportation users,” is one of MPO’s 2045 Metropolitan Transportation Plan Goals. It is given a weight factor of 39.73% out of 100% in project selection criteria. The 2019-2020 TIP includes projects programmed with Highway Safety Improvement Program (HSIP) funds and other fund sources that are expected to materially benefit the safety of the traveling public on roadways throughout the metropolitan planning area (MPA).

The current project selection process utilized at the MPO is consistent with, and aligns to, the agency’s 2045 MTP that contains goals, objectives, performance measures, and the anticipation of adopted performance targets such as those for Safety PM. The 2045 MTP adheres to the performance-based planning and programming requirements established under MAP-21 and continued in the FAST ACT. The 2045 MTP guides projects associated with the MPO Unified Planning Work Program (UPWP) and TIP.

The 2019-2022 Texas TIP has been reviewed and the anticipated effect of the overall program is that it will contribute to progress made in addressing the safety performance targets established by the State of Texas.

Highway Transportation Projects included in the 2019-2022 TIP are as follows:

**Project Number: 21**

**Project CSJ: 0610-07-113 - IH 30**

- Project Description: Widen existing Interstate (IH) from four (4) lanes to six (6) lanes from 0.6 mile west of FM 989 to Arkansas State Line.
- System Improvements: Increasing the number of lanes on IH-30 will increase capacity and decrease congestion and improve overall safety. At the point where Interstate 30 crosses into the State of Arkansas the AADT is 75,529 (as of 2018). Freight traffic at the state line, as of 2017 AADT is 41,916 and estimated to grow to 58,680 by 2037 with the 24-hour truck percentage being 36.2.

**Project Number: 46A**

**Project CSJ: 1231-01-066 - FM 989 (Kings Highway)**

- Project Description: Widen road – add lanes from IH-30 north frontage road to 0.3 mile north of Gibson Lane.
- System Improvements: In 2016 the Texarkana Independent School District built an elementary school approximately 0.3 mile north of IH-30. With the addition of the school local travel has increased especially in the mornings and mid-afternoons. AADT is 7,759 (2018) with truck traffic being 7,361 (2017) and estimated to increase to 10,310 by 2037. Widening the roadway will increase capacity and reduce congestion.

**Project Number: 55**

**Project CSJ: 0610-07-097 - IH 30 Frontage Roads**

- Project Description: Construct one-way frontage road, entrance and exit ramps, and turnarounds from FM 3419 to FM 989.
- System Improvements: Construction of one-way frontage roads, entrance and exit ramps, and turnarounds on IH-30 will improve safety, mobility, traffic operations, and local circulation of the traveling public. The construction of the above-mentioned attributes would fill in gaps in the frontage road system between FM 3419 and FM 989. The frontage road will also provide better traffic flow and safety in case of an accident on IH-30. Whenever there is an accident on IH-30, traffic will back up for miles due to no exits from the interstate. Within the area of FM 3419 and FM 989 commercial businesses are developing which in turn is bring more trucks that will use these frontage roads for the last mile.

As the MTP is the blueprint that guides transportation investment in the Metropolitan Planning Area (MPA), all new projects are evaluated against the community goals, objectives, and performance measures established in the MTP and are applicable to the federal surface

transportation authorization national goals as identified above and its planning factors. For instance, the 2045 MTP safety goal and objectives are shown in table 2.

