

FTA

FEDERAL TRANSIT ADMINISTRATION



Safety Performance Targets

February 4, 2020



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Webinar Objectives and Topics

- Objectives
 - To help States and transit agencies understand the requirements for safety performance targets in the Public Transportation Agency Safety Plan (PTASP) regulation at 49 CFR Part 673 (Part 673)
 - To highlight options for coordinating with the statewide and metropolitan planning process
- Topics
 - Understanding FTA's safety performance measures
 - Reviewing approaches and examples that address Part 673
 - Sharing safety targets and coordinating with States and Metropolitan Planning Organizations (MPO)

PTASP REQUIREMENTS FOR SAFETY PERFORMANCE TARGETS

PTASP Regulation Requirements



Agency Safety Plan

Develop and certify an Agency Safety Plan, **including safety performance targets**



Safety Management System (Subpart C)

Implement and operate a Safety Management System



PTASP Documentation (Subpart D)

Maintain documentation related to the ASP, SMS implementation, and results from SMS processes and activities

PTASP Requirement for Safety Performance Targets

- The Agency Safety Plan must include performance targets based on the safety performance measures established in FTA's National Public Transportation Safety Plan (§ 673.11(a)(3))

Performance Measure and Target, as Defined in the PTASP Regulation

Performance Measure

§ 673.5

- Expression based on a quantifiable indicator of performance or condition
- Used to establish targets and assess progress toward meeting targets

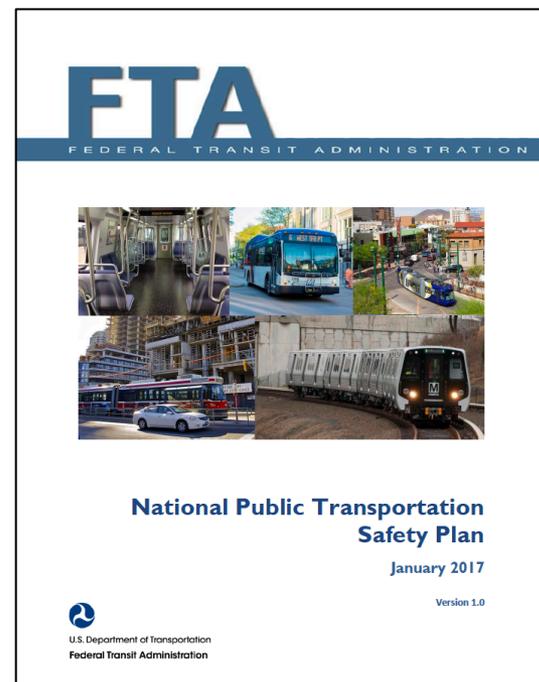
Performance Target

§ 673.5

- Quantifiable level of performance or condition, expressed as a value for the measure, to be achieved within a time period

FTA's Four Safety Performance Measures

- FTA establishes four safety performance measures in the National Public Transportation Safety Plan
 1. Fatalities
 2. Injuries
 3. Safety Events
 4. System Reliability



Safety Performance Measure Definitions*

Fatalities

- Death confirmed within 30 days, excluding suicide, trespassers, illness, or natural causes

Injuries

- Harm to person that requires immediate medical attention away from the scene

Safety Events

- Collision, derailment, fire, hazardous material spill, or evacuation

System Reliability

- Major mechanical failure preventing a vehicle from completing or starting scheduled trip

* These terms used in the National Public Transportation Safety Plan are defined in the National Transit Database Safety and Security Reporting Manual (<https://www.transit.dot.gov/node/146986>)

Question 1

How many safety performance targets does each transit agency have to develop per mode?

- A. Four, one for each safety performance measure
- B. None, targets are optional
- C. Seven, one for system reliability and two each (the total number and rate) for fatalities, injuries, and safety events

Safety Performance Targets

- Addressing FTA's **four** safety performance measures requires **seven** safety performance targets by mode

- Total number
- Rate per vehicle revenue mile

Fatalities
by Mode

- Total number
- Rate per vehicle revenue mile

Injuries
by Mode

- Total number
- Rate per vehicle revenue mile

Safety Events
by Mode

- Miles between major mechanical failures

System Reliability
by Mode

What are vehicle revenue miles?

- Vehicle revenue miles are the miles transit vehicles are scheduled to or actually travel in revenue service
 - Includes layover/recovery time
 - Excludes deadhead, operator training, vehicle maintenance testing, and school bus and charter services

What do we mean by “mode”?

