



Development of Local Safety Targets for the TPO Region under the FHWA Transportation Performance Management – 2025 Annual PM1 Safety Target Setting Process

February 2025

Background and Overview

Safety Performance Management (Safety PM) is part of the overall [Transportation Performance Management](#) (TPM) program, which FHWA defines as a strategic approach that uses system information to make investment and policy decision to achieve national performance goals. The Safety PM Final Rule supports the Highway Safety Improvement Program (HSIP), as it establishes safety performance measure requirements for the purpose of carrying out the HSIP and to assess fatalities and serious injuries on all public roads.

The Safety PM Final Rule establishes five performance measures (based on five-year rolling averages) to include:

1. **Number of Fatalities**
2. **Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT)**
3. **Number of Serious Injuries**
4. **Rate of Serious Injuries per 100 million VMT**
5. **Number of Non-motorized Fatalities and Non-motorized Serious Injuries**

The Safety PM Final Rule also establishes the process for State Departments of Transportation (DOTs) and Metropolitan Planning Organizations (MPOs) to establish and report their safety targets, and the process that FHWA will use to assess whether State DOTs have met or made significant progress toward meeting their safety targets.

This year represents the 8th annual target-setting process and for each of the first seven years the TPO Executive Board adopted a resolution to “support” the State’s targets. However, the TPO adopted a [Regional Roadway Safety Action Plan](#) in June 2023 that established a formal goal to reduce fatalities and serious injuries by two-thirds by the year 2045, which translates to a 5% annual reduction from 2024 – 2045. The TPO staff therefore are now proposing that the Executive Board consider adopting our own TPO regional PM1 Safety Targets based on the new commitment, which will serve as a mechanism for tracking our progress towards meeting this important goal moving forward.





2025 PM1 Safety Target and Baseline Period Overview

The annual safety targets are based on a rolling 5-year average, as a way to smooth out variances that typically occur year over year in the data. This year’s target period covers the years from **2021 – 2025**, which are compared against a 5-year baseline of actual data covering the years **2019 – 2023**.

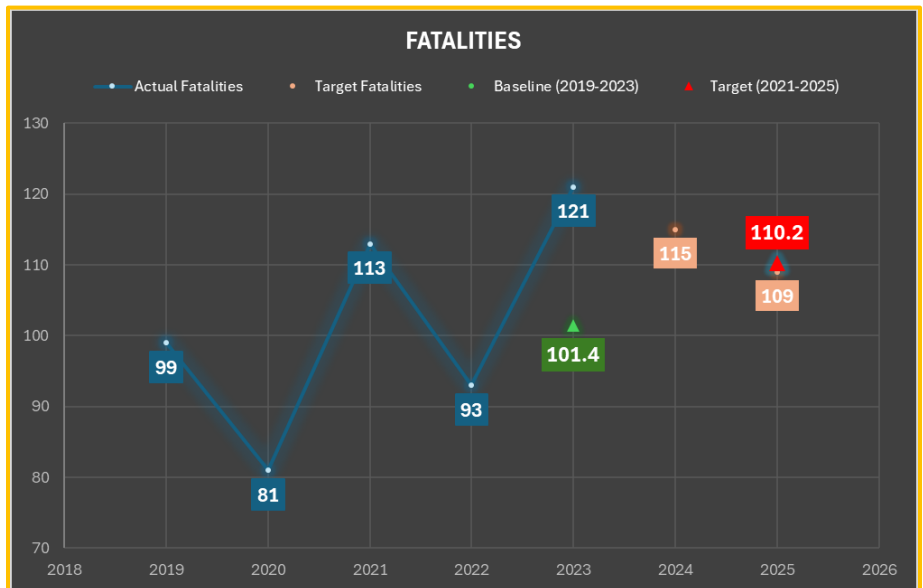
Entities are determined to have met or made significant progress toward meeting their safety performance targets when at least four out of the five targets are either met based on actual outcomes, or are better than the baseline period performance. Note, the TPO’s local targets will not be directly evaluated by FHWA with no consequences for missing targets.

Crash data back to the year 2019 was provided by the Tennessee Department of Safety & Homeland Security (TDOSHS) and specifically the Tennessee Highway Patrol’s TITAN Business Unit which stores all statewide crash reports in an online database system for tracking. Crash statistics are normally reported at the full-county level, but since geographic coordinates were provided, the TPO staff was able to select only the ones inside the TPO Planning Area for the necessary target computations.

