

Introduction

This manual was developed to assist public transit providers across the State of West Virginia in developing compliant policies, procedures and methods focused on safety for employees, riders and the community they serve. By presenting topic areas relevant to providing safe and reliable human service and public transportation services this manual serves as a resource for transit managers, operations supervisors and frontline staff.

West Virginia Department of Public Transit recognizes safety as a cornerstone to delivering beneficial transportation in the diverse communities of the State. They have been continuously invested in safety through partnerships with grant subrecipients, the West Virginia Transit Association, the Federal Transit Administration (FTA) and other state agencies to provide this safety manual for over 25 years.

Using This Manual

This safety manual contains sections chosen to support all aspects of safety, security and emergency management. Each section provides a general discussion on the topic area and its importance to safe service delivery, applicable Federal and State compliance requirements, sample documents, industry best practices and resources.

The manual includes videos, weblinks and software templates to assist transit leadership in crafting policies and processes from a centralized clearing house of topic specific tools.

Section 1 – Employees

The heart of any transportation service is its employees. Transit employees provide depth, value and a sense of pride in their work. Few transit professionals chose this industry initially, but once they understood the vital role they play in reducing isolation, improving health conditions, contributing to the local economy and investing in their community, its not hard to see why transit employees chose this as the profession.

Every transit employee will face challenges on a day to day basis, but if they are valued by their employer, they will be able to rise to the challenge and respond as a true transit professional. Employees must possess patience, confidence, empathy and respect to provide the services they provide. Even then, the rewards may be minimal, but many transit employees are not looking for praise, but instead appreciate knowing they had a positive impact on a passenger's life.

How do you find employees who are willing to accept the daily challenges of the transit industry?

1. Recruitment and Selection

Sometimes transit agencies struggle to locate individuals who have the qualities needed to for the transit industry. The recruitment process requires investment into the process of identifying candidates, delivering a positive image of the agency and position(s) to be filled, and most importantly, who the transit agency will value the employee.

Step 1. To start the recruitment process, the agency must first have an understanding of their employment needs. It's easy to simply fill an open position, but the agency must first evaluate if the open position is really necessary or could the vacancy be absorbed with the current staff. When starting the recruitment process the agency might want to answer the following questions:

- Does the vacancy present an opportunity for advancement for an existing employee?
- Does the agency anticipate an increase or decrease in service levels based on funding, ridership trends, or community demand?
- Does the vacancy allow the agency to make modifications to position requirements, description of duties or pay scale and if so, how will this affect others in a similar role?
 - Changes to requirements might include CDL vs non-CDL, shift assignments, experience in certain software programs, other job specific requirements.

The transit agency should seek input from others within the agency who supervise the position being sought, those still currently in the position, and review exit interviews to gain an understanding of why the former employee left. The information gained from this research can identify weaknesses in policy, processes, training, management support, opportunities for growth within the agency and current pay scale challenges.

In some cases, the agency may or may not be able to control the reasons for an employee seeking employment opportunities elsewhere, but for departures based on internal process failures, corrective actions are necessary before attempting to fill the position.

If the agency begins to notice a trend in some of the reasons an employee decides to leave, further investigation is needed to determine if changes can be made to mitigate the problem. Ideally, transit management should be aware of systemic issues before an employee quits.

Anytime an employee quits or retires, an exit interview should be conducted to determine if there are internal systemic issues influencing the employees decision to leave

How do we know if our employees are happy in the jobs?

There are several ways to determine employee satisfaction. Below are examples of methods used by employers to understand employee sentiment.

- Anonymous suggestion box
- Employee survey
- Management open door policy
- Employee training
- Agency meetings

If it is determined that the position does not require any modifications and recent departures were not tied to employee dissatisfaction, the recruitment process can continue.

Along with vacancy description, another potential deciding factor for candidates is pay scale. Agencies should be aware of hourly rates or salary ranges for similar positions within the community or region. A level of research is needed to determine if transit is competitive.

How many employees have left the transit agency citing pay as the reason?

Though public transit and human service agency transportation are not known for high pay, they may be known as a good place to work based on leadership, work environment, and benefits. Other factors that might be used to offset a restricted budget challenges may include:

- Late model vehicles (for operators and maintenance employees)
- Flexible shift selections
- Ability to work remotely
- Exposure to latest technology
- Conveniently located to...
- Mornings or evenings are available
- Access to fitness and nutrition programs
- Continued training
- Continuing education financial assistance
- Upward mobility within the agency
- Employee appreciation programs
- Signing bonuses

“At ABC Transit System we offer a safe and rewarding career while providing a vital service to the community”

Step 2.

To attract talented individuals who may be interested in the job but have little understanding of the position or the mission of the agency, the system needs to develop a marketing strategy. A marketing strategy can be as simple as modifying the “Job Opening” announcement to include a statement describing the reward of working at the agency, the way the agency values its employees with a few examples, and the impact the position has on the community.

Depending on the vacancy position, advertising within the organization or municipality should be considered prior to announcing to the public.

Samples of transit vacancy announcements (link)

“Do you want to be a valued part of a team of heroes making a difference in our community?”

Some elements to consider adding to the vacancy announcement might include the following:

- Provide safe, reliable, courteous, and efficient bus transportation service for residents and visitors in the ABC service area.

- Ensure a commitment to safety through consistent and professional behaviors in performance of job requirements that demonstrate safety is a fundamental value that guides all aspects of our work. Perform related duties as required.
- Serve as a good steward of ABC by regularly utilizing our transit system to maintain a strong and current understanding of customers' experiences and of ABC's product and service offerings.
- Be apart of a professional team working together to provide access to transit dependent community members to employment, healthcare, higher education, shopping and recreation.

The vacancy announcement is the mechanism to recruit candidates whose interest is peaked by the advertisement and want additional details. It is not meant to show the full description and it does not need to be excessive in length.

The announcement should provide a way to contact the transit agency either by phone or through electronic contact methods – website, text, social media etc... The agency needs to determine how the process will work and make sure it is efficient and accessible in many formats.

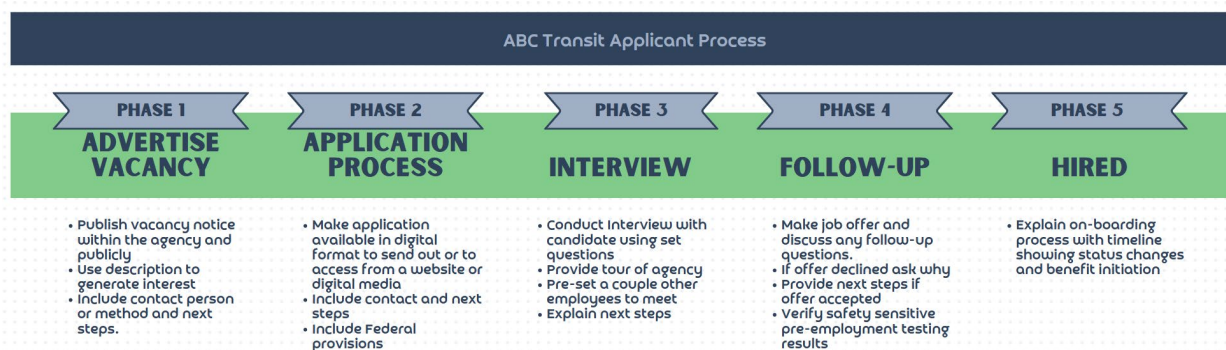
When posting the vacancy announcement, the following should be considered for maximum exposure:

- Local job fairs
- High School and Higher Education posting areas
- WV Employment Services
- County Fairs
- Web-based Employment Services



- Municipal Vacancy web sites
- On vehicle and facility advertising
- Transit Agency website
- Local retail bulletin boards

A process must be in-place to be used with each applicant in a consistent manner. The process will require coordination with multiple staff to ensure a seamless transition from step to step. Some agencies might be required to follow the municipal's process of hiring a new City or County employee. If so, the transit agency should be aware of the requirements for applicants, timeline of the hiring process and benefits of each type of position. The below sample shows a typical hiring process. Internally, agencies should have a timeline of each of the phases once an application is submitted.



Applications should be simple and easily accessible through an on-line platform. Requesting a candidate to come into the transit agency to complete an application or pick-up an application can still be an option, but online form completion has become a common way to submit applications and allows submissions to happen anytime. Ideally, online forms should be formatted to allow smart phone users to apply using their cell phone at any time. By increasing access to the application process and providing multiple platforms for the application, the agency is removing barriers to application completion and submission.

Applications must also include information pertaining to Equal Employment Opportunity (EEO)

A full EEO program is required of any recipient that both employs 100 or more transit-related employees (including temporary, full-time, or part-time employees) and 1) requests or receives in excess of \$1 million in capital and/or operating assistance in the previous Federal fiscal year, or 2) requests or receives in excess of \$250,000 in planning assistance in the previous Federal fiscal year. The program requirements detail what must be included, such as designation of personnel responsibilities, a workforce analysis (including an identification of areas of underutilization), goals, and timetables, an assessment of past employment practices, proposed remedies for problem areas, and a monitoring and reporting system. Program updates are required every four years. Formal communication mechanisms should be established to publicize and disseminate appropriate elements of the program, such as the EEO policy statement. The policy statement

should be posted, for example, on bulletin boards, near time clocks or in the employee's cafeteria. All civil rights programs must be uploaded to TrAMS.

Recipients that employ between 50-99 transit-related employees and 1) request or receive capital or operating assistance in excess of \$1 million in the previous Federal fiscal year, or 2) request or receive planning assistance in excess of \$250,000 in the previous Federal fiscal year must prepare and maintain an abbreviated EEO program. Recipients that must prepare an abbreviated program are not required to conduct a utilization analysis with goals and timetables or to submit the EEO program to FTA every four years. Instead, these programs are reviewed during FTA's oversight reviews.

No EEO program submission is required for recipients that fall below the transit-related employee or Federal assistance thresholds stated above.

See [FTA Circular 4704.1a Ch. 1.4](#)



All applications should be fully completed and include the applicant's signature and date signifying their understanding that false or misleading information may jeopardize the employment.

Interview Process

Once an applicant has expressed an interest in employment with the transit agency and completed an application an interview can be scheduled. The interview process itself should have a systematic process and include the following elements:

Prior to interview

- Scheduling the interview
- Securing the staff to be included in the interview
- If tour is to be included, notify impacted employees of a tour date/time
- Notify receptionist or security of interview date, time and applicant's name
- Coordinate with Operations or Maintenance if a vehicle or maintenance facility will be seen on tour. If so, it should be clean and easily accessible.
- Review application and resume' if submitted, prior to interview
- Be prepared to use the agencies standard interview document (used for all interviews)
- Prepare information packet for interview conclusion

Interview

- Introductions
- Questions and answers (standard form)
- Follow-up questions based on answers provided

- Description of agency
 - Agency mission, vision, objectives
 - History of agency
 - Basic statistics,
 - Importance to riders
 - Governing board
 - Community partnerships
 - Special events
 - Hours of Operation
 - Service area
 - Types of riders
 - Funding sources
 - Other descriptions
- Description of vacancy position
 - General description of the position matching the written job description
 - Safety sensitive position or not
 - Expected training to be received initially and refresher
 - Information on expected hours of work and location of work
 - Basic benefits and pay discussion
 - Discussion of cross training, position advancement, other opportunities
 - Discussion of continuous improvement, coaching and training
 - Discussion of atmosphere, co-worker support, open door policies
 - Discussion of position challenges and how agency prepares the candidate
- Questions from candidate
- Tour of facility
 - Introductions to pre-coordinated supervisors or other employees
 - Work area
 - Other facility or agency attractions (i.e. daycare, workout facility, employee lounge etc..)
- Next Steps and Interview Conclusion
 - Pre-employment Testing including drug screen
 - Job offer if wage not set standard
 - Additional information required – background check, license check, previous employer and previous drug/alcohol results check



Licensing

Each system may have varying requirements for frontline employees to include proper licensing or credentials. Transit agencies using Commercial Motor Vehicles, (CMV) as [defined by FMCSA](#), may require a Commercial Driver's License (CDL) issued by the State of WV to drive for the agency. In some cases, transit agencies may provide a grace period where the new employee will have a period of time to obtain their CDL.

CDL's include endorsements that specialize in a particular area. Below, are the endorsements available for West Virginia CDL holders. To obtain an endorsement, the operator will be required to participate in additional testing to qualify for the endorsement.

Class	Description
Class A	Any combination of vehicles with a GCWR of 26,001 or more pounds provided the GVWR of the vehicle being towed is in excess of 10,000 pounds.
Class B	Any single vehicle with a GVWR of 26,001 or more pounds, or any such vehicle towing a vehicle not in excess of 10,000 pounds.
Class C	Any single vehicle, or combination of vehicles, that do not meet the definition of Class A or Class B, but that either is: • Designated to transport 16 or more passengers including the driver; or • Placarded for hazardous materials.
Class D	A person whose primary function of employment is the transportation of people or property for compensation or wages and who does not meet the requirements for a Class A, B, or C license.
Class E	Represents a driver's license for automobiles and small trucks which are used for personal and private use (non-commercial).

Endorsements	
H	Hazardous Materials
N	Tank Vehicles
P	Passenger
S	School Bus
T	Double or Triple Trailers
X	Combination of H and N Endorsements

Restrictions	
E	No manual transmission-equipped commercial motor vehicle
K	Intrastate only
L	No air brake-equipped commercial motor vehicle
M	No Class A passenger vehicle
N	No Class A or Class B passenger vehicle
O	No tractor-trailer commercial motor vehicle
V	Medical variance
Z	No full air brake-equipped commercial motor vehicle

Most transit agencies operating CMV's require a Class A, B or C license with a "P" Passenger Endorsement. Agencies with smaller size vehicles might only require a standard license with not endorsement.

CDL holders must follow regulatory guidance from Federal Motor Carrier Safety Administration, FMCSA, but not all unless they are operating across state lines.

The following requirements are specific to transit operators with CDL licenses:

West Virginia has adopted Part 391 of the Federal Motor Carrier Safety Regulations (FMCSRs), as in effect on January 13, 2022, with some modifications.

Part 391 applies to any self-propelled or towed motor vehicle used on a highway in intrastate and interstate commerce when the vehicle has a gross vehicle weight rating, gross combination weight rating, gross vehicle weight, or gross combination weight of 10,001 pounds or more, or is of any size transporting a placardable amount of hazardous materials.

Age	18-years old
Drivers Qualification (DQ File)	Same as federal
Driving Records	Complete form DMV-101-PS1 and DMV-101-PS2. The forms are available via the Department of Motor Vehicles website: http://www.transportation.wv.gov/DMV/Drivers/Pages/Driving-Record.aspx . The fee: • \$7.50 per request • \$8.50 if the request does not include the driver's license number
Physical Exam - Motor Carrier	Physical exam and certificate required

Insert Medical Exam Link here

Checking driving records

Information required — Name, date of birth, Social Security number, and drivers license number. The company's name, address and signature.

Each request form submitted must include a copy of the requestor's state-issued driver's license or state-issued identification card.

Format — Please complete form DMV-101-PS1. The form may be photocopied. Form DMV-101-PS1 is available via the Internet: <http://www.transportation.wv.gov/DMV/Drivers/Pages/Driving-Record.aspx>.

Fee — \$7.50 per request. Fee must accompany request and be payable to the Division of Motor Vehicles.

See [Regulatory Agencies](#) for Driving Record contact information.

Reading driving records

Driving record reports issued by the state of West Virginia indicate violations in written out form without the use of code.

Insert New Training Requirements Here

Section 1 - Addendums

2. Section Summary and Resources

a. Compliance Requirements

- i. Statewide Medicaid Contractual obligations (obtain contract sample)
- ii. [FTA Circular 4704.1A](#) Attachment 4 EEO
- iii. WV 5311 Compliance – Personnel p. 35 Chart
- iv. FTA 49 CFR Part 655
- v. FTA 49 CFR Part 40
- vi. FMCSA 49 CFR Part 391
- vii. Drug Free Workplace Act 49 CFR 32
- viii. Annual Requirements
- ix. Document Retention

b. Sample Documents

- i. Employee evaluation forms
- ii. Employee Incentive Program
- iii. Job announcements
- iv. Job descriptions
- v. Interview checklists – questions
- vi. Employee Training Checklist and Certification (Excel)

c. Best Practices

- i. Recruitment campaigns
- ii. Capitalizing on community events
- iii. Hire for personality and train to do job
- iv. Questions to ask former employers

d. Resources

- i. JJ Keller
- ii. NRTAP
- iii. CTAA
- iv. Existing training programs on hiring – CTAA, RLS, NRTAP
- v. Job Hiring sites – Monster, Linkdin, Facebook, Nextdoor, Indeed, Glassdoor, WV Department of Labor

Section 2: Safety Elements for Transit

Introduction

Many public transit services are developed based on community needs to safely transport residents to healthcare, employment, education, social services and shopping. Though service performance is seen as a characteristic that heavily impacts a community's opinion of transit, safety can have a greater impact if not managed properly.

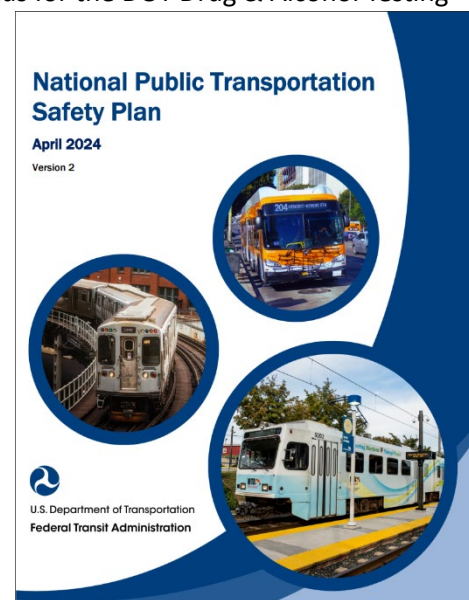
Passengers assume safety is the number one priority for transit systems, but this is not always the case. Many systems are challenged with balancing service performance with safety and accessibility while also managing strong customer service focused service.

In Section 2 of the VANTAGE Safety Program we will explore the importance of safety in transit operations, planning, management and finance. You will gain an understanding of current Federal compliance and the benefits of proactive safety management. It's important to your employees to equip them with the proper tools, training and policy to keep them safe while at work, but also keep passengers safe.

Background

Prior to the passage of 2013 Moving Ahead for Progress in the 21st Century Act (MAP-21), the Federal Transit Administration (FTA) provided little oversight of safety of its grant recipients, sub-recipients and public transit systems. That responsibility was left to other federal agencies like the Federal Railroad Administration (FRA), Federal Motor Carrier Safety Administration (FMCSA), Occupational Safety and Health Administration (OSHA) and others. Due to a few high profile public transit safety events resulting in catastrophic losses beginning in the late 1990's, the U.S. Congress demanded more oversight of federally funded transit systems. Similar actions were the impetus for the DOT Drug & Alcohol Testing requirements introduced in 1994.

With the passage of MAP-21, FTA began building the structure for safety compliance by modeling the structure after the airline industry. The program, Safety Management Systems or SMS, was structured to improve accountability, manage risk, monitor risk and promote safety and security in training programs. The SMS concept for transit was introduced through the published regulation [49 CFR Part 673](#) Public Transportation Agency Safety Plan or PTASP. The PTASP requirement serves as the safety risk reduction program with performance measure criteria to support the [National Public Transportation Safety Plan](#) (NPTSP) and its minimum safety standards and recommended practices to support mitigation of safety risk and improve safety performance.



The NPTSP or National Safety Plan was originally published in 2017 and was updated with the passage of the Bipartisan Infrastructure Law in 2022 and subsequent updates in 2024.

As part of the MAP 21 requirements to empower FTA oversight, a State Safety Oversight (SSO) program was developed and is administered by eligible states with rail transit systems in their jurisdiction. FTA provides federal funds through the SSO Formula Grant Program for eligible states to develop or carry out their SSO programs. Under 49 U.S.C. Section 5329(e), FTA is required to certify each state's program to ensure compliance with MAP-21.

The SSO regulations [49 CFR Part 674](#) have been updated several times since passage of MAP-21 with the latest update in November of 2024. This final rule implements new requirements of the Bipartisan Infrastructure Law (enacted as the Infrastructure Investment and Jobs Act (IIJA)), removes outdated references, and simplifies notification requirements. For more information about the SSO requirements contact the below state SSO.

