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

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Performance Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>§ 673.5</td>
<td>§ 673.5</td>
</tr>
<tr>
<td>• Expression based on a quantifiable indicator of performance or condition</td>
<td>• Quantifiable level of performance or condition, expressed as a value for the measure, to be achieved within a time period</td>
</tr>
<tr>
<td>• Used to establish targets and assess progress toward meeting targets</td>
<td></td>
</tr>
</tbody>
</table>
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
<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatalities</td>
<td>Death confirmed within 30 days, excluding suicide, trespassers, illness, or natural causes</td>
</tr>
<tr>
<td>Injuries</td>
<td>Harm to person that requires immediate medical attention away from the scene</td>
</tr>
<tr>
<td>Safety Events</td>
<td>Collision, derailment, fire, hazardous material spill, or evacuation</td>
</tr>
<tr>
<td>System Reliability</td>
<td>Major mechanical failure preventing a vehicle from completing or starting scheduled trip</td>
</tr>
</tbody>
</table>

*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](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
Addressing FTA’s four safety performance measures requires seven safety performance targets 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”?

<table>
<thead>
<tr>
<th>Rail Mode</th>
<th>Fixed Route Bus Mode</th>
<th>Non-Fixed Route Bus Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Heavy Rail (HR)*</td>
<td>• Motorbus (MB)</td>
<td>• Demand Response (DR)</td>
</tr>
<tr>
<td>• Light Rail (LR)</td>
<td>• Commuter Bus (CB)</td>
<td>• Demand Response Taxi (DT)</td>
</tr>
<tr>
<td>• Streetcar (SC)</td>
<td>• Bus Rapid Transit (RB)</td>
<td>• Vanpool (VP)</td>
</tr>
<tr>
<td>• Hybrid Rail (YR)*</td>
<td>• Trolley Bus (TB)</td>
<td></td>
</tr>
<tr>
<td>• Monorail/Automated Guideway (MG)</td>
<td>• Publico (PB)</td>
<td></td>
</tr>
<tr>
<td>• Inclined Plane (IP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Cable Car (CC)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* 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:

1. Identify Available Data and Modes
2. Identify Performance Baseline
3. Establish Method to Calculate Target
4. Calculate and Document Target

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

<table>
<thead>
<tr>
<th>Rail Mode Performance</th>
<th>5-year average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatalities</td>
<td>1.2</td>
</tr>
<tr>
<td>Injuries</td>
<td>15.4</td>
</tr>
<tr>
<td>Safety events</td>
<td>30.9</td>
</tr>
<tr>
<td>Major mechanical failures per vehicle revenue mile</td>
<td>86.3</td>
</tr>
<tr>
<td>Vehicle revenue miles</td>
<td>16,438,114</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th></th>
<th>Fatalities, 5-year average</th>
<th>Safety events, 5-year average</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rate Calculations</strong></td>
<td>1.2</td>
<td>30.9</td>
</tr>
<tr>
<td>per 100,000 vehicle revenue miles</td>
<td>0.007</td>
<td>0.19</td>
</tr>
<tr>
<td>per 1,000,000 vehicle revenue miles</td>
<td>0.07</td>
<td>1.9</td>
</tr>
<tr>
<td>per 10,000,000 vehicle revenue miles</td>
<td>0.7</td>
<td>19</td>
</tr>
<tr>
<td>Vehicle revenue miles, 5-year average</td>
<td>16,438,114</td>
<td></td>
</tr>
</tbody>
</table>
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?

<table>
<thead>
<tr>
<th>Rail Mode Targets</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatalities</td>
<td>Aspirational (zero)</td>
</tr>
<tr>
<td>Injuries</td>
<td>Reduce to peer average</td>
</tr>
<tr>
<td>Safety Events</td>
<td>Maintain five-year average</td>
</tr>
<tr>
<td>Major Mechanical</td>
<td>Reduce by five-percent</td>
</tr>
<tr>
<td>Failures</td>
<td></td>
</tr>
</tbody>
</table>
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
Step 4: Calculate and Document Target

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

<table>
<thead>
<tr>
<th>Rail Mode Targets</th>
<th>5-Yr. Avg.</th>
<th>12/31/21 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatalities</td>
<td>(#) 1.2</td>
<td>Aim for 0.0</td>
</tr>
<tr>
<td></td>
<td>Rate 7.3x10^-8</td>
<td>0.0</td>
</tr>
<tr>
<td>Injuries</td>
<td>(#) 15.4</td>
<td>Peer avg. 13.5</td>
</tr>
<tr>
<td></td>
<td>Rate 9.4x10^-7</td>
<td>8.3x10^-7</td>
</tr>
<tr>
<td>Safety Events</td>
<td>(#) 30.9</td>
<td>Maintain 30.9</td>
</tr>
<tr>
<td></td>
<td>Rate 1.9x10^-6</td>
<td>1.9x10^-6</td>
</tr>
<tr>
<td>Major Mechanical</td>
<td>86.3</td>
<td>Reduce by 5% to 80</td>
</tr>
</tbody>
</table>
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
## Example 1 from FTA’s Safety Performance Targets Guide

<table>
<thead>
<tr>
<th>Mode of Service</th>
<th>Fatalities (total)</th>
<th>Fatalities (rate*)</th>
<th>Injuries (total)</th>
<th>Injuries (rate*)</th>
<th>Safety events (total)</th>
<th>Safety events (rate*)</th>
<th>System reliability**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed route bus</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0.2</td>
<td>7</td>
<td>0.28</td>
<td>9,240</td>
</tr>
<tr>
<td>Non-fixed route bus</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0.1</td>
<td>1</td>
<td>0.1</td>
<td>68,456</td>
</tr>
</tbody>
</table>

* Rate is per 100,000 vehicle revenue miles

** System reliability is calculated as mean distance between major mechanical failures
## Rail Agency Example

<table>
<thead>
<tr>
<th>Mode of service</th>
<th>Fatalities (total)</th>
<th>Fatalities (rate*)</th>
<th>Injuries (total)</th>
<th>Injuries (rate*)</th>
<th>Safety events (total)</th>
<th>Safety events (rate*)</th>
<th>System reliability**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rail</td>
<td>4</td>
<td>2.5</td>
<td>20</td>
<td>12.5</td>
<td>30</td>
<td>18.75</td>
<td>75,000</td>
</tr>
<tr>
<td>Fixed route bus</td>
<td>3</td>
<td>0.75</td>
<td>35</td>
<td>8.75</td>
<td>45</td>
<td>11.25</td>
<td>6,500</td>
</tr>
<tr>
<td>Non-fixed route bus</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>10</td>
<td>55,000</td>
</tr>
</tbody>
</table>

* 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

**Ongoing through July 20, 2021:** Transit agencies coordinate with States and MPOs in the selection of performance targets (§ 673.15(b))

**By July 20, 2020:** Transit agencies share targets with MPOs (§ 673.11(a) and 673.15(a))

**By January 20, 2021:**
- MPOs set initial transit safety performance targets (§ 450.306(d)(3))
- MPOs integrate transit agency safety performance targets and performance plans into planning documents (§ 450.340(f))
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