
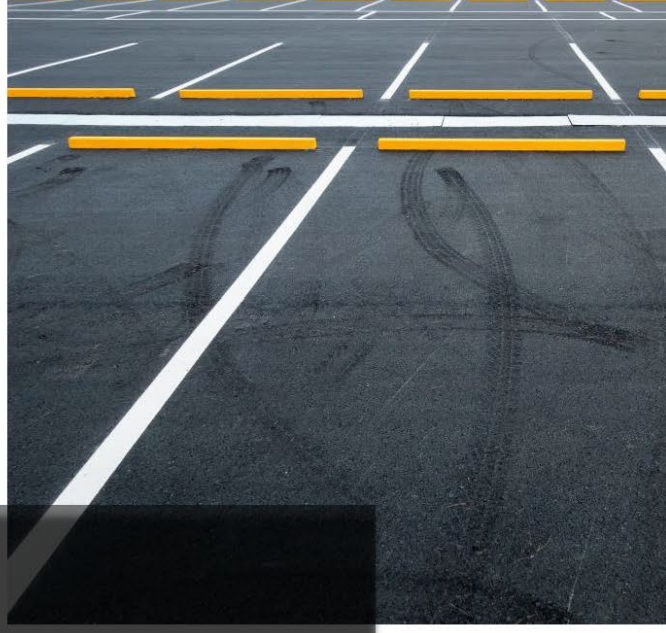

TDOT 25-YEAR LONG-RANGE TRANSPORTATION POLICY PLAN

SYSTEM PERFORMANCE REPORT



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Prepared for TDOT in August 2021

TN TDOT Department of Transportation

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1.0 INTRODUCTION

In 2015, the surface transportation reauthorization bill, Fixing America's Surface Transportation Act (FAST Act), continued the performance-based planning approach established with the 2012 Moving Ahead for Progress in the 21st Century Act (MAP-21). The FAST Act authorized federal transportation funding and highlighted national performance goals for Federal-aid Highway programs that state DOTs must address within their long-range transportation plans (LRTPs). This performance-based approach to planning and decision making is intended to provide for the efficient investment of federal transportation funds, focus on national transportation goals, and increase accountability and transparency.

To accomplish these goals, the FAST Act requires DOTs to set quantifiable targets to evaluate the performance of the state's transportation system based on a set of federally identified measures, which are outlined in three Performance Measure Rules, also referred to as PMs. The Tennessee Department of Transportation (TDOT) is tracking these measures in the areas of safety, infrastructure condition, and system performance to determine progress made towards implementing the vision laid out in its 2040 LRTP. In addition, MAP-21 mandated that the Federal Transit Administration (FTA) develop a rule that established an efficient process for tracking public transit assets. In October 2016, the Transit Asset Management (TAM) Final Rule established four transit asset management performance measures for state departments of transportation (DOTs) and metropolitan planning organizations (MPOs). TDOT's mission of providing a safe and reliable transportation system that supports economic growth and quality of life is pursued through its programs and long-term policies, which align with seven guiding principles. Of those seven principles, the ongoing performance monitoring described in this *System Performance Report* directly relates to TDOT's intention to:

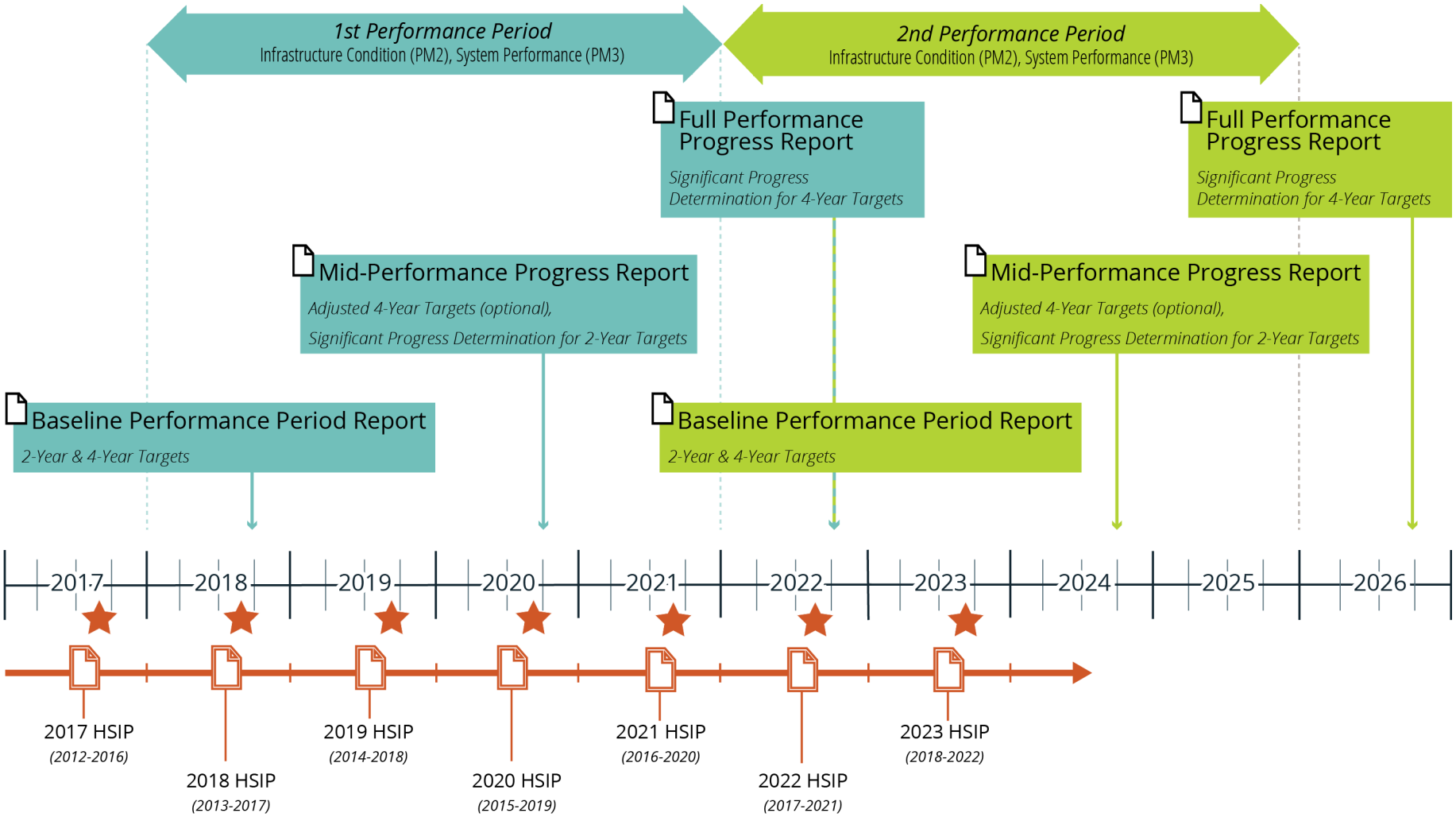
- Preserve and manage the existing system;
- Maximize safety and security;
- Provide for the efficient movement of people and freight; and
- Emphasize financial responsibility.

This *System Performance Report* includes all performance measure targets and current measurements for safety, infrastructure conditions, system performance, and transit asset management tracked by TDOT for roadways and transit systems in Tennessee.