West Virginia Department of Transportation

Timothy S. Walker

Division of Multimodal Transportation Facilities - Public Transit Division

Phone: (304) 414-8976

Email: timothy.s.walker@wv.gov

Website: <http://www.transportation.wv.gov/Pages/default.aspx>

Public Transportation Agency Safety Plan (PTASP)

As mentioned earlier this risk reduction strategy requires all FTA funded systems operating in areas greater than 50,000 population to comply with the requirements as either a small urban provider (50,000-200,000 population) or large urban provider with a population greater than 200,000. Rural and human service agency providers receiving FTA 5311 or 5310 funds are not required to comply with the PTASP requirement but are encouraged to adopt SMS strategies to reduce risk. If a rural or human service agency is operating as a subrecipient to an urbanized system for service in an urbanized area the PTASP is required.

FTA has developed a robust technical assistance program to support subrecipients design, implement and update their PTASP also referred to as an Agency Safety Plan (ASP). The following web site is full of templates, fact sheets, oversight tools and general information.



The ASP is meant to apply resources and accountability to mitigate risk to transit employees and its passengers using an SMS structured approach.

The purpose of the National Safety Plan is to improve the safety of all public transportation systems that receive funding under 49 U.S.C. Chapter 53. FTA uses the National Safety Plan to guide the national effort to manage safety risk in our Nation's public transportation systems. This update continues to mature FTA's national safety program and addresses new requirements in the Bipartisan Infrastructure Law, enacted as the Infrastructure Investment and Jobs Act, to further advance transit safety.

Transit should be safe for the passengers using the system, the workers operating the system, and the pedestrians, bicyclists, and all other persons who interact with the system.

FTA has adopted the principles and methods of Safety Management Systems (SMS) as the basis for enhancing the safety of public transportation in the United States. FTA follows the principles and methods of SMS in its development and revision of this plan, regulations, policies, guidance, best practices, and technical assistance administered under the authority of 49 U.S.C. § 5329. SMS is a formal, organization-wide approach to managing safety risk and assuring the effectiveness of a transit agency's safety risk mitigation. SMS includes systematic procedures, practices, and policies for managing hazards and safety risk. FTA will continue to support the transit industry's implementation of SMS and will continue to use SMS to strengthen its own safety management processes.

The Public Transportation Agency Safety Plans (PTASP) regulation ([49 CFR Part 673](#)) requires operators of public transportation systems that receive federal funds under the FTA [Urbanized Area Formula Grants \(Section 5307\)](#), and rail transit agencies subject to the FTA [State Safety Oversight \(SSO\)](#) program, to develop an Agency Safety Plan (ASP) that includes the processes and procedures to implement a Safety Management System (SMS). SMS is a comprehensive, collaborative, and systematic approach to managing safety.

SMS Framework Components

Safety Management Policy	Safety Risk Management	Safety Assurance	Safety Promotion
• AE Statement • Goals • Objectives • Employee Safety Reporting Program	• Hazard Identification • Safety Risk Assessment • Safety Risk Mitigation	• Monitor • Analysis • Assessment	• Competencies and Training • Safety Communication

The Federal Transit Administration's (FTA) Public Transportation Agency Safety Plan (PTASP) regulation (49 CFR Part 673) establishes requirements for Agency Safety Plans (ASP), including the requirements for review, approval, and certification.

The first step in the ASP review and approval process is to obtain the Accountable Executive's signature and approval of the ASP by the transit agency's Board of Directors or an equivalent authority (§

673.11(a)(1)). The Accountable Executive is ultimately responsible for carrying out the ASP and the Transit Asset Management Plan (§ 673.5 and § 673.23(d)(1)). The Board of Directors' or Equivalent Authority's approval of the ASP affirms that the ASP complies with the PTASP regulation and will effectively guide the transit agency with the management of safety risk.

Authorities, Accountabilities, and Responsibilities

Recipients must define and establish the following for the development and management of the transit agency's SMS:

- Authorities: what individuals are authorized to do
- Accountabilities: what individuals are accountable for, which cannot be delegated
- Responsibilities: what individuals must oversee the accomplishment of or do

Recipients may opt to include safety management authorities, accountabilities, and responsibilities in job or position descriptions. Required positions under Part 673 include the Accountable Executive, Chief Safety Officer or SMS Executive, agency leadership and executive management, and key staff. It is important to clearly communicate this information to avoid confusion or misunderstanding, especially when implementing new processes and activities. In addition to the roles identified in Part 673, an agency could consider engaging all employees and other stakeholders, such as the union. Broad engagement would support agency-wide buy-in on the ASP and efforts to prevent operator assault and other safety issues.

Accountable Executive means a single, identifiable person who has ultimate responsibility for carrying out the Public Transportation Agency Safety Plan of a transit agency; responsibility for carrying out the transit agency's Transit Asset Management Plan; and control or direction over the human and capital resources needed to develop and maintain both the transit agency's Public Transportation Agency Safety Plan, in accordance with [49 U.S.C. 5329\(d\)](#), and the transit agency's Transit Asset Management Plan in accordance with [49 U.S.C. 5326](#).

Chief Safety Officer means an adequately trained individual who has responsibility for safety and reports directly to a transit agency's chief executive officer, general manager, president, or equivalent officer. A Chief Safety Officer may not serve in other operational or maintenance capacities, unless the Chief Safety Officer is employed by a transit agency that is a small public transportation provider as defined in this part, or a public transportation provider that does not operate a rail fixed guideway public transportation system.

Equivalent entity means an entity that carries out duties similar to that of a Board of Directors, for a recipient or subrecipient of FTA funds under [49 U.S.C. chapter 53](#), including sufficient authority to review and approve a recipient or subrecipient's Public Transportation Agency Safety Plan.

Safety Management System (SMS) Executive means a Chief Safety Officer or an equivalent.

Safety Committee means the formal joint labor-management committee on issues related to safety that is required by 49 U.S.C. 5329.

For small public transportation providers, the State is responsible for drafting the ASP under its jurisdiction unless the provider voluntarily opts out of the State's ASP (§ 673.11(d)). In all cases, the

provider's Accountable Executive must sign the ASP and the provider's Board of Directors or Equivalent Authority must approve the ASP.

When determining SMS authorities, accountabilities, and responsibilities for Agency Leadership and Key Staff positions, consider reviewing PTASP requirements for each component of SMS and asking the following questions:

- How does the position issue approvals, maintain records, analyze and share data and information, develop procedures, and determine actions for SMS?
- How does the position assist or contribute to the operation and implementation of the agency's SMS, including safety risk management and safety assurance activities?
- How does the position allocate resources to support SMS objectives?
- How does the position support safety communication throughout the agency?

Safety Committee

The Bipartisan Infrastructure Law (BIL) resulted in significant changes to 49 CFR Part 673. With an increased emphasis on transit worker and pedestrian safety, FTA's Risk Reduction Program requires each large urban system establish a Safety Committee that is appropriately scaled to the size, scope, and complexity of the transit agency. (§ 673.19) The Safety Committee must include the following elements:

- Convened by a joint labor-management process
- Consist of an equal number of frontline worker representatives and management representatives
- To extent possible, committee includes frontline transit worker representatives from major transit service functions across the transit system, such as operations and maintenance.
- The labor organization that represents the plurality of the transit agency's frontline transit workers (includes employees, contractors, or volunteers working on behalf of the transit agency) selected frontline transit worker representatives for the Safety Committee.
- If a labor organization does not represent the transit agency's frontline transit workers: The mechanism the transit agency adopted for frontline transit workers to select frontline transit worker representatives for the Safety Committee.
- The organizational structure, size, and composition of the Safety Committee and how it will be chaired.
- How Safety Committee meeting agendas and notices will be developed and shared, and how meeting minutes will be recorded and maintained.
- Any required training for Safety Committee members related to the ASP and the processes, activities, and tools used to support the transit agency's SMS.
- The compensation policy established by the agency for participation in Safety Committee meetings.
- How the Safety Committee will access technical experts, including other transit workers, to serve in an advisory capacity, as needed, to support its deliberations.
- How the Safety Committee will access transit agency information, resources, and tools to support its deliberations.
- How the Safety Committee will access submissions to the transit worker safety reporting program to support its deliberations.

- How the Safety Committee will reach and record decisions.
- How the Safety Committee will coordinate and communicate with the transit agency's Board of Directors, or equivalent entity, and the Accountable Executive.
- How the Safety Committee will manage disputes to ensure it carries out its operations.
- How the Safety Committee will carry out its responsibilities.

The role of the Safety Committee is to be apart of the ASP review process, set annual safety performance targets to support the safety risk reduction program by:

- Identifying and recommending safety risk mitigations necessary to reduce the likelihood and severity of potential consequences identified through the transit agency's safety risk assessment, including safety risk mitigations associated with any instance where the transit agency did not meet an annual safety performance target in the safety risk reduction program.
- Identifying safety risk mitigations that may be ineffective, inappropriate, or were not implemented as intended, including safety risk mitigations associated with any instance where the transit agency did not meet an annual safety performance target in the safety risk reduction program.
- Identifying safety deficiencies for purposes of continuous improvement, including any instance where the transit agency did not meet an annual safety performance target in the safety risk reduction program.
- When the Safety Committee recommends a safety risk mitigation unrelated to the safety risk reduction program and the Accountable Executive decides not to implement the safety risk mitigation, the Accountable Executive prepares a written statement explaining their decision and submits and presents it to the transit agency's Safety Committee and Board of Directors or equivalent entity.
- When identifying safety risk mitigations for the safety risk reduction program related to vehicular and pedestrian safety events involving transit vehicles, including to address a missed safety performance target set by the Safety Committee for the safety risk reduction program, the transit agency and its Safety Committee consider mitigations to reduce visibility impairments for transit vehicle operators that contribute to accidents, including retrofits to vehicles in revenue service and specifications for future procurements that reduce visibility impairments.

Process and Timeline

Next, transit agencies must establish a process and a timeline for conducting an annual ASP review and update (§ 673.11 (a)(5)). Transit agencies could consider the following three questions when reviewing their ASP to determine whether the contents require revisions:

- Does our ASP address all relevant requirements in the PTASP regulation?
- Does our ASP reflect our organization and transit system as it operates today?
- Are the activities and processes described in our ASP suitable to manage safety at our transit agency?

To meet PTASP certification requirements, applicable States and transit agencies must certify compliance with the PTASP regulation on or before July 20, 2020. Both States and transit agencies must complete this certification annually as part of the certifications and assurances process. In the future, agencies applying for Section 5307 funding and rail transit agencies subject to the State Safety Oversight Program must certify their compliance with PTASP requirements to be eligible for FTA grant assistance.

Prior to approval by the transit system's governing authority, frontline representatives of small urban systems or a large urban system's Safety Committee must review the ASP to identify areas of concern or updates.

2.a.1: Safety Management Policy

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 Management Policy (SMP) 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 Management Policy SMP is the foundation of an agency's SMS—it includes information relevant to developing and carrying out the other SMS elements, and focuses on safety management policy, not all transit agency safety policies. Part 673 requires the following four SMP elements:

Safety Management Policy

- AE Statement
- Goals
- Objectives
- Employee Safety Reporting Program

- Written statement with safety objectives
- Employee safety reporting program
- Communication of the SMP throughout the agency
- Establishment of authorities, accountabilities, and responsibilities

Written Statement The written statement must include safety objectives, which can be useful for recipients to drive safety improvements and priorities. Part 673 does not establish specific requirements for objectives; however, recipients may choose to develop objectives based on the following:

- Leadership goals and priorities
- Concerns or targeted areas for improvement
- Strategic and long-term goals
- Local, regional, or state priorities

Recipients may consider relevant audiences, key takeaways, and anticipated communication approaches to clearly convey organizational accountabilities and responsibilities. Recipients may engage senior management in developing the statement to help reinforce leadership commitment to SMS. Employee

Safety Reporting Program Recipients must establish and implement a process that allows all employees and contractors to report safety conditions that could include hazards, potential consequences, or any other information relevant to safety. The safety reporting program is an important source of safety information and is intended to help the Accountable Executive and other senior managers receive this information from across the transit agency.

Safety Management Policy Communication

Recipients must demonstrate the SMP is communicated throughout the organization (e.g., via documentation and recordkeeping). Part 673 does not specify specific communication channels or methods, so recipients can identify the best approaches and formats (e.g., posters, videos, email, or training) for communicating different aspects of the. To ensure that SMP communications set realistic expectations, consider whether the transit agency is able to consistently deliver the outcomes as promised.

When establishing and implementing SMS—including SMP elements—recipients will generate ASP documentation which must be maintained for a minimum of three years. Recipients must provide these documents to FTA, other Federal entities, or State Safety Oversight Agencies upon request.

Employee Involvement

Transit systems serving populations less than 200,000 population must involve representatives of frontline workers in the annual review process in an effort to identify strategies or processes that may not be effective or need updating. This process should happen prior to BOD approval of each update.

Safety Performance Targets

The PTASP regulation requires each transit agency subject to the regulation to include safety performance targets (SPTs) based on the safety performance measures established in the National Safety Plan in their Agency Safety Plan ([§ 673.11\(a\)\(3\)](#)). Transit agencies use SPTs to monitor and assess the safety performance of their public transit systems.

On April 10, 2024, FTA published an update to the National Safety Plan to address requirements in the Bipartisan Infrastructure Law, enacted as the Infrastructure Investment and Jobs Act (Public Law 117-58). The updated National Safety Plan establishes performance measures for ASPs to improve the safety of public transportation systems that receive Federal financial assistance from FTA.

Each transit agency subject to the PTASP regulation must revise its ASP to address the new safety performance measures defined by the National Safety Plan, including documenting required SPTs, during the next annual review and update cycle identified in its ASP. State Safety Oversight agencies may establish additional requirements for rail transit agencies under their jurisdiction.

FTA's National Safety Plan establishes safety performance measures that can be applied to all modes of public transit under FTA's safety jurisdiction. The National Safety Plan identifies 14 safety performance measures for all agencies subject to the PTASP regulation. There are two kinds of safety performance measures established in the National Safety Plan: total number measures, or measures of the total number of instances (for example, total number of major events, total number of collisions, etc.), and rate measures, or measures of the rate of instances.

Safety Performance Measures for All Agencies Subject to PTASP Regulation ²		
1	Measure 1a:	Major Events
2	Measure 1b:	Major Event Rate
3	Measure 1.1:	Collision Rate (new)
4	Measure 1.1.1:	Pedestrian Collision Rate (new)
5	Measure 1.1.2:	Vehicular Collision Rate (new)
6	Measure 2a:	Fatalities
7	Measure 2b:	Fatality Rate
8	Measure 2.1:	Transit Worker Fatality Rate (new)
9	Measure 3a:	Injuries
10	Measure 3b:	Injury Rate
11	Measure 3.1:	Transit Worker Injury Rate (new)
12	Measure 4a:	Assaults on Transit Workers (new)
13	Measure 4b:	Rate of Assaults on Transit Workers (new)
14	Measure 5:	System Reliability

Safety Performance Measures for Safety Risk Reduction Programs

The Bipartisan Infrastructure Law requires large urbanized area (UZA) providers (recipients or subrecipients of financial assistance under 49 U.S.C. 5307 (Section 5307) that serve an urban area with a population of 200,000 or more as determined by the most recent decennial Census) to include a safety risk reduction program in their ASPs. In the National Safety Plan, FTA identified eight safety performance measures that the Safety Committee of applicable transit agencies will use to set targets for the safety risk reduction program.

Some of the performance measures for the safety risk reduction program overlap with the measures for all agencies subject to the PTASP regulation (described above). Large UZA providers may opt to use the same safety performance target set by the Safety Committee for the safety risk reduction program to satisfy the general safety performance target requirement for overlapping measures. Note that the target for the safety risk reduction program must be based on a three-year rolling average of the data the agency submits to the NTD.

The safety risk reduction program safety performance targets must reflect an annual reduction in the associated safety performance measure. To reflect an annual reduction, the SPT must be set below the three-year rolling average.

These safety risk reduction programs aim to improve safety performance by reducing the number and rates of accidents, injuries, and assaults on transit workers, including:

- a reduction of vehicular and pedestrian accidents involving buses that includes measures to reduce visibility impairments for bus operators that contribute to accidents, including retrofits to buses in revenue service and specifications for future procurements that reduce visibility impairments; and
- the mitigation of assaults on transit workers, including the deployment of assault mitigation infrastructure and technology on buses, including barriers to restrict the unwanted entry of individuals and objects into the workstations of bus operators when a risk analysis performed by the transit agency's Safety Committee determines that such barriers or other measures would reduce assaults on transit workers and injuries to transit workers.

Safety Committees have flexibility regarding the amount of annual reduction defined by their targets, as long as the methodology uses a three-year rolling average of data reported to the NTD and the targets reflect an annual reduction. For example, a Safety Committee may decide to set a target that is a 5 percent reduction from the previous three-year rolling average. Alternatively, a Safety Committee may set a target representing an annual reduction of 10 injuries from the previous three-year rolling average.

FTA has not established a required methodology for setting SPTs for the 14 safety performance measures for all agencies subject to the PTASP regulation. Except for safety risk reduction program measures, agencies can set SPTs for safety performance measures using their own selected target-setting methods.

Safety Risk Reduction Program Safety Performance Measures	
1	Major Events
2	Major Event Rate
3	Collisions
4	Collision Rate
5	Injuries
6	Injury Rate
7	Assaults on Transit Workers
8	Rate of Assaults on Transit Workers

This section primarily applies to the 14 safety performance measures for all agencies subject to the PTASP regulation.

Safety Performance Targets for All Agencies Subject to the PTASP Regulation

The PTASP regulation requires all applicable transit agencies to set safety performance targets based on the safety performance measures established in the National Safety Plan. In this context, the measure defines the data point that an agency will “watch” to monitor safety performance. The target defines the desired level of safety performance over a specified timeframe (e.g., annually). Rates are calculated using VRM, as defined by and reported to the NTD.

In general, a transit agency sets annual safety performance targets that represent its safety performance goals for the coming year. Transit agencies may define their own methodology for setting targets. For example, in its efforts to improve safety an agency may want to improve its own current safety performance or set performance targets based on peer agency benchmarking. Please note that transit agencies that serve a large UZA are subject to additional target setting requirements as part of the safety risk reduction program, as defined in 49 U.S.C. § 5329.

Safety Management Policy Statement

In the preamble to Part 673, FTA describes the Policy Statement as a written document that clearly states the organization’s safety objectives and sets forth the policies, procedures, and organizational structures necessary to accomplish the safety objectives. In addition, the document clearly delineates management and employee responsibilities for safety throughout the organization. The Policy Statement can help ensure management is actively engaged in the oversight of the organization’s safety performance because the Agency Safety Plan, as a whole, must be reviewed and signed annually by the designated Accountable Executive. § 673.23

Agencies may choose to develop safety objectives based on the following:

- Leadership goals and priorities,
- Targeted areas for improvement,
- Strategic and long-term goals, and/or
- Local, regional, or State concerns.

Most agencies have already developed and implemented safety objectives that can serve as a starting point for the Policy Statement. Before including existing safety objectives in the Policy Statement, your agency may find it helpful to ensure the objectives reflect current operating realities and fit into the agency’s safety management approach.

Safety objectives may be broadly worded, for example “to ensure employee and passenger safety,” “to continually improve safety performance,” or “to implement an effective SMS.” They can also be more specific, for example “reduce slips and falls on escalators in our system,” “improve mobility device securement on fixed-route buses,” or “decrease employee injuries on duty.”

Additional examples of safety objectives include:

- [Agency Name] aims to support a robust safety culture. We will conduct an annual safety culture survey of our employees and share results throughout our organization, working with our employees to develop and track initiatives that support continuous improvement.
- We will support [city name]’s Vision Zero strategy by reducing the number of safety events caused by excessive speeds of our transit vehicles.
- For our first annual Agency Safety Plan, we will reduce safety events overall, as specified in our safety performance targets.
- We are committed to improving our preventative maintenance practices and reducing our annual number of maintenance road calls.
- We plan to double the current level of coaching provided to our operators, enhancing their skills, and making them the safest drivers on the road.

The Policy Statement provides an opportunity to explicitly commit the transit agency and its leadership and executive management to the SMS. In carrying out this function, the Policy Statement may, for example:

- Make a clear statement of commitment to SMS,
- Commit executive management to ensuring availability of necessary resources and people to implement the SMS effectively, and/or
- Commit executive management to leading the development of a strong safety culture.