**Table 2: 2045 MTP Goals and Objectives**

Goals	Objectives
<b>Safety</b>	Reduce the number of fatalities and serious injuries related to traffic accidents.
	Reduce the number of crashes at high-speed intersections where an abnormal number of incidents occur.
	Reduce the number of conflict points between vehicles and active transportation users – e.g. pedestrians and bicyclists.
<b>Operations &amp; Maintenance</b>	Decrease the percentage of facilities and assets that are not in a state of good repair.
	Increase the number of Intelligent Transportation Systems (ITS) technology assets.
	Reduce delay at traffic signals through coordinated/progressive signal timing.
<b>Mobility</b>	Reduce delay on major thoroughfares.
	Reduce travel time to key destinations.
	Improve response time and clearance capabilities for first responders and emergency personnel.
<b>Accessibility &amp; Travel Choice</b>	Increase the number of jobs and key destinations that are accessible by all transportation modes.
	Ensure that transportation system improvements provide equitable benefits to the region.
	Expand access to and improve reliability of transit services, particularly for underserved areas and areas with high transit need.
	Fill major connectivity gaps in the sidewalk, bike lane, and trail networks that support regional travel.
<b>Sustainability</b>	Encourage infill development and transit-supportive land use.
	Increase the attractiveness of transportation options other than single-occupancy vehicles.
<b>Economic Vitality</b>	Increase percentage of transportation assets that use alternative energy sources.
	Improve accessibility to key tourist destinations.
	Reduce delay on designated freight corridors and roads connecting to existing and future intermodal or freight facilities.
<b>Quality of Life</b>	Increase access to major employment centers.
	Prioritize projects that demonstrate progress toward one or more Texarkana 2045 MTP goals and/or objectives, such as a project that both adds roadway capacity and enhances sidewalk connectivity.
	Reduce project delivery delays so that planned transportation improvements are implemented in a timely manner to meet the needs of the region.
	Coordinate planning and decision making with other entities beyond the MPA boundary so that decisions impacting the transportation system realistically acknowledge the Texarkana region’s geographic area of influence.

This approach provides a clear linkage between the TIP program of projects and the policies, goals, objectives, performance measures and ultimately, performance targets outlined in the MTP. The TIP includes a few site specific and systemic projects programmed with HSIP funds and other funding sources that are expected to materially benefit the safety of the traveling public on roadways throughout the MPA.

## **Transit Asset Management**

### *Performance Targets*

On July 26, 2016, the Federal Transit Administration (FTA) published the final rule for Transit Asset Management (TAM) in the Federal Register [81 FR 48889](#) with an effective date of October 1, 2016. This rule applies to all recipients and subrecipients of Federal transit funding that own, operate, or manage public transportation capital assets. The final rule defines the term “state of good repair” requires public transportation providers to develop, adopt, and implement two years from the effective date a TAM Plan, and establishes SGR standards and performance measures for four transit asset categories: rolling stock, transit infrastructure, equipment, and facilities.

The Texarkana Urban Transit District (TUTD) and MPO agreed to support Texas Department of Transportation TxDOT Targets for transit asset management which includes the Texarkana Urban Transit District (TUTD), as part of the plan, for the following measures on November 13, 2018 via Resolution #4-2019. TUTD was included in TxDOT TAM Plan and both Texas and Arkansas support the following targets listed in table 3. TUTD agreed to plan and program projects in the TIP that will, once implemented, make progress toward achieving the transit asset targets.

**Table 3: State DOT Transit Asset Management Performance Targets for 2022**

<b>Transit Asset Management</b>	<b>ArDOT</b>	<b>TxDOT</b>
% of revenue vehicles at or exceeding useful life benchmark	<15%	<15%
% of service vehicles (non-revenue) at or exceeding useful life benchmark	<15%	<15%
% of facilities rated below 3 on condition scale (TERM)	<15%	<15%
% of track segments with performance restrictions	<15%	N/A

### *Anticipated Effects*

The transit program of projects contained in the 2019-2022 TIP address amongst other items, transit asset management and SGR. The TUTD goal of addressing transit asset condition is linked to the investment plan of the MPO and the process used to prioritize the projects within the 2019-2022 TIP is consistent with federal requirements. Transit relevant goals and objectives from the adopted 2045 MTP are identified in table 3.

The MPO anticipates that the transit projects in the 2019-2022 TIP, when implemented, will contribute to progress toward achieving the established transit asset management targets, and will also benefit the traveling public throughout the MPA where the TUTD provides public transit services. This is consistent with the 2045 MTP goals, objectives, performance measures, and anticipated adopted performance targets. The MPO coordinates with TUTD/TLINE on TAM requirements and have agreed to program investments to support the TxDOT TAM Targets.

The 2019-2022 TIP has been reviewed and the anticipated efforts of the overall program is that it will contribute to progress made in addressing the transit performance targets established by TxDOT.

## PM 2: STATE BRIDGE AND PAVEMENT CONDITION PERFORMANCE TARGETS FOR 2020

The FHWA final rule for the *National Performance Management Measures; Assessing Pavement Condition for the National Highway Performance Program and Bridge* was published in the Federal Register ([82 FR 5886](#)) on January 18, 2017 and became effective on February 17, 2017. It established performance for all State DOTs to use to carry out the National Highway Performance Program (NHPP) and to assess the condition of pavements on the Interstate System, pavements on the National Highway System (NHS) (excluding the interstate System), and bridges carry the NHS which include on- and off- ramps connected to the NHS. The NHPP is a core Federal-aid Highway program that provides support for the condition and performance of the NHS and the construction of new facilities on the NHS. The NHPP also ensures that investments of the Federal-aid funds in highway construction are directed to support progress toward the achievement of performance targets as established in a State's Transportation Asset Management Plan (TAMP) for the NHS. This final rule establishes regulations for the performance aspects of the NHPP that address measures, targets, and reporting.

