

Safety Performance Targets Guide

Overview

The Public Transportation Agency Safety Plan (PTASP) regulation, at 49 CFR Part 673, requires covered public transportation providers and State Departments of Transportation (DOT) to establish safety performance targets (SPTs) to address the safety performance measures (SPMs) identified in the [National Public Transportation Safety Plan](#) (49 CFR § 673.11(a)(3)).

A **safety performance target** is a quantifiable level of performance or condition expressed as a value for the measure related to safety management activities to be achieved within a set time period (§ 673.5). A **safety performance measure** is a quantifiable indicator of performance or condition that is used to establish targets related to safety management activities, and to assess progress toward meeting the established targets (§ 673.5). Transit providers may choose to establish additional targets for the purpose of safety performance monitoring and measurement.¹

This guide provides information to help transit providers develop SPTs based on the SPMs in FTA's National Public Transportation Safety Plan (NSP).

NSP Safety Performance Measures

In order to reflect the broad and varied nature of public transportation, FTA's NSP relies on SPMs that: (1) can be applied to all modes of public transportation and (2) are based on data currently submitted to the National Transit Database (NTD). Transit providers and State DOTs report this data following the NTD Safety and Security Policy Manual (PM), available at: <https://www.transit.dot.gov/ntd/2019-ntd-safety-and-security-policy-manual>.

As described in the NSP, transit providers must establish by mode seven SPTs in four categories:

- Fatalities: **Total number** of fatalities reported to NTD and **rate per total vehicle revenue miles (VRM)** by mode.
- Injuries: **Total number** of injuries reported to NTD and **rate per total VRM** by mode.
- Safety Events: **Total number** of safety events reported to NTD and **rate per total VRM by mode**.

¹ The guidance in this document is not legally binding in its own right and will not be relied upon by the Federal Transit Administration as a separate basis for affirmative enforcement action or other administrative penalty. Compliance with the guidance in this document (as distinct from existing statutes and regulations) is voluntary only, and noncompliance will not affect rights and obligations under existing statutes and regulations.

- System Reliability: **Mean distance** between major mechanical failures by mode.

Transit providers **must make their SPTs available to their State and Metropolitan Planning Organizations (MPOs)** (§ 673.15(a)). Transit providers also **must coordinate with States and MPOs in the selection of State and MPO safety performance targets**, to the maximum extent practicable (§ 673.15(b)). During this coordination process, to ensure consistency across the transportation modes represented in the state/regional planning process, States and MPOs may request that transit agencies use specific time periods for “total number” SPTs and specific VRM values for “rate” SPTs.

When establishing **SPTs for total numbers**, transit providers may consider the total number of fatalities, injuries and safety events they expect to experience **per year** (calendar, fiscal, or NTD reporting year). The annual timeframe may be established to ensure consistency with the state/regional planning process. Likewise, in setting **rates per VRM**, transit providers may use total annual VRM, or another number (e.g. 100,000 VRM, 1,000,000 VRM, or 10,000,000 VRM) as needed for **consistency with state/regional planning requirements**.

Transit providers are not required to report their SPTs to FTA at this time; however, FTA will confirm that transit providers have set SPTs as part of its Triennial Review program. **FTA has not established, and does not impose, penalties for not meeting safety performance targets set by transit providers.**

Illustrative Examples of SPTs for the SPMs in the NSP

As illustrative examples, Tables 1 and 2 provide SPTs for a representative small and large transit provider, using a format based on the FTA’s Bus Transit ASP Template, which is available here: <https://www.transit.dot.gov/regulations-and-guidance/safety/public-transportation-agency-safety-program/ptasp-template-bus>.

Annual Safety Performance Targets based on the safety performance measures established under the National Public Transportation Safety Plan.

Mode of Service	Fatalities (total)	Fatalities (per 100k VRM)	Injuries (total)	Injuries (per 100k VRM)	Safety Events (total)	Safety Events (per 100k VRM)	System Reliability (VRM/failures)
Fixed Route/ Deviated Fixed Route	0	0	5	0.2	7	0.28	9,240
ADA/ Paratransit	0	0	1	0.1	1	0.1	68,456

Table 1: Sample SPTs for an Illustrative Small Public Transit Provider



Annual Safety Performance Targets based on the safety performance measures established under the National Public Transportation Safety Plan.

Mode of Service	Fatalities (total)	Fatalities (per 10 million VRM)	Injuries (total)	Injuries (per 10 million VRM)	Safety Events (total)	Safety Events (per 10 million VRM)	System Reliability (VRM/failures)
Rail Transit	4	2.5	20	12.5	30	18.75	75,000
Bus Transit	3	0.75	35	8.75	45	11.25	6,500
ADA/ Paratransit	0	0	1	10	1	10	55,000

Table 2: Sample SPTs for an Illustrative Large Public Transit Provider

In these examples, total number and rate SPTs are provided as annual calendar year (CY) targets. Total SPTs are recorded by taking the total number of fatalities, injuries, and safety events the transit agency expects to experience in CY 2020 and placing them in the table. For these sample agencies, rate SPTs are calculated by taking the total number of annual fatalities, injuries, and safety events identified in the table, multiplying by the standardizing measure established in the state/local planning process (100,000 VRM for the small transit provider or 10,000,000 VRM for the large transit provider) and dividing by the total expected VRM for the year.

