

# FTA

FEDERAL TRANSIT ADMINISTRATION

## **FTA Safety Risk Management Process** Transportation Research Board Presentation

January 13, 2020



U.S. Department of Transportation  
Federal Transit Administration

# Agenda

- Safety Risk Management Background and Overview
- Safety Risk Management Pilot – Inward/Outward Facing Cameras
  - Step 1: Identify Safety Concern
  - Step 2: Assess Safety Risk
  - Step 3: Develop Mitigations
- Next Steps

# Background

**FTA required a consistent process for managing transit safety risks.**

## Available Tools

New Regulations

Circulars

Safety Advisories/Bulletins

Training/Technical Assistance

Research

Enforcement Actions

## Unanswered Questions

- When does FTA implement these?
- How is effectiveness measured?
- How are resources prioritized?
- Who makes these decisions?
- How is progress tracked and communicated?

FTA has tools at its disposal for addressing safety risks, but previously had no systematic approach for using them.

# FTA's Safety Risk Management Program

- FTA's Safety Risk Management (SRM) program was created to actively manage transit safety risks.
- The program was created to develop processes to systematically apply FTA's available safety tools to address urgent safety needs and concerns.
- The resulting program is a 5-step process for identifying, evaluating, and mitigating safety risks and follows the principles of SMS.
- The SOP for SRM program was finalized in March 2019.
- This program follows industry standards and is currently being used by other modal agencies, including FAA.

# Safety Risk Management Benefits

FTA's SRM program offers the following benefits:

<b>Proactive Mitigation</b>	Establishes a proactive process for taking measures to improve transit safety, rather than a reactive one.
<b>Consistent Decision-Making</b>	Provides a uniform, tiered decision-making process for addressing safety concerns and prioritizing organizational resources.
<b>Data-Driven Methodology</b>	Incorporates available safety data and analyses into FTA's decision making.
<b>Complete Documentation</b>	Creates a consistent basis for documenting FTA's safety concerns, mitigation decisions, and monitoring results.

# Safety Risk Management Process



# Safety Risk Management Process Overview

Step	Description
 <p>Identify Safety Concern</p>	<ul style="list-style-type: none"> <li>Review transit safety data sources for safety concerns to elevate</li> <li>Identify any existing mitigation measures</li> </ul>
 <p>Assess Safety Risk</p>	<ul style="list-style-type: none"> <li>Conduct risk assessment to evaluate severity and likelihood of potential consequences associated with safety concern</li> </ul>
 <p>Develop Mitigation</p>	<ul style="list-style-type: none"> <li>Propose a mitigation management plan (MMP) that identifies recommended measures to reduce risk, implementation timeline, costs, and performance indicators</li> </ul>
 <p>Implement Mitigation</p>	<ul style="list-style-type: none"> <li>Implement mitigation measures in accordance with the specifics of the approved plan</li> </ul>
 <p>Monitor Safety Performance</p>	<ul style="list-style-type: none"> <li>Monitor safety concern and performance indicators in accordance with approved mitigation plan</li> <li>Plan communication of results to industry and other stakeholders</li> </ul>

# Safety Risk Management Decision Making

The **Safety Assessment Team (SAT)** is the primary decision-making body for each decision point, and engages the **Executive Safety Review Board (ESRB)** for decisions that require executive-level input.

Decision Point	Description
 Confirm Safety Issue	<ul style="list-style-type: none"> <li>Review identified safety concern</li> <li>Provide approval to proceed with risk assessment</li> </ul>
 Approve Safety Risk Assessment	<ul style="list-style-type: none"> <li>Review assessed safety risk(s)</li> <li>Provide approval to proceed with MMP development</li> </ul>
 Approve Mitigation Management Plan	<ul style="list-style-type: none"> <li>Review MMP</li> <li>Approve mitigation measure(s) and the timeline for implementation and monitoring</li> <li>Approve any additional resources required to support</li> </ul>
 Confirm Safety Performance	<ul style="list-style-type: none"> <li>Determine whether or not safety performance is within acceptable range or if further risk management activities are required</li> <li>Approve recommended communications to industry as appropriate</li> </ul>

# Safety Risk Assessment (SRA) Overview

Likelihood	5	Very High					
	4	High					
	3	Moderate					
	2	Low					
	1	Very Low					
			Negligible	Could cause minor first aid treatment	May cause minor injury, or minor property damage	May cause severe injury, or major property damage	May cause death or permanent injury or destruction of property
			A	B	C	D	E
			Severity				

For each consequence, the assessed likelihood and severity is plotted on a **risk matrix** to visualize the resulting safety risk.

# Safety Risk Management Pilot

FTA's Office of Transit Safety and Oversight identified the first safety concern for the SRM process in a pilot exercise to:

- Test the effectiveness of each process step and decision point,
- Refine the tools and templates used to support the process,
- Better understand time requirements of process steps, and
- Capture lessons learned and incorporate process improvements.

