Proposed Competencies for Safety Certification Training Program

Competency Area	Description of Competency
SMS Leadership	• List the advantages of effective safety management and the benefits that FTA anticipates SMS adoption will bring the transit industry • Categorize the activities performed by an Accountable Executive and explain why he or she is so important to effective SMS implementation • Recognize and describe the four major components of FTA's SMS framework • Identify and describe how to proactively utilize the interfaces between SMS, Finance, Human Resources and Asset Management to support executive decision-making • List specific tools that help executives incorporate SMS into their decision-making • Classify the SMS leadership activities that executives can perform as part of their day-to-day management process
Level 100: SMS Principles for Rail Transit	• Detail how and why FTA came to adopt the SMS framework as the foundation of its new safety regulatory program • State and describe the four major components and 12 elements of FTA's SMS framework • Write a sample Safety Policy Statement that ensures executive accountability and commitment for safety • Provide and discuss sample safety objectives and key performance indicators (KPIs) used at your agency • Distinguish among traditional system safety risk management approaches and the types of analyses required for SMS framework implementation • List and describe SMS safety assurance tools and techniques • Identify sources of operating and maintenance data to support the safety review of normal operations • Describe the major activities that can be performed to promote SMS and safety communication with transit employees • Discuss and outline the needed activities and timeline for SMS implementation from initial policy commitment through gap assessment and implementation planning to training and monitoring • Recognize and explain the purpose of the SMS Gap Analysis Tool and complete sample sections • Present and discuss results of sample SMS Gap Analysis with classmates and instructor • Categorize information from SMS Gap Analysis into the SMS

Competency Area	Description of Competency
	Implementation Plan • Demonstrate proficiency in the use of FTA-supplied materials, including SMS Guidebook and supporting forms
Level 101: SMS Principles for SSO Programs	• Discuss and demonstrate the correct usage of SMS and rail transit terminology and nomenclature • Identify and discuss the major objectives in overseeing and evaluating SMS implementation in the rail transit environment • Compare and contrast the four major components and 12 elements in FTA's SMS framework with the existing 49 CFR Part 659 regulation • Identify and discuss performance measures and tools to assess rail transit safety performance • Develop a sample SMS surveillance plan for a rail transit agency in your jurisdiction applicable to the level of SMS implementation at the rail transit agency • Illustrate and list safety risk management and safety assurance tools that can be used to support safety oversight • Demonstrate how to intervene effectively with the rail transit agency based on monitoring of SMS surveillance plan • Detail the phases of transition in SMS implementation and potential pitfalls and areas of concern for both the rail transit agency and the SSO agency
Level 102: SMS Principles for Bus Transit	• Detail how and why FTA came to adopt the SMS framework as the foundation of its new safety regulatory program • State and describe the four major components and 12 elements of FTA's SMS framework • Demonstrate how to use FTA's SMS gap assessment and implementation planning tools for bus transit agencies • Identify safety risk management and safety assurance tools and techniques and how to apply them in the bus transit environment • Describe the major activities that can be performed to promote SMS and safety communication throughout the bus transit agency • Categorize performance measures and activities that can be used to monitor the implementation of the SMS at the bus transit agency
Level 200: Advanced SMS	• Illustrate how to assess a safety policy statement for thoroughness and effectiveness of safety objectives and performance targets

Proposed Competencies for Safety Certification Training Program

Competency Area	Description of Competency
Principles for Rail Transit	- Describe ways in which the accountable executive should be committed to safety and use safety inputs in decision-making - Summarize and list the safety responsibilities of key management personnel and committees in the rail transit environment - Highlight typical SMS documentation control procedures - Compare and contrast different hazard identification and risk management methods and approaches - Outline the steps in safety action planning in the rail transit environment - Discuss key elements in safety performance monitoring, including auditing and real-time monitoring of rail transit operations - Describe how incident investigation and reporting using SMS principles differs from existing requirements in 49 CFR Part 659 - Outline how the management of change (including organizational changes with regard to safety responsibilities) can be approached in the transit industry - List ten major activities to support safety promotion - Describe the risk to transit organizations from human factors and human performance issues
Level 201: Advanced SMS Risk Management	- Explain the purpose of Safety Risk Management in SMS - Identify and lists weaknesses in the identification of hazards in recent transit accidents and incidents - In FTA's SMS framework, detail when to perform a System Description and Task Analysis and explain how this analysis helps identify hazards - Describe the elements of a System Description and Task Analysis, including the following steps: - Define the system and task(s) under analysis, including: - Function and purpose of the system. - The system's operating environment. - An outline of the system's processes and procedures. - The personnel, equipment, and facilities necessary for operation of the system. - Consider how the following attributes work within the system and task(s) under analysis to ensure its safe operation, including: - Responsibility.