Here are a few examples of how transit agencies may express commitment to SMS in the Policy Statement:

- [Agency Name] will maintain a Safety Management System appropriately scaled to the size, scope, and complexity of the agency.
- The management team at [Agency Name] will embrace the Safety Management System and is committed to developing, implementing, maintaining, and constantly improving processes to ensure the safety of our employees, customers and the general public.
- Safety is a core value of [Agency Name]. [Agency Name] will use safety management processes to direct the prioritization of safety and allocate our organizational resources—people, processes, and technology—in balance with our other core business functions.
- [Agency Name] commits to implementing a Safety Management System to support the management of safety through the provision of appropriate resources and the encouragement of an organizational culture that fosters safe practices, and enables effective employee safety reporting and communication.

The Policy Statement may describe at a high level, or reference, the safety management authorities, accountabilities, and responsibilities required as part of Safety Management Policy at § 673.23. The Policy Statement may commit the transit agency to defining accountabilities and responsibilities, and to holding individuals at all levels accountable for delivery of safety performance and the performance of the SMS. For example, the Policy Statement may clarify that:

- Safety management authorities, accountabilities, and responsibilities will be defined;
- Safety management roles and responsibilities will be different for different job functions; and/or
- Everyone, including agency leadership and executive management, will be held accountable for carrying out their individual responsibilities regarding safety performance and performance of the SMS.

Here are a few examples of how transit agencies may choose to address safety management authorities, accountabilities, and responsibilities at a high level in the Policy Statement:

- Executive management will lead the development of an organizational culture that promotes safe operations and provides appropriate resources to supporting this core management function by fostering and ensuring safe practices, improving safety when needed, and encouraging effective employee safety reporting and communication. [Agency Name] will hold executives, managers, and employees accountable for safety performance. Ultimate responsibility for safety rests with me as the Accountable Executive. Responsibility for making our operations safer for everyone lies with each one of us— from executive management to frontline employees. Each manager is responsible for implementing the Safety Management System in their area of responsibility and will be held accountable to ensure that all reasonable steps are taken to perform activities established as part of the SMS.
- All levels of management are responsible for ensuring the performance of [Agency Name]'s Safety Management System. Managers must take an active role in the Safety Risk Management process and ensure that Safety Assurance functions are adequately supported. Managers also are responsible for ensuring that Safety Risk Management is being performed in their operational areas of control so that safety risk associated with safety hazards is assessed and mitigated. As of July 1, 2020, safety performance targets will be an important part of performance evaluations for [Agency Name] managers and employees. All employees and contractors will support safety management by ensuring that safety concerns are identified and reported.
- All levels of management and all employees are accountable for the delivery of the highest level of safety performance, starting with the Accountable Executive. [Agency Name] will integrate the management of safety among the primary responsibilities of all managers and employees, as defined in all [Agency Name] job descriptions.

Safety Performance Objectives and Targets

Within the context of the Agency Safety Plan, an organization's safety objectives will be articulated through the setting of performance targets based on, at a minimum, the safety performance measures established in the National Public Transportation Safety Plan. These performance measures may be referenced or included in the Policy Statement to illustrate how your agency will assess its overall safety performance.

Since safety objectives may address your agency's most significant safety priorities, you may choose to include one or more high-level safety performance measures (or indicators), and safety performance targets, for each safety objective in the Policy Statement. While not required, including measures and targets in the Policy Statement can make your safety objectives more easily understood, and perhaps, more meaningful to agency personnel.

By providing safety performance targets that reflect your agency's safety objectives, the Policy Statement can clearly define the expectations of agency leadership and executive management regarding the agency's safety performance. These safety performance targets may be the same or different than the targets required under §673.11(a)(3).

By including safety performance targets, the Policy Statement can:

- Explain that safety must be actively managed with attention to results;
- Emphasize the importance of realistic, data-driven safety performance targets;
- Emphasize the importance of safety performance monitoring and measurement; and/or
- Commit the agency to take action to ensure continuous improvement of its SMS.

The Policy Statement could address the agency's Transit Worker Safety Reporting Program. This may be particularly useful if the Policy Statement is the primary method for informing agency personnel about the agency's SMS. For example, the Policy Statement could clarify:

- That the agency will establish and support the program, and make necessary changes to encourage safety reporting; and/or
- How employees will be expected to use the reporting program.

The reporting program should allow employees to report safety conditions to senior management without fear of reprisal from supervisors or other agency personnel. An effective program can put safety critical information in the hands of the individuals who can assign responsibilities and resources to resolve safety concerns before they become safety events.

Here are a few examples of how transit agencies may choose to document employee safety reporting in the Policy Statement:

- Executive management will establish a safety reporting program as a viable tool for employees to voice their safety concerns. No disciplinary action will be taken against any employee who communicates a safety concern through the [Agency Name] safety reporting program unless such disclosure indicates the following: an illegal act, gross misconduct and/or negligence, or a deliberate or willful disregard of [Agency Name] rules, policies, and procedures.
- [Agency Name] commits to providing appropriate management involvement and the necessary resources to establish an effective reporting system that will encourage employees to communicate and report any unsafe work conditions, hazards, or at-risk behavior to the management team. [Agency Name] will ensure that no action will be taken against employees who disclose safety concerns through the reporting system, unless disclosure indicates an illegal act, gross negligence, or deliberate or willful disregard of regulations or procedures.
- [Agency Name] will establish and operate an employee safety reporting program as a fundamental source for safety concerns and hazard identification; and ensure that no action will be taken against any employee who discloses a safety concern through the employee safety reporting program, unless disclosure indicates, beyond any reasonable doubt, an illegal act, gross negligence, or a deliberate or willful disregard of regulations or procedures.

Transit Worker Safety Reporting Program (TWSRP)

The Public Transportation Agency Safety Plan (PTASP) regulation under 49 CFR Part 673 requires transit agencies to have an Employee Safety Reporting Program (ESRP) also known as (TWSRP):

A transit agency must establish and implement a process that allows employees to report safety conditions to senior management, protections for employees who report safety conditions to senior management, and a description of employee behaviors that may result in disciplinary action (§ 673.23(b)).

An ESRP supports the Safety Risk Management (SRM) and Safety Assurance (SA) components of a transit agency's SMS by collecting data that

- Uncovers anticipated safety hazards (SRM),
- Confirms the implementation and effectiveness of mitigations (SA), and
- Alerts a transit agency to safety concerns experienced by personnel (SRM and SA).

An ESRP collects data from agency workers on safety concerns throughout the agency that may otherwise go unreported. Compared to information gathered through other methods, ESRP data is often timelier (reported immediately), diverse (reported by employees with different experiences and backgrounds), and comprehensive (multiple reports over time can reveal trends).

The type of ESRP an agency implements will depend on the agency's need, size, and scope. An ESRP can collect both **incident-based** reports on events that have happened and **risk-based** reports on concerns that could lead to an event.

Incident-based reporting is **reactive**. It allows an agency to gather information on events that have already occurred and supports SA in mitigating further occurrences. This is particularly helpful to capture events that would not otherwise be reported, such as trips or slips and falls without injury or equipment malfunction or failure without property damage.

Risk-based reporting is a **proactive** approach to safety management and provides data that assists the agency in identifying and mitigating safety risk before an event occurs. Risk-based reports include close-calls, near-misses, and observed safety concerns.

An effective ESRP provides data from risk-based reports to support the SRM process and identify safety concerns and mitigate safety risk before an event occurs. The following ESRP report examples give information that the agency can proactively act on before a safety event occurs:

- A mechanic reports the tire vendor has piled tires up in front of the eye wash station preventing access to the safety equipment if needed.
- A van driver reports the dispatcher continues to send out a vehicle in unsatisfactory condition because no spares are available.
- A bus operator reports that illegally parked vehicles associated with a construction project are blocking the operator's field of vision at a busy intersection.

These reported safety concerns give the agency timely information for Safety Risk Assessment, enabling the agency to implement targeted mitigations based on these reports.

Sample ESRP Policy

All hazards reported through the Employee Safety Reporting Program go straight to the CSO for review, assessment, investigation, mitigation and follow-up. If the hazard directly impacts the working relationship between two or more employees, the CSO will ensure no retaliation or hostile work environment will take place. Transit Agency will ensure that no action will be taken against any employee who discloses a safety concern through the respective Employee Safety Reporting Program unless the employee engaged in the following:

- ◆ Willful participation in illegal activity, such as assault or theft;
- ◆ Gross negligence, such as knowingly utilizing heavy equipment for purposes other than intended such that people or property are put at risk; or

Deliberate or willful disregard of regulations or procedures, such as reporting to work under the influence of controlled substances.

Examples of information typically reported include:

- ◆ Safety concerns in the operating environment (for example, county or town road conditions or the condition of facilities or vehicles);
- ◆ Policies and procedures that are not working as intended (for example, insufficient time to complete pre-trip inspection);
- ◆ Events that senior managers might not otherwise know about (for example, near misses, employee harassment); and
- ◆ Information about why a safety event occurred (for example, radio communication challenges).

Part 2.a.2: Safety Risk Management

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
• Hazard Identification • Safety Risk Assessment • Safety 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.

Under Part 673, SRM is the core process of each transit agency's Safety Management System (SMS). SRM determines and classifies systemwide safety risk to develop appropriate risk mitigation strategies. SRM ensures:

- Hazards and other safety issues are identified and documented, and the associated safety risk is prioritized, mitigated, monitored, and controlled.

- Safety risk is determined, assessed, and classified, and unacceptable safety risk is mitigated.
- The effectiveness of risk mitigation strategies is monitored and assessed, and the Accountable Executive ensures the overall performance of the SMS and SRM.
- There is continuous progress toward improving safety.

SRM also ensures that when safety risk is accepted, as a prerogative of the Accountable Executive, the decision is coordinated with the affected personnel and stakeholders, and then documented so that, in the future, everyone will understand the decision and why it was made.

SRM assumes systems are changing and, therefore, focuses on the routine, ongoing capture and analysis of safety information to assess the safety risk of potential consequences of hazards—both foreseen and unforeseen during system planning. Based on an assessment of safety risk, SRM supports decision-making regarding priorities in allocating safety resources.

SRM applies to all elements of the public transportation system, including employees and contractors, infrastructure, vehicles and equipment, revenue and non-revenue service activities, and may also include others who come into contact with the system, such as first responders or other local agency employees. Within the SMS, the SRM process also feeds into the transit agency's Safety Assurance process by evaluating changes that may impact safety performance, such as changes to operations and maintenance procedures, existing system configuration or service, organization structure or resources, and new capital projects. SRM also helps the agency evaluate the effectiveness of its safety risk mitigations over time.

Sources of Hazard Information

Your agency has many sources of information related to safety concerns that you can use to help identify hazards. Your agency may collect this information through proactive activities, such as using an employee safety reporting program or monitoring service operations, and reactive measures, such as investigating past events that may or may not have resulted in injuries or damage. By analyzing this collected safety data, your agency can determine its topmost safety concerns and how it will prioritize the investment of resources to address them. Major sources of information about hazards are listed below.

- Employee Safety Reporting Program
- Inspections
- Investigations
- Safety Trend Analysis
- Cameras and Data Recorders
- Training and Evaluation Records
- Internal Safety Audits
- Monitoring of Normal Operations
- External Sources including FTA, OSHA, CDC, FHWA, State DOT, Associations and Manufacturers
- Safety Assurance
- Generic Hazard List

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.

Risk Assessment Matrix					
Severity Likelihood	Catastrophic (1)	Critical (2)	Major (3)	Minor (4)	Negligible (5)
Frequent (A)	High	High	High	Medium	Medium
Probable (B)	High	High	High	Medium	Low
Occassional (C)	High	Medium	Medium	Medium	Low
Remote (D)	Medium	Medium	Medium	Low	Low
Improbable (E)	Medium	Medium	Low	Low	Low
Eliminated (F)	Eliminated				

Severity Scale	
Catastrophic (1)	Major safety event defined by NTD, Immediate shut-down to prevent further risk, immediate investigation
Critical (2)	Major safety event defined by NTD, mitigate to reasonably acceptable risk, root cause analysis
Major (3)	Major incident/accident, mitigate to reasonably acceptable risk, root cause analysis
Minor (4)	Minor safety event, minor service disruption, mitigate as neccesary and monitor
Negligible (5)	Minor incident with no additional risk, assess, mitigate if neccesary and monitor

Re-occurance scale	
Frequent (A)	1-2
Probable (B)	3-4
Occassional (C)	5
Remote (D)	6-7
Improbable (E)	8-9
Eliminated (F)	10

Initial Risk Assessment Priority	
	Level 1 - High Risk - Immediate Action: A deficiency, threat, or hazard requiring immediate attention to mitigate risk either temporarily until further action can be taken or complete mitigation.
	Level 2 - Medium Risk: Action is needed within seven days to mitigate an identified deficiency, threat, or hazard. The deficiency, threat, or hazard does not pose immediate danger, but if no action is taken could elevate to an Immediate level risk.
	Level 3 - Low Risk: A deficiency, threat or hazard has been identified but does not pose a threat currently, but could at a later time. Continued monitoring and awareness are required.
Likelihood of re-occurrence of this hazard (1-10)	

Transit agencies must develop and implement a process to assess safety risk, determine whether mitigation is needed, and monitor its operations to identify any safety risk mitigations that may be ineffective, inappropriate, or were not implemented as intended (49 CFR § 673.25 and § 673.27(b)(2)). Transit agencies are also required to document the results of their Safety Management System (SMS) processes and activities, including the outputs of Safety Risk Management and Safety Assurance (§ 673.31).

A safety risk register is an information management tool an agency may choose to use to document Safety Risk Management and Safety Assurance activities. In general, a safety risk register will capture the following types of information:

- Hazard information and potential consequence(s) associated with a hazard
- Existing mitigation(s) that could impact the potential consequence(s)
- Initial safety risk rating
- Further mitigation(s) to eliminate or minimize the risk associated with the hazard, as necessary
- Revised safety risk rating
- Mitigation monitoring measures and activities

[illegible]

Data Components										
	Type Incident Hazard	Consequences	Assmt Level	Mitigation Purpose	Vehicle Hazards/Incidents	Facility Hazards/Incidents	Passenger Hazard/Incidents	Employee Hazard/Incidents	Re-occurrence	Mitigation Status
Pull-down menus	Vehicle	Catastrophic	Level 1	Eliminate	Major Mechanical	Safety Equipment	Behavior	Behavior	1	Monitoring
	Passenger	Critical	Level 2	Control	Performance	Security Systems	Weapon	Theft	2	Re-evaluate
	Facility	Major	Level 3	Minimize	Interior	Plumbing	Suspended from svc.	Endangering Others	3	Unknown
	Employee	Minor		Correct	Exterior	Electrical	Medical Emergency	Property Abuse	4	Ineffective
	Weather Related	Negligible			Towed	Foundation	Injury	Illegal Activity	5	Successful
	Road Condition				Repaired on scene	Parking	Fatality	Injury	6	Removed
	Security				Safety equipment	Equipment	Mobility Device	Fatality	7	
	Near Miss				Lift/Ramp/Securemt	HVAC/Heat	Illegal Activity		8	
	Pedestrian				See Pre-Trip	Roof	Collision		9	
	Assault				Collision	Storage			10	
	Other					Computer/Data				
						Farebox/Vault				
						Shelter				
						Fueling				
						Hazardous Materials				
						Fencing/Gate				
						Passenger Amenities				

This documentation demonstrates and captures the flow of information and activity through the SMS process. While FTA does not require agencies to develop a safety risk register, using a tool like a safety risk register can help an agency track relevant information about a hazard, from identification through monitoring mitigations, if appropriate.

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.

Transit agencies may choose to implement safety risk mitigations depending on the results of their Safety Risk Assessment process. Safety Risk Assessment helps agencies determine the likelihood and severity of a potential consequence of a hazard to ascertain if mitigation is necessary (49 CFR § 673.25(c)(2)).

As the agency decides whether, when, and how to mitigate the safety risk, the agency may consider whether it is more practical or cost effective to focus on reducing the likelihood, severity, or both the likelihood and severity of the hazard's potential consequences. Once the mitigation is in place, an agency must track its effectiveness and whether it has been implemented as intended.

Safety Risk Reduction Program

The Public Transportation Agency Safety Plan of each large urbanized area provider must include a safety risk reduction program for transit operations to improve safety performance by reducing the number and rates of safety events, injuries, and assaults on transit workers. The safety risk reduction program must, at a minimum:

- Address the reduction and mitigation of vehicular and pedestrian safety events involving transit vehicles that includes safety risk mitigations consistent with § 673.25(d)(3);
 - When identifying safety risk mitigations for the safety risk reduction program related to vehicular and pedestrian safety events involving transit vehicles, including to address a missed safety performance target set by the Safety Committee for the safety risk reduction program, the transit agency and its Safety Committee consider mitigations to reduce visibility impairments for transit vehicle operators that contribute to accidents, including retrofits to vehicles in revenue service and specifications for future procurements that reduce visibility impairments. (§§ 673.11(a)(7)(i) and 673.25(d)(3))
- Address the reduction and mitigation of assaults on transit workers that includes safety risk mitigations consistent with § 673.25(d)(4);
 - When identifying safety risk mitigations for the safety risk reduction program related to assaults on transit workers, including to address a missed safety performance target set by the Safety Committee for the safety risk reduction program, the transit agency and Safety Committee consider the deployment of assault mitigation infrastructure and technology on transit vehicles and in transit facilities, including barriers to restrict the unwanted entry of individuals and objects into the workstations of bus operators. (§§ 673.11(a)(7)(ii) and 673.25(d)(4))
- Include the safety performance targets set by the Safety Committee pursuant to § 673.19(d)(2) for the safety risk reduction program performance measures established in the National Public Transportation Safety Plan.
- Include or incorporate by reference the safety risk mitigations identified and recommended by the Safety Committee as described in § 673.25(d)(5).
 - When the Safety Committee recommends a safety risk mitigation unrelated to the safety risk reduction program and the Accountable Executive decides not to implement the safety risk mitigation, the Accountable Executive prepares a written statement explaining their decision and submits and presents it to the transit agency's Safety Committee and Board of Directors or equivalent entity. (§ 673.25(d)(6))

Part 2.a.3: Safety Assurance

The Public Transportation Agency Safety Plan (PTASP) regulation (49 CFR Part 673) requires certain operators of public transportation systems that are recipients or subrecipients of FTA grant funds to develop Agency Safety Plans (ASP) that include the processes and procedures necessary for implementing Safety Management Systems (SMS). Safety Assurance is one of the four SMS components.

Safety Assurance

- Monitor
- Analysis
- Assessment

Safety Assurance means as “processes within a transit agency’s SMS that function to ensure the implementation and effectiveness of safety risk mitigation and the transit agency meets or exceeds its safety objectives through the collection, analysis, and assessment of information” (§673.5). Safety Assurance helps to ensure that mitigations put in place to manage safety risk are carried out and working as intended, potential safety issues are identified early, and safety objectives are met. Safety Assurance focuses on three processes:

- Safety performance monitoring and measurement (§ 673.27(b)),
- Management of change (§ 673.27(c)), and
- Continuous improvement (§ 673.27(d)).

Safety Performance Monitoring and Measurement

To address PTASP regulation requirements, all applicable transit agencies must establish processes and activities to monitor the safety performance of their systems and the effectiveness of their safety management efforts. Specifically, each transit agency must:

- Monitor its system for compliance with operations and maintenance procedures, and establish methods to verify that procedures are sufficient (§ 673.27(b)(1));

- Monitor its operations to identify any safety risk mitigations that may be ineffective, inappropriate, or were not implemented as intended (§ 673.27(b)(2));
- Conduct investigations of safety events, including accidents, incidents, and occurrences (defined in §673.5), and identify causal factors (§ 673.27(b)(3)); and
- Monitor information reported to it through any internal safety reporting programs, including the employee safety reporting program (§ 673.27(b)(4)).

