



FEDERAL TRANSIT ADMINISTRATION

# **2016 State Public Transportation Partnerships/Transit Midwest Conference**

## **Safety Management**

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**Office of System Safety**

**Office of Transit Safety and Oversight**

**August 16, 2016**



U.S. Department of Transportation

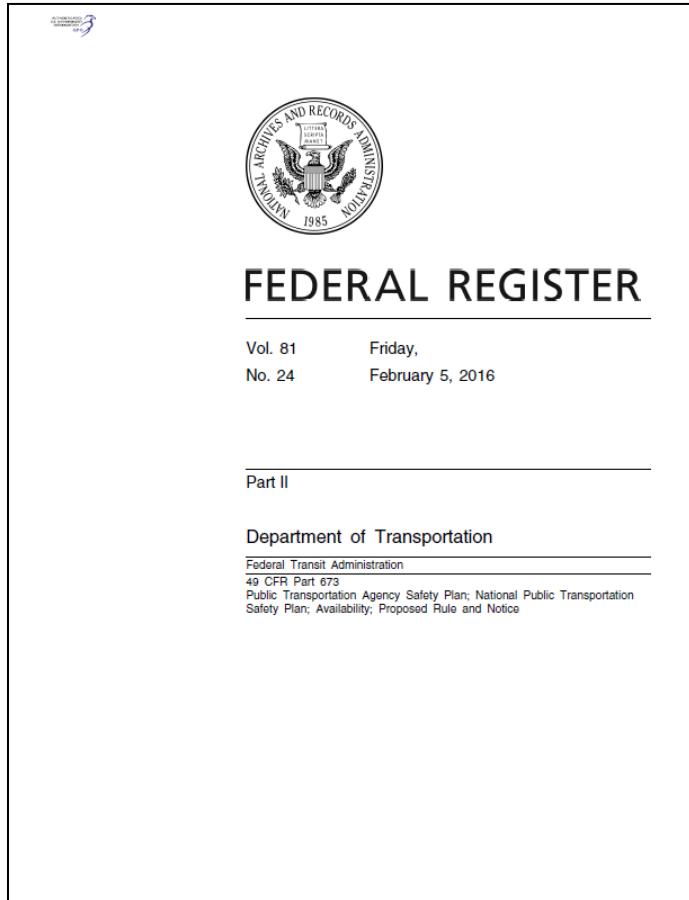
Federal Transit Administration

# Today's Presentation

- FTA policy & regulations
- What does an SMS look like?
- Introduction to SMS implementation

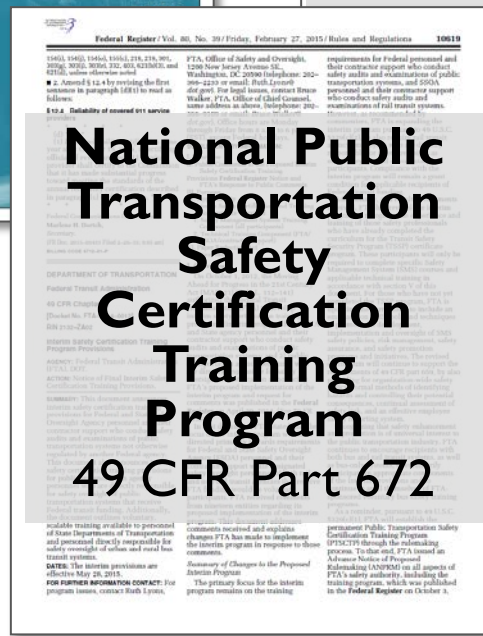
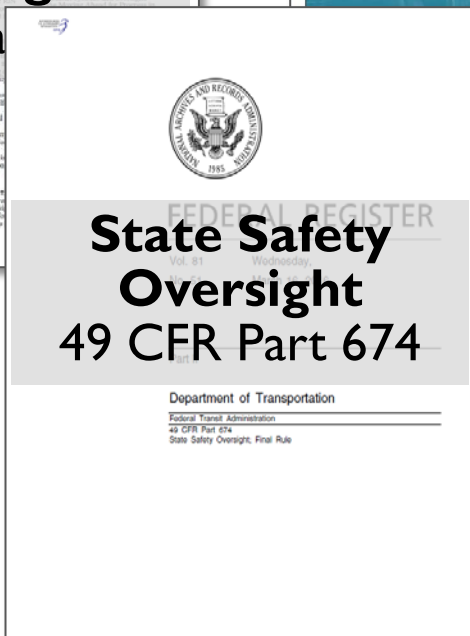
# FTA policy & regulations

# The Public Transportation Agency Safety Plan rule (49 CFR Part 673)



- Requires transit agency to implement an SMS through an Agency Safety Plan
- Larger transit agencies certify they have established and implemented a Plan
- Smaller transit agencies may have State DOT draft and certified a Plan
- Final rule may be published by December 2016

## FEDERAL TRANSIT ADMINISTRATION



# Why a new approach?

- High-profile transit accidents
- Emerging technology
- Growing, aging ridership
- \$85.9B state of good repair backlog
- Need for smarter resource allocation
- Successes in other industries



# FTA's Goals for the Transit Industry

- Improved safety performance - make a safe industry even safer
- Increased accountability for safety decisions at highest levels of a transit agency
- Greater consistency in identifying hazards and evaluating safety risk
- Increased use of data to monitor effectiveness of safety risk mitigations
- Strong safety culture within every transit system

# What does an SMS look like?



# What factors help make service delivery safe?



# Why SMS?

- Human and organizational factors are a major cause of and contributor to transit accidents.
  - Written procedures vs. practice
  - Prioritization, decision-making
- Addressing these factors requires a new approach.





