

# FTA

FEDERAL TRANSIT ADMINISTRATION

## **Safety Risk Management in Public Transportation Agency Safety Plans**

January 13, 2020



U.S. Department of Transportation  
Federal Transit Administration

# Presentation Topics

- Public Transportation Agency Safety Plan (PTASP) regulation overview
- PTASP Safety Risk Management (SRM) requirements
- Key considerations for developing the SRM section of an Agency Safety Plan (ASP), based on PTASP Technical Assistance Center reviews of draft ASPs

# PTASP Overview

- Public Transportation Agency Safety Plan (PTASP) regulation at 49 CFR Part 673
- Innovative approach to improving transit safety:
  - Based on Safety Management System (SMS) principles and methods
  - Risk and performance-based
  - Flexible and scalable
- Compliance deadline: July 20, 2020

# Applicability

## Applies to:

Operators of transit systems that are recipients or subrecipients of FTA funds:



Section 5307



Section 5310 & 5311  
(applicability deferred)



All rail transit operators,  
regardless of FTA funding source

## Does NOT Apply to:



FTA recipients that do not operate transit systems



Commuter rail service regulated by Federal Railroad Administration



Passenger ferry service regulated by U.S. Coast Guard

# Requirements



## **Agency Safety Plan**

Develop and certify an  
Agency Safety Plan



## **Safety Management System (SMS) (Subpart C)**

Implement and operate a  
Safety Management  
System

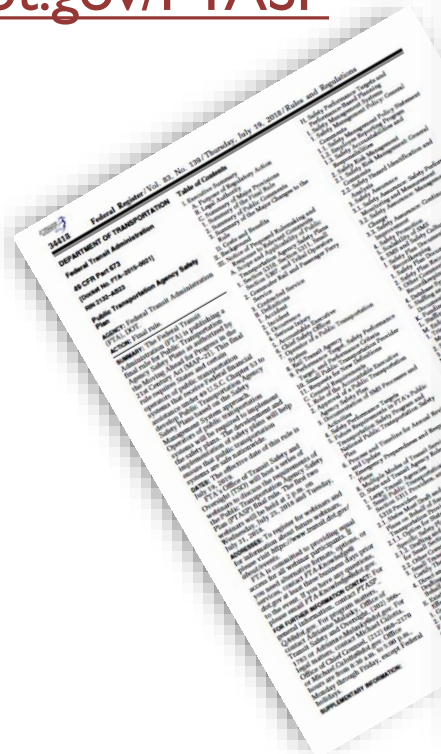


## **PTASP Documentation (Subpart D)**

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

# Reviewing the Regulation

- The regulatory text, fact sheets, and guidance are available at [www.transit.dot.gov/PTASP](http://www.transit.dot.gov/PTASP)



## **PART 673—PUBLIC TRANSPORTATION AGENCY SAFETY PLANS**

### **Subpart A—General**

- 673.1 Applicability.
- 673.3 Policy.
- 673.5 Definitions.

### **Subpart B—Safety Plans**

- 673.11 General requirements.
- 673.13 Certification of compliance.
- 673.15 Coordination with metropolitan, statewide, and non-metropolitan planning processes.

### **Subpart C—Safety Management Systems**

- 673.21 General requirements.
- 673.23 Safety management policy.
- 673.25 Safety risk management.
- 673.27 Safety assurance.
- 673.29 Safety promotion.

### **Subpart D—Safety Plan Documentation and Recordkeeping**

# Agency Safety Plan Requirements

- One plan for all modes, or one for each mode
  - Recommend excluding commuter rail subject to safety regulation by FRA from ASP due to data protection differences
- Must include:



**SMS processes and activities**



**Safety performance targets**



**Emergency preparedness and response plan (rail only)**



**Process and timeline for annual review and update**

# Agency Safety Plan Requirements

- ✓ Must address all applicable requirements and standards in FTA's Public Transportation Safety Program
- ✓ Must specify a Chief Safety Officer or SMS Executive
- ✓ Must be signed by the Accountable Executive
- ✓ Must be approved by the agency's Board of Directors or an Equivalent Authority



# SMS Components



## How are the SMS components different?

Safety Risk Management (SRM) and Safety Assurance (SA) are the key processes and activities for managing safety

**Actions**

vs.