Safety Investigations

Safety Event Investigation					
Causal Factor	Contributing Factor Present (Y/N)	Describe Causal Factors Leading to Event		Describe Mitigation Strategy for Causal Event	
Operator Error					
Operator Fitness for Duty (DA/RS/Med)					
Operator Action(s)					
Vehicle Placement					
Vehicle Condition					
Road Conditions					
Weather Conditions					
Passenger/Other Driver/Public Contribution					
Training Deficiency					
Regulation/Policy Deficiency					
Existing Mitigation Failure					
External Conditions/Factors					
Event Type:		Event Date:		Investigator:	
Investigation Start Date:		Event Location:		Transit Division:	
Investigation End Date:		Location Type:		Safety Event Number:	
Investigation Review Dates:		Witness Interview(s) Y/N		Video Footage Review:	
Document Review (attachments):					

The Public Transportation Agency Safety Plan (PTASP) regulation (49 CFR part 673) states that each transit agency must establish activities to “conduct investigations of safety events to identify causal factors” (§ 673.27(b)(3)). As defined in the PTASP regulation, an investigation is “the process of determining the causal and contributing factors of an accident, incident or hazard, for the purpose of preventing recurrence and mitigating risk” (§ 673.5). Investigations are an essential part of an agency’s Safety Management System (SMS), particularly for Safety Risk Management (SRM), Safety Assurance (SA), and Safety Promotion processes.

The PTASP regulation defines events to include accidents, incidents, and occurrences. By investigating all these events – not just the most serious ones – agencies can learn valuable information and implement safety risk mitigations before severe consequences occur. Identifying causal and contributing factors during investigations allows an agency to determine why a safety event happened in addition to what caused the event and how it occurred. Identifying causal factors can highlight deficiencies that the agency can then address to improve safety performance.

Causal and Contributing Factors

Causal and contributing factors include key actions, situations, or conditions that led to an event’s occurrence or that increased an event’s effects. Determining causal factors is about more than “at-fault” determinations or establishing whether a safety event was “preventable” or “non-preventable.” In addition to looking at those actions immediately preceding the event, the investigation should examine organizational factors that could have contributed to the event, such as procedures, training, supervision, or resourcing. It may also include analyzing factors related to the operating environment, the natural environment (snow, ice, rain, etc.), or the condition of infrastructure or equipment. Determination of causal factors will allow the agency to identify actions that can help prevent reoccurrence.

Causal Factors and SRM

As defined in Part 673, SRM is the process of “identifying hazards and analyzing, assessing, and mitigating safety risk.” The results of an investigation feed into an agency’s SRM, providing valuable information about both new and known hazards. This information can help prioritize hazards, for example, by showing the increased likelihood of a consequence for a hazard the agency was previously tracking, thus prioritizing the mitigation of the hazard.

Causal Factors and SA

The identification of causal factors provides an agency with valuable information to support SA activities. The data supports safety performance monitoring and measurement, allowing an agency to determine where issues with compliance or the sufficiency of current operating and maintenance procedures may exist. (See the SMS Techniques for Monitoring Operations and Maintenance Procedures for more information.) It may also reveal whether and how a recent change in operations may have created a new safety hazard.

Causal Factors and Safety Promotion

Communicating the causal factors identified during a safety event investigation throughout the agency may help increase awareness of the safety event and promote safety policies or rules that may help prevent or mitigate future events. Furthermore, these communications can highlight the importance of policies and rules and encourage compliance. An investigation may also identify gaps in training. Depending on identified gaps, the agency may find it necessary to clarify roles and responsibilities or develop training that targets the areas of deficiency that the agency identifies as a causal factor in a safety event.

Investigation Activities

Typically, the first step of an investigation is preserving and securing the scene and gathering information. An investigation will often start with reporting to the event scene to conduct in-person interviews with all involved parties and to gather information and evidence that may be lost or modified once the scene is clear. The investigation team will then review information such as:

- Field observation notes (e.g., weather conditions, lighting, injuries)

- Scene photographs, sketches, measurements, and CCTV video footage
- Radio communication and recordings
- Damaged equipment, infrastructure, vehicles, public and private property, and any other evidence that is part of the event scene (e.g., broken rail, debris)
- Operating rules, bulletins, special orders, speed limits, restrictions, or other operating conditions in effect at the event location
- Maintenance records of the vehicles, equipment, and infrastructure involved in the event and vehicle event log data
- Supervisory control and data acquisition information
- Post-accident tests and inspections of the vehicles, equipment, and infrastructure involved in the event
- Internal transit agency reports (e.g., supervisor reports) and external reports (e.g., police reports)
- Past event data and trends

- Drug and alcohol test results
- Employee records and work history prior to the event, considering years of service, discipline, compliance with rules, accident history, training, qualifications, and certifications.

The investigation team will analyze all facts gathered at and away from the event scene. This analysis should include ongoing attention to the quality and credibility of the information. For example, consider whether the maintenance reports reviewed during an investigation are comprehensive, clear, signed, and dated.

Performance Monitoring

Transit agencies may adopt various methods to collect and use information to support safety performance monitoring and measurement activities, such as:

- Reviewing existing rule-check programs and datasets on compliance with operations and maintenance procedures;
- Leading workshops and discussions with supervisors and training instructors to assess the performance of procedures;
- Reviewing the results of maintenance inspections; • Observing transit operations;
- Conducting audits, reviews, and assessments;
- Using safety performance indicators and targets;
- Conducting trend or statistical analyses; and
- Consulting subject matter experts.

Additionally, while not required, mitigation monitoring plans can help ensure that the agency documents and performs monitoring activities to confirm that mitigations are effective, appropriate, and fully implemented.

Monitoring the Sufficiency of Operations and Maintenance Procedures

Transit agencies must establish activities to monitor their system which help make sure their operations and maintenance procedures (§673.27(b)(1)) are sufficient. Although many transit agencies already evaluate procedures for sufficiency, they may not have a consistent and specific process to do so. To monitor the sufficiency of operations and maintenance procedures, transit agencies can consider two questions: 1. What does this procedure ensure or prevent? 2. What indicators tell us whether our agency has successfully ensured or prevented that outcome?

Transit agencies use many different techniques to monitor compliance with and sufficiency of operations and maintenance procedures. Common techniques agencies use to address the monitoring requirement in § 673.27(b)(1), include the following:

- **Observations**, such as ride-alongs, posting observers at various locations (such as transfer centers), using mystery riders, and placing observers in separate vehicles.
- **Operational testing** or a formal process to test workers for compliance with operating and maintenance procedures while they perform their duties. Examples of operational testing include:
 - Speed checking vehicles using a radar or Lidar speed-measuring device or onboard vehicle data loggers;
 - Monitoring live or recorded radio transmissions for proper radio protocol; and

- Reviewing video-data-recording systems, data loggers, and vehicle analytics to observe vehicle operation.
- **Audits, reviews, and special studies** include comprehensive and structured examinations of how your agency implements procedures. These are often focused on specific areas or disciplines, such as management of bus dispatch, operator training, or vehicle maintenance.
- **Inspections** include targeted observations to check or test how well workers comply with procedures, or to determine the condition of vehicles, equipment, or infrastructure.

Continuous Improvement

Continuous improvement helps a transit agency assess its overall safety performance and how well its SMS is working, and identify and address any issues. As specified in § 673.27(d)(1), each applicable transit agency must establish a process to assess its safety performance.

Assessments could be based on annual reviews, how well the agency is meeting its required safety performance targets and additional agency-wide or mode-specific targets, and/or how well the agency has accomplished the safety objectives specified in the Safety Management Policy Statement.

Assessments also may be tied to the annual review and update of the ASP.

If a transit agency identifies any deficiencies as part of its safety performance assessment, then the transit agency must develop and carry out, under the direction of the Accountable Executive, a plan to address the identified safety deficiencies (§ 673.27(d)(2)).

The plan could include efforts to address underlying hazards and potential consequences through Safety Risk Management, changing data collection or analysis techniques to better understand what is really going on, and/or testing and evaluating new approaches to SMS processes.

Management of Change (large urban)

Transit agencies must establish a process for identifying and assessing changes that may introduce new hazards or impact the agency's safety performance. If a transit agency determines that a change may impact its safety performance, then the agency must evaluate the proposed change through its Safety Risk Management Process.

In assessing change the system must determine the risk involved with the change and impacts on passengers and employees.

Part 2.a.4: Safety Promotion

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 Promotion (SP) is one of the four SMS components. Each eligible transit operator must have an approved ASP meeting the regulation requirements by July 20, 2020.

SP outlines requirements for promoting both SMS practices and safety throughout a transit agency. Part 673 requires the following two SP elements:

- Competencies and training
- Safety communication

Competencies and Training Part 673 requires recipients to establish and implement a comprehensive safety training program for all employees and contractors that are directly responsible for safety, including refresher training. Recipients may consider training for Board Members or others involved in approving or overseeing the ASP. In addition to specifying who is directly responsible for safety and their training requirements, recipients may choose to define the competencies necessary to perform different job roles.

A competency:

- Combines the knowledge, skills, and abilities required to effectively fulfill job roles
- May cross various job roles and functions
- May be useful as an employee training topic
- Can be developed from a variety of sources

A training needs assessment can help recipients identify and provide training relevant to the specific needs of the employees and agency goals. When considering what training to provide on SMS, recipients may find it useful to focus on the specific tasks an individual must perform to manage safety (e.g., frontline employee SMS training on how to report safety conditions instead of general SMS concepts).

Safety Communication

Part 673 requires that recipients demonstrate through documentation and recordkeeping that safety and safety performance information is communicated throughout the agency's organization.

Safety communications must:

- Include information on hazards and safety risk relevant to employees' roles and responsibilities
- Inform employees of safety actions taken in response to reports submitted through an employee safety reporting program

A safety action doesn't necessarily mean implementing a new safety solution. Safety actions taken in response to reports could primarily involve recordkeeping for later trend analysis. Recipients should

Safety Promotion

- Competencies and Training
- Safety Communication

consider responding to employee reports as a way to acknowledge and help encourage more employee reporting.

Recipients also may choose to consider what and how to communicate safety information. Relevant questions may include, but are not limited to:

- What information does this individual need to do their job?
- How can we ensure they understand what is communicated?
- How can we ensure they understand what action they must take as a result of the information?
- How can we ensure the information is accurate and kept up-to-date?
- Are there any privacy or security concerns to consider when sharing information? If so, what should we do to address these concerns?

Safety Training Resources

This [index](#) lists the safety-related topics discussed in this guide and provides URLs to locations that provide training resource information on those topics.

Americans with Disabilities Act (ADA)

- FTA Webinars and Presentations
- Community Transportation Association of America
- National Rural Transit Assistance Program
- National Transit Institute

Bus Operator Training

- Community Transportation Association of America
- Center for Urban Transportation Studies
- National Rural Transit Assistance Program
- National Transit Institute
- Transit Safety Institute

Bus Transit Accidents

- Center for Urban Transportation Research
- Transit Safety Institute

Bus Transit Maintenance Programs

- Community Transportation Association of America
- Small Urban and Rural Transit Center
- South West Transit Association

Bus Transit Management

- Community Transportation Association of America
- Small Urban and Rural Transit Center
- South West Transit Association

Defensive Driving

- Center for Urban Transportation Studies
- National Rural Transit Assistance Program

Drug and Alcohol

- FTA Webinars and Presentations
- Center for Urban Transportation Research
- National Rural Transit Assistance Program
- Transit Safety Institute

Emergency Preparedness and Response

- American Public Transportation Association
- Community Transportation Association of America
- Federal Emergency Management Agency
- National Rural Transit Assistance Program
- National Transit Institute
- Transit Safety Institute

Risk Management

- Center for Urban Transportation Studies
- National Transit Institute
- Small Urban and Rural Transit Center
- Transit Safety Institute

Public Transportation Safety Certification Training Program (PTSCTP)

- FTA Webinars and Presentations
- Transit Safety Institute

Safety Management System (SMS)

- FTA SMS FAQ
- Transit Safety Institute

Transit Asset Management (TAM)

- TAM Tools and Case Studies
- TAM Fact Sheets, Trainings, and Presentations

Section 2

Part 2.b: Federal Transit Administration (FTA) Safety Requirements

2.b.1: Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations

The Omnibus Transportation Employee Testing Act of 1991 mandated the Secretary of Transportation to issue regulations to combat prohibited drug use and alcohol misuse in the transportation industry. For that portion of the transportation industry has to do with the provision of and service to the public of mass transportation, FTA is the agency delegated with the authority and responsibility for issuing these implementing rules. These rules are encompassed in [49 CFR Part 655](#), Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations.

In accordance with the U.S. Department of Transportation (USDOT), Federal Transit Administration (FTA), public transit systems must establish a drug and alcohol-testing program to achieve a drug- and alcohol-free work force in the interest of the health and safety of employees and the public. This includes conducting drug and alcohol testing of safety-sensitive transit employees.

The regulation covers program elements like employer policy statements, education and training for employees and supervisors, various types of testing (pre-employment, random, post-accident, reasonable suspicion, follow-up), and administrative recordkeeping requirements. It mandates specific testing rates and requires adherence to the procedures outlined in [49 CFR Part 40](#).

The requirements are set forth in the following regulations:

- [49 CFR Part 655](#), *Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations*.
- [49 CFR Part 40](#), *Procedures for Transportation Workplace Drug and Alcohol Testing Programs* (prescribes the testing methods to be followed).

Any recipient of Federal financial assistance under 49 U.S.C. Sections 5307, 5309, 5311, or 5339 of the Federal Transit Act, as amended or any recipient of Federal financial assistance under Section 103(e)(4) of title 23 of the United States Code must comply with these regulations.

NOTE: SECTION 5311 ASSISTANCE RECIPIENTS – contract maintenance is exempt from FTA drug and alcohol testing regulations for employers who receive Section 5311 funding, as well as employers who receive Section 5307/5309 funds in an area less than 200,000 in population and who contract out their maintenance services.

FTA-covered systems must develop a drug- and alcohol-testing program that meets the requirements of USDOT and FTA regulations (49 CFR Part 40 and Part 655). This includes having a policy in place that addresses the requirements set forth in the regulation, training both safety-sensitive employees and supervisors, testing safety-sensitive employees in accordance with the procedures set forth in the regulation, and adhering to the administrative procedures set forth in the regulation. FTA requires employers that receive financial assistance from the Federal Transit Administration (FTA) and by

contractors of those employers, to implement programs, as specified in 49 CFR Part 655, that are designed to help prevent accidents, injuries, and fatalities resulting from the misuse of alcohol and use of prohibited drugs by employees who perform safety-sensitive functions.

Program Elements:

- **Policy Statement:** A clear anti-drug and alcohol misuse policy distributed to all safety-sensitive employees.
- **Education and Training:** Informational materials and training on the effects of drugs and alcohol, with specific training for supervisors on identifying reasonable suspicion.
- **Testing Program:** Implements various types of testing in accordance with 49 CFR Part 40.
- **Substance Abuse Professional (SAP):** Procedures for referring employees who test positive to a SAP.

Types of Testing:

- **Pre-employment:** Mandatory for a verified negative drug test result before performing safety-sensitive functions for the first time.
- **Random:** A minimum percentage of safety-sensitive employees are randomly selected for testing.
- **Post-accident:** Required after certain accidents that meet FTA testing thresholds.
- **Reasonable Suspicion:** Conducted when an employer has a reasonable suspicion to believe that the covered employee has used a prohibited drug and/or engaged in alcohol misuse.
- **Return-To-Duty / Follow-up:** Conducted following an employee who tests positive, refuses to test, or violates other DOT agency testing regulations.

Prohibited substances and alcohol limits:

The prohibited drugs are marijuana, cocaine, opioids, amphetamines, and PCP, with use prohibited at all times. An alcohol concentration of 0.04 or greater is prohibited. Employees with a concentration of 0.02 or greater, but less than 0.04 must be immediately removed from duty for at least 8 hours or until below 0.02.

Covered safety-sensitive employees are prohibited under the FTA regulations from consuming alcohol during the following timeframes:

- While performing a safety-sensitive function
- 4 hours prior to performing a safety-sensitive function
- While on-call to perform a safety-sensitive function
- 8 hours after being involved in an accident, or until tested whichever occurs first.

Any employee who tests positive for prohibited drugs, has an alcohol test result of 0.04 or above, or who refuses to test must be immediately removed from the performance of safety-sensitive functions and provided with a list of USDOT-Qualifies Substance Abuse Professionals (SAPs).

Employer's responsibilities:

Transit employers covered by United States Department of Transportation (USDOT)-FTA drug & alcohol regulations must develop, implement, and manage their own alcohol and drug testing program. The major topics covered in this section include:

1. Designate a DAPM
2. Obtain Access to Applicable Regulations
3. Identify Covered Employees
4. Establish and Implement a D&A Testing Policy
5. Establish an Education and Training Program for All Covered Employees
6. Conduct Required D&A Testing
7. Review Testing Records and Fix Errors When Found
8. Retention of D&A Program Records
9. Report D&A Testing Data Annually (MIS Reporting)

Below you will find a summary of the major expectations related to each of these areas.

1. Designate a Drug & Alcohol Program Manager (DAPM)

- Each vendor must have one individual designated as the DAPM who is responsible for administering the program.
- The DAPM responsibilities are often assigned to an existing employee with other related duties in human resources, personnel, or risk management. Often the DAPM is responsible for record keeping, preparation of the annual Management Information System (MIS) report, administering required testing, and sometimes also serving as the Designated Employer Representative (DER).
- A DAPM will often act as a DER as well; however, many transit operators will have DERs in addition to the agency's DAPM.

2. Obtain Access to Applicable Regulations

- The DAPM is required to have ready access to the two (2) federal regulations that govern your USDOT-FTA drug & alcohol testing program:
 - [49 CFR Part 40](#)
 - [49 CFR Part 655](#)

3. Identify Covered Employees

- Each employer must identify the categories of employees subject to USDOT-FTA drug & alcohol testing.
- Employees performing any of the following FTA-defined safety-sensitive functions are subject to testing:
 - Operating a revenue service vehicle, in or out of revenue service
 - Operating a non-revenue vehicle requiring a Commercial Driver's License (CDL)
 - Maintaining a revenue service vehicle or equipment used in revenue service
 - Controlling dispatch/movement of a revenue service vehicle
 - Carrying a firearm for security purposes

4. Establish and Implement A Drug & Alcohol Testing Policy

- Any drug & alcohol program must have a statement describing the employer's policy on prohibited drug use and alcohol misuse in the workplace.
- The D&A Policy must be written and made available to all covered employees.
- The D&A Policy must include all information listed in [49 CFR Part 655.15](#)
- Board Approval
 - Obtain adoption of the policy by the local governing board or another responsible individual with appropriate delegation of authority.
- Policy Distribution ([655.16](#))
 - Provide written notice of the policy to all covered employees and employee organization representatives.
- Policy Resources:
 - The [Policy Builder](#) on FTA's Drug and Alcohol Program website can help develop a customized anti-drug and alcohol misuse policy containing all required elements.
- The [Policy Requirements Checklist](#) can be used to help ensure your own policy includes all required elements.
- Additional Employer Provisions Allowed
 - The policy may provide additional detail or include additional requirements not mandated by USDOT-FTA (though in these cases, FTA's requirements must still be described).
 - These additional provisions must be clearly identified in the policy.
 - Using clear phrasing, **bolding**, or *italics* to differentiate between FTA and company policy prohibitions, terms, etc., is common.
 - You must not impose requirements that are inconsistent with or contrary to USDOT-FTA regulations.

4. Establish an Education and Training Program ([655.14](#))

- Display and Distribute Materials
 - Provide informational materials on the effects of drugs and alcohol (e.g., posters, pamphlets).
 - Provide information on community service hotlines or resources for employees needing assistance with drug/alcohol use.
 - Distribute company anti-drug and alcohol misuse policy (or written notice of its availability)
- Conduct Required Training Programs
 - Employee Training (60 minutes minimum)
 - All safety-sensitive employees must receive 60 minutes of training on the effects and consequences of prohibited drug use.
 - Resources:
 - [FTA's Video](#)
 - National Rural Transit Assistance Program (NRTAP)'s [eLearning Module \(Substance Abuse Training\)](#)
 - Supervisor Training (120 minutes minimum)
 - Reasonable Suspicion Determination training is required for supervisors or other company officials authorized to make reasonable suspicion determinations.
 - Training must include a minimum of:

- 60 minutes of training on recognizing the physical, behavioral, and performance indicators of probable **drug** use;
- 60 minutes of training on recognizing the physical, behavioral, speech, and performance indicators of probable **alcohol** misuse
- Supervisors and/or company officials must complete this training before making any reasonable suspicion referrals.