An iceberg floating in dark blue water. The small tip of the iceberg is above the water line, while the much larger, jagged mass is submerged below. Two white text boxes are overlaid on the image: one on the tip and one on the submerged part.

**ACCIDENTS  
INCIDENTS**

**NEAR-MISSES  
UNSAFE ACTS**

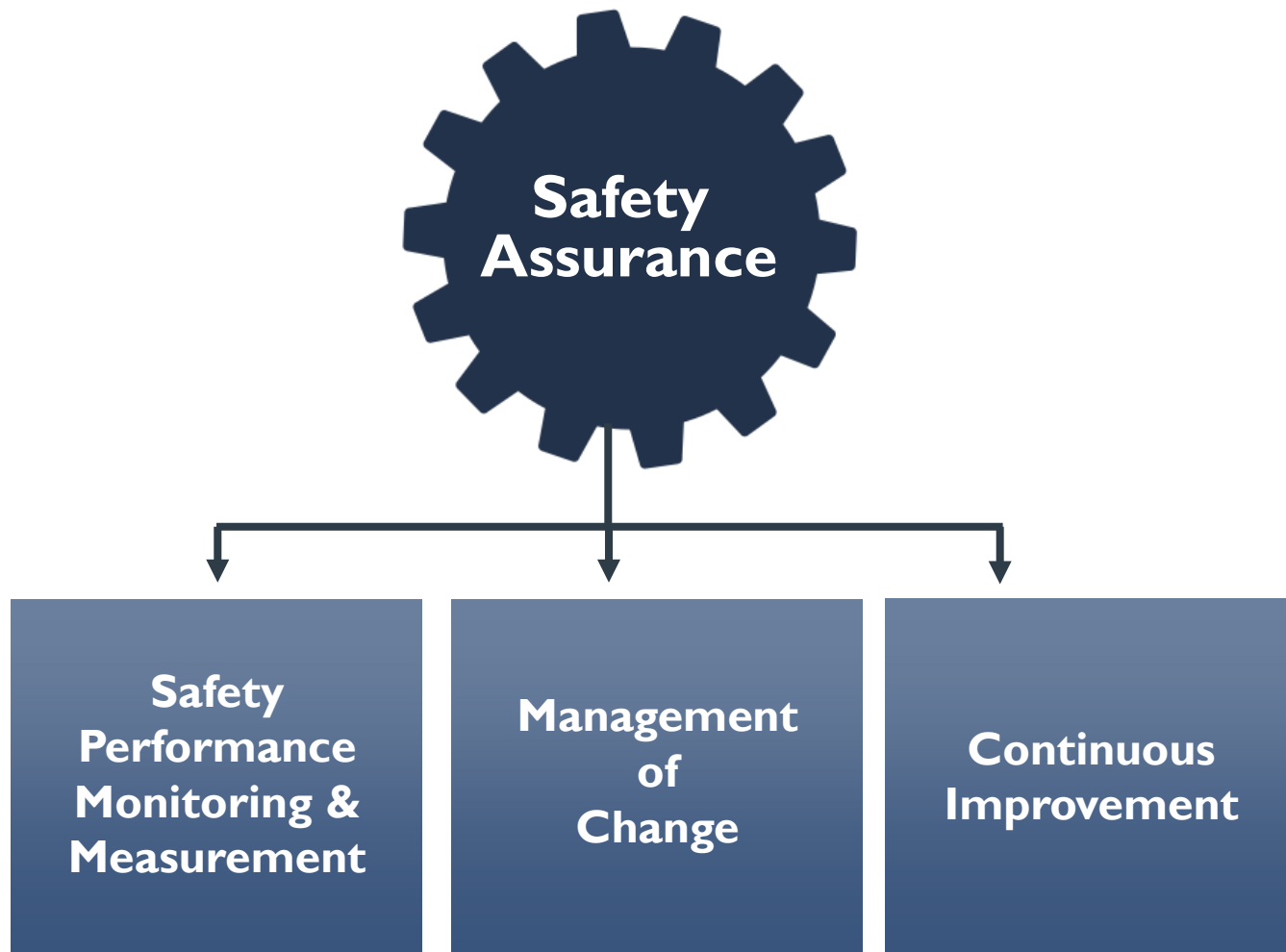
## Why SMS?