- The National Public Transportation Safety Plan defines the word “mode” as one of three categories:
 1. Rail modes
 2. Fixed route bus modes
 3. Non-fixed route bus modes

What do we mean by “mode”?

National Public Transportation Safety Plan Mode Examples

Rail Mode	Fixed Route Bus Mode	Non-Fixed Route Bus Mode
<ul style="list-style-type: none">• Heavy Rail (HR)*• Light Rail (LR)• Streetcar (SC)• Hybrid Rail (YR)*• Monorail/Automated Guideway (MG)• Inclined Plane (IP)• Cable Car (CC)	<ul style="list-style-type: none">• Motorbus (MB)• Commuter Bus (CB)• Bus Rapid Transit (RB)• Trolley Bus (TB)• Publico (PB)	<ul style="list-style-type: none">• Demand Response (DR)• Demand Response Taxi (DT)• Vanpool (VP)

* Recall that Part 673 **excludes** modes under the safety jurisdiction of the Federal Railroad Administration

Safety Performance Target Data

- Many agencies report safety, system reliability, and vehicle revenue miles data to the National Transit Database
 - Major Incident Reporting form (S&S-40): Data on fatalities, injuries, and safety events
 - Non-Major Summary Reporting form (S&S-50): Data on injuries
 - Maintenance Performance form (R-20): Data on system reliability
 - Service form (S-10): Data on vehicle revenue miles
- This data may help agencies identify safety performance targets appropriate to their operational history

SAMPLE METHOD FOR CREATING SAFETY PERFORMANCE TARGETS

Sample Four-Step Method for Creating Safety Performance Targets

Here is a sample four-step approach to developing safety performance targets

- This is a sample only – there is no one required approach

Step 1: Identify Available Data and Modes

Step 2: Identify Performance Baseline

Step 3: Establish Method to Calculate Target

Step 4: Calculate and Document Target

Step 1: Identify Applicable Modes and Available Data

- Which modes do I operate?
 - The National Public Transportation Safety Plan identifies three mode categories (rail, fixed route bus, and non-fixed route bus modes)

Modes my agency operates:

Rail

Fixed route bus

Non-fixed route bus

Step 1: Identify Applicable Modes and Available Data

- What data do I already have that I can use?
 - Do I report fatality, injury, safety event, and system reliability data to the National Transit Database?
 - Do I report on these metrics regularly to executive leadership or our Board of Directors?

Data I can use:

- National Transit Database Reports
- Monthly Safety Committee Reports
- Annual Safety Performance Report

Step 2: Identify Performance Baseline

- What is my agency's typical performance for each measure?
 - Using historical data can help establish a performance baseline, which provides context for developing safety performance targets

Rail Mode Performance

	5-year average
Fatalities	1.2
Injuries	15.4
Safety events	30.9
Major mechanical failures per vehicle revenue mile	86.3
Vehicle revenue miles	16,438,114

Step 3: Establish Method to Calculate Target

- What is an appropriate rate for my agency?
 - There is no “correct” answer – some agencies may use 100,000 vehicle revenue miles, or one million, or 15 million
 - Some MPOs and/or States may provide guidance or preferences for transit agency safety performance targets

Step 3: Establish Method to Calculate Target

- Consider "testing" these rates out by dividing your historic numbers of fatalities, injuries, or safety events by the selected number of vehicle revenue miles

Sample Rate Calculations		
Fatalities, 5-year average	1.2	
Safety events, 5-year average	30.9	
Vehicle revenue miles, 5-year average	16,438,114	
Rate Calculations		
	Fatalities	Safety Events
per 100,000 vehicle revenue miles	0.007	0.19
per 1,000,000 vehicle revenue miles	0.07	1.9
per 10,000,000 vehicle revenue miles	0.7	19

Step 3: Establish Method to Calculate Target

- What is an appropriate target for my agency? Do we want to:
 - Benchmark our target to the performance of peer agencies?
 - Maintain the same numbers from the last year(s)?
 - Set a percentage reduction?
 - Set an aspirational goal?