5. Conduct Required D&A Testing As Applicable

- Pre-Employment Testing (655.41 and 655.42)
 - Inquire about an applicant's previous USDOT employer D&A testing history in accordance with [49 CFR Part 40.25](#); document.
 - Ask each applicant if they have failed or refused a DOT pre-employment test in the previous two years [per 40.25\(j\)](#); document.
 - Send applicant of safety-sensitive position for USDOT pre-employment drug test and receive verified negative results prior to performance of safety-sensitive duties.
 - If current employee has not performed a safety-sensitive function for 90 days or more and has been out of the random testing pool during that time, send the individual for a new USDOT pre-employment drug test prior to returning to safety-sensitive functions.
 - Resources:
 - [Pre-Employment Notification and Acknowledgment Form](#)
 - [Previous USDOT employer Release of Information Form](#)
 - [Acknowledgment of 60 minutes of training Form](#)
 - [Notification of Testing Form](#)
- Random Testing (655.45)
 - Ensure selections occur no less frequently than quarterly.
 - Ensure selections are made by a scientifically valid method wherein all employees have an equal chance of being selected.
 - Ensure the random selection list is transmitted to the DAPM in a secure manner.
 - Ensure random testing is spread throughout the calendar year in a manner that is unpredictable.
 - Ensure that employees notified of their selection for random testing proceed immediately to the testing site.
 - Ensure random alcohol testing is only conducted just before, during, or just after the performance of safety-sensitive functions.
 - Ensure you are only excusing employees from random testing for legitimate reasons (i.e., employee is unavailable throughout the remainder of the entire selection period) and maintain a record of any excusals.

- Ensure you meet the current minimum annual testing rates by the end of the calendar year. Current rates can be found here:
<https://www.transportation.gov/odapc/random-testing-rates>
- Resources:
 - [Random Testing Chart Generator](#)
 - [Notification of Testing Form](#)
- Reasonable Suspicion Testing (655.43)
 - Ensure that any decision to conduct reasonable suspicion testing is based on specific, contemporaneous, articulable observations made by a trained supervisor/company official.
 - Ensure reasonable suspicion alcohol testing is only conducted just before, during, or just after the performance of safety-sensitive functions.
 - Ensure that if the reasonable suspicion alcohol test is not conducted within 2 hours of the time of the observation, that there is a record of the reason for the delay in the file.
 - Ensure that if the reasonable suspicion alcohol test is not conducted within 8 hours of the time of the observation, that all attempts to conduct the test cease.
 - Ensure that any decision to conduct reasonable suspicion testing is documented and maintained on file.
 - Resources:
 - [Reasonable Suspicion Determination Report](#)
 - [Notification of Testing Form](#)
- Post-Accident Testing (655.44)
 - Ensure all applicable supervisors/agency officials have a comprehensive understanding of [FTA's post-accident testing thresholds, procedures, and time limits](#)
 - Ensure that all post-accident drug & alcohol testing decisions are documented and maintained.
 - Ensure that FTA post-accident drug & alcohol testing is ONLY conducted following accidents that meet FTA post-accident thresholds.
 - Resources:
 - [Post-Accident Testing Chart](#)
 - [Post-Accident Decision Making Form](#)
 - [Notification of Testing Form](#)
- Non-Negative Test Results (655.35; 655.46; 655.61)
 - Ensure that an employee is immediately removed from the performance of safety-sensitive functions following any of the following test results:
 - Confirmed Alcohol test ≥ 0.02 , but < 0.04
 - Confirmed Alcohol test ≥ 0.04
 - Verified positive drug test

- Refusal to test
 - Ensure that the employee/applicant is provided a list of USDOT qualified SAPs following a confirmed alcohol result of 0.04 or above, a verified positive drug test, or a refusal to test.
- Return To Duty Testing (655.46) & Follow-Up Testing (655.47)
 - Ensure the employee completes the SAP assessment process.
 - Ensure you receive an initial evaluation letter from the SAP that meets all requirements of [49 CFR Part 40.311\(c\)](#)
 - If the SAP determines the employee has demonstrated successful compliance:
 - Ensure you receive a follow-up evaluation letter from the SAP that meets all requirements of [49 CFR Part 40.311\(d\)](#)
 - If you determine you will be returning the employee to safety-sensitive functions:
 - Ensure the employee is sent for a return-to-duty drug and/or alcohol test as prescribed by the SAP.
 - Ensure any return-to-duty drug test is conducted under directly observed conditions.
 - After passing return-to-duty testing, return the employee to random testing pool.
 - Ensure the SAP's follow-up testing plan is carried out
 - Ensure all follow-up drug testing is conducted under directly observed conditions
 - If the SAP determines the employee has NOT demonstrated successful compliance:
 - Ensure you receive a follow-up evaluation letter from the SAP that meets all requirements of [49 CFR Part 40.311\(e\)](#)
 - Resources:
 - [Notification of Testing Form](#)

6. Review Testing Records and Fix Errors When Found

- Review Alcohol Testing Forms (ATF) and Custody and Control Forms (CCF).
- Review MRO drug test results.
- Use Affidavit of Correction Forms for ATFs and CCFs when errors are found.
- Resources:
 - [Alcohol Testing Form \(ATF\) Review Checklist](#)
 - [ATF Affidavit of Correction Form](#)
 - [Custody and Control Form \(CCF\) Review Checklist](#)
 - [CCF Affidavit of Correction Form](#)
 - [MRO Drug Test Results Checklist](#)

7. Retention of D&A Program Records

- Maintain all records in [a secure location with controlled access](#) and retain them for no less than the time periods identified in [49 CFR Part 40.333](#) and [Part 655.71](#)

8. **Report D&A Testing Data Annually via the MIS System ([655.72](#))**

- Ensure you complete the MIS report by the due date set by IndyGo (but no later than the federal due date of March 15)
- Ensure your MIS report accurately contains only FTA drug & alcohol testing information

SPECIAL D&A TESTING TOPICS

FTA Section 5310 Funding – Drug & Alcohol Applicability

Question: Do FTA drug and alcohol program rules apply to recipients and subrecipients that receive funds only from the Enhanced Mobility and Seniors & Individuals with Disabilities Program (49 U.S.C. § 5310) (Section 5310)?

Answer: No. Recipients or subrecipients that receive only Section 5310 assistance are not subject to FTA's drug and alcohol program rules at 49 CFR Part 655. However, such recipients and subrecipients may be required to comply with other drug and alcohol rules, such as the Federal Motor Carrier Safety Administration (FMCSA) rules, which cover employees required to hold a commercial driver's license (49 CFR Part 382).

Question: Are recipients or subrecipients of Section 5310 funds receiving federal assistance under 49 U.S.C. §§ 5307, 5309, or 5311 required to comply with the FTA drug and alcohol program rules?

Answer: Yes. The FTA drug and alcohol program rules apply to recipients and subrecipients of the Urbanized Area Program (49 U.S.C. § 5307), Capital Investment Grants Program (49 U.S.C. § 5309), and Rural Area Program (49 U.S.C. § 5311) funds, as well as their contractors and subcontractors. Therefore, recipients and subrecipients of Section 5310 funding that also receive funding under one or more of the covered FTA programs (Section 5307, 5309, or 5311) must include any safety-sensitive employees funded under the Section 5310 program in their DOT/FTA testing program. Employers do not need to create a separate testing program for employees funded under Section 5310. Those employees may be included in the existing testing program.

Question: Can a recipient of Section 5307, 5309, or 5311 funds separate the transportation services provided under Section 5310 from the transportation services funded by one of the other covered FTA programs so that the Section 5310 service is not subject to the FTA drug and alcohol program rules?

Answer: No. Because recipients and subrecipients of assistance under FTA's Section 5307, 5309, and 5311 grant programs are covered by the FTA drug and alcohol program rules, all operations, including those funded under Section 5310, are subject to FTA drug and alcohol program rules. Employers don't need to create a separate testing program for employees funded under Section 5310. Those employees may be included in the existing testing program.

Balancing Rx/OTC Programs with Employee Safety and Health: What an Employer Should Know

Federal Transit Administration has always expressed concern about prescription and over-the-counter (Rx/OTC) medication use by safety-sensitive employees and the impact the use of these medications can have on transit system safety. As an employer of safety-sensitive employees, you are encouraged to establish a program which fosters a partnership between management, employees, and their prescribing health-care professionals (HCPs) or pharmacists to address this concern. It is vital for you to be aware of how Rx/OTC medications may affect your employees' ability to perform safety-sensitive functions and to address it as part of your Rx/OTC Program

Develop A Prescription (Rx) and OTC Medication Policy

Every employer of safety-sensitive employees is encouraged to have a comprehensive policy to address Rx/OTC medication use. Recommended components include:

- Reporting and monitoring the use of Rx/OTC medications.
- Obtaining medical input (from a licensed health-care professional) to evaluate the impact Rx/OTC medication use may have on safety-sensitive employees.
- Removing safety-sensitive employees from duty when impaired and/or using Rx/OTC medications impairing driving or the performance of other safety-sensitive functions.
- Defining the roles and responsibilities of employer managers and supervisors.
- Establishing consequences for violating policy provisions for the use and reporting of Rx/ OTC medications.
- Determining confidentiality protections regarding records.

To develop an effective Rx/OTC policy statement, consider the following:

- Become familiar with the varieties and types of medications that are being prescribed, and commonly used over-the-counter medications. Vicodin, Percocet, Oxycodone, and Darvocet, are medications commonly prescribed to relieve moderate to severe pain. Xanax, Valium, and Ativan are prescription medications used to relieve anxiety. Drixoral, Nyquil, Benadryl, and Chlortrimeton are over-the-counter medications used to relieve the symptoms of colds and allergies. Benadryl by it as an additive in Tylenol P.M., is also commonly used as a sleep-aid. These are just a sampling of Rx/OTC that are on the marketplace, and all of these medications can cause drowsiness and affect the safe operation of machinery, e.g. transit vehicles.
- Remember your intent with an Rx/OTC policy is to balance the treatment of medical conditions with requirements of performing safety-sensitive job duties. It should not be your intention to force employees in need of medical attention to return to work prematurely, neither do you want to keep employees receiving medical treatment from returning to work.
- Address the removal of employees from safety-sensitive duty who are impaired by Rx/OTC medications.
- Develop an attendance policy that reflects Rx/OTC-use related absences. Be careful, however, that your attendance policy does not inadvertently encourage employees from reporting for work or remaining on duty when impaired by illness or Rx/OTC use (i.e., no sick leave; Rx/OTC use ineligible for leave, etc.). Be sure to consider Rx/OTC use when establishing limitations on sick leave use.
- Establish your employees' responsibilities for reporting their use of Rx/OTC medications.

- Clearly state the consequences for policy violations including the use of Rx/OTC that contributes to cause or severity of an accident and failure to report use or obtain medical authorization, if required.
- Remember, confidentiality in relation to records and interaction with medical practitioners must be maintained at all times.
- Refrain from developing a policy that relies on an employee's perception of his or her impairment. If you ask a driver if he or she feels well enough to drive, the answer more than likely will be "yes." Employees are commonly unaware of, or unable to accurately ascertain, their degree of impairment and may report for work or remain on duty when they pose a safety risk to themselves, other transportation system employees, and the general public.

Employee Education

Establish clear and ongoing communication with your employees to ensure ongoing, regular safety meetings and training on your transit system's policies and program. Emphasize the need for your employees to balance the safe performance of their required job functions with the responsible use of Rx/OTC medications. Explain the importance of discussing with their prescriber, pharmacist, or other health-care professional their medical needs and treatment plans in light of their safety-sensitive job duties.

Confidentiality

Employers should respect and protect their employees' privacy and confidentiality as it relates to medical conditions, treatments, and medication use. Rx/OTC medication authorization forms, discussions of medical conditions related to Rx/OTC medications, and associated records should conform to the Health Insurance Portability and Accountability Act (HIPAA).

Partnering with HCPs to Make Informed Decisions

Assist health-care professionals (HCPs) in developing Rx/OTC medication and treatment plans that take into consideration the employee's safety-sensitive functions by requiring employees to provide these communication aids to their HCP:

- **Safety-Sensitive Job Functions.** Job descriptions to inform HCPs about safety-sensitive job duties their patients are required to perform.
- **Rx/OTC Medication Authorization Forms.** Forms to document the HCP's determination regarding the employee's ability to perform safety-sensitive functions while using Rx/OTC medications.

OTC medications, in particular, cause some of the most common and serious impairments due to their widespread use and a belief that OTCs are safer than prescription medications. The following, while not all-inclusive, contains many of the most commonly used potentially driver-impairing (PDI) OTC medications: anti-diarrhea medications, antihistamines, and medications to treat cold and flu symptoms, including pseudoephedrine, and various products which contain combinations of alcohol, antihistamines, decongestants, or dextromethorphan.

Even though most transit professionals acknowledge that the misuse or abuse of Rx medications is a serious safety issue, many do not understand that even responsible and correct use of some Rx medications can impact safety. Similarly, there is a widespread belief that unless a prescription has a

warning label, it is safe to drive. This view does not take into consideration multiple medication interactions, underlying medical conditions, and central nervous system effects other than drowsiness.

Common prescription medications that are considered PDI include, but are not limited to, narcotic analgesics, antidepressants, anti-diabetic agents, anti-anxiety agents, anti-hypertensives, and skeletal muscle relaxants, all of which have the potential to impair driving. For more information on PDI medications, please go to the NHTSA website, at www.nhtsa.gov.

Encourage Proactive Care

In addition to policies and procedures to address Rx/OTC medication use, employers should encourage proactive care. Emphasize the need for your employees to balance the safe performance of their required job functions with the responsible use of Rx/OTC medications.

Best practices include:

- Offering health screening/risk assessments by a HCP to address current medical conditions requiring Rx/OTC medication use or conditions that are not being treated.
- Encouraging employees to engage in healthy lifestyles.
- Implementing programs to encourage a “culture of proactive health care” such as weight management, stress reduction, nutrition classes, smoking cessation, and exercise.

Potentially Driver Impairing (PDI) Medications

Many Rx/OTC medications (taken as prescribed) have the potential to impair driving as well as the performance of other safety-sensitive duties. PDI medications have been a topic of research by the National Highway Traffic Safety Administration (NHTSA) for over a decade. PDI medications are those with known effects on the central nervous system, blood sugar levels, blood pressure, vision, or otherwise have the potential to interfere with driving skills. PDI medication effects may include sedation, hypoglycemia, blurred vision, hypertension, dizziness, fainting, and loss of coordination.

Lists of PDI medications which have been developed as a result of research should not be considered all-inclusive, nor should they be considered ‘hit lists.’ Rather, they should be considered as guides to the types of medications that can cause driver impairments. They can also be used to inform your safety-sensitive employees of the danger of taking these medications while performing safety-sensitive functions. Similarly, medications that have not been identified as PDI should not necessarily be considered safe.

Ultimately, a physician or other HCP must decide if an employee can perform his or her safety-sensitive functions, taking into consideration the employee’s medical condition with the medications used to treat the condition as well as all medications taken by the employee.

Rx/OTC Resources:

As indicated previously, transportation systems are not required to address Rx and OTC medications in their drug and alcohol (D/A) policies, however, the WVDOT/Division of Public Transit, therefore, strongly recommends that transportation systems be proactive and develop this policy as part of its overall Drug

and Alcohol Program. The FTA has a Prescription and Over-the-Counter Medication Tool Kit available to assist transportation systems in addressing this issue.

- [FTA's Rx/OTC Brochure for Employers](#)
- [FTA's Rx/OTC Brochure for Employees](#)
- [FTA's Rx/OTC Medications Tool Kit](#)

NOTE: Information for this Rx/OTC section was taken in part from the FTA's brochure on "Balancing Rx/OTC Programs with Employee Safety and Health"

USDOT-FTA D&A Resources

FTA's Drug and Alcohol Office publishes many useful tools and resources on their website pertaining to USDOT-FTA D&A testing requirements. These tools & resources can be accessed at <https://transit-safety.fta.dot.gov/DrugAndAlcohol/Tools/Default.aspx>

A listing of some of the key tools and resources found on that site include (but aren't limited to) the following:

- [D&A Testing Policy Requirements Checklist](#)
- [D&A Policy Builder](#)
- [60-Minute Drug Awareness Video](#)
- [Pre-Employment Notification and Acknowledgement Form](#)
- [Previous Employer Release of Information Form](#)
- [Acknowledgment of Policy Form](#)
- [Acknowledgement of Prohibited Awareness Training for Safety-Sensitive Employees Form](#)
- [Random Testing Chart Excel Tool](#)
- [Post-Accident Testing Chart](#)
- [Post-Accident DA Testing Decision Making Form](#)
- [Post-Accident Threshold Cards Template](#), sized for Avery61612 Durable ID badges (PDF Format)
- [Acknowledgement of Reasonable Suspicion Training for Supervisors Form](#)
- [FTA Reasonable Suspicion Cards Template](#), sized for Avery61612 Durable ID badges (PDF Format)
- [Reasonable Suspicion Determination Report](#)
- [Notification for Testing Form](#)
- [Breath Collection Checklist](#)
- [Alcohol Testing Form Review Checklist](#)
- [Alcohol Testing Site Affidavit Form](#)
- [Urine Collection Checklist](#)
- [Example of Completed Federal Drug Testing CCF and Drug Test Custody and Control Form Review Checklist \(Updated March 2023\)](#)
- [Drug Test Collection Site Affidavit Form](#)
- [MRO/TPA Results Checklist](#)
- [Use this checklist to assess your level of compliance with FTA and DOT regulations](#)
- [FTA's D&A Newsletters](#)

USDOT Office of Drug & Alcohol Policy and Compliance (ODAPC) also posts many very useful resources

- [ODAPC Employer Resources](#)
- [ODAPC Employee Resources](#)

2.b.2: Drug Free Workplace Act

On November 18, 1988, Congress enacted the Drug-Free Workplace Act requiring Federal agency contractors and grantees to certify that they will provide a drug-free workplace as a pre-condition of receiving a contract or a grant from a Federal agency after March 18, 1989.

The Office of Management and Budget (OMB) coordinated the participation of over 30 Federal agencies, including the Department of Labor, in the development of regulatory requirements to ensure prompt compliance, prompt issuance of final rules, and uniform government-wide implementation of the Act.

As a pre-condition to receiving a grant, a potential grantee shall certify to the FTA that it will maintain a drug-free workplace by (see [29 CFR 98 Appendix C](#) text below):

The grantee certifies that it will or will continue to provide a drug-free workplace by:

- a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
- b) Establishing an ongoing drug-free awareness program to inform employees about
 - 1) The dangers of drug abuse in the workplace;
 - 2) The grantee's policy of maintaining a drug-free workplace;
 - 3) Any available drug counseling, rehabilitation, and employee assistance programs; and
 - 4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
- c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);
- d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will—
 - 1) Abide by the terms of the statement; and
 - 2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;
- e) Notifying the agency in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;
- f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted—

- 1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
 - 2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
- g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e) and (f).

The recipient is required to have and distribute to award-related employees a written policy that states:

- The unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in the workplace is prohibited
- Employees must abide by the terms of the policy statement as a condition of employment
- If convicted of a drug statute violation that occurred in the workplace, employees are to report it to the employer in writing no later than five calendar days after such a conviction

The DFWA requirement applies to employees of a recipient directly engaged in the performance of work under the award, including both direct and indirect charge employees as well as temporary employees on the recipient's payroll.

If an indirect charge employee's impact or involvement in the performance of work under the award is insignificant to the performance of the award, then the requirements do not apply to that employee. The requirements do not apply to volunteers, consultants, or independent contractors not on the recipient's payroll, or employees of subrecipients or contractors in covered workplaces.

The DFWA policy can be part of the FTA drug and alcohol testing policy as long as it is clearly differentiated and it is extended to all applicable employees, not just safety-sensitive employees. These requirements should not be confused with FTA drug and alcohol testing requirements, which apply only to "safety sensitive" employees as well as subrecipient's, contractors, and subcontractors with safety sensitive employees.