The pavement and bridge performance measures include:

- % of Interstate pavements in good condition
- % of Interstate pavements in poor condition
- % of Non-Interstate NHS pavements in good condition
- % of Non-Interstate NHS pavements in poor condition
- % of NHS bridges by deck area classified in good condition
- % of NHS bridges by deck area classified in poor condition

State 2-year and 4-year targets (the desired SGR) were due on May 20, 2018. Like PM1 (Highway Safety), MPOs must establish targets by either agreeing to support the State targets or establishing their own quantifiable targets no later than 180 days after a State DOT establishes (or amends) its targets. On November 13, 2018 via Resolution #4-2019, the MPO Policy Board agreed to support TxDOT's statewide Pavement and Bridge Infrastructure Performance targets and efforts at achieving those targets shown in Table 4 and 5. Table 6 shows the system performance targets establish by both TxDOT and ARDOT for 2020 in the 2045 MTP.

### **Pavement Performance Targets**

The PM2 rule requires that State DOT report and manage performance of the NHS, regardless of ownership or maintenance responsibility, for the full extent of the Interstate and Non-Interstate NHS.

Federal rulemaking [23 USC 119](#) requires that all distress component information be collected for one-tenth-mile increments. Pavement condition is measured by four distress components (International Roughness Index (IRI), Cracking, Rutting, and Faulting), which are then translated to good, fair, or poor condition scores per FHWA criteria and then broken out into separate values for the Interstate and Non-Interstate NHS.

Based on guidance from [23 CFR 490.313](#), each roadway segment on system was categorized by condition according to the following IRI rating scale:

- Poor: IRI > 170
- Fair: IRI >=95 and <= 170
- Good: IRI <95

**Table 4: TxDOT Targets for Bridge Performance Measures on the NHS**

NHS Bridge Condition Targets by Deck Area			
	Baseline	2020 Target	2022 Target
Percent of NHS bridges by deck area classified as Poor condition	0.88%	0.80%	0.80%
Percent of NHS bridges by deck area classified as Good condition	50.63%	50.58%	50.42%

**Table 5: TxDOT Targets for Pavement Performance Measures on the NHS**

NHS Pavement Condition Targets by Interstate and Non-Interstate Facility			
Measure	Baseline	2020 Target	2022 Target
Percent of Interstate pavements in Good condition			66.4%
Percent of Interstate pavements in Poor condition			0.3%
Percent of Non-Interstate NHS pavement in Good condition	54.4%	52.0%	52.3%
Percent of Non-Interstate NHS pavement in Poor condition	13.8%	14.3%	14.3%

**Table 6: TxDOT & ARDOT System Performance Targets for 2020**

NHS Bridge Condition Targets by Deck Area		ARDOT	TxDOT
% of NHS bridges by deck area classified as Poor condition		4%	0.8%
% of NHS bridges by deck area classified as Good condition		50%	50.58%
NHS Pavement Condition Targets by Interstate and Non-Interstate Facility		ARDOT	TxDOT
% of Interstate pavements in Good condition		--	--
% of Interstate pavements in Poor condition		--	--
% of Non-Interstate NHS pavement in Good condition		48%	52%
% of Non-Interstate NHS pavement in Poor condition		10%	14.3%

### **Bridge Condition Targets**

The bridge conditions analysis is based on the FHWA National Bridge Inventory (NBI). The NBI included location and condition information for 141 bridges within the MPA as of January 2018. The project team



followed guidance provided in FHWA's *Computation Procedure for the Bridge Condition Measures* and [23 CFR 490.409](#) to determine the condition of each roadway. The methodology for determining condition included the calculation of a minimum component condition rating and application of the following scale based on this rating:

- Good: minimum condition rating between 7 and 9 for bridge components
- Fair: minimum condition rating between 5 and 6 for bridge components
- Poor: minimum condition rating between 0 and 4 for bridge components; indicates a bridge that is structurally deficient

