Guide to Developing the Safety Risk Management Component of a Public Transportation Agency Safety Plan

U.S. Department of Transportation
Federal Transit Administration

Overview

The Public Transportation Agency Safety Plan (PTASP) regulation (49 C.F.R. Part 673) requires certain operators of public transportation systems that are recipients or subrecipients of FTA grant funds to develop Agency Safety Plans (ASP) including the processes and procedures necessary for implementing Safety Management Systems (SMS). Safety Risk Management (SRM) is one of the four SMS components. Each eligible transit operator must have an approved ASP meeting the regulation requirements by **July 20, 2020**.

Safety Risk Management

SRM is an essential process within a transit agency's SMS for identifying hazards and analyzing, assessing, and mitigating safety risk. Key terms, as defined in Part 673, include:

- **Event**–any accident, incident, or occurrence.

- **Hazard**–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.

- **Risk**–composite of predicted severity and likelihood of the potential effect of a hazard.

- **Risk Mitigation**–method(s) to eliminate or reduce the effects of hazards.

The following is not defined in Part 673. However, transit agencies may choose to derive a definition from other text provided in Part 673, such as:

- **Consequence**–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.

The SRM process requires understanding the differences between hazards, events, and potential consequences. The *Sample SRM Definitions Checklist* can support agencies with understanding and distinguishing between these terms when considering safety concerns and to help address Part 673 requirements while developing the SRM section of their ASP.

What is it? If you can select all 3 in one box, it's…	**A Potential Consequence** ❏ Not a real or potential condition ❏ Can be caused by a hazard ❏ Hasn't happened yet, but could be similar to a past event
A Hazard ❏ Real or potential condition ❏ Can cause a consequence ❏ Not an event	**An Event** ❏ Accident, incident or occurrence ❏ Not a real or potential condition ❏ Has already occurred

Sample SRM Definitions Checklist

Part 673 requires transit agencies to develop and implement an SRM process for all elements of its public transportation system. Part 673 requires the following three elements to establish and implement a process for managing safety risk:

- Hazard identification,

- Risk assessment, and

- Risk mitigation.

Safety Hazard Identification

Part 673 requires recipients to establish methods or processes to identify hazards and consequences of hazards. A hazard informs agencies of what is wrong, while a consequence identifies what could happen. When agencies properly identify and clearly define hazards, they can more easily identify potential consequences that will help decision-makers allocate safety resources based on safety risk.

Transit agencies must include data and information provided by an oversight authority and FTA (e.g., Safety Bulletin, General Directive, or Notices). Agencies also may consider outputs of Safety Assurance (SA) activities, such as employee safety reporting programs, event investigations, monitoring of operations and maintenance procedures, or system changes, as sources for hazard and consequence information.

Agencies may consolidate consequence and hazard information in one location for easier sorting and analysis (e.g., Risk Register or SharePoint forms) to share information and enable analysis.

Safety Risk Assessment

As part of an ASP, agencies are required to establish methods or processes to assess the likelihood and severity of the consequences of hazards, and prioritize the hazards based on the safety risk. Agencies will establish a hazard's safety risk based on their assessment of how often they may experience a potential consequence (likelihood) and the consequence's degree of harm or damage (severity), including any existing mitigations.

Agencies may decide to use tools, such as a safety risk matrix, to facilitate risk-based prioritization. This approach combines assessed likelihood and severity into one visual, which can help decision-makers understand when actions are necessary to reduce or

mitigate safety risk. These tables are most useful when customized to an agency's unique operating realities and leadership guidance.

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

Unacceptable under existing circumstances — red
Acceptable, but monitoring is necessary — yellow
Acceptable under existing circumstances — green

Sample Safety Risk Matrix

Safety Risk Mitigation

Part 673 requires agencies to establish methods or processes to identify mitigations or strategies necessary, as a result of agencies' safety risk assessment, to reduce the likelihood and/or severity of the consequences. The goal of risk mitigation is to reduce the assessed risk rating to an acceptable level; however, mitigations do not typically eliminate the risk entirely. Agencies may consider obtaining input from subject matter experts from different departments to ensure that the selected safety risk mitigation is appropriate. Input from multiple sources can help prevent unintended effects, including new hazards.

In an SMS, transit agencies conduct SA activities to know whether mitigations are having the intended effect. Part 673 requires agencies' SA processes to include activities to monitor the effectiveness of safety risk mitigations. Agencies may consider defining the mitigation monitoring approach when implementing safety risk mitigations.

Resources and Questions

Visit FTA's Safety Training page for information on SMS course offerings and registration and submit questions to PTASP_QA@dot.gov.