Competency Area	Description of Competency
	▪ Authority. ▪ Procedures and practices. ▪ Controls placed on equipment and personnel. ▪ Process measurements on tasks and activities. ▪ Interfaces among the hardware, software, people, and environment that make up the system. ○ Assess the system and task(s) under analysis for hazards and risks. • Describe how to document the identified hazards and risks, depending on the size of the public transportation agency and the complexity of its operations: ○ In a list, matrix or table ○ Through a mapping process in flow charts (e.g., block flow diagram) or process maps (e.g., block flow procedural process map or a cross-functional process map) ○ In deductive or inductive system safety analyses ○ Using computer models ○ In other methods established by the public transportation agency • Describe the steps needed to develop and maintain processes to analyze safety risk associated with the hazards identified in the system analyses • Define a process for conducting risk assessment that allows for the determination of acceptable safety risk • List potential processes to develop safety risk controls that are necessary as a result of the safety risk assessment process • Explain how to evaluate whether the risk will be acceptable with a proposed safety risk control applied, before the safety risk control is implemented • Discuss the pros and cons of mandatory employee reporting systems for hazard identification
Level 202: Advanced SMS Principles for Bus Transit	• Describe ways in which the accountable executive should be committed to safety and use safety inputs in decision-making • Summarize and list the safety responsibilities of key bus management personnel and committees • List the major purpose of the SMS Manual and identify the key components for a bus agency • Define typical SMS safety data/records management requirements for

Competency Area	Description of Competency
	an SMS at a bus transit agency
	• Characterize an effective safety assurance program in the bus transit environment
	• List types of reactive safety issue identification (events, incidents, accidents)
	• Describe proactive safety issue identification approaches
	• Compare and contrast different risk assessment methods used in the bus transit industry
	• Demonstrate investigation and problem-solving skills
	• Review corrective action planning & implementation practices
	• Understand transit industry and agency risk profiles
	• Demonstrate proficiency in the use of additional FTA-supplied materials, including SMS Guidebook and supporting forms
Level 300: SMS Risk Control Strategies	• Explain why there is no such thing as "absolute safety" in public transportation, but that risks can be managed to a level "as low as reasonably practicable" (ALARP)
	• Demonstrate the ways in which risk mitigation and control must be balanced against: time, cost, and the difficulty of taking measures to reduce or eliminate the risk
	• Describe how effective risk management seeks to maximize the benefits of accepting a risk (a reduction in time and cost) while minimizing the risk itself
	• Communicate the rationale for risk decisions to gain acceptance by stakeholders affected by them
	• Describe the three basic risk mitigation strategies
	• Describe and list the steps in the "hierarchy of controls" for hazards
	• Identify and discuss the relative merits of the "layers of protection" approach to controlling hazards
	• Explain how to monitor and measure risk control performance levels
	• Evaluate how data flow and analysis processes can support the assessment of the performance of risk control strategies
	• Develop a monitoring plan for the implementation of risk control strategies at the transit agency
Level 301: SMS Assurance and Auditing Normal	• Explain how safety assurance activities support the accountable executive and board of directors in making decisions and recommendations regarding resource allocation

Proposed Competencies for Safety Certification Training Program

Competency Area	Description of Competency
Operations and Risk Controls	• Demonstrate application of SMS tools and approaches in the investigation of accidents and incidents and the development and oversight of corrective action plans • Detail the steps required to establish and manage mandatory and voluntary employee reporting systems • Outline and discuss approaches to internal safety audits and surveys that support SMS performance monitoring • Explain why SMS implementation must be coordinated quality assurance audits • Discuss coordination required monitor normal operations using data management, mining and analysis at the transit agency • Demonstrate capability to manage the conduct of safety reviews, examinations and audits and tracking of findings at rail transit agency • Explain how safety certification for capital projects is managed in the SMS framework • Propose performance measures and monitoring activities to oversee risk controls at rail transit agency
Alternative training available for: • Level 102: SMS Principles for Bus Transit • Level 202: Advanced SMS Principles for Bus Transit	Alternative voluntary training will be developed by FTA in partnership with the Community Transportation Association of America (CTAA) for Executive Leadership and personnel with direct responsibility for safety at Section 5311 sub-recipients and personnel at State DOTs responsible for overseeing Section 5311 sub-recipients.