Figure 1 outlines the Federal Highway Administration's (FHWA) timeline for performance tracking by state DOTs. MPOs may choose to adopt targets established by the state or set targets for each measure within their planning area. MPO targets, as well as baseline data, are then reported to the DOT for its submission of the baseline performance period report. MPOs that include areas designated as a nonattainment or maintenance area for emissions are required to include a Congestion Mitigation and Air Quality (CMAQ) Performance Plan to the DOT prior to each biennial report.

FHWA makes a determination whether states have “met or made significant progress toward meeting its performance targets.” For safety targets, this determination occurs on an annual basis. For targets related to bridge and pavement conditions, reliability, and freight movement, this determination is made every two years. Assessments of significant progress are not made on the CMAQ emissions and congestion measures. States that do not meet or make significant progress on performance targets are required to outline the causes and develop a plan of action to meet targets in the future, potentially by adjusting the obligation of federal funds.

Table 1, Table 2, Table 3 and Table 4 provide a snapshot of past performance and represent, with the exception of safety targets, annual conditions for each performance measure. The safety performance metrics are based on a 5-year rolling average of available calendar year data, which typically lags the performance period by one calendar year and is reported annually.



Source: FHWA

Figure 1. Performance Tracking Timeline

Table 1. System Safety (PM1) Performance Summary (2015-2020)

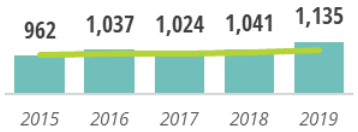
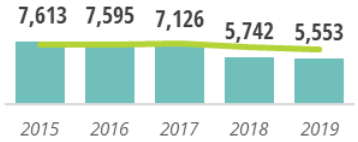
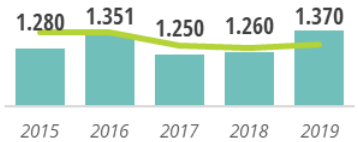
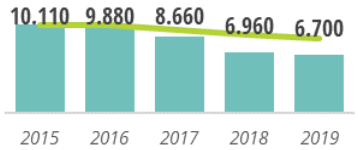
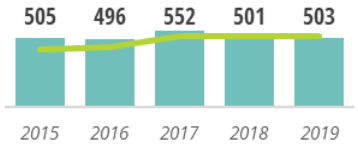
	Measures	Historical Performance
System Safety (PM1)	**Number of Fatalities** *Crashes per Year*	
	Number of Serious Injuries *Crashes per Year*	
	Fatality Rate *Fatal Crashes per 100 million VMT*	
	Serious Injury Rate *Serious Injury Crashes per 100 million VMT*	
	Non-Motorized Serious & Fatal Crashes *Crashes per Year*	

Table 2. Infrastructure Conditions (PM2) Performance Summary (2018-2019)

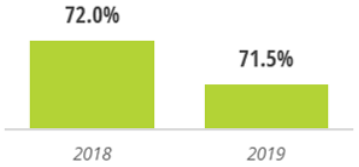
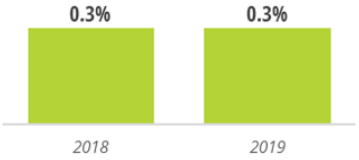
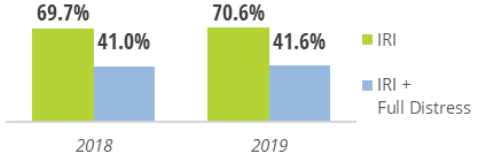
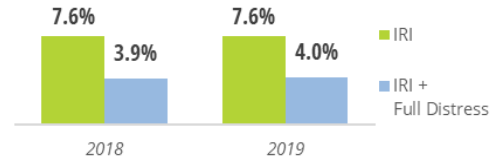
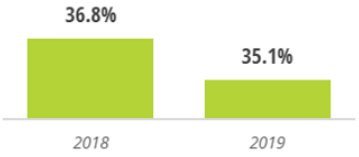
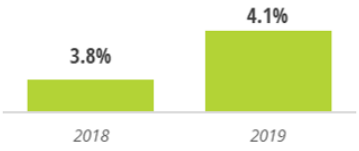
Measures		Historical Trends
Infrastructure Conditions (PM2)	**Interstates in Good Condition** *Percentage of Pavements*	
	Interstates in Poor Condition *Percentage of Pavements*	
	Non-Interstate NHS in Good Condition *Percentage of Pavements*	
	Non-Interstate NHS in Poor Condition *Percentage of Pavements*	
	NHS Bridges in Good Condition *Percentage of Bridges*	
	Bridges in Poor Condition *Percentage of Bridges*	

Table 3. System Performance (PM3) Performance Summary (2018-2019)

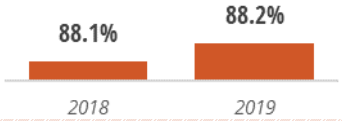
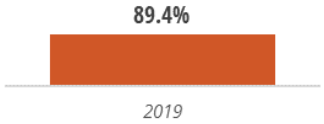
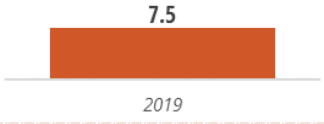
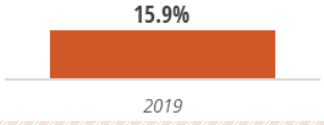
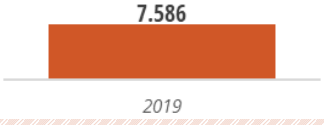
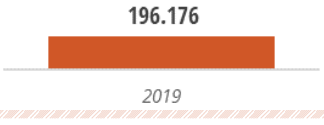
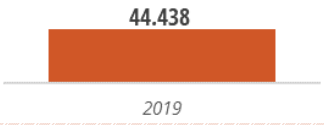
	Measures	Historical Trends
System Performance (PM3)	**Reliable Interstate** *Percentage of Person-Miles Traveled*	
	Reliable NHS Roads *Percentage of Person-Miles Traveled*	
	Freight Reliability *Truck Travel Time Reliability (TTTR) Index*	
	Peak Hour Delays *Annual Hours Delay (Memphis UZA)*	
	Non-SOV Travel *Percentage of Travel (Memphis UZA)*	
	$PM_{2.5}$ Emissions Reductions *(kg/day)*	
	NO_X Emissions Reductions *(kg/day)*	
	VOC Emissions Reductions *(kg/day)*	
	CO Emissions Reductions *(kg/day)*	---

Table 4. Transit Asset Management Performance Summary (2020)

	Measures	Vehicle/Facility Type	Historical Trends
Transit Asset Management	**ROLLING STOCK** *Percentage of Revenue Vehicles past Useful Life Benchmark*	Automobile	56.25% 2020
		Bus	12% 2020
		Cutaway Bus	7.12% 2020
		Minivan	21.05% 2020
		Other Rubber Tire	0.00% 2020
		Van	13.41% 2020
	EQUIPMENT *Percentage of Non-Revenue Service Vehicles past Useful Life Benchmark*	Non-Revenue/Service Automobile	9.09% 2020
		Truck/Other Rubber Tire	21.21% 2020
	FACILITIES *Percentage of Facilities by Group with Low Rating*	Administrative/Maintenance	0.00% 2020
		Passenger/Parking	0.00% 2020
	INFRASTRUCTURE *Percentage of Track Segments with Performance Restrictions*	---	

2.0 SYSTEM SAFETY (PM1)

Users of all modes and abilities should be considered when planning for, constructing, and maintaining a safe transportation system. States are required to collect data that will assist in identifying safety needs and subsequent countermeasures throughout their transportation system along all public roadways. The federal safety rulemaking, also known as PM1, includes five performance measures. Table 5 outlines the five safety measures tracked by TDOT and the current rolling average for each measure over the first half of the performance period. All measurements for PM1 are calculated based on a 5-year rolling average using annual data collections. More information on each measure is found on the following pages.