Safety Management Policy (SMP) and Safety Promotion (SP) provide the structure and supporting activities to make SRM and SA possible and sustainable

**Enablers**

# Safety Risk Management Requirement

- For **all** elements of a transit agency's system
  - May adopt variability in methods and processes, as appropriate
- Consider how agency will develop, maintain, and make available required documents
- Relevant resources include:
  - SRM webinar and factsheet
  - Hazard and Consequences Self-Guided Training Tool

## § 673.25

- a) **A transit agency must develop and implement a Safety Risk Management process for all elements of its public transportation system**

# Risk

- A **measure** of severity and likelihood, combined
- **Predicted**—in the future; hasn't happened yet
- Measures the **potential effects** of a hazard, not the hazard itself
- Likelihood (**how often**) vs. severity (**how bad**)

## § 673.5 Definitions

***Risk* means the composite of predicted severity and likelihood of the potential effect of a hazard**

- **Avoid confusing** risk with hazard
  - We often call something “a safety risk” when we mean “a hazard”

# Hazard

- **Real or potential** condition—not an event
  - **Real:** Observable condition that exists in the transit system
  - **Potential:** Condition that doesn't exist, but could exist if a change is made in the transit system
- **Can cause** consequences

## § 673.5 Definitions

***Hazard* means any real or potential condition that can cause injury, illness, or death; damage to or loss of the facilities, equipment, rolling stock, or infrastructure of a public transportation system; or damage to the environment**

# Consequence

- Important to **distinguish hazards from consequences** for accurate safety risk assessment
- Potential consequences are **the focus of safety risk assessment**
  - Assess the **severity and likelihood of potential consequences, not hazards**
- A single hazard could cause multiple consequences

**Not defined in § 673.5, but can be derived from the definition of *Hazard*. Transit agencies may choose to use the following definition:**

***Consequence* means an effect of a hazard, involving injury, illness, or death; damage to or loss of the facilities, equipment, rolling stock, or infrastructure of a public transportation system; or damage to the environment**

# Event

- **Something that happened**, not a condition or system state
- Important to distinguish from a hazard
- Safety event investigation may reveal hazards

## § 673.5 Definitions

***Event* means any accident, incident, or occurrence**

- Used primarily for reporting, not SRM
  - Event definitions are based on type of event and magnitude of outcomes

# Risk Mitigation

- **Solution** to a problem, not the problem itself
- Eliminates or reduces **likelihood and/or severity of consequences**
- Usually focused on **reducing safety risk to an acceptable level**, not getting the level of risk to zero

## § 673.5 Definitions

***Risk mitigation*** means a method or methods to eliminate or reduce the effects of hazards



# Example of Hazard vs. Consequence



**HAZARD**

Near-side bus stop



**CONSEQUENCE**

Bus pulls away from the near-side bus stop and the car, trying to turn right in front of the bus, collides with the bus

# Lessons Learned – SRM Terminology

## Key Requirement

- Apply terms as defined in the PTASP regulation
  - Risk
  - Hazard
  - Consequence (based on use of the term; no formal definition provided)
  - Event
  - Risk Mitigation

## Effective Practices

- Include or reference definitions for key terms
- Define terms as provided in § 673.5

# Lessons Learned – SRM Terminology

## Key Considerations

- Ensure descriptions of methods and processes reflect proper use of key terms. The PTASP regulation provides guidance on how terms are defined, and what they mean in the context of SRM.

- **For example: “mitigating hazards”**

*What’s wrong with how the term is used?*

- If using alternative terms or definitions, ensure the link to PTASP terms is clearly explained.

# Safety Hazard Identification

- Must establish how the agency will identify hazards and consequences
- **All agencies must** consider FTA and oversight authority information
- **Some agencies must** consider changes that may impact safety performance
- Information sources may include Employee Safety Reporting Programs and Safety Assurance outputs

## § 673.25

### b) Safety hazard identification

- 1) A transit agency must establish methods or processes to identify hazards and consequences of hazards
- 2) A transit agency must consider, as a source for hazard identification, data and information provided by an oversight authority and the FTA

# Lessons Learned – Safety Hazard Identification

## Key Requirements

- Establish methods or processes to identify hazards and consequences of hazards
- Include FTA as a source of hazard information

## Effective Practices

- Commitment to comprehensive hazard identification
- Include key sources of hazard information, such as FTA, employee safety reporting, and outputs of Safety Assurance activities

# Lessons Learned – Safety Hazard Identification

## Key Considerations

- Describe **how** hazard identification will be carried out. For example:
  - Who is responsible for what?
  - How is data or information managed?
  - Is different information addressed differently? If so, how?
  - When or how frequently is an activity carried out?
  - What are key outputs of an activity?
- Consider requirement to specify authorities, accountabilities, and responsibilities of key positions in Safety Management Policy (§673.23(d))
- Consider referencing a separate document with details on methods and processes.