- Safety risk cannot be eliminated, but it can be managed.
  - Learn from past events
  - Adopt a proactive approach; understand and mitigate safety risk
  - Allocate resources effectively and efficiently













# SMS is a management system.

**Executive Management  
(Accountable Executive)**

**Safety  
(Chief Safety  
Officer)**

**Technical Management  
Operations, Maintenance, etc.**

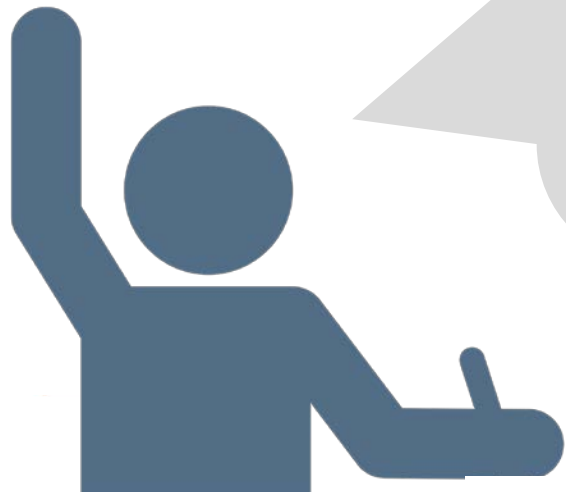
**Frontline  
Operations, Maintenance, etc.**

# With an effective SMS, a transit agency can answer these five questions:

1. What are our **most serious** safety concerns?
2. How do we **know** this?
3. What are we **doing** about it?
4. Is what we are doing **working**?
5. How do we **know** what we are doing is working?

# What are our most serious safety concerns? How do we know this?

I almost hit a vehicle turning right in front of me at the corner of 8<sup>th</sup> and Maple this morning!



# What are our most serious safety concerns? How do we know this?

## Identify Safety Concerns

### Reactive

- Investigations

### Proactive

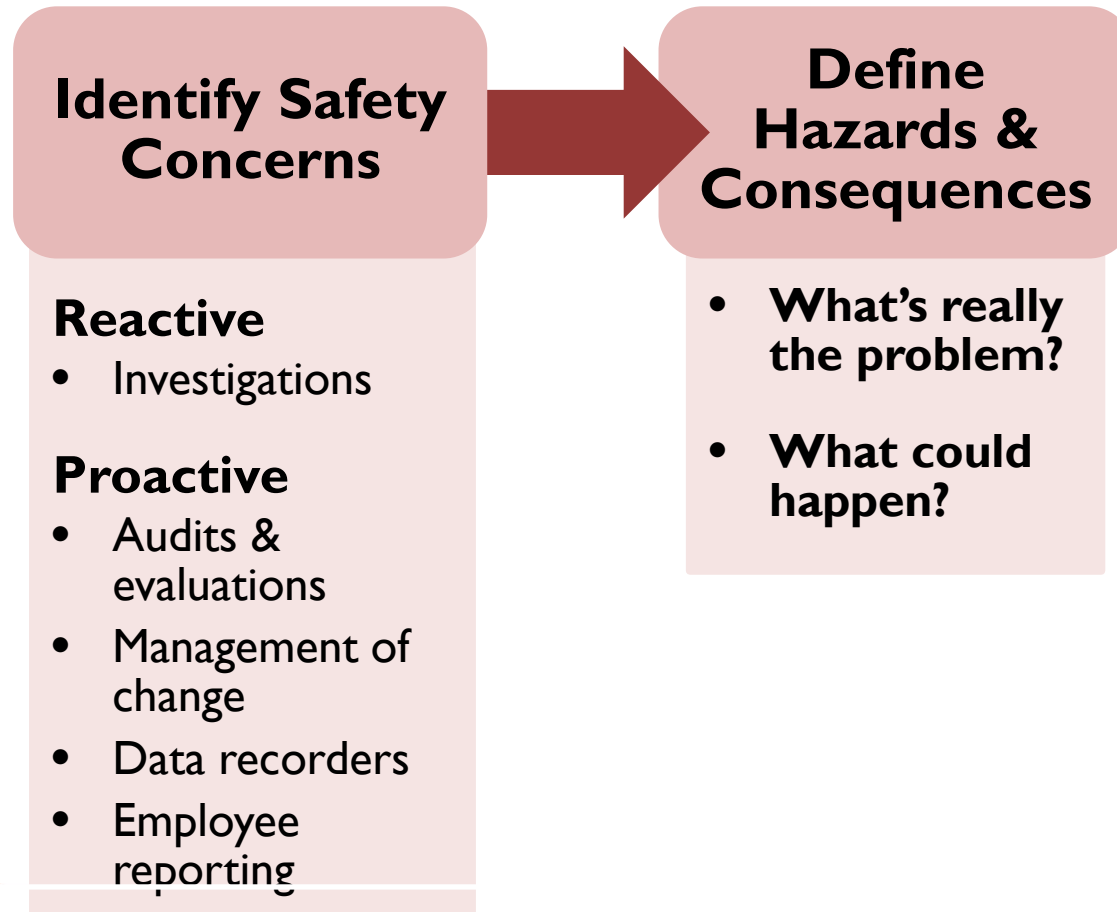
- Audits & evaluations
- Data recorders
- Management of change
- Employee reporting