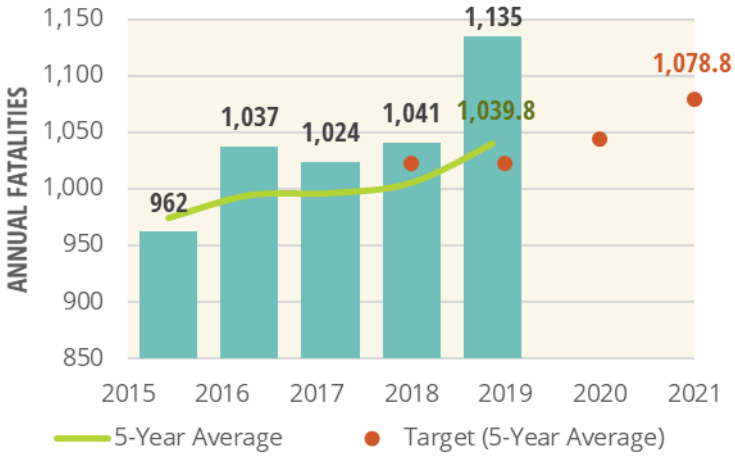
Tennessee's safety targets were established by TDOT's Safety PM Working Group. The target setting process consisted of data review, trend analysis, context/consideration of key factors, consensus on target setting assumptions, and review and consensus on draft targets. The Safety PM Working Group includes TDOT, the Tennessee Department of Safety and Homeland Security, the Federal Highway Administration, the Tennessee Health and Safety Office (SHSO) and other planning partners. Of note is that TDOT and the SHSO are required to report the same targets for three of the five safety measures (number of fatalities, number of serious injuries, and fatality rate per 100 million VMT).

Table 5. System Safety (PM1) Current Performance

Measure	Rolling 5-Year Average (2015-2019)	Target (2017-2021)
Number of Fatalities	1039.8	1,078.8
Number of Serious Injuries	6725.8	6,227.1
Fatality Rate per 100 million VMT	1.302	1.355
Serious Injury Rate per 100 million VMT	8.462	8.394
Non-Motorized Fatalities and Serious Injuries	511.4	521.0

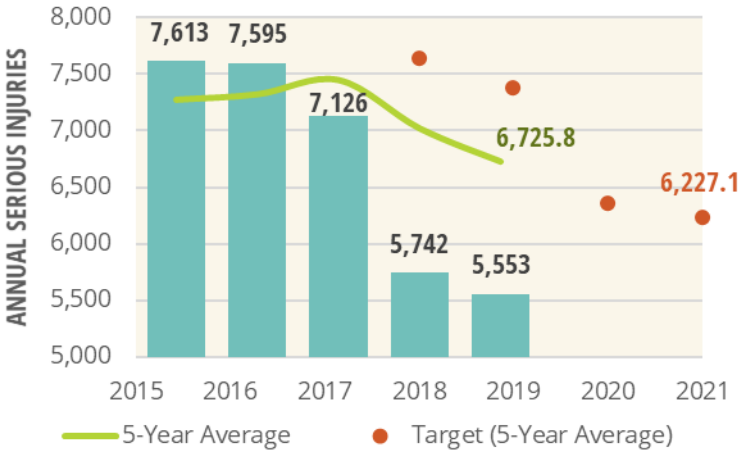
Source: TDOT, FHWA

Crash fatalities are reported annually in the national Fatality Analysis Reporting System. The baseline for a given performance period is the 5-year rolling average from the previous reporting period.



Source: TDOT, FHWA

Figure 2. Number of Fatalities

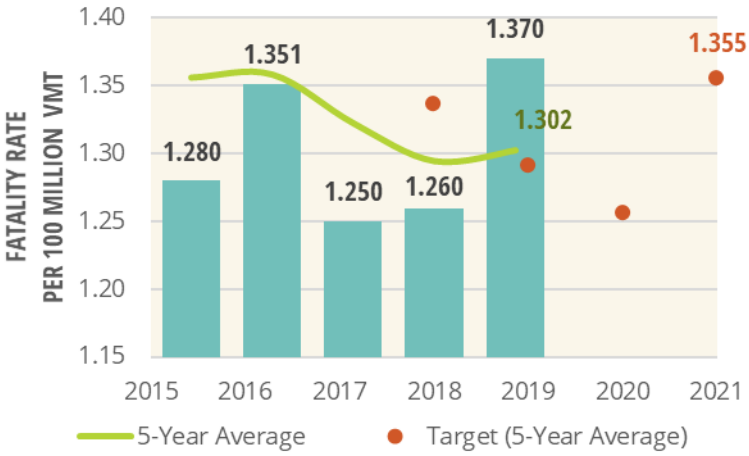


Source: TDOT, FHWA

Figure 3. Number of Serious Injuries

In contrast to fatalities, the number of serious injuries sustained as a result of a crash have been steadily declining for the past 5 years. Tennessee revised its crash reporting and definition of suspected serious injuries in December 2017 to reflect the *Model Minimum Uniform Crash Criteria* (4th Edition), which likely caused the significant decrease shown for 2018 and 2019 that can be seen in Figure 3.

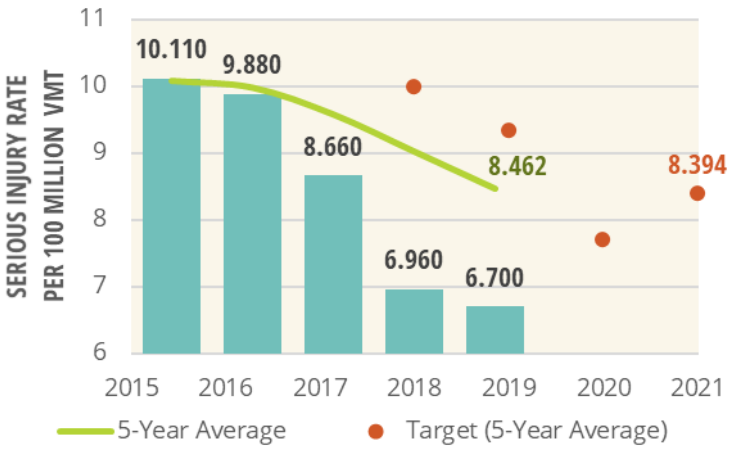
Tennessee's vehicle miles traveled (VMT) have increased in recent years due to increasing population, tourism, and low fuel prices. Based on historical data and other influencing factors, the rate of vehicular fatalities per 100 million VMT is expected to increase and targets were set to reflect that change.