Measure 1 – Number of Fatalities

The chart and figure below show the actual number of fatalities each year within the TPO Planning Area for the baseline period from 2019 – 2023. The year 2023 had the highest number of fatalities and it now serves as the baseline/starting year for implementing target reductions moving forward based on the goal stated in the TPO Regional Roadway Safety Action Plan. A 5% reduction factor was applied to the 2023 value to generate target numbers for both 2024 and 2025 which comprise part of the target period 5-year rolling average between 2021 – 2025. The somewhat low values in the baseline, especially for year 2020, means that the target will likely be higher than the baseline for the next few annual target-setting reporting periods.

Year	Actual Fatalities	Target Fatalities
2019	99	
2020	81	
2021	113	
2022	93	
2023	121	
2024		115
2025		109
5-Year Rolling Avg Baseline (2019-2023)		101.4
5-Year Rolling Avg Target (2021-2025)		110.2





Measure 2 – Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT)

In order to develop rate targets, the TPO staff first had to estimate the amount of Vehicle Miles of Travel that occurs only within the TPO Planning Area, which consists of partial counties except for Knox County. This can be challenging because TDOT only reports full county-level VMT in its annual Highway Performance Monitoring System (HPMS) submittal. A GIS process was used to select the roadways within the TPO Planning Area and estimate their contribution to the full county VMT through use of traffic count data. This method accounts for the roadways classified as Collector and above with a separate estimate for “Local” road VMT having to be computed. The Local road VMT was derived based on a roadway mileage percentage factor that was applied to that category for each county independently.

To develop target-year rates for the full 2021 – 2025 period the TPO staff also had to project the VMT for the unknown years of 2024 and 2025. The projections for those years were made using the TPO’s regional travel demand forecasting model which provided county-specific VMT growth rates which were applied to the 2023 VMT. See the chart below for the final results that were converted to an annualized total in terms of 100 million VMT needed for the rate calculations. The other chart shows the resulting baseline and target rate values for this performance measure area as calculated by dividing the fatality numbers from Measure 1 by the total VMT.

County	Full County Daily VMT					TPO Area Daily VMT					Projected TPO VMT	
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2024	2025
Anderson	2,617,038	2,580,705	2,558,989	2,614,333	2,773,999	2,347,419	2,332,424	2,291,994	2,345,033	2,496,232	2,503,933	2,503,933
Blount	3,426,686	3,194,163	3,380,241	3,567,522	3,614,476	3,132,244	2,901,379	3,056,600	3,240,154	3,316,958	3,345,661	3,403,067
Knox	17,724,261	15,889,294	16,883,974	17,636,854	17,243,528	17,724,261	15,889,294	16,883,974	17,636,854	17,243,528	17,367,499	17,615,441
Loudon	2,520,197	2,315,669	2,475,930	2,498,786	2,605,498	2,172,116	2,000,600	2,132,226	2,162,603	2,252,140	2,270,079	2,305,958
Roane	2,093,089	1,990,747	2,087,432	2,121,103	2,222,535	264,643	265,175	252,624	244,844	268,302	269,389	271,565
Sevier	4,425,487	4,128,988	4,601,354	4,608,283	4,598,751	533,704	502,327	553,021	562,882	559,487	565,961	578,908
TOTAL	32,806,758	30,099,566	31,987,920	33,046,881	33,058,787	26,174,386	23,891,198	25,170,438	26,192,370	26,136,646	26,322,523	26,678,872
	ANNUALIZED in 100M VMT					95.54	87.20	91.87	95.60	95.40	96.08	97.38