**Learn from past experience.**

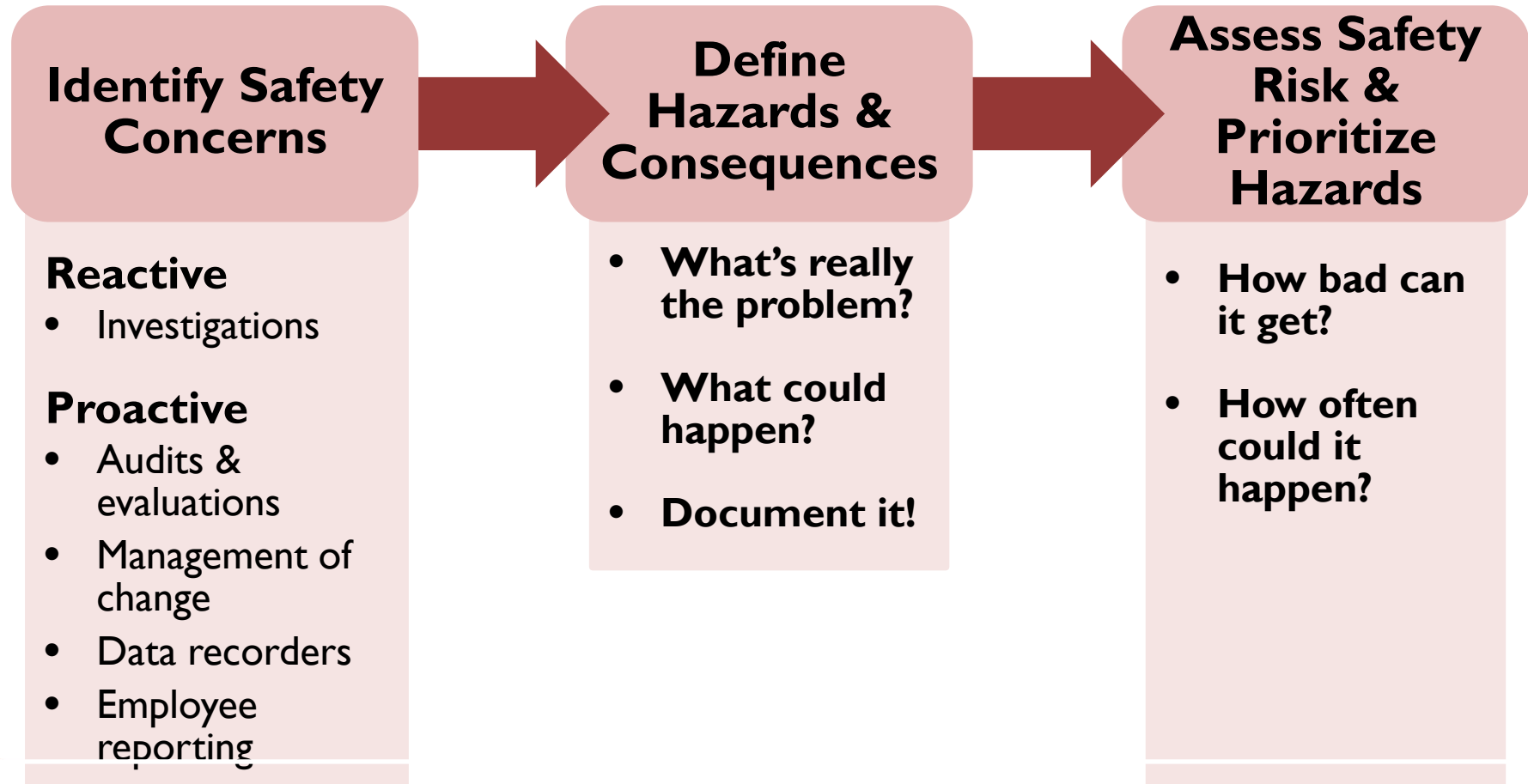
**Identify potential safety concerns before an event occurs.**

**Listen to the experts!**

# What are our most serious safety concerns? How do we know this?



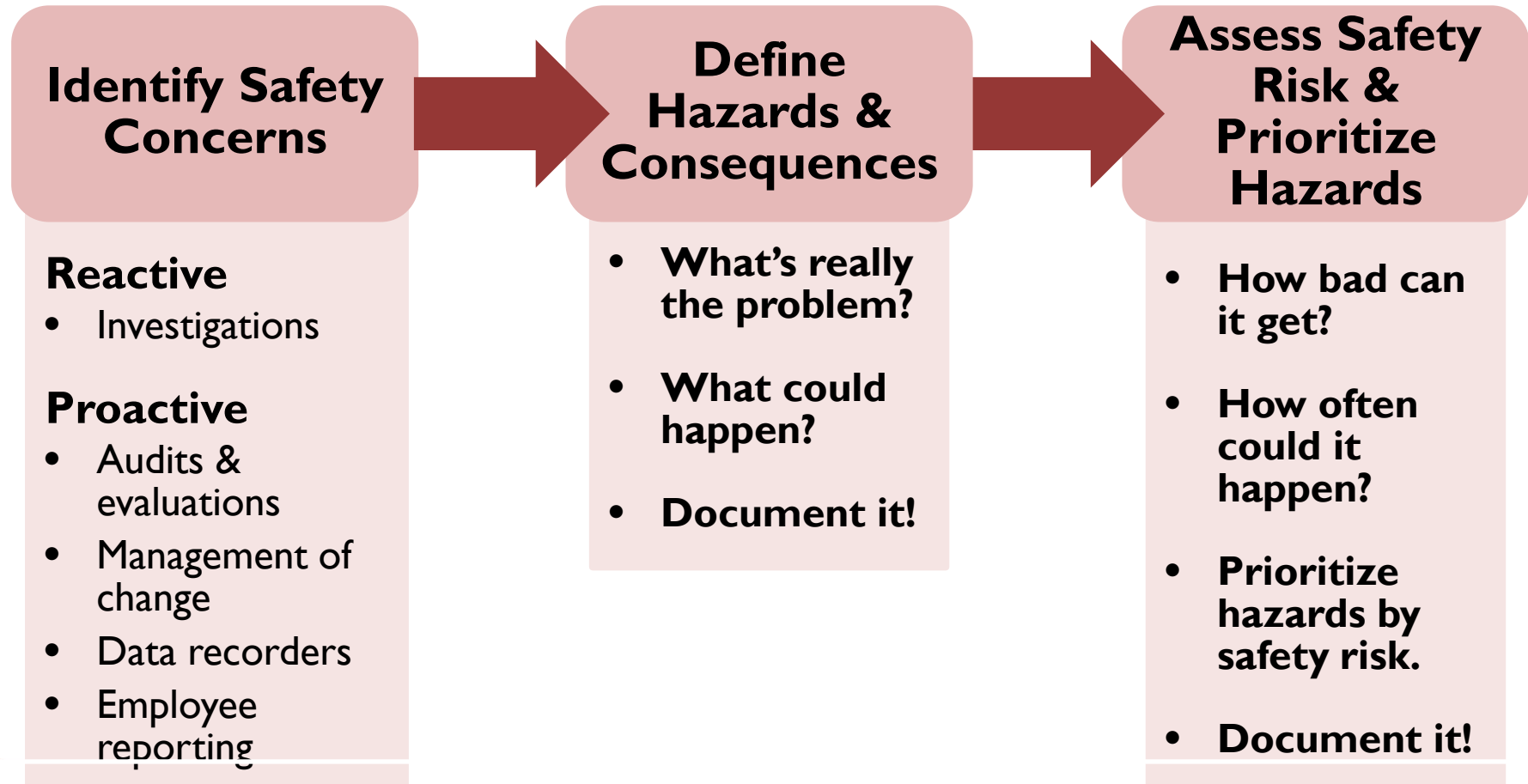
# What are our most serious safety concerns? How do we know this?