Source: TDOT, FHWA

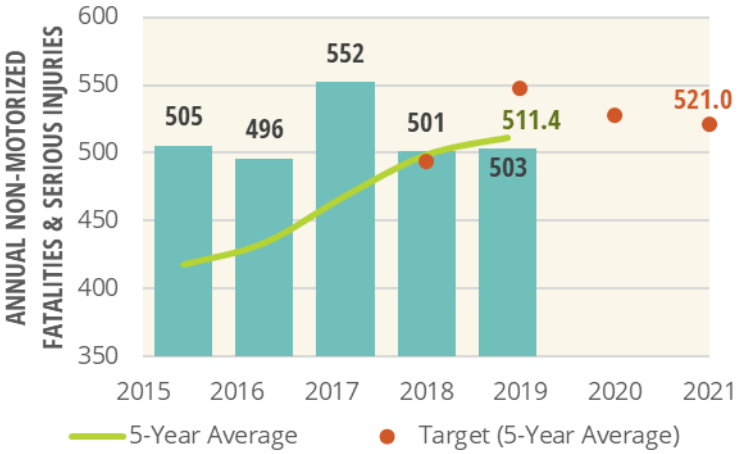
Figure 4. Fatality Rate per 100 Million VMT

Similar to the fatality rate, the rate of serious injuries sustained as a result of a crash is expected to be influenced by a continual rise in VMT. Tennessee's 2019 serious injury rate was well below TDOT's target.



Source: TDOT, FHWA

Figure 5. Rate of Serious Injuries per 100 Million VMT



Source: TDOT, FHWA

Figure 6. Annual Non-Motorized Fatalities and Serious Injuries

The number of non-motorists, including bicyclists and pedestrians, that suffered serious injury or death as a result of a crash has remained consistent for the past five years, with the exception of a 2017 spike that can be seen in Figure 6. In 2018, 10% of pedestrian fatalities occurred on Tennessee's interstates, which suggests the data includes not only non-auto users, but also pedestrians struck by a vehicle while experiencing car troubles on the roadway. The annual number is expected to increase due to a rising population and increasing use of personal mobility devices, such as e-scooters and bike share.

3.0 INFRASTRUCTURE CONDITION (PM2)

TDOT is responsible for evaluating the existing conditions of the transportation system and identifying investments that will maintain and improve the system. Performance targets for roadway pavement and bridge conditions, also known as PM2, are reported on a 4-year cycle. Facilities are evaluated in sections and their metrics rated as good, fair, or poor. Long-term costs for transportation facilities are lower when maintenance is funded and implemented throughout the asset's life cycle. Table 6 shows all performance measures for system maintenance and preservation.

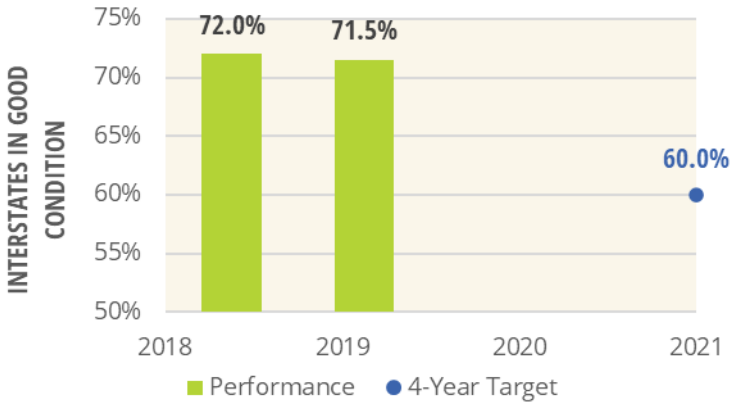
Under the FAST Act, if the condition of a state's interstate pavement (excluding bridges) falls below a minimum level established by the U.S. DOT, the state is required to dedicate certain funds for use on interstate maintenance. State DOTs are allowed to adjust 4-year targets during the mid-performance period progress report. For TDOT's PM2 performance measures, the only 4-year target adjusted was the percentage of non-interstates in poor condition. In addition to updating the target, TDOT developed asset preservation projects to extend the lifetime of bridges, including epoxy deck seals, concrete overlays, and polymer concrete overlays to mitigate the damaging effects of chloride penetration into the bridge decks and beam ends.

Table 6. Infrastructure Conditions (PM2) Current Performance

Measure		Baseline (2018)	2-Year Target (2018-2019)	Midpoint Performance (2018-2019)	4-Year Target (2018-2021)	4-Year Target Adjustment
Percentage of Interstates in Good Condition		---	---	71.5%	60.0%	*None*
Percentage of Interstates in Poor Condition		---	---	0.3%	1.0%	*None*
Percentage of Non-Interstate NHS in Good Condition	IRI *Only*	72.7%	---	70.6%	---	*None*
	IRI + Full Distress	---	42.0%	41.6%	40.0%	*None*
Percentage of Non-Interstate NHS in Poor Condition	IRI *Only*	6.7%	---	7.6%	---	*None*
	IRI + Full Distress	---	4.0%	4.0%	4.0%	5.0%
Percentage of NHS Bridges in Good Condition		39.5%	36.0%	35.1%	36.0%	*None*
Percentage of NHS Bridges in Poor Condition		3.5%	6.0%	4.1%	6.0%	*None*

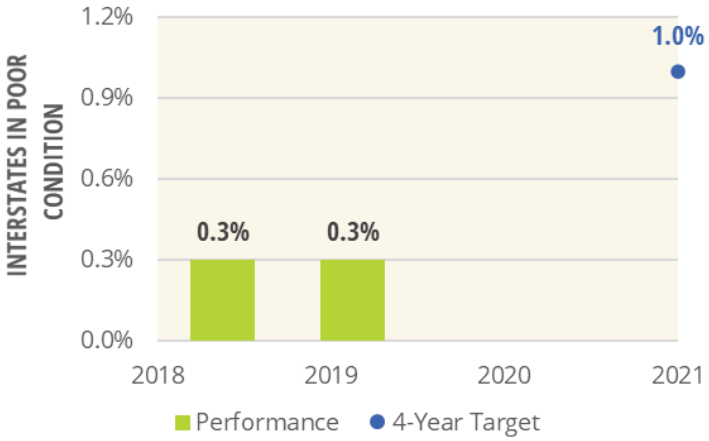
Source: TDOT, FHWA

For the first performance period only, state DOTs were not required to set a 2-year target for good and poor interstate pavement conditions. The 2-year performance from 2018-2019 will be the baseline for future performance tracking. The 4-year target anticipates the projected decline of roadway conditions.



Source: TDOT, FHWA

Figure 7. Interstate Pavement in Good Condition

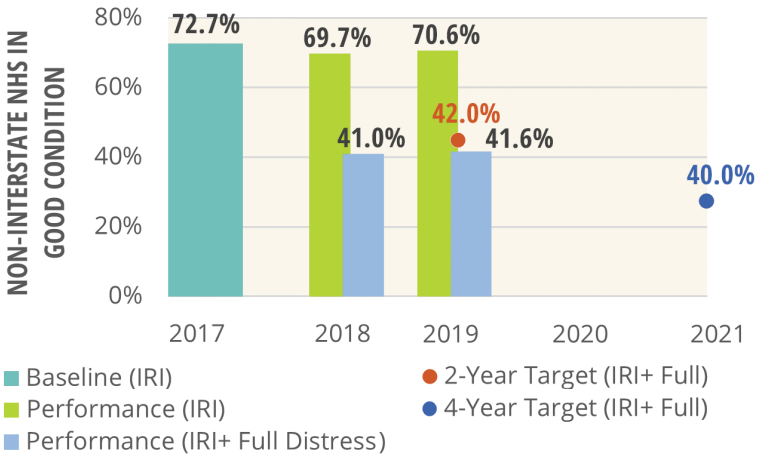


Pavement performance targets project four years' worth of the facility's condition plus a metric that considers the roadway's visible cracking. Performance targets also take into account other influencing factors, such as aging infrastructure, population changes, and congestion.