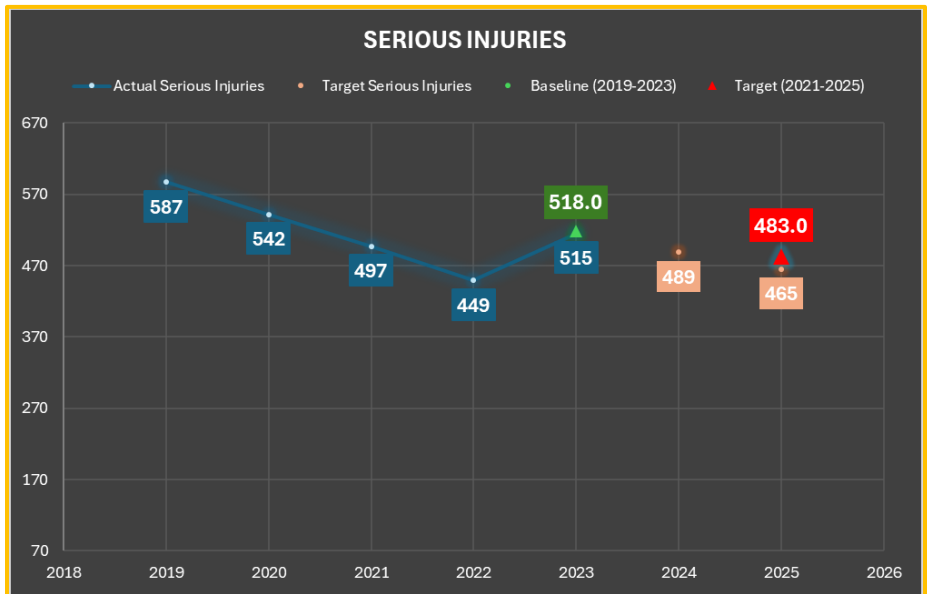
Year	# of Fatalities	100 Million VMT	Actual Fatality Rate	Target Fatality Rate
2019	99	95.54	1.036	
2020	81	87.20	0.929	
2021	113	91.87	1.230	
2022	93	95.60	0.973	
2023	121	95.40	1.268	
2024	115	96.08		1.197
2025	109	97.38		1.119
5-Year Rolling Avg Baseline (2019-2023)			1.087	
5-Year Rolling Avg Target (2021-2025)			1.157	



Measure 3 – Number of Serious Injuries

The chart and figure below show the actual number of Serious Injuries within the TPO Planning Area each year for the baseline period from 2019 – 2023. Similar to the fatalities measure, the year 2023 had the highest number of serious injuries and it now serves as the baseline/starting year for implementing target reductions moving forward of 5% reduction per year. Unlike with the Fatality numbers however, the Serious Injuries have been experiencing an overall declining trendline and the 2021 – 2025 5-Year Target is projected to be less than the 2019 – 2023 Baseline value.

Year	Actual Serious Injuries	Target Serious Injuries
2019	587	
2020	542	
2021	497	
2022	449	
2023	515	
2024		489
2025		465
5-Year Rolling Avg Baseline (2019-2023)		518.0
5-Year Rolling Avg Target (2021-2025)		483.0



Measure 4 – Rate of Serious Injuries per 100 million VMT

This measure is very similar to Measure 2 except instead of fatalities it is the rate of Serious Injuries per 100 million VMT. The chart below shows the baseline and targets which illustrate the projected decline (improvement) in this measure.

Year	# of Serious Injuries	100 Million VMT	Actual S.I. Rate	Target S.I. Rate
2019	587	95.54	6.144	
2020	542	87.20	6.215	
2021	497	91.87	5.410	
2022	449	95.60	4.697	
2023	515	95.40	5.398	
2024	489	96.08		5.090
2025	465	97.38		4.775
5-Year Rolling Avg Baseline (2019-2023)			5.573	
5-Year Rolling Avg Target (2021-2025)			5.074	

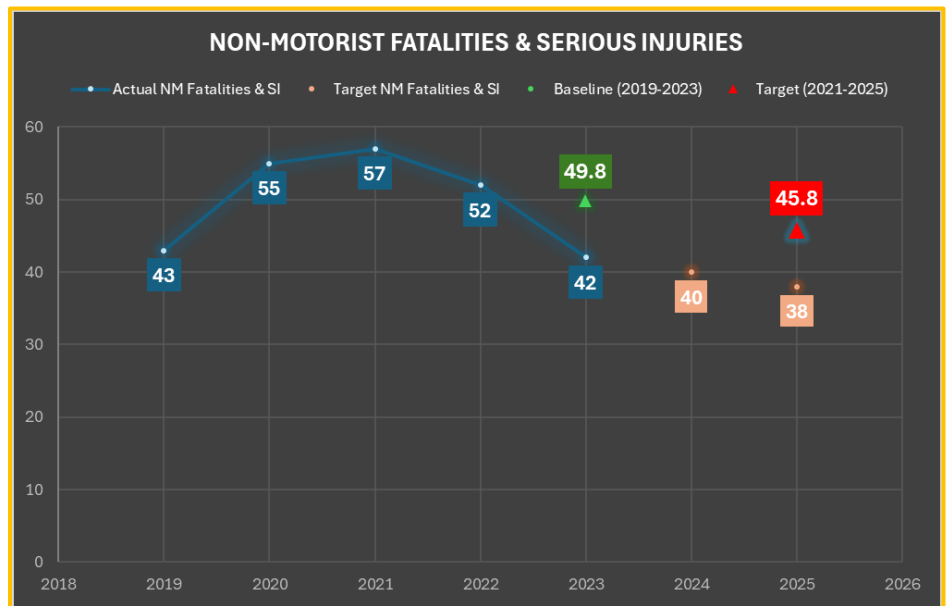
Measure 5 – Number of Non-motorized Fatalities and Non-motorized Serious Injuries