# Risk Matrix

Probability		Severity			
		Catastrophic <b>A</b>	Critical <b>B</b>	Marginal <b>C</b>	Negligible <b>D</b>
Frequent	<b>1</b>	<b>1A</b>	<b>1B</b>	<b>1C</b>	<b>1D</b>
Probable	<b>2</b>	<b>2A</b>	<b>2B</b>	<b>2C</b>	<b>2D</b>
Occasional	<b>3</b>	<b>3A</b>	<b>3B</b>	<b>3C</b>	<b>3D</b>
Remote	<b>4</b>	<b>4A</b>	<b>4B</b>	<b>4C</b>	<b>4D</b>
Improbable	<b>5</b>	<b>5A</b>	<b>5B</b>	<b>5C</b>	<b>5D</b>

# What are our most serious safety concerns? How do we know this?

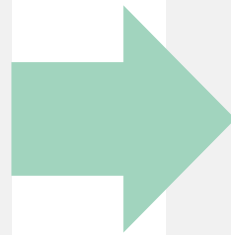




# What are we doing about our most serious safety concerns?

## Identify Safety Risk Mitigations

- Reduce likelihood that consequence will happen
- Reduce severity of the consequence



**Hazard:  
Nearside Bus Stop**



# What are we doing about our most serious safety concerns?



**Document it!**

# Is what we are doing working? How do we know?

## Evaluate Whether Mitigations are Effective

- **Assess the impact**
  - Clarify expectations
  - Monitor the mitigation
  - Monitor safety performance
  - Watch for unintended consequences

# Is what we are doing working? How do we know?

## Evaluate Whether Mitigations are Effective

- **Assess the impact**
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  - Monitor safety performance
  - Watch for unintended consequences

## Continuously Improve the SMS and Safety Performance

- **Make changes based on what you learn**
- **Build on successful processes**

# How can a transit agency answer these questions routinely, effectively, and efficiently?

- **Document** safety management processes, responsibilities



# How can a transit agency answer these questions routinely, effectively, and efficiently?

- **Set safety objectives & safety performance targets**

## Performance targets and measures

Table 2 – Business, Financial and Leadership

	2014 Actual	2014 Target	2013 Actual <sup>1</sup>	2014 HANA Forecast	Status Goal & Score vs Target
<b>Business Performance</b>					
Operational safety – near collision incidents	2	Zero	Zero	Zero	Not achieved
Staff safety – workplace lost time injuries (per million hours)	4.4	Zero	Not measured	Not forecast	Not achieved
Customer value added from investments (Customer benefits/service enhancement (Capex) investments)	1.65	>1 x investment	Not measured	Not forecast	Achieved
Service availability	99.95%	99.95%	99.88%	99.95%	Achieved
Customer satisfaction	80%	80%	75%	82%	Achieved
Always Global Services – Number of market leading businesses	Zero	1	Zero	Zero	Not achieved
<b>Financial Performance</b>					
Group NOPW	\$11.8m	\$14.6m	\$10.2m	\$10.7m	Not achieved
Service Improvement (Capital) projects	\$15.8m	\$38.8m	\$23.6m	\$31.0m	Not achieved
System Operator (Air Traffic Control Services) – Return on capital	9.1%	7.8%	5.6%	Not forecast	Achieved
System Operator (Ancillary Services) and Always Global Services NOPW	\$1.6m	\$5.7m	\$1.6m	\$2.3m	Not achieved
Earnings per Share (cents per share)	29cps	36cps	23cps	26cps	Not achieved
<b>Leadership</b>					
Staff engagement	73%	82%	70.5%	80%	Not achieved
Best employer (NZ Employment Brands)	Not applicable <sup>2</sup>	Top 20	Not measured	Not forecast	Not achieved

<sup>1</sup> The 2013 actual values exclude the impact of selling the QTE lease, which resulted in a one-off increase in NOPW of \$12.8 million.  
<sup>2</sup> Companies must be nominated by a cross section of employees and job seekers; we cannot apply to take part in the survey and have not been nominated in the current year.

