Safety Risk Management
Lessons Learned

March 12, 2020
Webinar Objectives

• To review the requirements for Safety Risk Management in the Public Transportation Agency Safety Plan (PTASP) regulation at 49 CFR Part 673

• To provide lessons learned regarding Safety Risk Management based on voluntary reviews of Agency Safety Plans
PTASP REQUIREMENTS FOR SAFETY RISK MANAGEMENT
PTASP Regulation Requirements

**Agency Safety Plan**
Develop and certify an Agency Safety Plan

**Safety Management System (SMS)**
Implement and operate a Safety Management System

**PTASP Documentation**
Maintain documentation related to the Agency Safety Plan, SMS implementation, and results from SMS processes and activities
SMS Components

Safety Promotion

Safety Risk Management
(Identify, Assess, & Mitigate)

Safety Management Policy
(Leadership Commitment & Accountability)

Safety Assurance
(Measure, Monitor, & Evaluate)

(Communication & Training)
What is Safety Risk Management?

• Safety Risk Management is a process for identifying hazards and analyzing, assessing, and mitigating safety risk (§ 673.5)

• Transit agencies must develop and implement a Safety Risk Management process for all elements of their transit system (§ 673.25)
Why does Safety Risk Management matter?

- Enables a **proactive approach** to managing safety
- Helps **allocate resources** to areas of **highest safety risk** and/or unacceptable safety risk
The Safety Risk Management Process

**Safety Hazard Identification**
Establish methods or processes to identify hazards and consequences

**Safety Risk Assessment**
Establish methods or processes to assess safety risk associated with hazards, including an assessment of the likelihood and severity of consequences of hazards

**Safety Risk Mitigation**
Establish methods or processes to identify mitigations or strategies necessary as a result of safety risk assessment, to reduce the likelihood and severity of consequences
SAFETY RISK MANAGEMENT
LESSONS LEARNED
Icon Legend

⚠️ This slide includes a PTASP requirement

💡 This slide includes lessons learned from FTA’s Agency Safety Plan reviews

💭 This slide includes considerations for Agency Safety Plans

📝 This slide includes resources available for Agency Safety Plans
The Agency Safety Plan must document **processes and activities** related to SMS implementation

(§ 673.11(a)(2))
Lessons Learned: Documenting Processes and Activities

Some draft Plans do not detail the actions or steps the agency will take to carry out specific requirements.
Considerations for Documenting Processes and Activities

• Consider describing processes and activities with defined steps, actions, timelines, and documentation requirements

• Consider the following questions:
  – What specifically will my agency do?
  – Who will do it?
  – How will we do it?
  – What is the timeline?
  – Where will we record the process and store relevant data or information?
Resources Available on Documenting Processes and Activities

Safety Risk Management Fact Sheet

Sample List of Documented Safety Risk Management and Safety Assurance Process Elements
PTASP Requirements for Identifying Sources of Hazard Information

• Agencies must establish methods or processes to identify hazards and consequences of the hazards (§ 673.25(b)(1))

• Agencies must include, as a potential source for hazard identification, data and information provided by an oversight authority and the FTA (§ 673.25(b)(2))

• Some agencies must consider changes that may impact safety performance (§ 673.27(c)(2))
Lessons Learned: Identifying Sources of Hazard Information

Some draft Plans do not explicitly describe the sources the agency may consider for hazard information.

Straightline Transit Hazard Identification Section 1. The agency identifies hazards as part of existing operations and maintenance activities, changes to the existing system or environment, capital projects, including vehicle procurement or
Considerations for Identifying Sources of Hazard Information

Agencies could identify hazards from:

• Single reports
• Analysis of data from multiple sources
• Trends of multiple data points
Considerations for Identifying Sources of Hazard Information

Example sources of information for hazard identification:

• FTA and other oversight agencies (required)
• Changes to the system identified through management of change (not required for small public transportation providers)
• Employee Safety Reporting Program
• Findings or observations from transit agency inspections and audits, including rules compliance audits
• Observations from training
• Data reports and safety trend analyses
• “Dear colleague” letters or other information from industry associations
Resources Available on Identifying Sources of Hazard Information

Potential Sources of Hazard Information for Bus Transit Operations

Lessons Learned: Managing Identified Hazards

Some draft Plans describe methods and processes for escalating identified hazards to a formal safety risk assessment.
Considerations for Managing Identified Hazards

- FTA does not require agencies to put all identified hazards through a formal safety risk assessment process.
- You may want to consider defining a process for escalation and documenting this in your Agency Safety Plan:
  - Who is responsible?
  - What is the timeline and frequency?
  - What are the escalation standards?
  - How is this documented?
Safety risk assessment must include prioritization of the hazards based on the safety risk (§ 673.25(c)(2))
Lessons Learned: Prioritizing Hazards Based on Safety Risk

Some draft Plans do not describe a prioritization process for hazards based on safety risk.

Straightline Transit Safety Risk Assessment Section 1.
The assigned Safety representative is responsible for recommending hazards for additional analysis to the Safety committee. This recommendation is based on their review of
Consider developing or adopting a safety risk matrix to help prioritize hazards based on the safety risk of their potential consequences.

The safety risk matrix is color-coded red, yellow, and green. **Red** safety risks must be elevated immediately to the Chief Safety Officer and require their immediate action.
Considerations for Prioritizing Hazards Based on Safety Risk

Severity and likelihood tables, and a safety risk matrix can help:

• Communicate leadership’s guidance to support decision-making
  – For example, what is considered unacceptable safety risk

• Support assessment consistency

Straightline Transit Safety Risk Matrix

The safety risk matrix is color-coded red, yellow, and green. **Red** safety risks must be elevated immediately to the Chief Safety Officer and require their immediate action.
Resources on Prioritizing Hazards Based on Safety Risk

Safety Risk Management webinar, June 13, 2019, presentation and audio


Safety Risk Management Fact Sheet


PTASP Workshop Participant Guide (pages 23-26)

PTASP Requirements for Identifying Mitigations

Agencies must establish methods or processes to identify mitigations or strategies as a result of the agency’s safety risk assessment to reduce the likelihood and severity of consequences (§ 673.25)
Lessons Learned: Identifying Mitigations

Some draft Plans do not detail how the transit agency identifies mitigations.
Considerations for Identifying Mitigations

• Agencies can:
  – Reduce the safety risk by reducing either likelihood or severity
    – there is no requirement for a single mitigation to reduce both likelihood and severity
  – Eliminate the safety risk by addressing the hazard
• May choose a set of mitigations, instead of a single mitigation
• Consider establishing categories to help brainstorm mitigations, such as:
  – Safety risk avoidance
  – Safety risk reduction
  – Safety risk segregation
Considerations for Identifying Mitigations

MIL-STD-882E offers another list of categories:

• Eliminate hazards
• Reduce risk through alteration
• Incorporate engineered features or devices
• Provide warning devices
• Incorporate signage, procedures, training, and personal protective equipment
Considerations for Identifying Mitigations

Regardless of how your agency decides to establish mitigations, subject matter experts can help identify and validate appropriate safety risk mitigations

• Consider subject matter experts both within and outside of your agency

• Consider consulting several subject matter experts from different disciplines, particularly when considering complex hazards
Resources on Identifying Mitigations

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Safety Risk Management Fact Sheet
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