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FEDERAL TRANSIT ADMINISTRATION



Safety Risk Management Lessons Learned

March 12, 2020



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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



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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



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

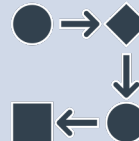
The Safety Risk Management Process

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



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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



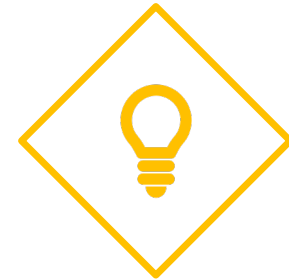
This slide includes resources available for Agency Safety Plans

PTASP Requirement for Documenting Processes and Activities



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

Safety Risk Management at Straightline Transit
1. Identify hazards using the following data sources: Employee Safety Reporting Program, Department of Quality Assurance audit reports,

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

- <https://www.transit.dot.gov/regulations-and-guidance/safety/public-transportation-agency-safety-program/safety-risk-management-fact-sheet>



Sample List of Documented Safety Risk Management and Safety Assurance Process Elements

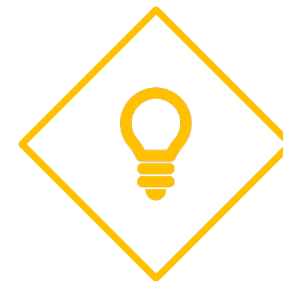
- <https://www.transit.dot.gov/regulations-and-programs/safety/public-transportation-agency-safety-program/sample-list-documented>

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))

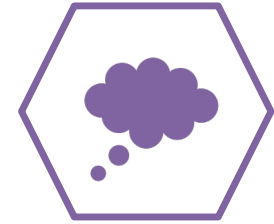
Lessons Learned: Identifying Sources of Hazard Information



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

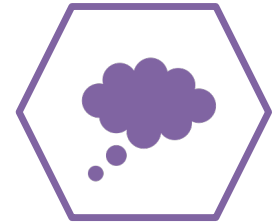


Agencies could identify hazards from:

- 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
 - <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/regulations-and-programs/safety/public-transportation-agency-safety-program/134116/potential-sources-hazard-information-bus-transit-operations.pdf>

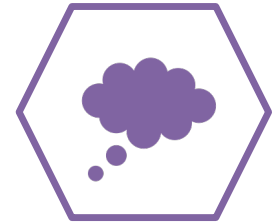
Lessons Learned: Managing Identified Hazards



Some draft Plans describe methods and processes for escalating identified hazards to a formal safety risk assessment

Straightline Transit Hazard Identification Section 2. The agency's Safety Committee will establish a Work Plan for escalating identified hazards to the formal Safety Risk Assessment process based on regular reviews of hazard information.

Considerations for Managing Identified Hazards



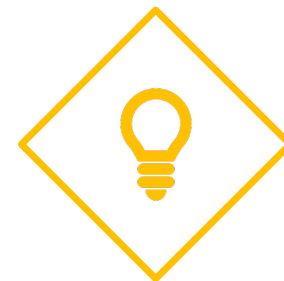
- FTA does not require agencies to put all identified hazards through a formal safety risk assessment process
- You may want to consider defining a process for escalation and documenting this in your Agency Safety Plan:
 - Who is responsible?
 - What is the timeline and frequency?
 - What are the escalation standards?
 - How is this documented?

PTASP Requirements for Prioritizing Hazards Based on Safety Risk



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

Considerations for Prioritizing Hazards Based on Safety Risk



Consider developing or adopting a safety risk matrix to help prioritize hazards based on the safety risk of their potential consequences

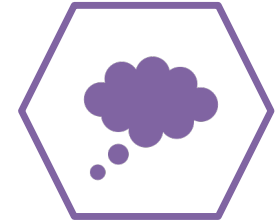
Straightline Transit Safety Risk Matrix

Severity Likelihood				
	1	2	3	4
A	1A	2A	3A	4A
B	1B	2B	3B	4B
C	1C	2C	3C	4C
D	1D	2D	3D	4D
E	1E	2E	3E	4E

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

		Severity			
		1	2	3	4
Likelihood	A	1A	2A	3A	4A
	B	1B	2B	3B	4B
	C	1C	2C	3C	4C
	D	1D	2D	3D	4D
	E	1E	2E	3E	4E

The safety risk matrix is color-coded red, yellow, and green.