Airways Annual Report 2013-14 23

# How can a transit agency answer these questions routinely, effectively, and efficiently?

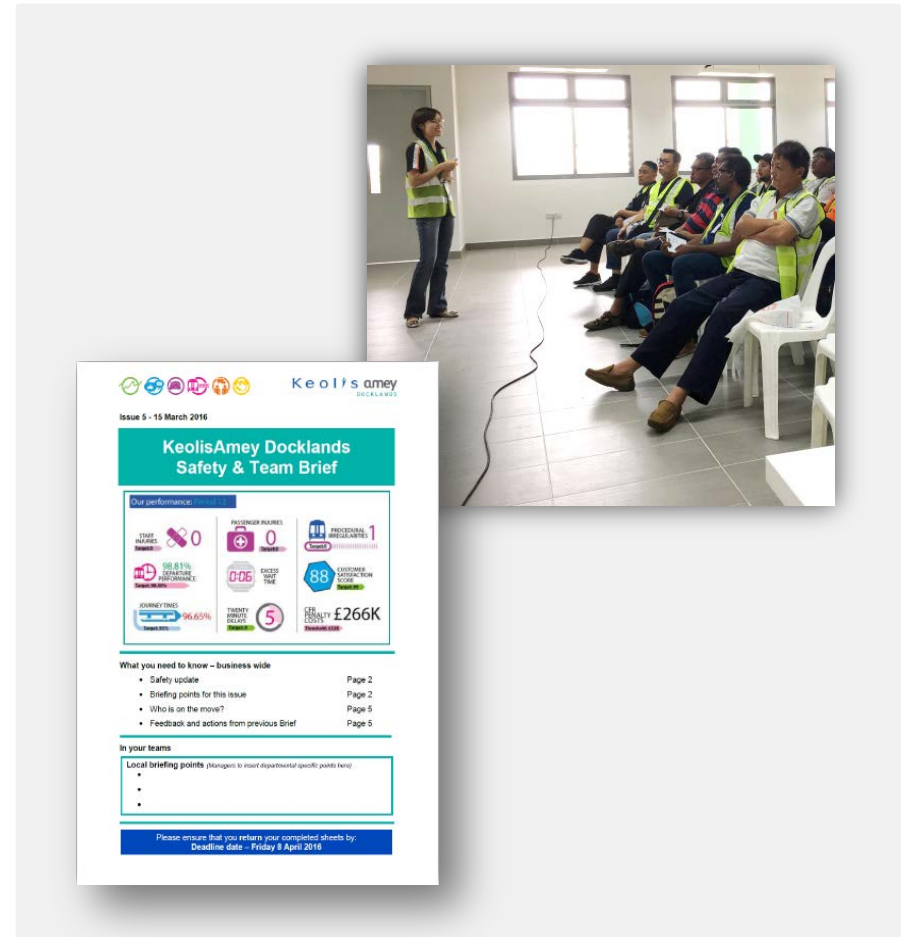
- **Record and track** safety risk management and safety assurance efforts

**Risk register**

[Insert name of organisation]		Risk register					Log number					
Report reference number	The risk • What can happen? • How can this happen?	Date entered in register	Existing controls	The consequences of an event happening			Additional mitigation required	Residual risk			Action and owners	Monitoring and review requirements
				Severity	Likelihood	Level of risk		Severity	Likelihood	Level of risk		