Rail Mode Targets

□₁

	Method
Fatalities	Aspirational (zero)
Injuries	Reduce to peer average
Safety Events	Maintain five-year average
Major Mechanical Failures	Reduce by five-percent

Step 4: Calculate and Document Target

- Using the method identified in Step 3, calculate the safety performance target, including the associated timeframe
 - For example, reduce major mechanical failures by five-percent by the end of 2021

Rail Mode Targets			
		5-Yr. Avg.	12/31/21 Target
Fatalities	(#)	1.2	Aim for 0.0
	Rate	7.3×10^{-8}	0.0
Injuries	(#)	15.4	Peer avg. 13.5
	Rate	9.4×10^{-7}	8.3×10^{-7}
Safety Events	(#)	30.9	Maintain 30.9
	Rate	1.9×10^{-6}	1.9×10^{-6}
Major Mechanical Failures		86.3	Reduce by 5% to 80

Step 4: Calculate and Document Target

- Document the safety performance targets in the Agency Safety Plan and provide to the State and MPO

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		5-Yr. Avg.	12/31/21 Target
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	Rate	1.9×10^{-6}	1.9×10^{-6}
Major Mechanical Failures		86.3	Reduce by 5% to 80

Question 2

Has your agency developed safety targets in the past?

- A. Yes
- B. No
- C. I'm not sure

Available Guidance

- Find more guidance under “Safety Performance Targets” in the PTASP Public Technical Assistance Center Resource Library
 - <https://www.transit.dot.gov/PTASP-TAC>

The screenshot shows the homepage of the PTASP Technical Assistance Center. At the top is the Federal Transit Administration logo and navigation links for About, Funding, and Regulations & Programs. A search bar is located in the top right corner. The main content area is divided into several sections: a left sidebar with a 'Resource Library' dropdown menu listing categories like Small Bus Transit Providers, Bus Transit Providers, Rail Transit Providers, State DOTs, State Safety Oversight Agencies, Metropolitan Planning Organizations, and FAQs; a central 'PTASP Technical Assistance Center' section with a welcome message and a 'PTASP Community of Practice' box; and a 'PTASP Resource Library' section with a 'Choose your agency type to begin' prompt and icons for Small Bus Transit Provider, Bus Transit Provider, Rail Transit Provider, State Department of Transportation, State Safety Oversight Agency, and Metropolitan Planning Organization. On the right side, there are buttons for 'Find Out What's New', 'PTASP Workshops', 'Sign Up for PTASP Updates', and 'Learn More About the TAC', along with a 'How can we help?' section listing services like answering questions, reviewing draft plans, and providing onsite trainings. Contact information for the PTASP Technical Assistance Center is provided at the bottom right.

Example 1 from FTA's Safety Performance Targets Guide

Bus Agency Example

Mode of service	Fatalities (total)	Fatalities (rate*)	Injuries (total)	Injuries (rate*)	Safety events (total)	Safety events (rate*)	System reliability**
Fixed route bus	0	0	5	0.2	7	0.28	9,240
Non-fixed route bus	0	0	1	0.1	1	0.1	68,456

* Rate is per 100,000 vehicle revenue miles

** System reliability is calculated as mean distance between major mechanical failures

Example 2 from FTA's Safety Performance Targets Guide

Rail Agency Example							
Mode of service	Fatalities (total)	Fatalities (rate*)	Injuries (total)	Injuries (rate*)	Safety events (total)	Safety events (rate*)	System reliability**
Rail	4	2.5	20	12.5	30	18.75	75,000
Fixed route bus	3	0.75	35	8.75	45	11.25	6,500
Non-fixed route bus	0	0	1	10	1	10	55,000

* Rate is per 100,000 vehicle revenue miles

** System reliability is calculated as mean distance between major mechanical failures

Question 3

Do transit agencies have to share their safety performance targets with anyone?

- A. Yes, with the State and MPO
- B. Yes, with the FTA, State, and MPO
- C. No, they do not have to share their safety performance targets with anyone

STATEWIDE AND METROPOLITAN PLANNING PROCESS



Joint Planning Regulatory Framework

- The Joint Planning Regulation sets performance target requirements for **States and MPOs**
 - Federal Highway Administration 23 CFR Parts 450 and 771 and FTA 49 CFR Part 613
- 49 CFR Part 673 sets performance target requirements for **transit agencies**

What does the Joint Planning Regulation require?