Small Transit Provider

The small transit provider in this example has not experienced a fatality in its operating history, so it opted to select a total number SPT of 0 fatalities and a corresponding SPT rate of 0 fatalities per 100,000 VRM.

The small transit provider has experienced injuries, however, and set a total number SPT of 5 injuries in its fixed route/deviated fixed route service for CY 2020. The small transit provider also expects to provide 2.5 million VRM of service in its fixed/deviated fixed route mode in CY 2020. To establish the SPT injury rate, the small transit provider performed the following calculation:

- Total SPT injuries multiplied by 100,000 VRM divided by annual expected VRM = $(5 \times 100,000) / 2,500,000 = 0.2$ injuries per 100,000 VRM

To establish the safety event rate, based on a total number SPT of 7 safety events for CY 2020, the small provider performed a similar calculation:

- $(7 \text{ safety events} \times 100,000 \text{ VRM}) / 2,500,000 \text{ VRM} = 0.28$ safety events per 100,000 VRM

For the Americans with Disability Act (ADA)/paratransit mode, the small transit provider expects to experience 1 injury resulting in 1 reportable safety event in CY 2020 while providing 1,000,000 VRM of service. Since the total SPT numbers are the same for injuries and safety events (both 1), the total SPT rates will also be same, calculated as follows:

- $(1 \text{ injury} \times 100,000 \text{ VRM}) / 1,000,000 \text{ VRM} = 0.1 \text{ injuries per } 100,000 \text{ VRM}$
- $(1 \text{ safety event} \times 100,000 \text{ VRM}) / 1,000,000 \text{ VRM} = 0.1 \text{ safety events per } 100,000 \text{ VRM}$

Finally, the small transit provider reviewed its vehicle maintenance log to establish its system reliability SPT in terms of total VRMs between failures. The small transit provider selected a target of 9,240 miles between failures for its fleet of fixed route buses and 68,456 miles between failures for its fleet of paratransit vans.

Large Transit Provider

The large transit provider in this example operates three modes: rail transit, bus transit, and ADA/paratransit. This large agency has experienced fatalities in its rail transit and bus transit modes, where it expects to provide 16,000,000 VRM and 40,000,000 VRM of service, respectively, in CY 2020. This large provider has never experienced a fatality in its ADA/paratransit mode, where it expects to provide 1,000,000 VRM in service in CY 2020.

Based on its experience, the large transit provider established total number SPTs of 4 rail transit fatalities, 3 bus transit fatalities and 0 paratransit fatalities for CY 2020. Due to its larger service levels, and as recommended through the state/regional transportation planning process, the large transit provider calculated its fatality rate SPTs in terms of 10,000,000 VRM as follows:

- Rail transit: $(4 \text{ fatalities} \times 10,000,000 \text{ VRM}) / 16,000,000 \text{ VRM} = 2.5 \text{ fatalities per } 10,000,000 \text{ VRM}$
- Bus transit: $(3 \text{ fatalities} \times 10,000,000 \text{ VRM}) / 40,000,000 = 0.75 \text{ fatalities per } 10,000,000 \text{ VRM}$
- ADA/paratransit: $(0 \text{ fatalities} \times 10,000,000) / 1,000,000 = 0 \text{ fatalities per } 10,000,000 \text{ VRM}$

In terms of injuries for CY 2020, the large transit provider in this example established total number SPTs of 20 rail transit injuries, 35 bus transit injuries and 1 ADA/paratransit injury. The large transit provider calculated its injury rate SPTs per 10,000,000 VRM as follows:

- Rail transit: $(20 \text{ injuries} \times 10,000,000 \text{ VRM}) / 16,000,000 \text{ VRM} = 12.5 \text{ injuries per } 10,000,000 \text{ VRM}$
- Bus transit: $(35 \text{ injuries} \times 10,000,000 \text{ VRM}) / 40,000,000 \text{ VRM} = 8.75 \text{ injuries per } 10,000,000 \text{ VRM}$

- ADA/paratransit: $(1 \text{ injury} \times 10,000,000 \text{ VRM}) / 1,000,000 \text{ VRM} = 10 \text{ injuries per } 10,000,000 \text{ VRM}$

For safety events in CY 2020, the large transit provider in this example established total number SPTs of 30 rail transit safety events, 45 bus transit safety events and 1 ADA/paratransit safety event. The large transit provider calculated its safety event rate SPTs per 10,000,000 VRM as follows:

- Rail transit: $(30 \text{ safety events} \times 10,000,000 \text{ VRM}) / 16,000,000 = 18.75 \text{ safety events per } 10,000,000 \text{ VRM}$
- Bus transit: $(45 \text{ safety events} \times 10,000,000 \text{ VRM}) / 40,000,000 = 11.25 \text{ safety events per } 10,000,000 \text{ VRM}$
- ADA/paratransit: $1 \text{ safety event} \times 10,000,000 \text{ VRM} / 1,000,000 = 10 \text{ safety events per } 10,000,000 \text{ VRM}$

Finally, the large transit provider reviewed its major mechanical failure data as reported to the NTD to establish its system reliability SPT in terms of total VRMs between failures. The large transit provider selected a target of 75,000 miles between failures for its fleet of light rail vehicles, 6,500 miles between failures for its bus fleet and 55,000 miles between failures for its fleet of paratransit vans.

Strategies for Establishing SPTs

When establishing SPTs, transit providers may choose to set aspirational SPTs, i.e., zero fatalities or injuries, or targets that represent improvement over current safety performance levels. To the extent possible, FTA recommends that transit providers set realistic SPTs that consider relevant safety goals and objectives. **While transit providers may select SPTs that reflect an improvement in safety performance, they do not necessarily have to do so and could focus on maintaining current safety performance.**

Three sample strategies for establishing initial SPTs include:

- **Setting SPTs based on five-year trends:** A transit provider could review its fatality, injury, safety event, major mechanical failures, and vehicle revenue mile data over the previous five years by mode. See Table 3 below for an illustrative example for a fixed route bus mode.

Once this five-year picture has been established, by mode, the public transportation provider may choose to adopt the 5-year average total numbers and rates, by mode, as its performance targets, reflecting a goal to maintain the current level of safety performance while addressing new Part 673 requirements. Alternatively, an agency may choose to select as SPTs the highest or lowest numbers and rates documented in its



tables for the 5-year period or average the highest and lowest numbers and rates to develop SPTs that reflect their operating characteristics.

SPT Category	2014	2015	2016	2017	2018	5-Year Average
Total Number of Fatalities	0	1	2	0	1	0.8
Fatality Rate per 10,000,000 VRM	0	1	1.98	0	0.99	0.8
Total Number of Injuries	30	22	40	32	25	29.8
Injury Rate per 10,000,000 VRM	30.9	22	39.2	31.4	24.8	29.8
Total Number of Safety Events	40	35	50	42	35	40.4
Safety Event Rate per 10,000,000 VRM	41.2	35	49.5	41.2	35	40.4
Total Number of Major Mechanical System Failures	55	64	72	45	60	59.2
Annual VRM	9,700,000	10,000,000	10,100,000	10,200,000	10,000,000	10,000,000

Table 3: Sample 5-Year Safety Performance for a Large Fixed Route Bus Transit Mode (Based on NTD Reporting Year)

- Number and rate reduction:** A transit provider also could set their SPTs in terms of a rate reduction. For example, an agency could decide to reduce the number of total injuries by two-percent per year, then determine the number and rate of injuries that reduction would present for a particular year’s SPTs.
- Benchmarking peers:** Some transit providers may not have sufficient data to set SPTs for each of the NSP safety performance measures. This could be because the transit agency does not experience fatalities, injuries, safety events, or major mechanical failures often enough to develop meaningful data trends or because the transit agency is new and does not have historical data. Also, some agencies are not required to report data on mechanical failures to the NTD based on the size or type of their operations, so they may not have a historical record of this information.

For these agencies, benchmarking against peer transit agencies can help provide baseline data to inform their SPTs. For example, if a transit agency with limited data to draw on determines that six peer (similarly sized) transit agencies experienced an average of 50 total safety events in fixed route bus service over the last five years, then the transit agency may choose to set an SPT such as: “10 total safety events for the fixed-route bus mode in 2021.” The NTD provides safety time series data to support peer benchmarking, available at: <https://www.transit.dot.gov/ntd/ntd-data>

Coordination with Statewide and Metropolitan Planning

States and MPOs will take transit SPTs into account as they prepare appropriate highway and public transportation SPTs for their planning jurisdictions. The recent Federal Highway Administration (FHWA)/FTA joint planning rule governs the planning activities of transit agencies, States, and MPOs, and is available at: <https://www.govinfo.gov/content/pkg/FR-2016-05-27/pdf/2016-11964.pdf>

Additional information on State and MPO coordination under the requirements of the PTASP regulation is available at: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/regulations-and-guidance/transportation-planning/133056/ptasp-fact-sheet-53019_0.pdf



PTASP Technical Assistance Available Now

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- Learn and share through the PTASP Community of Practice
- Explore the PTASP Resource Library

<https://www.transit.dot.gov/PTASP-TAC>