This measure is a subset of both Measure 1 and Measure 3 to focus in on the Non-Motorist involved crash victims, also known as “Vulnerable Road Users”. The measure is calculated as the sum of both Serious Injuries and Fatalities, so it is helpful to look at the breakdown of those separately as shown in the chart below.

Performance Measure	2019	2020	2021	2022	2023	2024 (Projected)	2025 (Projected)
Number of Non-motorist Fatalities	13	15	19	14	17		
Number of Non-motorist Serious Injuries	30	40	38	38	25		
Number of Non-motorist Fatal + SI	43	55	57	52	42	40	38

The chart and figure below show the actual number of Non-Motorist Fatality and Serious Injury victims within the TPO Planning Area each year for the baseline period from 2019 – 2023. Unlike both previous measures, the year 2023 had the lowest number of fatalities plus serious injuries and it now serves as the baseline/starting year for implementing target reductions moving forward of 5% reduction per year.

Year	Actual NM Fatalities & SI	Target NM Fatalities & SI
2019	43	
2020	55	
2021	57	
2022	52	
2023	42	
2024		40
2025		38
5-Year Rolling Avg Baseline (2019-2023)		49.8
5-Year Rolling Avg Target (2021-2025)		45.8

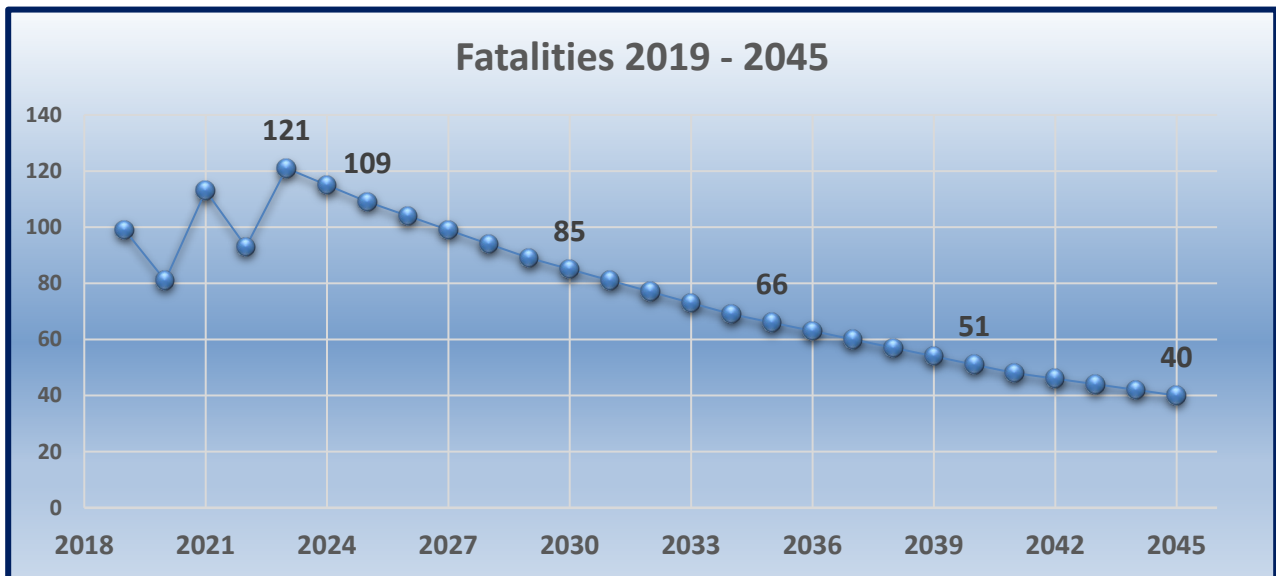


Summary and Conclusion

The chart below provides a summary of all measures with historical and projected numbers for the baseline and target 5-year periods:

Performance Measure	2019	2020	2021	2022	2023	2024 (Projected)	2025 (Projected)	BASELINE 2019-2023	TARGET 2021-2025
Fatalities	99	81	113	93	121	115	109	101.4	110.2
Serious Injuries	587	542	497	449	515	489	465	518.0	483.0
Number of Non-motorist fatalities	13	15	19	14	17				
Number of Non-motorist serious injuries	30	40	38	38	25				
Number of Non-motorist Fatal + SI	43	55	57	52	42	40	38	49.8	45.8
Vehicle Miles of Travel (100M VMT)	95.54	87.20	91.87	95.60	95.40	96.08	97.38		
Fatalities per 100M VMT	1.036	0.929	1.230	0.973	1.268	1.197	1.119	1.087	1.157
Serious Injuries per 100M VMT	6.144	6.215	5.410	4.697	5.398	5.090	4.775	5.573	5.074

Future safety target setting reports like this will include information on performance towards achieving the goals of the Regional Roadway Safety Action Plan. It is recognized that the goal of reducing fatalities and serious injuries by two-thirds by 2045 will be a significant challenge based on recent trendlines. The TPO will continue to work with its partner jurisdictions to identify crash factors and program projects to address major safety needs in the Region in the hopes of reversing the recent trends. The following chart depicts the annual progress needed to achieve the two-thirds reduction, from 121 in 2023 to 40 in 2045 for the Fatalities measure by 2045:



**A RESOLUTION BY THE EXECUTIVE BOARD
OF THE KNOXVILLE REGIONAL
TRANSPORTATION PLANNING ORGANIZATION
ADOPTING 2025 REGIONAL SAFETY PERFORMANCE MEASURE TARGETS
FOR THE TPO PLANNING AREA**

WHEREAS, the Knoxville Regional Transportation Planning Organization (TPO) is the designated Metropolitan Planning Organization (MPO) for the Knoxville urbanized area; and

WHEREAS, in 2012 Congress passed the Moving Ahead for Progress in the 21st Century (MAP-21) that mandated the establishment of a performance and outcome based program for transportation decisions which was carried forward in the Infrastructure Investment and Jobs Act (IIJA); and

WHEREAS, a national goal has been established to achieve a significant reduction in traffic fatalities and serious injuries on all public roads; and

WHEREAS, the Safety Performance Management Measures regulations support the Highway Safety Improvement Program (HSIP) and require State DOTs and MPOs to annually set Safety Performance Measure Targets, which apply to all public roads, for 5 factors; including number of fatalities, rate of fatalities per 100 Million Vehicle Miles Traveled (VMT), number of serious injuries, rate of serious injuries per 100 Million VMT, and number of non-motorized fatalities and serious injuries; and

WHEREAS, MPOs have 180 days following the establishment and reporting of the State targets in the HSIP Annual Report to make a decision regarding whether to support each state's targets or to establish their own; and

WHEREAS, the Knoxville Regional TPO adopted a Regional Roadway Safety Action Plan in July 2023, which made a stated commitment to reduce fatalities and serious injuries by two-thirds by 2045; and

WHEREAS, Knoxville TPO staff quantified the number of motorist and non-motorist fatalities and serious injuries using data provided by the Tennessee Department of Safety & Homeland Security in order to calculate all required safety targets including an estimate of vehicle miles traveled (VMT) for the rate-based ones; and

WHEREAS the Technical Committee has recommended that the Knoxville TPO Executive Board adopt regional targets for this 2021 - 2025 period;

NOW, THEREFORE, BE IT RESOLVED BY THE KNOXVILLE REGIONAL TRANSPORTATION PLANNING ORGANIZATION EXECUTIVE BOARD:

That the Knoxville Regional TPO hereby adopts Regional 2021 – 2025 Targets as shown in Attachment A for all of the required Safety Performance Measures specified in the IIJA in order to support the goals of the TPO's Regional Roadway Safety Action Plan.

February 26, 2025

Date

Mayor Indya Kincannon
City of Knoxville
TPO Executive Board Vice-Chair

Doug Burton
Coordinator
Knoxville Regional TPO

ATTACHMENT A: Regional 2025 Safety Performance Measure Targets (2021-2025 5-Year Average)

Performance Measure	5-Year Rolling Averages	
	Baseline (2019 - 2023)	Target (2021 - 2025)
Number of Fatalities	101.4	110.2
Fatality Rate	1.087	1.157
Number of Serious Injuries	518.0	483.0
Serious Injury Rate	5.573	5.074
Number of Non-Motorized Fatalities and Serious Injuries	49.8	45.8