# Safety Risk Assessment

- Must **assess likelihood and severity** of the consequences of hazards
  - Must include existing mitigations
- Must **prioritize hazards** based on the safety risk of their potential consequences
- Consider how agency will select or prioritize hazards and potential consequences to undergo safety risk assessment

## § 673.25

### c) Safety risk assessment

- 1) A transit agency must establish methods or processes to assess safety risks associated with identified safety hazards
- 2) A safety risk assessment includes an assessment of the likelihood and severity of the consequences of the hazards, including existing mitigations, and prioritization of the hazards based on the safety risk

# Lessons Learned – Safety Risk Assessment

## Key Requirements

- Establish methods or processes to assess safety risk associated with identified safety hazards
- The method(s) or process(es) describe:
  - Assessment of the likelihood and severity of the consequences of the hazards, including existing mitigations
  - Prioritization of the hazards based on safety risk

## Effective Practices

- Establish or adopt a safety risk matrix to help assess likelihood and severity
- Reference tools used for safety risk assessment, like MIL-STD-882E



# Lessons Learned – Safety Risk Assessment

## Key Considerations

- Ensure methods or processes include required elements, such as:
  - Assessment of the likelihood and severity of **consequences**, and
  - Prioritization of hazards based on safety risk.

Note: Review definitions of key terms to ensure methods and processes address requirements.

- Most transit agencies will not be assessing the safety risk of all identified consequences of hazards in the same way. In that case, include a description of how hazards and consequences are selected or prioritized for safety risk assessment, and how assessment approaches vary.
- Clarify **how** activities are carried out—noting relevant authorities, accountabilities, and responsibilities of key positions (Safety Management Policy (§673.23(d))).

# Safety Risk Mitigation

- Must have methods or processes to **identify necessary mitigations** or strategies
- Can reduce risk by reducing likelihood and/or severity
  - No requirement for a single mitigation to address both
- When identifying and choosing mitigations, consider mitigation monitoring needs

## § 673.25

### d) Safety risk mitigation

**A transit agency must establish methods or processes to identify mitigations or strategies necessary as a result of the agency's safety risk assessment to reduce the likelihood and severity of the consequences**

# Lessons Learned – Safety Risk Mitigation

## Key Requirements

- Establish methods or processes to identify mitigations or strategies that reduce the likelihood and severity of the consequences, which are considered necessary as a result of the agency's safety risk assessment

## Effective Practices

- Establish or adopt a safety risk reduction order of precedence

# Lessons Learned – Safety Risk Mitigation

## Key Considerations

- Ensure method(s) or process(es) describe how mitigations are identified, and how mitigation selection is related to the agency's determination of what is **necessary** based on safety risk.
- Consider noting relevant authorities, accountabilities, and responsibilities of key positions (Safety Management Policy (§673.23(d))), including how mitigations will be approved or selected.
- Consider preparation and decision-making for mitigation monitoring required under Safety Assurance (§673.27(b)(2)) by describing monitoring approach development and approval.

# Key Take-aways

- Watch out for use of key terms
- Specify methods or processes, and address all requirements
- Include relevant authorities, accountabilities, and responsibilities
- Address documentation requirements
- Consider how different activities and processes are linked, within SRM and among SMS components
- Consider how the agency will scope and prioritize activities to ensure methods and processes are feasible

# PTASP Technical Assistance Center



- Public Transportation Agency Safety Plan (PTASP) Technical Assistance Center (TAC) is now available
- Provides comprehensive technical assistance to help the transit industry meet PTASP regulation requirements by July 20, 2020, by supporting:
  - Bus and rail transit providers, large and small
  - State Departments of Transportation
  - State Safety Oversight Agencies

# PTASP Technical Assistance Center Components

## Community of Practice



- Online discussion forums to ask questions, share ideas and documents, and engage with posts
- Quick sign-up process to post
- Optional alerts when others post

## Resource Library



- Voluntary technical assistance materials organized by agency type
- Hosted on FTA's website
- Updated with new materials, based on industry needs

## One-on-One Technical Assistance



- Agency Safety Plan reviews
- Help desk to answer questions and schedule assistance
- Staffed 9am-8pm ET, M-F, with a dedicated phone number, email and mailing address

## Onsite Technical Assistance



- Conduct onsite trainings and provide assistance to help agencies meet PTASP regulation requirements

# Links and Contact Information



## Technical Assistance Center

- [www.transit.dot.gov/PTASP-TAC](http://www.transit.dot.gov/PTASP-TAC)

## PTASP Community of Practice

- [www.transit.dot.gov/PTASP-COP](http://www.transit.dot.gov/PTASP-COP)

## Frequently Asked Questions

- [www.transit.dot.gov/PTASP-FAQs](http://www.transit.dot.gov/PTASP-FAQs)

		<a href="http://transit.dot.gov/PTASP-TAC">transit.dot.gov/PTASP-TAC</a>
		1 - 877 - 827 - 7243
		<a href="mailto:PTASP-TAC@dot.gov">PTASP-TAC@dot.gov</a>
		PTASP Technical Assistance Center 943 Glenwood Station Lane, Suite 301 Charlottesville, VA 22901



# Questions?