# How can a transit agency answer these questions routinely, effectively, and efficiently?

- **Communicate and train personnel to perform their roles**





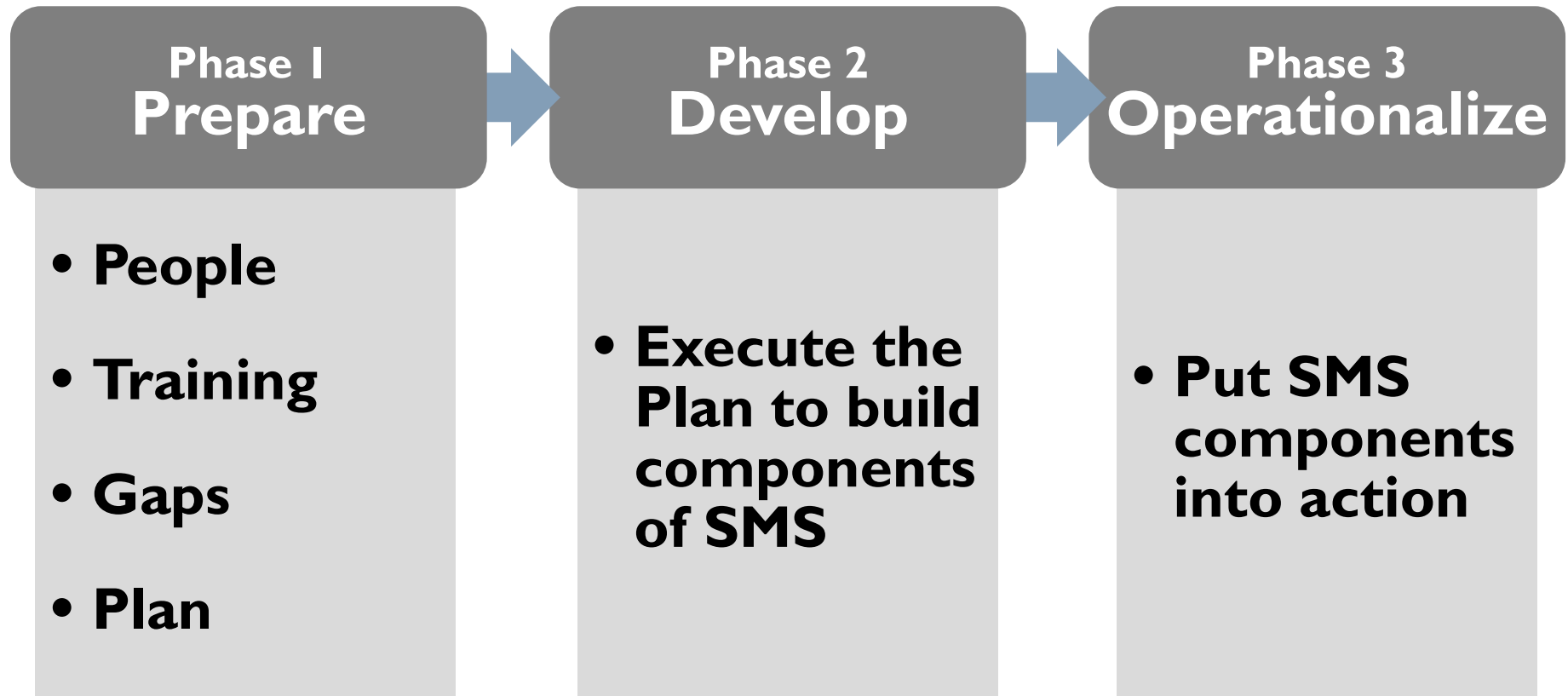
# Introduction to SMS implementation



# Key Questions

- Requirements
- Deadlines
- Resource commitment – money, staff, time

# The SMS Implementation Process



Indicators of successful SMS implementation

## **Leadership is committed and the right people are engaged.**

- The Accountable Executive and SMS Lead are identified and leading the effort.
- An SMS Implementation Team is established.
- Key partners are engaged, as appropriate.

### **Phase I Prepare**

- **People**
- Training
- Gaps
- Plan

Indicators of successful SMS implementation

## **Individuals participating in SMS implementation are knowledgeable and confident.**

Everyone involved in SMS implementation:

- Received briefings or completed SMS training
- Understands how SMS is different
- Buys into SMS

### **Phase I Prepare**

- People
- **Training**
- Gaps
- Plan

Indicators of successful SMS implementation

## The SMS Implementation Team is evaluating existing processes before building new ones.

- Conduct a gap analysis, identifying:
  - What elements of SMS are in place
  - What still needs to be developed
- Examine current safety culture

### Phase I **Prepare**

- People
- Training
- **Gaps**
- Plan

Indicators of successful SMS implementation

## **The SMS Implementation Team is looking ahead and has a realistic plan.**

Consider and document, as appropriate:

- Key steps, a realistic timeline, and resources
- Roles and responsibilities
- How to communicate and engage personnel and partners

### **Phase I Prepare**

- People
- Training
- Gaps
- **Plan**

Indicators of successful SMS implementation

## **SMS policies, procedures, and processes are well-documented and communicated.**

- Adequately document SMS activities and processes to meet all requirements
- Draft a Safety Management Policy Statement
- SMS policies and procedures are:
  - Appropriately written, communicated, and incorporated into training
  - Well understood by the intended audience
  - Maintained as records



Indicators of successful SMS implementation

**Once developed, SMS policies, procedures, and processes are actually put into practice.**

SMS processes and activities are:

- observable
- used as expected, based on written guidance
- having a positive impact on safety performance

# How does a transit agency increase voluntary employee safety reporting?

**Challenge** – Employees will not voluntarily share information if they feel it could lead to a negative outcome.



**Solution** – Reduce incentives not to report and increase incentives to report.

# How does a transit agency increase voluntary employee safety reporting?

## *Why don't employees report?*

- Not that important

## **Change Incentives to Report**

- Demonstrate that reporting is valued
- Clarify what's important
- Empower employees

# How does a transit agency increase voluntary employee safety reporting?

## ***Why don't employees report?***

- Not that important
- Affects team's safety record

## **Change Incentives to Report**

- Prioritize an accurate safety risk picture
- Emphasize benefits for safety, not safety record

# How does a transit agency increase voluntary employee safety reporting?

## ***Why don't employees report?***

- Not that important
- Affects team's safety record
- Nothing would be done to fix it

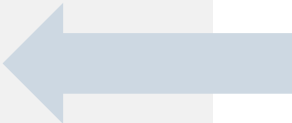
## **Change Incentives to Report**

- Evaluate each report
- Follow up and show what was done as a result of reporting