Source: TDOT, FHWA

Figure 8. Interstate Pavement in Poor Condition

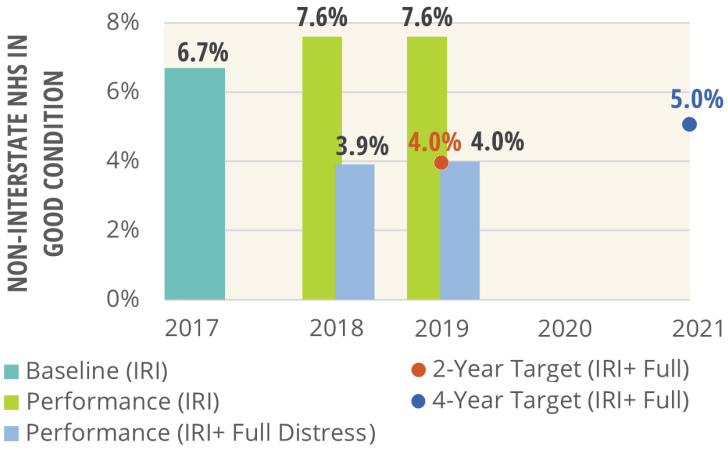
FHWA used the International Roughness Index (IRI) to set baseline and interim metrics (2017 and 2018, as shown in Figure 9 and Figure 10) for pavement conditions on non-NHS roadways. To set condition targets for both interstate and non-interstate NHS pavements, TDOT used the "full measure" which includes the IRI, cracking, faulting, and rutting, and projects a less severe decline in condition.



Source: TDOT, FHWA

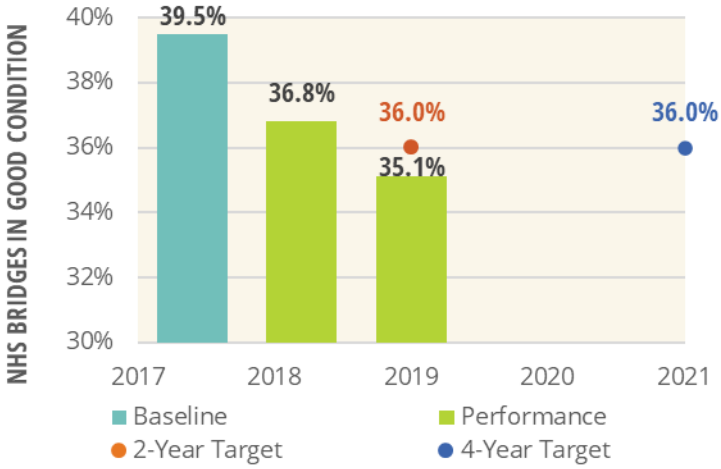
Figure 9. Non-Interstate NHS Pavement in Good Condition

State DOTs had the option to adjust their 4-year targets in the 2020 mid-performance period progress report. TDOT elected to keep their 4-year targets for all pavement condition performance measures except for the non-Interstate NHS pavements in poor condition.



Source: TDOT, FHWA

Figure 10. Non-Interstate NHS Pavement in Poor Condition

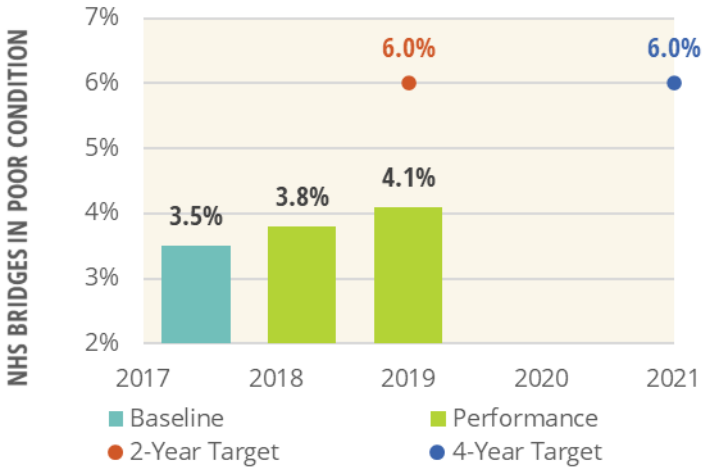


For bridge conditions, TDOT utilized National Bridge Inventory (NBI) data to derive a percentage of bridge deck in good and poor conditions (Figure 11 and Figure 12). Infrastructure age plays a critical role for establishing bridge condition targets. In Tennessee, the average age of NHS bridges is 42 years.

Source: TDOT, FHWA

Figure 11. NHS Bridges in Good Condition

In addition to aging infrastructure, increased freight traffic accelerates deterioration of bridges throughout the state. With a stable bridge program for maintenance, TDOT expects poor bridge conditions to meet federal thresholds.



Source: TDOT, FHWA

Figure 12. NHS Bridges in Poor Condition

4.0 SYSTEM PERFORMANCE (PM3)

States are encouraged to mitigate congestion and improve air quality by reducing the overall vehicles miles and hours traveled. The final performance measure category is system performance, or PM3, which assesses the performance of roadways, freight movement, traffic conditions, and transportation-related emissions, using the metrics shown in Table 7.

In 2017, FHWA made a determination that state DOTs and MPOs are required to establish targets and report performance related to the Congestion Mitigation and Air Quality Improvement Program (CMAQ). In Tennessee, the urbanized area of Memphis, which crosses state boundaries into both Arkansas and Mississippi, was required to establish two additional performance measures — for traffic conditions and emissions — based on population size, NHS mileage, and status as a nonattainment or maintenance area for ozone (O3), carbon monoxide (CO), and particulate matter (PM_{10} and $PM_{2.5}$) based on National Ambient Air Quality Standards (NAAQS).

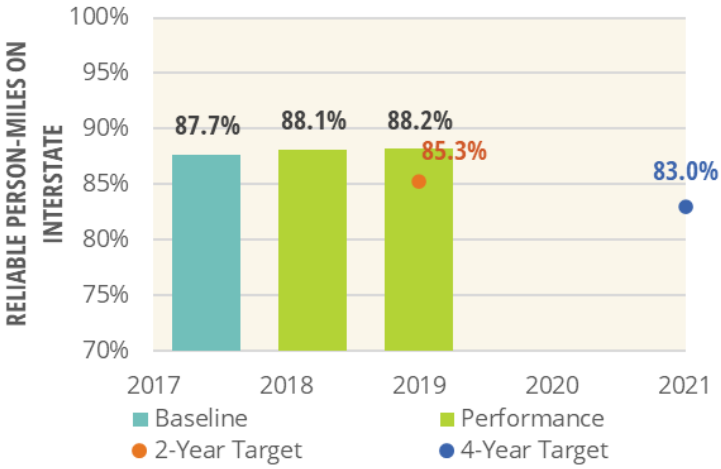
Table 7. System Performance (PM3) Current Performance

Measure	Baseline (2018)	2-Year Target (2018-2019)	Midpoint Performance (2018-2019)	4-Year Target (2018-2021)	4-Year Target Adjustment
Percentage of Person-Miles Traveled on the Interstate that are Reliable	87.7%	85.3%	88.2%	83.0%	*None*
Percentage of Person-Miles Traveled on the Non-Interstate NHS that are Reliable	---	---	89.4%	87.5%	*None*
Truck Travel Time Reliability (TTTR) Index	1.35	1.35	1.35	1.33	1.37
Annual Hours of Peak Hour Excessive Delay Per Capita: Urbanized Area 1*	---	---	7.5	18.8	8.0
Percentage of Non-Single Occupancy Vehicle (Non-SOV) Travel: Urbanized Area 1*	16.6%	16.5%	15.9%	16.5%	14.5%