Definitions to know

"Controlled substance" means a controlled substance in Schedules I through V of the Controlled Substances Act (21 U.S.C. 812) and as further defined by regulation (21 CFR 1308.11 through 1308.15); "Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes;

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, use, or possession of any controlled substance;

"Employee" means the employee of a grantee directly engaged in the performance of work under a grant, including: (i) All "direct charge" employees; (ii) all "indirect charge" employees unless their impact or involvement is insignificant to the performance of the grant; and, (iii) temporary personnel and consultants who are directly engaged in the performance of work under the grant and who are on the grantee's payroll. This definition does not include workers not on the payroll of the grantee (e.g.,

volunteers, even if used to meet a matching requirement; consultants or independent contractors not on the grantee's payroll; or employees of subrecipients or subcontractors in covered workplaces).

Part 2.c: Additional Federal Safety Requirements

Part 2.c.1: Overview of OSHA Requirements

As an employer you are responsible under the Occupational Safety and Health Act to provide a workplace free from recognized hazards that are causing or are likely to cause death or serious physical harm to your employees. You must comply with standards, rules and regulations issued by OSHA under the Act. You must be familiar with the standards and make copies available to employees for review upon their request. OSHA's regulations are contained in Title 29, Code of Federal Regulations (CFR) Parts 1900-1910.

Copies of various OSHA standards are available for purchase through the Superintendent of Documents, Government Printing Office, Washington, DC 20402-9325 (phone 202-512-1800) (fax 202-512-2250). Payment may be made by check payable to the GPO Deposit Account, or with VISA or MasterCard.

OSHA coverage of state and local government workers

Some transit systems may be part of a state or local government. As such, state and local government workers are excluded from Federal coverage under the Occupational Safety and Health Act of 1970 (the "OSH Act"). However, states operating their own state workplace safety and health programs under plans approved by the U.S. Department of Labor cover most private sector workers and are also required to extend their coverage to public sector (state and local government) workers in the state. Section 2 (11) of the OSH Act encourages states to develop and operate their own state OSH programs.

OSHA and Transportation Systems

As a transportation system, you have responsibilities under OSHA for both your vehicles and your facilities. OSHA requirements for bloodborne pathogens are covered in a separate section (please refer to the table of contents). Other OSHA areas are addressed below.

Facility Safety/Hazard Audit Checklists

Facility safety includes having exit lights in appropriate locations, the availability of first aid and bloodborne pathogen clean-up kits, eye-wash stations, and identifying chemical hazards. Hazard audits are an important part of your overall safety program, and will help you identify safety concerns before they become safety catastrophes. Although not required, a Hazard Audit Checklist will assist you in identifying areas that are in compliance and those areas that will require corrective action.

Workplace Hazard Identification

- Systematically identifying potential hazards, including health hazards.
- Conducting a hazard analysis to assess risks.

Work Environment

- Checking lighting, ventilation, and noise levels.
- Assessing exposure to hazardous substances.

Walking and Working Surfaces

- Ensuring all surfaces are clean, orderly, and free from hazards like slips, trips, and falls.
- Checking the condition of portable and fixed ladders and the presence of guardrails on elevated surfaces.

Equipment and Machinery

- Verifying that machinery has proper and functional guards.
- Confirming that safety features are in place and working correctly.

Electrical Safety

- Identifying potential electrical hazards.

Fire Safety

- Assessing fire protection measures and emergency exits.

Hazard Communication

- Checking chemical labels for accuracy.
- Ensuring Safety Data Sheets (SDSs) are accessible and up-to-date.
- Maintaining an accurate chemical inventory.

Personal Protective Equipment (PPE)

- Identifying tasks requiring PPE and ensuring the proper equipment is available.

Emergency Preparedness

- Ensuring a comprehensive emergency action plan is in place and tailored to the workplace.

Employee Training and Awareness

- Confirming employees receive adequate safety and health training.
- Checking that employees are involved in and participate in the safety program.

Incident Reporting and Recordkeeping

- Having a system for tracking hazard corrections, accident investigations, and maintaining records. (Similar to Safety Management Systems (SMS))

Where to Find Checklists

SC OSHA Website: Offers self-inspection checklists for general industry.

<https://osha.llr.sc.gov/PDFS/General%20Industry%20Checklist%202020.pdf>

Third-Party Safety Providers: Websites like GoAudits provide free OSHA checklists and templates for download.

OSHA Website: Provides guidance on hazard identification and risk assessment within OSHA's Safety Management section.

By using these checklists, you can perform regular self-inspections to proactively identify and control workplace hazards, promoting a safer and compliant environment. The Hazard Audit Checklist areas that do not apply to your operation can be removed and discarded. Perform regular walk-throughs periodically depending on the size of your transportation system, at least once each quarter; inspections



should be performed annually. Your hazardous material inventory should also be checked regularly; additions and deletions to the inventory should be made as they occur.

An OSHA hazard audit checklist helps identify potential risks in a workplace to ensure compliance with safety regulations. Key areas include hazard communication, walking and working surfaces, electrical safety, machinery and equipment, personal protective equipment (PPE), emergency preparedness, and employee training. You can find resources, including a sample basic review checklist, on the [South Carolina OSHA \(SC OSHA\) website](#) and through other third-party safety compliance providers.

Sample Policy for PPE

PERSONAL PROTECTIVE EQUIPMENT

Purpose: To meet the requirements of WAC 296-24-073, shall furnish and use safety devices and safeguards, and shall adopt and use practices, means, methods, operations, and processes which are reasonably adequate to render such employment and place of employment safe. Management shall do everything reasonably necessary to protect the life and safety of employees.

Expectations: TS provides special protective equipment and its use is mandatory. Maintenance and Facilities Maintenance employees shall be accountable for using it properly.

Scope: The use of protective equipment is required anytime there is a chance of injury or illness. Personal protective equipment is required for many maintenance department activities, performing first aid, and when dealing with potentially infectious materials.

Procedure: The following list is an outline of TS work areas and the required personal protective devices that must be worn:

- A. Maintenance Shop - While operating a drill or air gun, a safety shield or safety glasses must be worn. While welding, the use of a protective hood and fireproof gloves is required. The welding area must be screened off to protect the eyes of others from flash burns.
- B. Wash Rack - While using chemicals, the use of rubber gloves and either a face shield or safety glasses is required.
- C. Service Truck - While boosting batteries, the use of rubber gloves and either a face shield or safety glasses is required. While changing light bulbs, the use of cloth gloves is recommended.
- D. Facilities Maintenance - While collecting contained trash, the use of heavy-duty gloves is required. While collecting loose trash the use of tongs or similar instrument is recommended.
- E. Battery Storage Area - While charging batteries, rubber gloves and a safety shield or safety glasses must be worn.
- F. First Aid/CPR - While performing first aid or CPR employees must use latex gloves, and a mouth shield (CPR only).

Bloodborne Pathogens

Bloodborne pathogens are microorganisms such as viruses or bacteria that are carried in the bloodstream and can cause disease in people. There are many different types of bloodborne pathogens, including malaria, syphilis and brucellosis, but Hepatitis B (HBV) and the Human Immunodeficiency Virus (HIV) are the two diseases specifically addressed by the OSHA Bloodborne Pathogen Standard. In March 1992, OSHA's Bloodborne Pathogen Standard, 29 CFR 1910.1030, took effect. This standard was designed to help prevent more than 200 deaths and 9,000 bloodborne infections every year. While the standard was primarily aimed at hospitals, funeral homes, nursing homes, clinics, law enforcement agencies, emergency responders, and HIV/HBV research laboratories, anyone who can "reasonably expect to come in contact with blood or potentially infectious materials" as part of their job is covered by the standard.

Note: State and local government workers are excluded from Federal coverage under the Occupational Safety and Health Act of 1970 (the "OSH Act"). The West Virginia Department of Transportation, Division of Public Transit, requires all recipients of financial assistance to comply with the OSHA Bloodborne Pathogen Standard, 29 CFR 1910.1030.

Many transit employees can "reasonably anticipate" exposure to blood and/or other potentially infectious materials as part of their job duties, and therefore must receive training to limit, or avoid this exposure to the maximum extent feasible. The person conducting the training must be knowledgeable in the subject matter covered by the elements contained in the training program as it relates to the workplace that the training will address.

Transportation system employees must be aware of the ways exposure are most likely to occur, for example, assisting Dialysis patients, cleaning blood or other body fluid (urine, vomit, saliva) that is visibly contaminated with blood from the vehicle, and providing first aid.

Exposure Control Plan

You are required to develop and implement an Exposure Control Plan. The plan should include but is not limited to:

- Providing a Hepatitis B vaccination program at no-cost to the employee; if the employee does not want to participate in the vaccination program, you must ask them to sign the declination statement;
- Establishing a training program for all employees to teach them the characteristics of bloodborne pathogens;
- Including in your training and Exposure Control Plan "Universal Precautions." Universal Precautions is the term used to describe a prevention strategy in which all blood and potentially infectious materials are treated as if they are, in fact, infectious, regardless of the perceived status of the source individual. In other words, whether or not you think the blood/body fluid is infected with bloodborne pathogens, you treat it as if it is. This approach is used in all situations where exposure to blood or potentially infectious materials is possible. This also means that certain work practice controls shall always be utilized in situations where exposure may occur;

- Including a bloodborne pathogen Awareness Training Program in your Exposure Control Plan. The training must include information on determining who is infected and how transmission can occur and result in infection. OSHA requires that Awareness Training be conducted annually;
- Practicing actual spill clean-ups using water, fruit juice,
- Placing biohazard response kits on vehicles and at work locations; and
- Providing specific training to all employees regarding the use and contents of cleaning kits, procedures and incident reports as they relate to bloodborne pathogens.

Awareness Training Program

The Exposure Control Plan must include an awareness-training program regarding bloodborne pathogens. It must include information on determining who is infected and how transmission can occur and result in infection. OSHA requires that training must be conducted annually.

It is impossible to know for sure if an individual that the system might come into contact with is or is not infected. That is why it is so important for everyone to understand that all blood and other applicable body fluids must be considered infectious at all times and that all precautions be put in place to prevent contact with these fluids so as to minimize the probability of infection. All bloodborne pathogens are carried in the blood. In addition, they can often be found in several different kinds of body fluids, including blood products such as those found in the drainage of wounds, vaginal secretions, semen, and saliva as a result of dental procedures. Normally less dangerous bodily fluids include tears, perspiration, vomit, urine, feces and saliva from drooling. However, if any of these bodily fluids contain visible blood, then they fall into the same class of potential infection agents as blood, blood products, etc.

Infection results from the intrusion of bloodborne pathogens into a person's body. Intrusion can incur through a variety of entry points including mucous membranes of the eyes, nose and mouth, via cuts or scratches in the skin or through skin which has been punctured by a contaminated sharp object such as broken glass. These could be the general pathways for infection of transit personnel and passengers during typical service delivery. Infection can also occur as a result of sexual contact and by the sharing of needles by drug users. It is believed that unless your transit system is atypical, the latter two routes of infection are probably not going to be common problem areas for you.

Ultimately as you might expect, the highest probability of exposure and the potential transmission of infection can and will occur as a result of an accident. However, an accident does not necessarily have to be a major collision. It could very well be something as simple as a bloody nose, a cut caused by something that is broken, or by vomit generated by someone having a reaction to chemotherapy or some other medical treatment.

It is most important to assume that all blood and other bodily fluids are infectious so that all appropriate precautions can be taken to prevent transmission and eventual infection. OSHA considers this assumption to be an approach they label as "Universal Precautions."

Biohazard Kit Training

Each employee should receive appropriate training on how to effectively utilize the materials in the biohazard kit. In the event that blood or bodily fluid with visible blood within it has to be cleaned up, specific steps should be taken. It is your responsibility to train your employees in the proper clean up and disposal procedures.

The procedure should be as follows for the cleanup of all blood, blood products, and other body fluids visibly contaminated with blood.

- Disinfectant spray should be used to decontaminate the spill.
- After the disinfectant has been sprayed onto the infected area, clean up the area using paper towels and/or absorbent powder.
- Once the area is wiped clean, new disinfectant spray and towels or absorbent powder should again be used to collect any residue material.
- Any materials acquired by the towels in the cleanup and the towels must be placed carefully into a red biohazard bag. In addition, gloves worn by the employee during the cleanup must also be placed into the red biohazard bag. Any item, which is saturated with blood or body fluids, must go into a red biohazard bag.

Any material which you feel may be contaminated should be placed into a leak proof bag. It is probably wise to assume that all materials being cleaned up and discarded do contain blood or body fluids (with blood) and should be placed into the red biohazard bags. If it is necessary to cleanup broken glass, needles, or other sharp objects known as “sharps” which could cut you, tear your gloves, or otherwise cause a problem, they should be handled strictly by mechanical means. This means the use of the brush, dustpan and tongs within the biohazard kit. Make sure that any “sharps” are put into a leak proof, puncture-proof container properly marked with the approved biohazard symbol. As a total precaution the brush, dustpan, and tongs used to mechanically pick up “sharps” should also be discarded in the container.

Transportation systems should not attempt final disposal of biohazardous materials. Rather, contact a local hospital, clinic or medical waste disposal company to make arrangements for final and proper disposal of the biohazardous material. Never put labeled biohazardous materials, no matter how small, into the regular trash. The following is the ideal process for labeling and disposal of biohazardous waste:

- Labels must be florescent orange or orange-red or predominantly so, with lettering or symbols in a contrasting color.
- Labels must either be an integral part of the container or affixed as close as feasible to the container by string, wire, adhesive, or other method that prevents their loss or unintentional removal.
- Red bags or red containers may be substituted for labels.
- Individual containers of blood or other potentially infectious materials that are placed in a labeled container during storage, transport, shipment or disposal are exempted from the labeling requirement.
- Labels required for contaminated equipment must also state which portions of the equipment remain contaminated.
- Regulated waste that has been decontaminated need not be labeled or color-coded.
- The primary impacts to transportation systems regarding labeling requirements are the biohazard waste bags and the containers into which they are stored before final disposal.

Note: Your transportation system may be considered a low volume generator of biohazardous waste. Low volume generators are not required to dispose of biohazardous waste in accordance with medical practice and the steps shown above. If your local health department classifies your systems as a low volume generator, you are permitted to dispose of the waste in regular trash containers. Do not,

however, leave the biohazard bags exposed or labeled, but place the biohazard bag into a back opaque trash bag before disposal. Unless you meet the requirements for low volume generators as indicated above, even small amounts of biohazardous materials must be disposed of in accordance with proper medical procedures. Contact your local county health department for further assistance.

Reporting Exposure Incidents

You are required to report and conduct a follow-up, including a report from the healthcare professional, when an employee may have been exposed to a bloodborne pathogen from exposure to blood or through needle sticks, to non-intact skin, cuts, or penetrations of the skin and/or splashes to the mucous membranes. Routine use of a biohazard kit to cleanup a biohazardous spill does not trigger an investigation or medical follow-up unless there is reason to believe that an exposure may have occurred. However, it is suggested that you record biohazard kit usage, although you are only required to report and investigate when there is a reasonable probability that an employee has been exposed to a bloodborne pathogen.

All exposure incidents must be documented. Attempts must be made to capture reasonably detailed information regarding the circumstances of a biohazardous spill and employee exposure incident, therefore, we recommend you use some type of form to ensure that you are capturing complete and consistent information for each incident. A form also provides a base record for determining if additional information is necessary in order to properly evaluate the incident. Information to be captured includes:

- a full description of the incident;
- the equipment within the biohazard kit, which was worn and used in the cleanup;
- whether or not you feel you were exposed to bloodborne pathogens;
- a description of the passenger and anything relevant to the way they acted or what happened to them; and
- the status of your Hepatitis B vaccination program.

The ultimate purpose of an incident report form and of the investigation that follows is:

- to identify and develop methods for preventing future such incidents; and
- provide background information for any medical follow-up.

The final step in the cleanup phase should be to thoroughly wash your hands with running water and an ample amount of good quality antiseptic soap. Thorough washing of your hands followed by a second thorough washing should prevent any potential for transmission and infection.

Managing Airborne Pathogen Threats

The World Health Organization (WHO) considered the [coronavirus](#) disease 2019 (COVID-19) pandemic as a major global [public health](#) concern ([Cucinotta and Vanelli, 2020](#)). This [respiratory disease](#) infected over 770 million individuals worldwide, resulting in approximately 7 million deaths by February 2024 ([WHO, 2023](#)). The rapid spread of the virus was largely associated with national and international transportation involving all modes, but particularly public vehicles, stations, and terminals ([Carteni et al., 2021](#); [Murano et al., 2021](#); [Zheng et al., 2020](#)). Research has shown that closed vehicles and facilities pose a higher risk compared to open environments ([Qian et al., 2021](#)). The public transportation sector was identified as the second biggest contributor to the transmission of Covid-19, following the health sector ([Lan et al.,](#)

2020). Consequently, governments implemented control measures, leading to a significant decline of approximately 90% in ridership levels for all modes of public transportation ([Abduljabbar et al., 2022](#); [Qi et al., 2021](#); [Transitapp, 2020](#)). Covid-19 is mostly in the past while the demand for public transportation has returned to normal. However, the experiences with the pandemic highlighted the need for developing control measures and [strategic management](#) of public transportation systems.

Airborne infections can cause significant financial challenges for operators of public transportation systems. Most urban train systems cover more than half of their operational costs from passenger fares, whereas in many countries other services rely primarily on government support ([Coulombel and Monchambert, 2023](#)). Indeed, a higher self-financing ratio typically suggests a more secure long-term financial status among transport managers ([Hörcher et al., 2022](#)). However, self-financing was a disadvantage during Covid-19 considering the decrease in demand ([Hörcher et al., 2022](#)). Therefore, public transportation agencies require established countermeasures to be employed during airborne transmissions to minimize losing passengers and financial loss.

Initial preventative measures such as social distancing and closures present implementable challenges for transportation services ([Tarasi et al., 2021](#)). This is primarily because public transportation systems were not prepared to implement effective social distancing measures. Similarly, public transport organizations did not have a pre-established control plan to address a pandemic ([Gartland et al., 2023](#)). A global survey among transport researchers, managers, and policymakers revealed that only 21.1% of cities/towns had contingency plans for bus systems, 18.3% for rail transit systems, and 11.3% for taxi services, which left the sector vulnerable to the disruptions caused by the pandemic (J. [Zhang et al., 2021](#)). Many researchers suggested the promotion of alternative modes, such as cycling, to mitigate Covid-19 transmission ([Peralvo et al., 2022](#)). While cycling worked relatively well during the Covid-19 pandemic ([Abdullah et al., 2021](#)), the challenge now becomes to develop tailored control measures that effectively address transmission risks while minimising passenger attrition.

A relatively large number of studies have investigated a range of control measures for reducing the risk of transmission of airborne infections in public transportation across the globe ([Beck et al., 2023](#); [Bonful et al., 2020](#); [Edwards et al., 2021](#); [Lin et al., 2022](#); [Okeke et al., 2023](#); [Shelat et al., 2022](#)). These measures included more frequent vehicle cleaning and [disinfection](#), improved sanitization facilities, mask-wearing, maintaining social distancing, and enhancing ventilation ([Gartland et al., 2022](#); [Gkiotsalitis and Cats, 2021](#); Z. [Wang et al., 2022](#)). While these measures have been somewhat successful in reducing transmission in public transportation, they are insufficient to prevent closures or service reductions during peak times of pandemics. Consequently, recent literature, reviewed in this study, has recommended several technology-driven solutions to help implement these measures more effectively. This paper presents a [systematic review](#) that compiles and synthesizes recent literature and provides a comprehensive overview of implementation strategies employed worldwide to minimize the transmission of airborne infections in public transportation.