- Requires **States and MPOs** to:
 - Set targets to document expectations for future performance (§ 450.306(a) and (d))
 - Reflect those targets in the Statewide planning process/Metropolitan Transportation Plans ((§ 450.324(f))
 - Link investment priorities from the MPO's Transportation Improvement Program to achieve performance targets (§ 450.326(a) and (d))

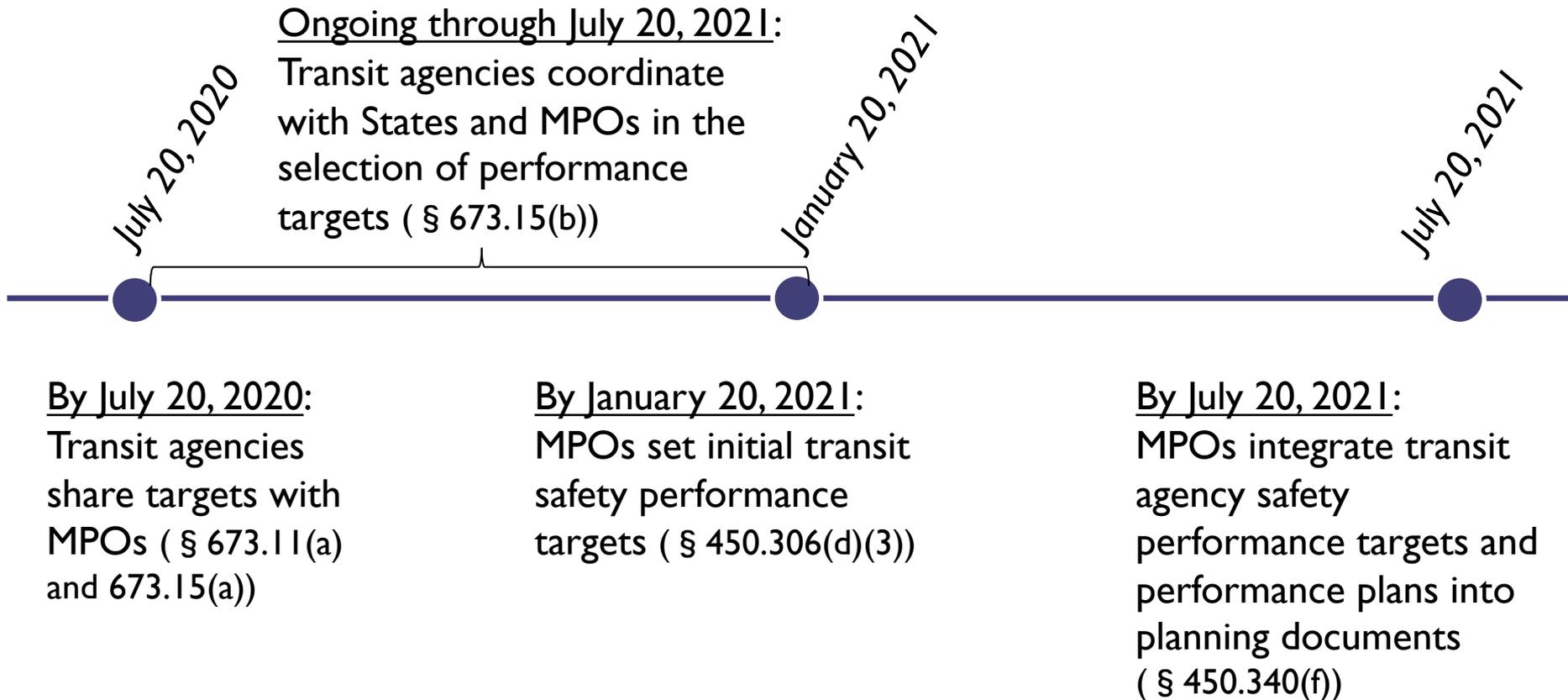
What does Part 673 require?

- Requires **transit agencies** to:
 - Set targets for safety performance measures established in the National Public Transportation Safety Plan (§ 673.11(a)(3))
 - Make those targets available to States and MPOs to aid in the planning process (§ 673.15(a))
 - Coordinate with States and MPOs in the selection of their performance targets to the maximum extent practicable (§ 673.15(b))

MPOs and Safety Performance Targets

- MPOs may initiate discussions with transit agencies, State Departments of Transportation, and other planning partners to update their Metropolitan Planning Agreements (§ 450.314)

Joint Planning Timeline for Safety Performance Targets



Upcoming Webinars

- Agency Safety Plan Review, Approval, and Certification webinar
 - February 26, 2020 from 2:00-3:30 PM EST
 - Registration link to come at:
<https://www.transit.dot.gov/PTASP>

PTASP Technical Assistance Center (TAC) Links and Contact Information



Technical Assistance Center

- www.transit.dot.gov/PTASP-TAC

PTASP Community of Practice

- www.transit.dot.gov/PTASP-COP

Frequently Asked Questions

- www.transit.dot.gov/PTASP-FAQs

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