** Applies only to the Memphis Urbanized Area*

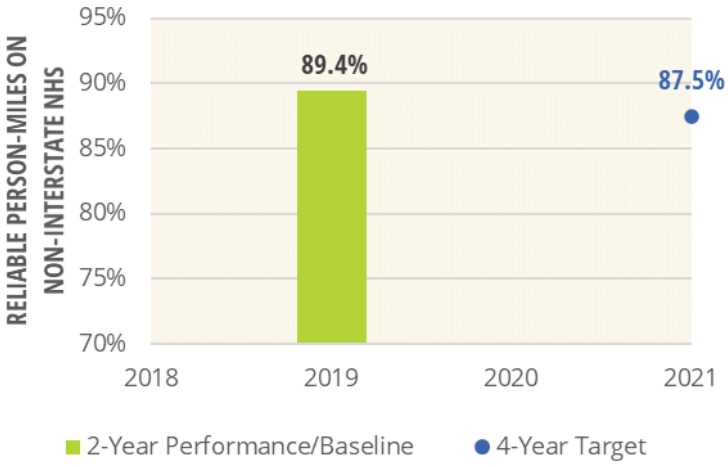
Source: TDOT, FHWA

Interstate and non-interstate NHS reliability performance measures were developed using the National Performance Management Reporting Data Set (NPMRDS) provided by FHWA. Initial targets were established based on trends using limited datasets, which may account for the difference between the 2-year target of 85.3% and Tennessee's performance.



Source: TDOT

Figure 13. Interstate Travel Reliability

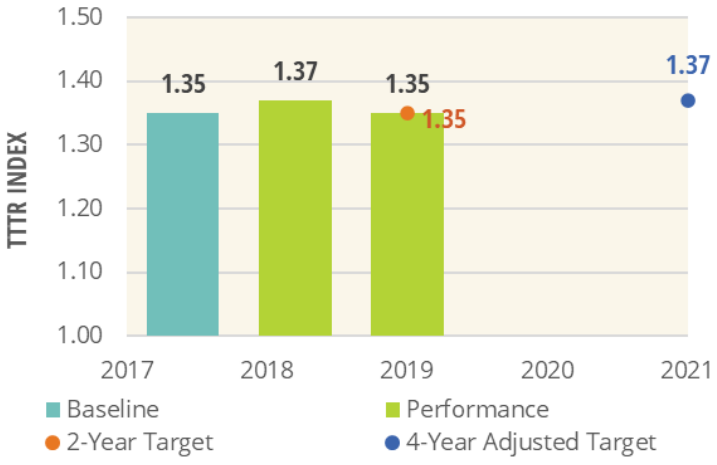


Source: TDOT

Figure 14. Non-Interstate Travel Reliability

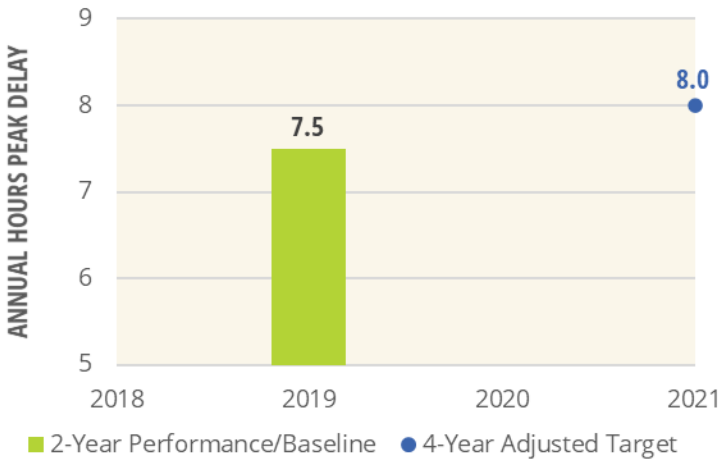
TDOT has recently let projects that specifically address reliability for both interstates and state routes, incorporating emerging technologies that can provide accurate, real-time information and allow Traffic Management Centers to reduce congestion caused by traffic, construction or crashes. With the update of its *Traffic Operations Program Plan*, TDOT's Traffic Operations Division will identify other potential projects to address reliability and overall system performance.

Freight travel is measured by the consistency of travel times — rather than congestion — across different times of the day. TDOT updated and amended the *Tennessee Statewide Multimodal Freight Plan* in 2019, which included a bottleneck analysis and extensive stakeholder engagement. The plan identified projects on the Primary Highway Freight Network, many of which have positive impacts to truck travel time reliability. The 4-year target (Figure 15) was adjusted to ensure TDOT is able to make significant progress while setting an attainable target.



Source: TDOT

Figure 15. Truck Travel Time Reliability Index

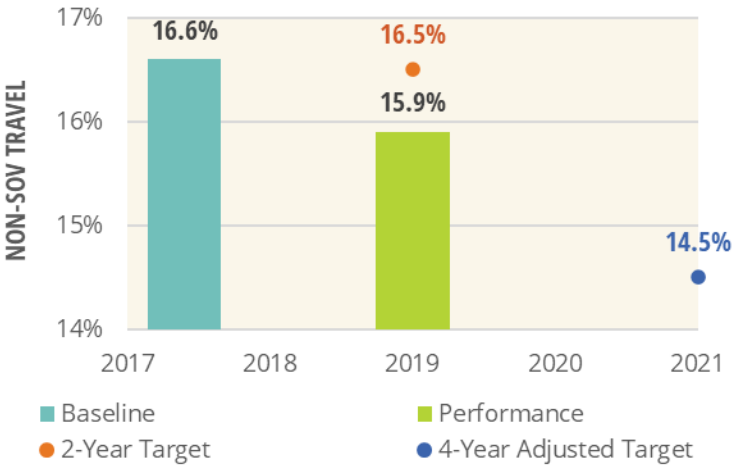


Source: TDOT

Figure 16. Excessive Peak Delay in the Memphis Urbanized Area

Tennessee's two traffic performance measures are applicable to the Memphis Urbanized Area only. Targets were established via a tri-state working group of agencies, which elected to adjust the 4-year targets for both measures based on 2-year performance and also taking into consideration future projects in 2021 that could cause significant traffic or delays. The 2-year performance will serve as the future baseline for this measure.

The non-single occupancy vehicle (SOV) travel targets were set using commuting trends from 5-year census data. Several variables may be a factor in target progress, including shifting regional development patterns toward low-density, COVID-19 pandemic effects on work commuters, and a reduction of rideshare trips in Shelby County over the previous few years.