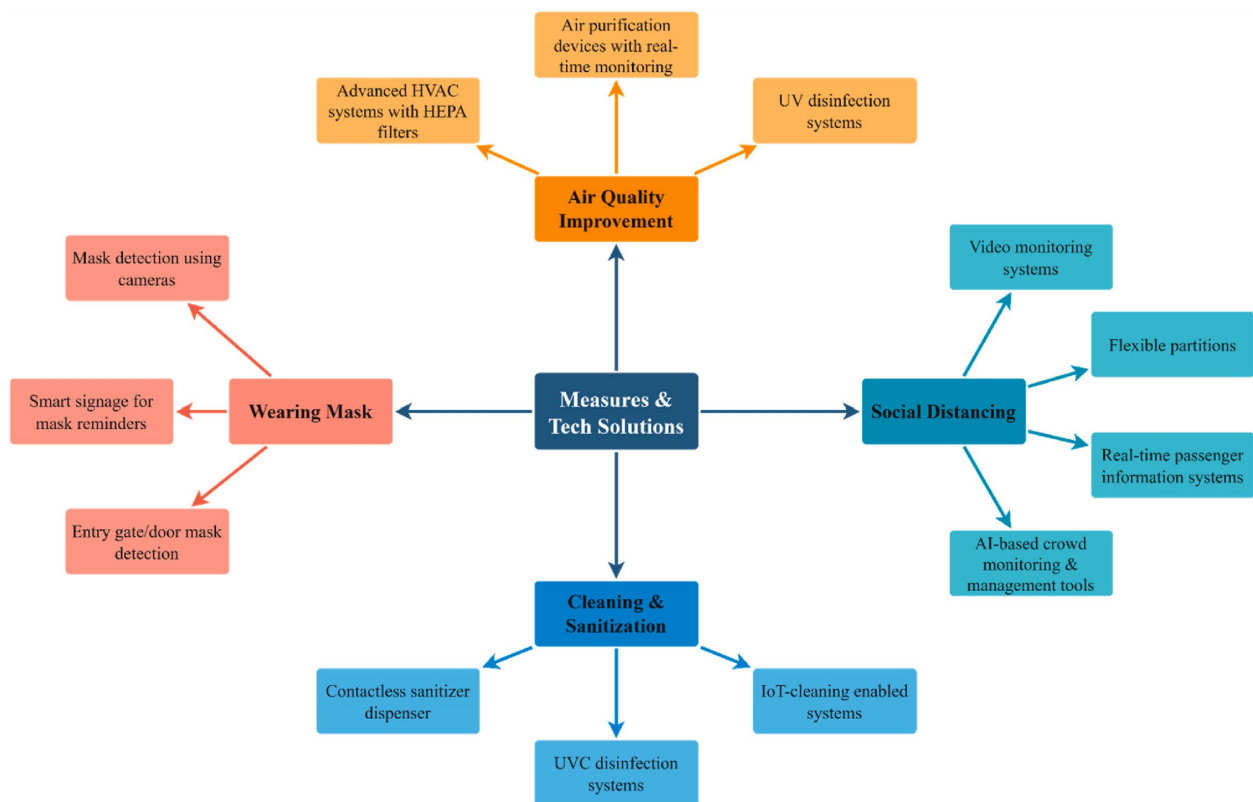
Lessons learned from the pandemic can serve as a blueprint for managing future outbreaks. There is a need for comprehensive strategies that address specific challenges faced by public transportation systems, emphasizing the importance of alternatives to closing or limiting capacity. Furthermore, there are critical gaps in our understanding of how to implement these lessons effectively. This [systematic review](#) aims to (1) summarize available evidence on countermeasures, and their efficacy, for ground public transportation agencies to control airborne infection transmission; and (2) provide practical

recommendations to help public transportation organizations in preparing for future epidemics. These countermeasures aim to help transportation agencies maintain passenger safety during epidemics and pandemics of respiratory infections such as Covid-19 and their airborne transmission, rather than closing public transportation or restricting service.

Control strategies and corresponding practical solutions.

<u>Control strategies</u>	<u>Practical solutions</u>
Air quality	•Increased ventilation rate for mechanically ventilated transport. •Utilizing efficient filtration systems such as electrostatic filters, high-efficiency particulate air (HEPA), and antimicrobial air filters. •Promoting open windows when feasible. •Implementing door openings in stations. •Introducing overhead gaspers and higher backrests.
Cleaning/Sanitization	•Using contactless payment. •Cleaning of high-contact surfaces. •Placing automated sanitizer dispensers.
Face mask	•Enforce mask-wearing through automated mask detection monitoring systems at the front doors of public transport vehicles and stations.
Social distancing	•Crowd management using automatic passenger counting systems. •Pricing management - Off-Peak travel incentives (bonus points or discounted fares). •Seat reservation systems for trains. •Bus crowding management (dedicated bus lanes and headway management). •Ticketing systems - Online purchase and e-ticketing. •Passenger information (crowding dissemination, floor, and seat stickers). •Closing gathering places (mark platforms and rope off benches). •Infrastructure adjustments (switching to larger articulated buses).
Information dissemination	•Preventing crowding in stations using strategies such as posting informative flyers and roping off unnecessary seats to ensure physical distancing. •Utilizing websites, emails, custom-built mobile apps, and data platforms with LED displays and electronic screens to disseminate safety measures.

- Integrate QR codes on public transport for easy access to relevant information.



The above study excerpt, *Mitigating Airborne Infection Risks in Public Transportation: A Systematic Review* was published by Australia's [Transport Policy, Volume 155](#), September 2024, Pages 309-320

Protection of the Transit Operator

During the Covid 19 Pandemic, public transit systems found themselves on the frontlines of potential exposure to an airborne pathogen devastating the global population. Though mitigation strategies were enacted by USDOT and Centers for Disease Control (CDC) it was the transit agencies, collective bargaining units and vendors who created innovative solutions to keeping their employees safe.

Some of the new strategies were already in place with many public transit systems developing plexiglass barriers between passengers and the operator to keep the operator safe from disgruntled passengers. Other methods included those previously mentioned as well as changes to policy, training programs, personal protection equipment, fare collection, seating capacity, vehicle access, cleaning and disinfecting protocols.

Below is a list of a few mitigation strategies when pandemic declarations have been made or as standardized precautions against airborne pathogens.

- Operator area plexiglass protection – providing a level of protection for operators who have a potential for virus exposure.

- Front transit door access – by removing passenger boardings through the front transit door (for transit coaches) and only permitting boarding and alighting through the rear door provides a level of exposure protection for the operator.
 - Fare boxes would need to be relocated, removed or signage with other payment options
 - Accessible ramps located at the front entrance would be the exception to front access
- Seating Capacity Reduction – primarily to reduce risk for passengers, reducing passenger capacity will also reduce risk to operator.
- PPE's – Masks will be required of operators and passengers
- Warning Notification – Adding a hidden operator emergency notification system will allow an operator to notify the transit system without escalating a passenger safety or security event.
 - Several options to include surveillance camera system, destination sign notification, vehicle kill switch, software and communications systems options.
- Posted policy information or informational hashtags to reduce passenger questions to the operator.
- Operator area air purification system with HEPA filtration
- Operator cleaning policies between routes or demand response trips.

See the following links for additional information on the impacts of pandemics on public transit.

<https://www.apta.com/wp-content/uploads/APTA-Brief-Safety-During-Pandemic-July-2020.pdf>

<https://nap.nationalacademies.org/catalog/28285/protecting-transportation-employees-and-the-traveling-public-from-airborne-diseases>

<https://nap.nationalacademies.org/catalog/28283/mitigating-exposure-to-airborne-diseases-for-public-transportation-passengers-and-employees>

Transit Facility Safety & Hazard Checklist

Workplace Hazards

Public Transit, like other employers, face challenges with safety vigilance in a changing work environment that is dynamic in nature impacted by new technology demands, modified infrastructure and threats from inside and outside the organization. Whether the system includes its own maintenance facility or not, facility safety hazards are still present and may include chemical and biological threats, electrical issues, fire and flood hazards, and hazards from lack of basic housekeeping procedures. To better manage facility safety, transit systems are using tools developed by OSHA to conduct assessments of risk similar to FTA's Safety Management Systems (SMS) and safety risk management techniques. Additionally, assessing and monitoring facility hazards is also a fundamental element of FTA's Transit Asset Management Plan requirements to manage and maintain assets in a State of Good Repair (SGR).

Facility Safety

Facility safety includes having exit lights in appropriate locations, the availability of first aid and bloodborne pathogen clean-up kits, eye-wash stations, and identifying chemical hazards. Hazard audits

are an important part of your overall safety program, and will help you identify safety concerns before they become safety catastrophes. Although not required, a Hazard Audit Checklist will assist you in identifying areas that are in compliance and those areas that will require corrective action.

As you conduct your audit, be aware of, and address, the following fundamental safety areas:

- Basic Design Deficiencies;
- Inherent Hazards;
- Malfunctions;
- Maintenance Hazards;
- Environmental Hazards; and
- Human Factors.

While not covered by OSHA regulations, during your audit, look for areas that may contain mold spores. Mold spores can result in allergic reactions and cause health concerns to those exposed to mold.

The Hazard Audit Checklist areas that do not apply to your operation can be removed and discarded. Perform regular walk-throughs periodically depending on the size of your transportation system, at least once each quarter; inspections should be performed annually. Your hazardous material inventory should also be checked regularly; additions and deletions to the inventory should be made as they occur.

Hazard Identification and Assessment

One of the "root causes" of workplace injuries, illnesses, and incidents is the failure to identify or recognize hazards that are present, or that could have been anticipated. A critical element of any effective safety and health program is a proactive, ongoing process to identify and assess such hazards.

To identify and assess hazards, employers and workers:

- Collect and review information about the hazards present or likely to be present in the workplace.
- Conduct initial and periodic workplace inspections of the workplace to identify new or recurring hazards.
- Investigate injuries, illnesses, incidents, and close calls/near misses to determine the underlying hazards, their causes, and safety and health program shortcomings.
- Group similar incidents and identify trends in injuries, illnesses, and hazards reported.
- Consider hazards associated with emergency or nonroutine situations.
- Determine the severity and likelihood of incidents that could result for each hazard identified, and use this information to prioritize corrective actions.

Some hazards, such as housekeeping and tripping hazards, can and should be fixed as they are found. Fixing hazards on the spot emphasizes the importance of safety and health and takes advantage of a safety leadership opportunity.

Action item 1: Collect existing information about workplace hazards

Information on workplace hazards may already be available to employers and workers, from both internal and external sources.

How to accomplish it

Collect, organize, and review information with workers to determine what types of hazards may be present and which workers may be exposed or potentially exposed. Information available in the workplace may include:

- Equipment and machinery operating manuals.
- Safety Data Sheets (SDS) provided by chemical manufacturers.
- Self-inspection reports and inspection reports from insurance carriers, government agencies, and consultants.
- Records of previous injuries and illnesses, such as OSHA 300 and 301 logs and reports of incident investigations.
- Workers' compensation records and reports.
- Patterns of frequently-occurring injuries and illnesses.
- Exposure monitoring results, industrial hygiene assessments, and medical records (appropriately redacted to ensure patient/worker privacy).
- Existing safety and health programs (lockout/tagout, confined spaces, process safety management, personal protective equipment, etc.).
- Input from workers, including surveys or minutes from safety and health committee meetings.
- Results of job hazard analyses, also known as job safety analyses.

Information about hazards may be available from outside sources, such as:

- OSHA, National Institute for Occupational Safety and Health (NIOSH), and Centers for Disease Control and Prevention (CDC) websites, publications, and alerts.
- Trade associations.
- Labor unions, state and local occupational safety and health committees/coalitions ("COSH groups"), and worker advocacy groups.
- Safety and health consultants.

Action item 2: Inspect the workplace for safety hazards

Hazards can be introduced over time as workstations and processes change, equipment or tools become worn, maintenance is neglected, or housekeeping practices decline. Setting aside time to regularly inspect the workplace for hazards can help identify shortcomings so that they can be addressed before an incident occurs.

How to accomplish it

- Conduct regular inspections of all operations, equipment, work areas and facilities. Have workers participate on the inspection team and talk to them about hazards that they see or report.
- Be sure to document inspections so you can later verify that hazardous conditions are corrected. Take photos or video of problem areas to facilitate later discussion and brainstorming about how to control them, and for use as learning aids.
- Include all areas and activities in these inspections, such as storage and warehousing, facility and equipment maintenance, purchasing and office functions, and the activities of on-site contractors, subcontractors, and temporary employees.
- Regularly inspect both plant vehicles (e.g., forklifts, powered industrial trucks) and transportation vehicles (e.g., cars, trucks).
- Use checklists that highlight things to look for. Typical hazards fall into several major categories, such as those listed below; each workplace will have its own list:
 - General housekeeping
 - Slip, trip, and fall hazards
 - Electrical hazards
 - Equipment operation
 - Equipment maintenance
 - Fire protection
 - Work organization and process flow (including staffing and scheduling)
 - Work practices
 - Workplace violence
 - Ergonomic problems
 - Lack of emergency procedures
- Before changing operations, workstations, or workflow; making major organizational changes; or introducing new equipment, materials, or processes, seek the input of workers and evaluate the planned changes for potential hazards and related risks.

Note: Many hazards can be identified using common knowledge and available tools. For example, you can easily identify and correct hazards associated with broken stair rails and frayed electrical cords. Workers can be a very useful internal resource, especially if they are trained in how to identify and assess risks.

Action item 3: Identify health hazards

Identifying workers' exposure to health hazards is typically more complex than identifying physical safety hazards. For example, gases and vapors may be invisible, often have no odor, and may not have an immediately noticeable harmful health effect. Health hazards include chemical hazards (solvents,

adhesives, paints, toxic dusts, etc.), physical hazards (noise, radiation, heat, etc.), biological hazards (infectious diseases), and ergonomic risk factors (heavy lifting, repetitive motions, vibration). Reviewing workers' medical records (appropriately redacted to ensure patient/worker privacy) can be useful in identifying health hazards associated with workplace exposures.

How to accomplish it

- Identify *chemical hazards* –review SDS and product labels to identify chemicals in your workplace that have low exposure limits, are highly volatile, or are used in large quantities or in unventilated spaces. Identify activities that may result in skin exposure to chemicals.
- Identify *physical hazards* –identify any exposures to excessive noise (areas where you must raise your voice to be heard by others), elevated heat (indoor and outdoor), or sources of radiation (radioactive materials, X-rays, or radiofrequency radiation).
- Identify *biological hazards* –determine whether workers may be exposed to sources of infectious diseases, molds, toxic or poisonous plants, or animal materials (fur or scat) capable of causing allergic reactions or occupational asthma.
- Identify *ergonomic risk factors* –examine work activities that require heavy lifting, work above shoulder height, repetitive motions, or tasks with significant vibration.
- Conduct *quantitative exposure assessments* –when possible, using air sampling or direct reading instruments.
- *Review medical records* –to identify cases of musculoskeletal injuries, skin irritation or dermatitis, hearing loss, or lung disease that may be related to workplace exposures.

Note: Identifying and assessing health hazards may require specialized knowledge. Small businesses can obtain free and confidential occupational safety and health advice services, including help identifying and assessing workplace hazards, through OSHA's [On-site Consultation Program](#).

Action item 4: Conduct incident investigations

Workplace incidents –including injuries, illnesses, close calls/near misses, and reports of other concerns– provide a clear indication of where hazards exist. By thoroughly investigating incidents and reports, you will identify hazards that are likely to cause future harm. The purpose of an investigation must always be to identify the root causes (and there is often more than one) of the incident or concern, in order to prevent future occurrences.

How to accomplish it

- Develop a clear plan and procedure for conducting incident investigations, so that an investigation can begin immediately when an incident occurs. The plan should cover items such as:
 - Who will be involved
 - Lines of communication
 - Materials, equipment, and supplies needed

- Reporting forms and templates
- Train investigative teams on incident investigation techniques, emphasizing objectivity and open-mindedness throughout the investigation process.
- Conduct investigations with a trained team that includes representatives of both management and workers.
- Investigate close calls/near misses.
- Identify and analyze root causes to address underlying program shortcomings that allowed the incidents to happen.
- Communicate the results of the investigation to managers, supervisors, and workers to prevent recurrence.

Effective incident investigations do not stop at identifying a single factor that triggered an incident. They ask the questions "Why?" and "What led to the failure?" For example, if a piece of equipment fails, a good investigation asks: "Why did it fail?" "Was it maintained properly?" "Was it beyond its service life?" and "How could this failure have been prevented?" Similarly, a good incident investigation does not stop when it concludes that a worker made an error. It asks such questions as: "Was the worker provided with appropriate tools and time to do the work?" "Was the worker adequately trained?" and "Was the worker properly supervised?"

Note: OSHA has special reporting requirements for work-related incidents that lead to serious injury or a fatality (29 CFR 1904.39). OSHA must be notified within 8 hours of a work-related fatality, and within 24 hours of an amputation, loss of an eye, or inpatient hospitalization.

Action item 5: Identify hazards associated with emergency and nonroutine situations

Emergencies present hazards that need to be recognized and understood. Nonroutine or infrequent tasks, including maintenance and startup/shutdown activities, also present potential hazards. Plans and procedures need to be developed for responding appropriately and safely to hazards associated with foreseeable emergency scenarios and nonroutine situations.

How to accomplish it

- Identify foreseeable emergency scenarios and nonroutine tasks, taking into account the types of material and equipment in use and the location within the facility. Scenarios such as the following may be foreseeable:
 - Fires and explosions
 - Chemical releases
 - Hazardous material spills
 - Startups after planned or unplanned equipment shutdowns
 - Nonroutine tasks, such as infrequently performed maintenance activities
 - Structural collapse

- Disease outbreaks
- Weather emergencies and natural disasters
- Medical emergencies
- Workplace violence

Action item 6: Characterize the nature of identified hazards, identify interim control measures, and prioritize the hazards for control

The next step is to assess and understand the hazards identified and the types of incidents that could result from worker exposure to those hazards. This information can be used to develop interim controls and to prioritize [hazards for permanent control](#).

How to accomplish it

- Evaluate each hazard by considering the severity of potential outcomes, the likelihood that an event or exposure will occur, and the number of workers who might be exposed.
- Use interim control measures to protect workers until more permanent solutions can be implemented.
- Prioritize the hazards so that those presenting the greatest risk are addressed first. Note, however, that employers have an ongoing obligation to control all serious recognized hazards and to protect workers.

Note: "Risk" is the product of hazard and exposure. Thus, risk can be reduced by controlling or eliminating the hazard or by reducing workers' exposure to hazards. An assessment of risk helps employers understand hazards in the context of their own workplace and prioritize hazards for permanent control.

Hazardous Material Storage

Another good management practice is to maintain an inventory of hazardous material(s). List all the areas where hazardous material(s) are stored. Inspect and record the condition of the storage area and its suitability for hazardous material containment.

Maintaining a record of the contents of storage areas will be particularly helpful in the event of an emergency. For example, if a fire were to occur at your facility, the fire department personnel responding to the call could be warned of dangerous conditions that might exist if the storage area were to be engulfed in fire. Your inventory of hazardous material(s) should be kept at three separate locations:

- At the storage area (posted outside);
- In the Administrative Offices (filed); and
- At the local fire station (filed with other emergency information).

Use a separate sheet for each storage location. On each form, list the hazardous substance, the type of danger it poses, and the amount that is stored for each location. The categories to be used in classifying a possible hazard are:

- Toxic (harmful if inhaled or swallowed);
- Flammable (catches fire easily); and
- Caustic (burns skin if touched).

To keep an accurate record of which hazards might be present in a storage area, the listing should be compiled on an annual basis. For this reason, the date on which the inspection was completed is crucial. Each storage area should be evaluated. If the storage of the material(s) fails to meet the standard for the storage of that material, the problem should be noted in a comment section and resolved immediately.

For example, flammables stored next to sources of flames (water heater/furnace). To ensure that the problem is fixed, another inspection should be scheduled within six weeks after the first evaluation.

All chemicals which employees may be exposed to under normal conditions of use or in a potential emergency must be evaluated for hazards. Chemical manufacturers and importers must evaluate chemicals they produce or import to determine if they are hazardous using available scientific evidence. Transportation systems are not required to evaluate chemicals unless they choose not to rely on the manufacturer or importer's evaluation. This chemical hazard information, as well as appropriate protective measures, must be communicated to employees of the transportation system by the following methods:

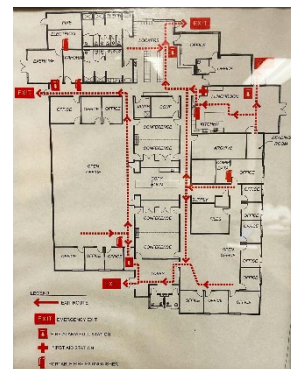
- A written hazard communication program in the workplace, including lists of hazardous chemicals present;
- Proper labeling of chemicals in the workplace;
- Preparation and distribution of Material Safety Data Sheets (MSDS); and
- Employee training regarding hazardous chemicals and proper safety measures.

Commonly found hazardous materials include batteries, paint, lubricants, antifreeze, and cleaning materials, among others.