### *Anticipated Effects*

#### **Pavement**

In the MPO's 2045 MTP (adopted September 2019), some of the roadway segments did not include an IRI rating. Where an IRI rating was absent, the analysis deferred to the Present Serviceability Rating (PSR) if available. Each roadway segment was categorized by condition according to the following PSR rating scale:

- Poor Conditions: PSR  $\leq 2.0$
- Fair Condition: PSR  $> 2.0$  and  $< 4.0$
- Good Condition: PSR  $\geq 4.0$

Segments rated as poor have been overlaid onto the MPA roadway network, helping identify which roadways within the network are potentially not in a SGR. These segments are roughly 10% of the lane miles provided with IRI and PSR values. Major pavement condition deficiencies (i.e. roadway segments with contiguous poor ratings) occur along the following roadways:

- Poor Conditions: PSR  $\leq 2.0$
- North State Line Avenue extending south of IH-30 to West Dr Martin Luther King Jr Boulevard
- US 67/West 7<sup>th</sup> Street/West Dr Martin Luther King Jr Boulevard between State Line Avenue and IH-369
- Summerhill Road near the IH-30 junction
- New Boston Road between Collins Road and North Pecan Street

#### **Bridge**

Results for the bridge condition show that there are currently zero bridges in the MPA designated as being in poor condition (as of January 2018). However, a total of 45 (32%) of the region's bridges rate as being in fair condition. Though the condition of these bridges is sufficient for the time being, preventative maintenance and repairs should be planned to ensure conditions do not fall below fair.

Maintaining and, where possible, improving the condition of NHS pavements and bridges is a critical component of the MPO’s mission and the mix of projects on the TIP are consistent with the need to address the condition of these infrastructure assets. The projects selected by the MPO for inclusion in the TIP is intended to support TxDOT in achieving its PM2 targets for the State of Texas transportation system, given the availability of necessary funds.

### PM 3: TRAVEL TIME RELIABILITY MEASURES

The System Performance rule (PM3) established performance measure requirements to assess the performance of the NHS and to assess freight movement on the Interstate System. These measures focus on evaluating travel time reliability and travel delay on interstate, freeway and principal arterial class facilities to determine whether the magnitude of travel time variability is considered unreasonable. The objective of the rule is to ensure efforts to improve unreasonable travel delay and expedite the movement of people and goods guide funding prioritization, furthering the national goal of improving the efficiency of the surface transportation system. Reliability references the level of consistency in transportation service over a specific time period and is the most important service quality attribute for travelers and freight transporters.

Required performance measurements include:

- Level of Travel Time Reliability (LOTTR) for Interstates on the NHS
- Level of Travel Time Reliability (LOTTR) for non-Interstates on the NHS
- Level of Truck Travel Time Reliability (TTTR) for Interstates on the NHS

**Table 7: TxDOT & ARDOT System Performance Targets for 2020**

<b>NHS System Performance Targets by Level of Travel Time Reliability (LOTTR)</b>	<b>ARDOT</b>	<b>TxDOT</b>
IH Level of Travel Time Reliability	91%	61.2%
Non-IH Level of Travel Time Reliability	--	--
<b>Interstate Freight Performance Targets by Truck Travel Time Reliability (TTTR)</b>	<b>ARDOT</b>	<b>TxDOT</b>
Truck Travel Time Reliability on the Interstate System	1.45	1.7

### Anticipated Effects

Providing for the reliable movement of people and goods is a critical component of the MPO’s mission, and the projects on the 2019-2022 TIP are consistent with the need to address the reliability of travel times for vehicles, including trucks. Notable areas with the MPO boundary that experience moderate-to-severe congestion include IH-30 from IH-369 to US-71, US-59 just west of IH-369, and the 7<sup>th</sup> Street/Texas Boulevard/New Boston Road (US-82) area. During peak travel periods US-67 experiences heavy congestion especially at the IH-369 connection. The above-mentioned areas are on the NHS. The 2019-2022 TIP includes projects programmed with funds from various funding programs that have benefits to reliability in travel times for people

and freight. The 2019-2022 TIP includes projects such as bridges, pavements, signal upgrades on non-interstate NSH segments. The MPO coordinates with TxDOT in the selection of improvement projects to these locations in order to reduce the travel time reliability. During the recent 2045 MTP development, projects were reviewed and selected upon the necessity of reducing delays in traffic flow for this region.