**Lessons learned and feedback received through this pilot will be used to refine SRM standard operating procedures. All transit agencies are encouraged to establish a process for evaluating their SRM program.**

# Safety Risk Management Pilot Topic

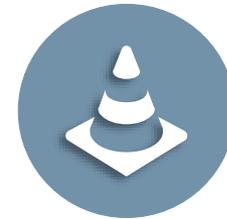
## Inward/Outward-Facing Cameras



**Investigation  
Support**



**Rules Compliance  
Improvement**

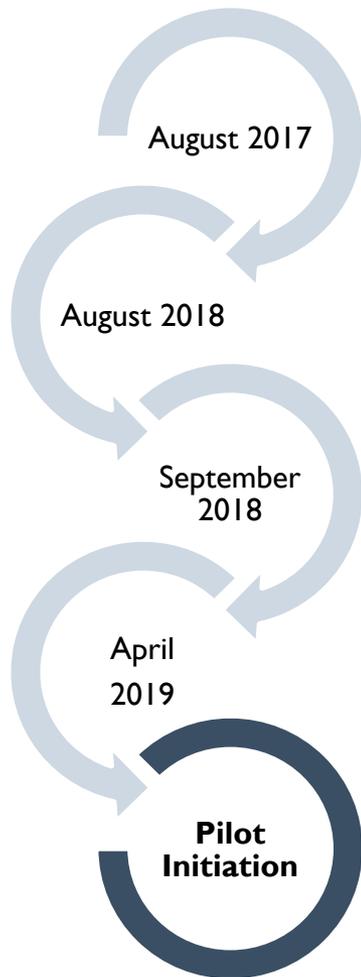


**Hazard Identification  
& Training Support**

FTA selected this topic for the pilot topic as it:

- Addresses a priority issue for FTA leadership
- Supports a response to an open NTSB recommendation
- Allows the SAT to test SRM processes and templates

# Inward/Outward-Facing Cameras



NTSB formally recommends FTA require the installation of inward/outward-facing cameras.

---

Center for Urban Transportation Studies (CUTR) research report on inward/outward-facing camera usage is released as part of a safety standards research effort.

---

FTA directs the American Public Transportation Association (APTA) to assist in the development of a recommended practice on inward/outward-facing cameras.

---

APTA publishes a final recommended practice: Crash and Fire Protected Inward and Outward Facing Audio and Image Recorders in Rail Transit Operating Compartments

---

**What additional steps, if any, should FTA take towards requiring implementation of inward/outward-facing cameras?**

# Step 1: Identified Hazards and Consequences

The SAT determined that an absence of cameras in rail transit controlling cabs is a hazard, and identified three potential consequences associated with this hazard.

<b>Hazard</b>	<b>Lack of inward- and outward-facing cameras in rail transit vehicles.</b>
<b>Consequence 1</b>	Repeat accident due to unmitigated safety risk from inadequate causal determination.
<b>Consequence 2</b>	An accident caused by a rule violation that would not occur if cameras were present.
<b>Consequence 3</b>	An accident caused by hazard not identified through safety performance monitoring with cameras.

# Step 2: Inward/Outward-Facing Cameras Risk Assessment Results

Likelihood	5	Very High						
	4	High						
	3	Moderate						
	2	Low					1 2 3	
	1	Very Low						
				Negligible	Could cause minor first aid treatment	May cause minor injury, or minor property damage	May cause severe injury, or major property damage	May cause death or permanent injury or destruction of property
			A	B	C	D	E	
Severity								

# Step 3: Develop Mitigations

Based on the assessed safety risk of the three identified consequences, the SAT made recommendations for mitigation and monitoring actions that were selected from the mitigation toolbox.

<b>New/Altered Policy</b>	Circular	<b>Communications</b>	Dear Colleague Letter
	Regulation		Newsletter
	Statement of Policy		Safety Advisory
	National Safety Plan		Safety Bulletin
<b>Technical Assistance</b>	Guidance Document		Safety Directive
	Training Course		Safety Report
	Webinar		Safety Stakeholder Letter
	Workshop		Website Posting
<b>Research</b>	FTA-Funded Research	<b>Enforcement Actions</b>	Federal Safety Management
	TRACS Report		Enforcement Actions and Withholding of Funds
	Safety Standards		Restriction and Prohibitions
	Other DOT-Led Research		

# Next Steps

- **Current status: Decision Point 3.** The FTA Chief Safety Officer has presented these recommendations to the ESRB and is awaiting final approval.
- If approved, the SAT will develop a Mitigation Management Plan and execute the plan while conducting monitoring activities.
  - The MMP serves as a documented record of the activities FTA will undertake to reduce the effects of the safety hazard.
- The SAT has begun the formal SRM process for the identification and assessment of the second pilot topic: Roadway Worker Protection.