Source: TDOT

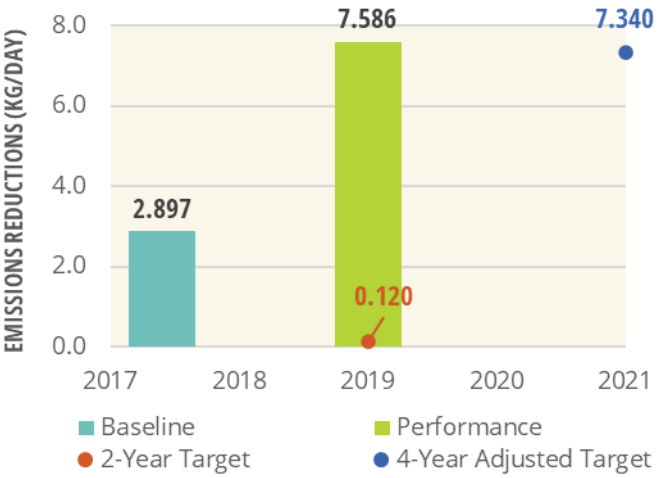
Figure 17. Non-SOV Travel in the Memphis Urbanized Area

Table 8. Emissions Reductions Current Performance

Measure (kg/day)	Baseline (2017)	2-Year Target (2018-2019)	Midpoint Performance (2018-2019)	4-Year Target (2018-2021)	4-Year Target Adjustment
$PM_{2.5}$ Emissions Reductions	2.897	0.120	7.586	0.240	7.340
NO_X Emissions Reductions	363.399	62.840	196.176	125.680	181.679
VOC Emissions Reductions	230.025	30.698	44.438	61.396	41.449
CO Emissions Reductions	530.282	75.000		150.000	*None*

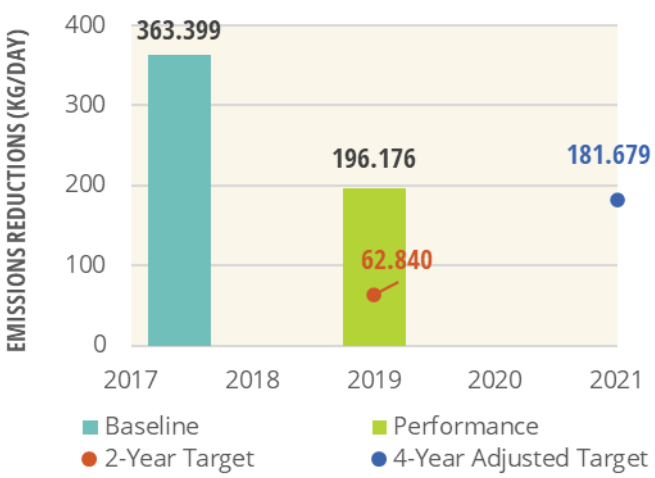
Source: TDOT

In Tennessee, the Memphis and Knoxville urbanized areas are the only applicable areas for the on-road mobile source emissions performance measures of $PM_{2.5}$, NO_X and VOC. Only the Memphis urbanized area, which meets the population criteria of one million people, is subject to establishing emissions reduction targets and submitting a CMAQ Performance Plan though it is anticipated that the Knoxville urbanized area will be required to establish targets on these measures starting with the next performance period. There have been no areas in the state that are nonattainment or maintenance for CO since Shelby County was designated attainment in late 2017. However, identified emissions reduction targets are statewide targets. When the *Baseline Performance Period Report* was submitted in 2018, the System Performance Measures Working Group did not have an established methodology to reliably predict future emission values and the determination was made to set a conservative target based on the lowest value over the 4-year baseline period. Adjusted targets for $PM_{2.5}$, NO_X, and VOC are shown in the following figures.



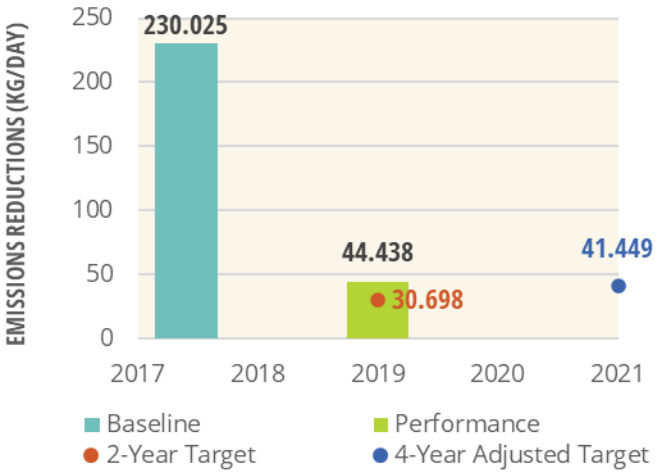
Source: TDOT

Figure 18. Particulate Matter ($PM_{2.5}$) (kg/day)



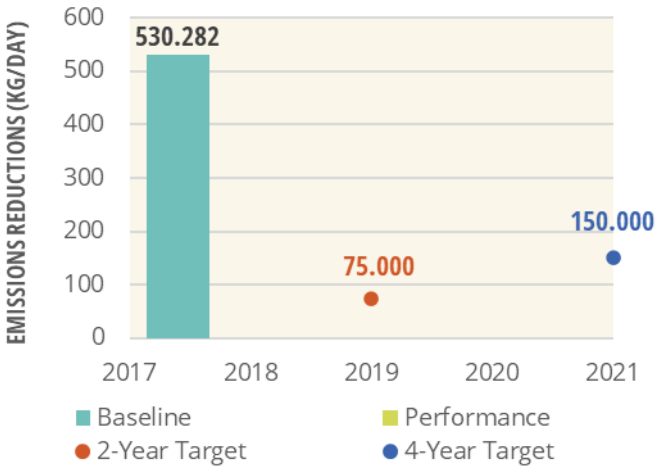
Source: TDOT

Figure 19. Nitrogen Oxides (NO_X) (kg/day)



Source: TDOT

Figure 21. Volatile Organic Compounds (VOC) (kg/day)



Source: TDOT

Figure 20. Carbon Monoxide (CO) (kg/day)

5.0 TRANSIT ASSET MANAGEMENT

The TAM Final Rule, established by FTA in 2016, establishes four nationally-required performance measures that use age, condition, and infrastructure performance restrictions to approximate the State of Good Repair (SGR) for capital transportation assets. Transit providers or group TAM sponsors like TDOT are required to establish and report these performance measures and targets annually to the National Transit Database. TDOT utilizes the default FTA/NTD performance targets for rolling stock and equipment based on the useful life benchmark (ULB) of vehicles. Facility conditions are measured by FTA's Transit Economic Requirements Model (TERM) scale. In addition to the required SGR goals, TDOT established an investment prioritization tool that aggregates ULB, mileage, and asset condition to produce the TDOT TAM Score that is provided to agencies. Future performance tracking will include a Replacement Criticality Scale that identifies assets in need of replacement. Infrastructure performance restrictions apply only to fixed rail guideway systems and signify areas where the transit vehicle cannot reach its maximum possible speed, which can be caused by issues with guideway, track, power and signal systems. Similar to the measures in PM1, PM2, and PM3, transit providers are allowed to create their own additional requirements to utilize available data and advanced techniques.