# How does a transit agency increase voluntary employee safety reporting?

## ***Why don't employees report?***

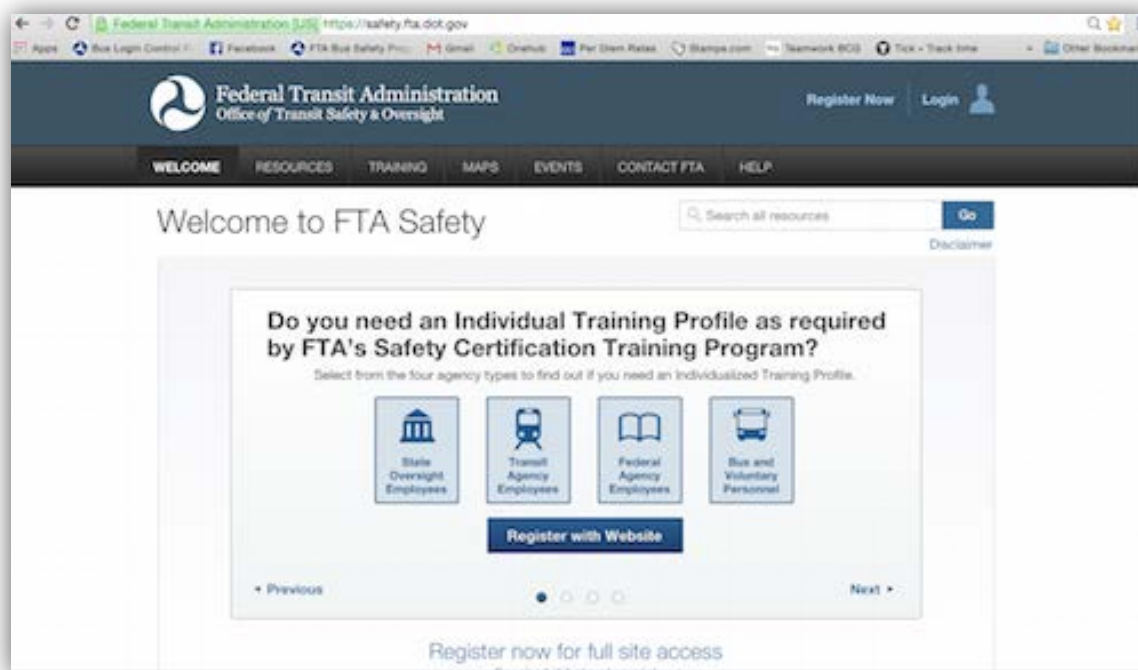
- Not that important
  - Affects team's safety record
  - Nothing would be done to fix it
  - Blame for incident
  - Treated or disciplined unfairly
- 

## **Change Incentives to Report**

- Balance learning and accountability
- Be consistent – set & follow clear guidelines for unacceptable behavior

# FTA's New Safety and Training Resource Website

<http://safety.fta.dot.gov/>

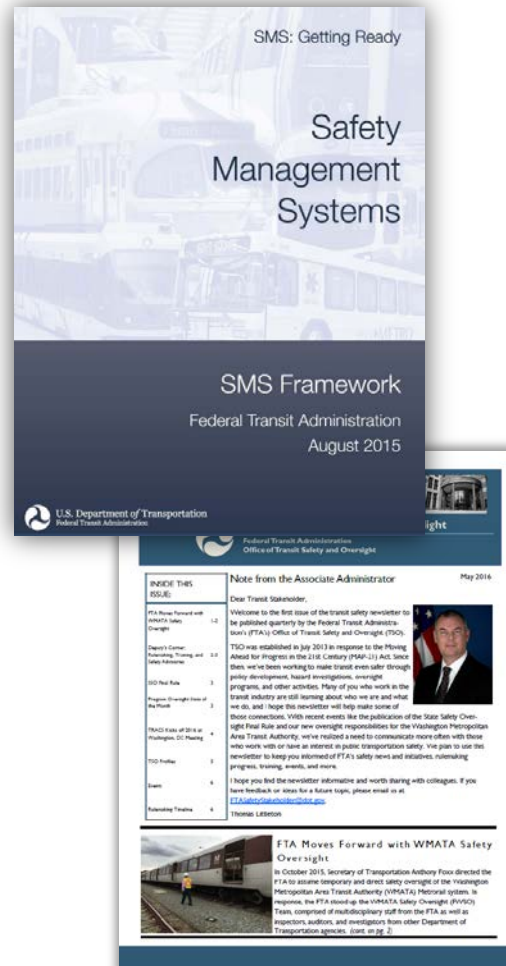


- SMS information
- Training
- Events
- Emails to registered users

# Key Resources

## Read, watch, and participate

- Review FTA's **SMS Framework**
- Participate in webinars explaining new regulations and guidance
- Visit FTA's YouTube page to view previous webinars
- Read our newsletter **TSO Spotlight**



## Sign up to receive updates

### Sign up for **GovDelivery**

- FTA announcements and new documents
- Tailored to specific interests

The image is a screenshot of the FTA GovDelivery sign-up page. At the top, it says 'U.S. Department of Transportation Federal Transit Administration'. Below that is a section for 'Email Updates' with a text box for 'Email Address' and 'Submit' and 'Cancel' buttons. At the bottom, there is a link to the 'Privacy Policy'.

Questions? Comments? Email us at **FTASafetyStakeholder@dot.gov**



# Additional Questions?

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