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Resources on Prioritizing Hazards Based on Safety Risk



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

- <https://www.transit.dot.gov/regulations-and-guidance/safety/public-transportation-agency-safety-program/ptasp-safety-risk>



Safety Risk Management Fact Sheet

- <https://www.transit.dot.gov/regulations-and-guidance/safety/public-transportation-agency-safety-program/safety-risk-management-fact-sheet>



PTASP Workshop Participant Guide (pages 23-26)

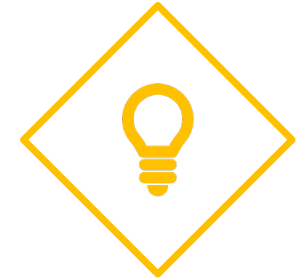
- <https://www.transit.dot.gov/regulations-and-guidance/safety/public-transportation-agency-safety-program/ptasp-bus-workshop>

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)

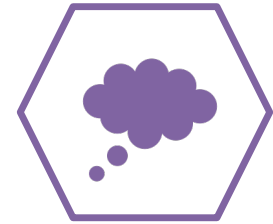
Lessons Learned: Identifying Mitigations



Some draft Plans do not detail how the transit agency identifies mitigations

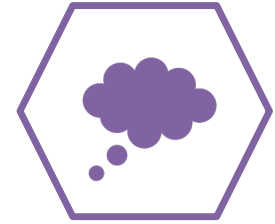
County Transit Safety Risk Mitigation Section 1. Once a hazard is identified and the safety risk assessment indicates that a mitigation is required, the agency solicits input from stakeholders, including

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:

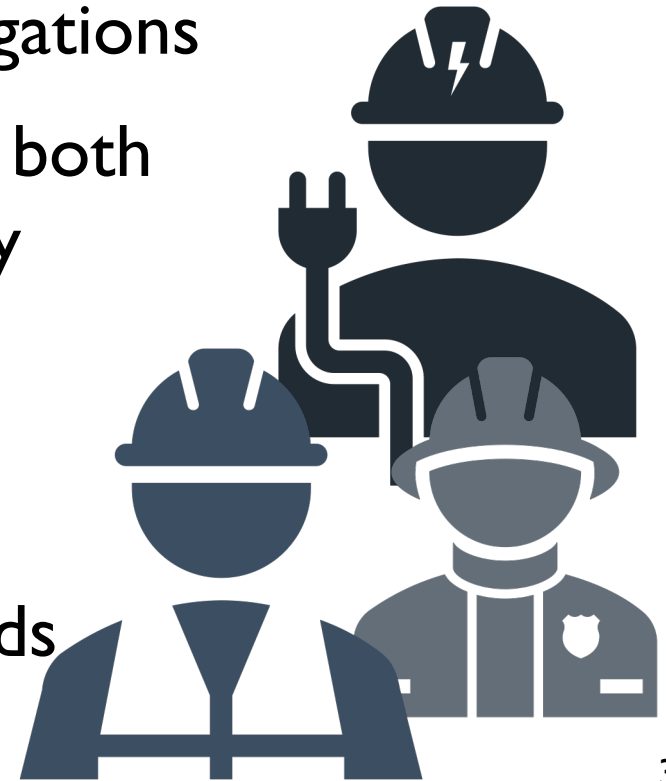
- Eliminate hazards
- Reduce risk through alteration
- Incorporate engineered features or devices
- Provide warning devices
- Incorporate signage, procedures, training, and personal protective equipment

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



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

- <https://www.transit.dot.gov/regulations-and-guidance/safety/public-transportation-agency-safety-program/ptasp-safety-risk>



Safety Risk Management Fact Sheet

- <https://www.transit.dot.gov/regulations-and-guidance/safety/public-transportation-agency-safety-program/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

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