Transit agencies are divided into tiers based on the number of service vehicles, transit modes, and available funding. TDOT sponsors a Group TAM Plan for the 11 rural transit providers classified as Tier II recipients of FTA 5311 funding: Delta Human Resource Agency (DHRA), East Tennessee Human Resource Agency (ETHRA), First Tennessee Human Resources Agency/Northeast Tennessee Rural Public Transit (NET Trans), Mid-Cumberland Human Resource Agency (MCHRA), Northwest Tennessee Human Resource Agency (NWTHRA), Southeast Tennessee Human Resource Agency (SETHRA), Southwest Human Resource Agency (SWHRA), Upper Cumberland Human Resource Agency (UCHRA), South Central Tennessee Development District (SCTDD), Gatlinburg Mass Transit, and Pigeon Forge Fun Time Trolley. MPOs and other Tier I agencies coordinate with TDOT to establish performance measures and targets but report them independently in their respective TAM Plans. TDOT's 2020 Group TAM Plan includes an inventory of capital assets for each of the 11 Tier II agencies, an assessment of their condition, decision support tools, and a prioritization of investments based on this information. Table 9 shows all performance measures reported in TDOT's 2020 Group TAM Plan. Of note is that none of the Tier II agencies included in the TDOT 2020 Group TAM Plan have fixed rail guideway systems; therefore, the percentage of track segments with performance restrictions is not an applicable performance metric included in this report.

Table 9. Transit Asset Management: Current Performance

Measure	Vehicle/ Facility Type	ULB	FTA/NTD Targets (2021)	TDOT TAM Score Target (2020)	Performance (2020)
Percentage of Revenue Vehicles past Useful Life Benchmark	Automobile	8	50.00%	50.00%	56.25%
	Bus	14	15.00%	10.00%	12.00%
	Cutaway Bus	10	10.00%	15.00%	7.12%
	Minivan	8	25.00%	30.00%	21.05%
	Other Rubber Tire	14	0.00%	0.00%	0.00%
	Van	8	15.00%	30.00%	13.41%
Percentage of Non-Revenue Service Vehicles past Useful Life Benchmark	Non-Revenue/ Service Automobile	8	10.00%	10.00%	9.09%
	Truck/Other Rubber Tire	14	30.00%	25.00%	21.21%
Percentage of Facilities by Group a TERM Rating below 3.0	Administrative/ Maintenance	---	25.00%	25.00%	0.00%
	Passenger/Parking	---	25.00%	25.00%	0.00%
Percentage of Track Segments with Performance Restrictions		---			

Source: TDOT

The Public Transportation Agency Safety Plan (PTASP) final rule requires transit providers who are recipients of certain FTA funds to develop safety plans. Each PTASP includes transit safety performance measures and targets based on measures established in FTA's National Public Transportation Safety Plan (NSP). The measures — which apply to areas within transit vehicles, right-of-way and facilities — include annual fatalities, injuries, safety events, and system reliability based on SGR.

Small public transportation providers without rail transit systems may choose to have TDOT draft safety plans on their behalf but are still required to implement the plan. The 2021 targets for agencies in the state-sponsored plan are shown in Table 10. For the metropolitan agencies where TDOT does not have a PTASP readily available or where an agency chose to opt out of the state sponsored plan, performance targets will be finalized in the coming months and will be incorporated into the metropolitan planning process in tandem with future MPO TIP amendments.

Table 10. Transit Safety Performance Targets

Transit Provider	Route Type	Vehicle Revenue Miles (VRM)	Fatality Target (2021)		Injury Target (2021)		Safety Events Target (2021)		System Reliability Target (2021)	
			Number of Fatalities	Rate of Fatalities per 100K VRM	Number of Injuries	Rate of Injuries per 100K VRM	Number of Safety Events	Rate of Safety Events per 100 VRM	Total Major Mechanical Failures	Miles between Major Mechanical Failures
Bristol Tennessee Transit	Fixed Route	56,876	0	0	1	0.590	1	0.590	3	56,876
Clarksville Transit System	Fixed Route	1,206,518	0	0	2	0.170	3	0.250	26	46,404
	Demand Response	306,324	0	0	2	0.650	2	0.650	6	51,054
Cleveland Urban Area Transit System	Fixed Route	307,776	0	0	0	0.000	9	2.920	1	307,776
East Tennessee Human Resource Agency	Fixed Route	628,334	0	0	0	0.000	0	0.000	5	125,667
	Demand Response	2,850,617	0	0	2	0.070	2	0.070	35	81,446
First Tennessee Human Resources Agency	Demand Response	2,009,935	0	0	0	0.000	0	0.000	19	105,786
Jackson Transit Authority	Fixed Route	583,413	0	0	9	1.030	18	3.080	77	7,577
	Demand Response	205,505	0	0	4	3.400	6	2.910	15	13,700
Johnson City Transit	Fixed Route	430,000	0	0	3	6.98E-06	7	1.63E-05	50	8,600
	Demand Response	254,000	0	0	2	8.00E-06	3	1.18E-05	50	5,080
Kingsport Area Transit Service	Fixed Route	200,000	0	0	1	0.500	1	0.500	30	5
	Demand Response	115,000	0	0	1	1.000	1	1.000	6,666	23,000
Knox County Community Action Committee Transit	Demand Response	1,265,977	0	0	1	0.080	1	8.000	7	180,854
Knoxville Area Transit	Fixed Route	2,792,741	0	0	2	0.070	3	0.107	340	8,524
	Demand Response	439,235	0	0	2	0.460	3	0.683	40	10,992
Murfreesboro Rover	Fixed Route	250,238	0	0	2	0.800	2	0.800	3	83,413

6.0 CONCLUSION

Performance results will be used to help guide Tennessee's investments and create strategies that promote an efficient and safe transportation network. The upcoming LRTP update will use the performance data included in this report to establish policies that TDOT can adopt to achieve their guiding principles and complement other system performance documents, such as the *Strategic Highway Safety Plan* (SHSP) and the *Transportation Asset Management Plan* (TAMP).

In the 2020 SHSP, TDOT established additional safety strategies to provide a safer transportation system. The plan, which was established through engagement with regional and local stakeholders, identifies additional strategies for crash reduction. Crash reduction at a local and regional level will then improve overall state outcomes for fatalities and serious injuries in the future. The SHSP's five safety goals include:

1. A 14% reduction in serious injuries;
2. A 36% reduction in serious injury rate;
3. A reduction in the 5-year average for vehicular fatalities;
4. A 14% reduction in the fatality rate; and
5. A reduction in the 5-year average for non-motorized fatalities and serious injuries.

TDOT uses the TAMP to document all current transportation assets throughout the state's transportation network. TDOT data for pavement conditions is used to identify roadways and bridges in need of maintenance or rehabilitation and impacts funding allocations for these activities. For instance, funding for the state route resurfacing program was increased from $164 million to $195 million in late 2020. A key component of Tennessee's IMPROVE Act, which passed in 2017, was addressing "poor" rated bridges along the NHS system. As IMPROVE Act projects are completed, TDOT will continually reassess system conditions and targets for the next reporting cycle. Additionally, TDOT recently increased funding for preservation efforts for bridges and expects those impacts to be reflected in the next reporting cycle.

In conclusion, this *System Performance Report* illustrates TDOT's current performance in providing a safe, well-maintained, and efficient transportation system. It will be updated at a minimum with each state long-range transportation plan, providing an important opportunity to assess system conditions, understand the causes of changes, and identify opportunities for TDOT to positively impact system performance.

ADDITIONAL RESOURCES

National Resources for Performance Management

- FHWA Transportation Performance Management Guidance
- FHWA Safety Performance Measures (PM1) Fact Sheet
- FTA Asset Management Performance Management

Tennessee Resources for Performance Tracking

- FHWA State Performance Dashboard – Tennessee
- Tennessee Strategic Highway Safety Plan (2020)
- Highway Safety Improvement Program Annual Report (2019)
- TDOT Transportation Asset Management Plan (2019)
- Tier II Sponsored Group Transit Asset Management Plan (2020)