Fire Safety

Fire extinguishers should be checked regularly and maintained. As part of your overall safety program, regularly review the location of fire extinguishers in your facility with all of your employees, and review the procedures for their use. If possible, work with your local fire department for regular fire safety reviews, and drills. Smoke detectors should also be regularly checked and batteries replaced. At a minimum, replace the batteries in all smoke detectors in the spring and fall coinciding with the beginning and ending of daylight savings time.

Fire extinguishers must be kept accessible and functional to eliminate lost time when needed. They should also be the proper class of extinguisher based on the kinds of materials in your operation and inspected on a regular basis to verify Fire Marshall inspection/replacement date, charge status, access and proper mounting.



Evacuation route maps should be included in all offices and common meeting areas, storage rooms and restrooms providing the path of travel to the nearest exit. The map should include fire extinguisher location, fire alarm pulls, first aid kits and emergency exits.

Training on proper use of fire extinguishers, fire emergency procedures and first aid should be conducted as part the new employee orientation process as well as periodic refresher training. Facility evacuation drills are helpful to make sure employees understand the role they may play in the emergency, designated meeting points aware from danger and assistance to those needing help exiting.

If construction or temporary changes are made to a facility, methods should be in place to communicate those changes and the impact on employee daily routine and emergency situations.

Written Hazard Communication Program

The Hazard Communication Standard written by the Occupational Safety and Health Administration (OSHA), also known as "Employee Right-to-Know," is designed to inform and train employees in the proper recognition, use and handling of hazardous chemicals or products. In order to comply, a company must prepare a written hazard communication plan, maintain an up-to-date inventory of hazardous chemicals or products at the workplace, and label containers of hazardous chemicals or products. In addition, Safety Data Sheets (SDS) must be readily available to employees and training must be provided to employees working with hazardous chemicals or products.

The written hazard communication program must be made available to a representative of the Assistant Secretary of Labor for Occupation Safety and Health (USDOL) or Director of the National Institute for Occupational Safety and Health (USDOHHS) upon request.

Labeling of Hazardous Chemicals

All containers of hazardous chemicals in the transportation system must be labeled in English with the identification of the chemical and appropriate hazard warnings. Portable containers for transferring hazardous chemicals do not need to be labeled. If the chemical is regulated by an OSHA substance specific health standard, the labels must meet all requirements of that standard.

Safety Data Sheets (SDS)

OSHA does not require that SDSs be provided to purchasers of household consumer products when the products are used in the workplace in the same manner that a consumer would use them, i.e.; where the duration and frequency of use (and therefore exposure) is not greater than what the typical consumer would experience. This exemption in OSHA's regulation is based, however, not upon the chemical manufacturer's intended use of his product, but upon how it actually is used in the workplace. Employees who are required to work with hazardous chemicals in a manner that results in a duration and frequency of exposure greater than what a normal consumer would experience have a right to know about the properties of those hazardous chemicals.

Safety Data Sheets (SDS) must be maintained for each hazardous chemical used by a transportation system. Workers exposed to hazardous chemicals have the right to know the identities and hazards of those chemicals, as well as the appropriate means to protect themselves from adverse health effects.

Any chemical that poses either a physical hazard (such as flammability) or a health hazard (such as causing damage to the skin or eyes) is covered by the OSHA rules. (Examples of hazardous chemicals they might use). There are several hundred hazardous chemicals. Not all will be used in your system, the most common hazardous chemicals that you may encounter are diesel and gasoline fuel, cleaning supplies, batteries, and anti-freeze. Depending on the amount of exposure by the employee, you may need SDSs for the hazardous chemicals. This includes hazardous materials used in administration, operations, and maintenance. Transportation systems will receive appropriate SDS from the chemical manufacturer or importer with, or just prior to, an initial shipment of the chemical (or with the first shipment after a SDS update). If it is not provided, the transportation system should obtain one as soon as possible. The information contained on the SDS must accurately reflect all scientific evidence used when making the hazard determination. Any new information regarding the hazards of the chemical or ways to protect against the hazards must be added to the SDS within three months of discovery.

SDSs must be readily accessible to employees when they are at their work areas. If work is carried out at more than one location, the SDSs may be kept at a central location within the facility. SDSs may be kept in any form, including operating procedures, and may cover groups of chemicals instead of individual chemicals where hazards of a process are particularly important.

However, the required information for each chemical must remain readily accessible. In addition, SDSs must be made available upon request of representatives of the Assistant Secretary of Labor for occupation Safety and Health (USDOL) or Director of the National Institute for Occupational Safety and Health (USDHHS).

Employee Information and Training

The transportation system must train and inform employees regarding hazardous chemicals when they are initially assigned to a particular area, or when a new hazardous chemical is introduced. This training and information sharing must include, at a minimum:

- Description of the transportation system's requirements;
- Ways to detect the presence of a hazardous chemical in their work area, such as visual appearances, odor, etc.;
- Physical and health hazards of chemicals;
- Appropriate work practices, emergency procedures, and personal protective equipment to be used when dealing with hazardous chemicals; and
- The location, availability, and description of the overall hazard communication program, including an explanation of the labeling system, material safety data sheets, inventory sheets, site report sheets, and how employees can obtain additional information about hazardous chemicals.

Conducting a facility audit, identifying hazardous chemicals, and appropriate employee training is good management. Identifying and correcting hazardous conditions will result in a safer work environment for you and your employees.

Underground Storage Tanks

If your transportation system has an underground storage tank you need to be aware that on August 8, 2005, President Bush signed the Energy Policy Act of 2005. Title XV, Subtitle B of this act (entitled the Underground Storage Tank Compliance Act of 2005) contains amendments to Subtitle I of the Resource

Conservation and Recovery Act - the original legislation that created the underground storage tank (UST) program. This new law significantly affects federal and state underground storage tank programs. Those who own underground storage tanks will be impacted by the changes EPA and states make in their tank programs as a result of the law. Further information on compliance with these requirements can be found at the U.S. Environmental Protection Agency (EPA) website, www.epa.gov/OUST/ustsystem/tanko&m.htm. Or, contact the



West Virginia Department of Environmental Protection

Division of Water and Waste: Tanks Unit

601 57th Street SE

Charleston, WV 25304

Phone: [\(304\) 926-0495](tel:3049260495)

<https://dep.wv.gov/WWE/ee/tanks/ust/Pages/default.aspx>

RESOURCES

- *Operating and Maintaining Underground Storage Tank Systems: Practical Help and Checklists.* (EPA 510-B-05-002). September 2005; this publication can be found at:
<http://www.epa.gov/OUST/pubs/ommanual.htm>
- Current information concerning underground storage tanks may be accessed at:
<http://www.epa.gov/OUST/ustsystem/tanko&m.htm>
- A good hazard audit check list is available at: **<http://www.psm.act.gov.au/documents/checklist.pdf>**
- Additionally, OSHA publishes the Small Business Handbook that will assist you in your audit. This may be downloaded at: **<http://www.osha.gov/dcsp/smallbusiness/small-business.html#gather>**
- West Virginia Department of Environmental Protection, www.dep.state.wv.us.

Section 2.d: Summary and Resources

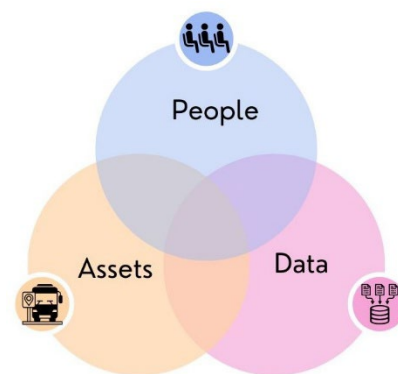
- a. Compliance Requirements
 - i. 49 CFR Part 673, 674
 - ii. OSHA 29 CFR 1910.1030
 - iii. OSHA 29 CFR Part 1910.147
 - iv. 49 CFR Part 37
 - v.
- b. Sample documents
 - i. Incident Report
 - ii. Accident Report
 - iii. Pre-trip Inspection Form
 - iv. Risk Assessment Index
 - v. Hazard Identification Form
 - vi. Safety Performance Measures
 - vii. Risk Assessment Matrices
 - viii. Safety Definitions
 - ix. On-board safety equipment
 - x. Dispatch – Accident protocols
 - xi. Threat and Vulnerability Assessments
 - xii. Complaint Form
 - xiii. Root Cause Investigation Form
- c. Best Practices
- d. Resources
 - i. [FTA PTASP TA Center](#)
 - ii. FTA Small Urban Checklist
 - iii. FTA Large Urban Checklist
 - iv. Iowa Bloodborne Pathogen Video
 - v. [National Public Transportation Safety Plan](#)
 - vi. [49 CFR Part 673](#)
 - vii. FTA Circular 4710.1

Section 3- Transit Security

According to the National Infrastructure Protection Plan (NIPP) developed by the Department of Homeland Security (DHS) protecting and ensuring the continuity of the critical infrastructure and key resources (CIKR) of the United States is essential to the Nation's security, public health and safety, economic vitality, and way of life. CIKR includes physical or virtual assets, systems, and networks so vital to the United States that the incapacity or destruction of such assets, systems, or networks would have a debilitating impact on security, national economic security, public health or safety, or any combination of those matters.

Though West Virginia public transit systems may not have a national impact like an oil refinery or nuclear power plant, they are an essential element of the community infrastructure and without them the community could suffer transportation challenges where residents have no other option. Public and private transit providers are the vital link between community members and employment, health care, human and social services, education, nutrition and quality of life destinations. Along with managing personnel (Section 1) and safety (Section 2) transit systems must be vigilant with security risk that may or may not impact transit services.

The following Section 3 will provide transit systems with information to help manage the security of three main groups – People, Assets and Data. The safety and security of these group elements will impact the public perception of the role of transit in their community. This section will focus on tools, methods and best practices transit systems can use to reduce the risk of security issues impacting their operations.



Section 3.a.1: Transit Worker Security

Safety is stressed in a transit system's mission statement, training programs, marketing campaigns and policies, but there are still instances where safety and security has been compromised due to complacency.

After tragic events in 2001, Congress and the transportation industry responded with increased security protocols for passengers and employees of transportation services for all modes. This rapid deployment security practices had a large impact on airline and rail passenger services while public transit focused on improved training of transit employees and added passenger policies.

The transit industry concerns included the potential for terrorist events through means of improvised explosive devices (IED), chemical and biological release, or other methods of creating catastrophic events on-board public transit. Transit infrastructure was added to a growing list of federally recognized hard and soft targets that would have a crippling effect on the community if they were attacked. Additional security measures were taken at major transit hubs and stations. The industry readied itself by making some subtle changes as well as noticeable changes in hopes of preventing a catastrophic event. Some of those changes included the following:

- Use of surveillance camera systems on vehicles and in transit facilities
- Train all personnel on suspicious behavior and belongings brought on-board that may conceal an explosive device
- Policies, procedures and protocols to prevent or respond to security events
- Additional staffing for security – transit police, security contractors, agreements with local police
- New construction considerations or modifications to existing structures – lighting, key cards/fob, gates and fencing
- Facility access control – transit parking area, facility hazardous chemical supplies, facility HVAC systems, fire suppression systems, security systems, fuel supply, and computer servers
- Administrative staff trained to properly respond to call-in threats
- Public security awareness campaigns – “See something, say something”
- Security drills or scenario practice with subject matter expert(s)
- Development of Agency Security Plan
- Threat and Vulnerability Assessment (TVA)
- Special alarms on bus or facility – to include destination sign activation, hidden duress alarm for driver, ticket agent or administrative staff
- Background investigation for employees and contractors
- Random inspections of assets and service

Many of these security measures were in place in large city transit systems as a means to combat local crime and vandalism, but smaller systems were being encouraged to adopt similar profiles.

According to a 2015 Transportation Cooperative Research Program (TCRP) study, Policing and Security Practices for Small- and Medium-Sized Public Transit Systems, small - and medium sized agencies spend less time and resources on security, employ fewer dedicated security personnel— 87% of small-sized transit agencies and 83% of medium-sized transit agencies report having no dedicated security staff—and depend to a much higher degree on obtaining assistance from local area police and occasionally contract security forces. Fewer agencies maintain security plans or deploy security countermeasures to minimize risk, with 91% of small agencies indicating no budget or budget under \$25,000 set aside for security. Forty-four percent of medium-sized agencies have no security budget and an additional 34% spend less than \$25,000 per year.

Security Risk Defined

Security Risk consists of the much narrower category of possible loss events that result from the intentional harmful acts of other persons. It requires an actor, motivation to do harm, and to constitute actual risk, there must be a capability or opportunity to accomplish the adverse act. The crime of robbery is a good example. For a robbery to be considered to have occurred there must be an actor with the intent to take something of value by force from a victim. Assume the robber has a gun and threatens to shoot the victim if he doesn’t turn over his or her money. There is a criminal actor, the verbal threat to shoot indicates there is motivation to do harm, and the gun represents the capability to commit the act.

Comparatively, a much broader *safety*-related risk may consist of a potential accidental release of a chemical substance into the atmosphere or bad weather causing a hazardous condition such as icy roads. In such cases there was no intent by an individual to harm another.

Security risk is “threat based” as opposed to “hazard based.” *Avoiding, reducing and mitigating security risk at small- and medium-sized public transit agencies is the specific topic of this research.* Safety and security are both considered under the universal term “All Hazards.”

Before the Covid-19 Pandemic, public transit systems were seeing an increase in assaults on transit workers with labor unions asking Congress for additional safeguards for transit operators through protective barriers to operator compartment redesign to security policy requirements. As seen in Section 2 of this manual, Congress required the FTA to conduct safety oversight of all FTA funded properties, which prior to 2013, had been the responsibility of other transportation departments like Federal Rail Administration (FRA) or Federal Motor Carrier Safety Administration (FMCSA).

The Public Transportation Agency Safety Plan (PTASP) requirement forced urban transit systems receiving FTA 5307 funding to adopt Safety Management Systems (SMS) to manage risk for employees, passengers and the public. SMS, replicates the basic foundation of managing risk in the airline industry but adapted for surface transportation. Though not required of rural public or human service agencies, the PTASP requirement, 49 CFR Part 673, focuses on accountability, identification, assessment and mitigation of risk.

As with safety, security can be managed by first identifying risk within the transit system and then assessing the consequences of the risk and potential for it to continue or happen again. Based on the assessment, the transit system can determine the impacts of doing nothing versus prioritizing mitigation strategies to either reduce or remove the risk. Security risk does not always present itself as safety risk might. Thus, one unforeseen event could result in catastrophic results without any indication or warning.

Employee Safety & Security

According to FTA’s National Transit Data (NTD) Reporting Manual for Reduced Reporters: An assault on a transit worker occurs when an individual knowingly, without lawful authority or permission, with intent to endanger the safety of any individual, or with a reckless disregard for the safety of human life, interferes with, disables, or incapacitates a transit worker while the transit worker is performing the duties of the transit worker.

FTA’s assault on a transit worker definition requires acts that either intend to endanger the safety of any individual or are done with reckless disregard for the safety of human life.

When reporting assault on a transit worker data annually using the NTD S&S-60 form, agencies report the event type, worker type (who), assault type (what), and location (where).

Element	Options
Event Type	• Major • Non-major
Worker Type (Who)	• Operator • Other transit worker (e.g., transit police, station agent) • Other (an individual that is not a transit worker or operator)
Assault Type (What)	• Physical • Non-physical
Location (Where)	• In transit vehicle • In revenue facility • In non-revenue facility • Other

Major Event Criteria: A major event comprises at least one of the following:

- The worker requires immediate transport for medical attention.
- The assault results in a major event such as a derailment or collision.
- (Rail modes) The assault results in a serious injury for which immediate transport from the scene may not occur but that results in one or more of the following—
 - Requires hospitalization for more than 48 hours, commencing within 7 days of the event.
 - Results in a fracture of any bone (except simple fractures of fingers, toes, or nose).
 - Causes severe hemorrhages or nerve, muscle, or tendon damage.
 - Involves an internal organ.
 - Involves second- or third-degree burns, or any burn affecting more than 5 percent of body surface.

Non-major Events Criterion: The assault on a transit worker does not meet the major event criteria listed above. The transit worker is not immediately transported for medical attention; the assault does not result in a major event such as a derailment or collision; and the assault does not meet the serious injury criteria noted above for rail modes.

Location Categories: Transit agencies must identify physical and non-physical assaults on transit workers based on the following location categories:

- Physical Assaults/Non-physical Assaults in Transit Vehicle
- Physical Assaults/Non-physical Assaults in Revenue Facility
- Physical Assaults/Non-physical Assaults in Non-revenue Facility
- Physical Assaults/Non-physical Assaults in Other Location

Assault Type:

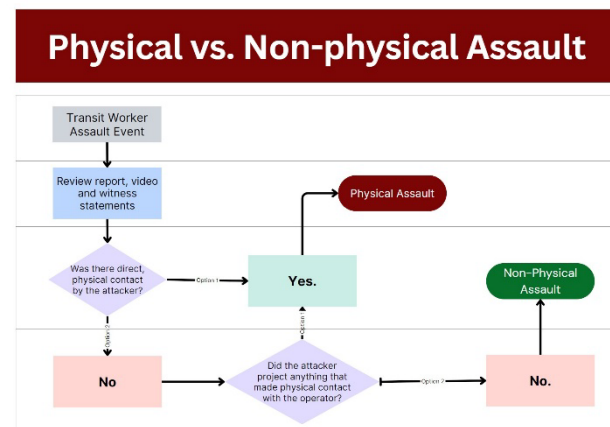
Physical assault is the assault on a transit worker in which the attack involves physical contact with the transit worker. This could include any physical contact with the victim from a weapon, a projectile, or other item.

Examples of a physical assault include

- A transit rider strikes a station agent with a metal bar.
- A passenger intentionally spits on a bus operator.
- A passenger intentionally shoves a transit worker.

Non-physical assault is the assault on a transit worker in which the attack involves no physical contact with the transit worker which could include verbal threats, intimidation, harassment, or other interference with a transit worker's duties.

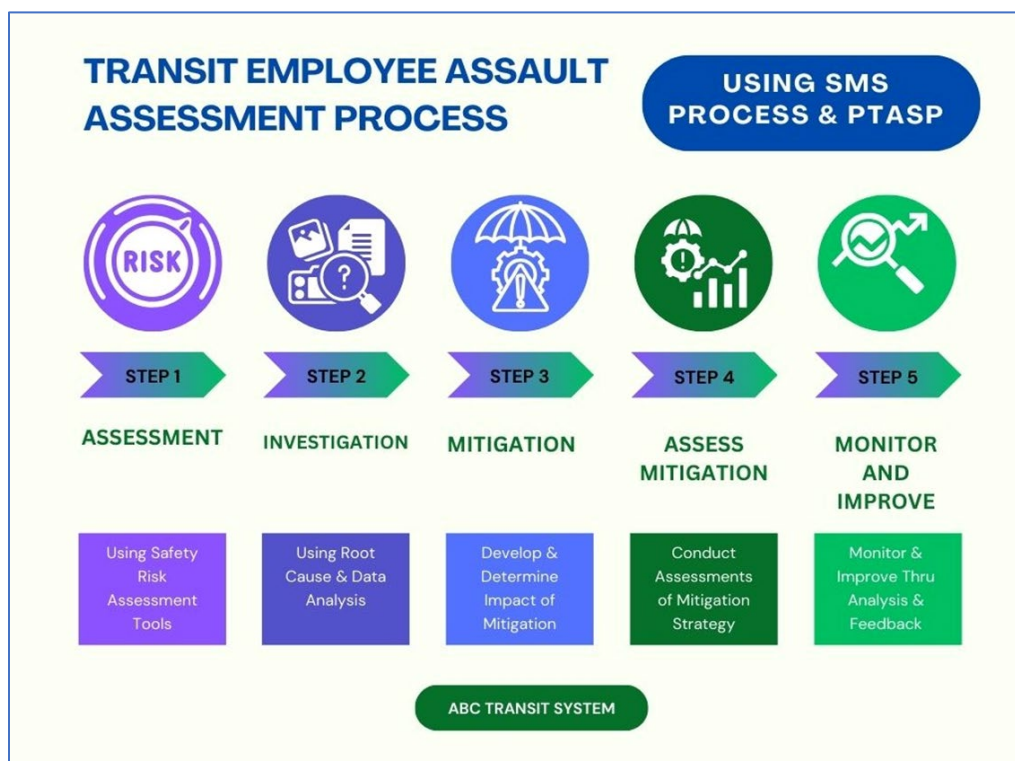
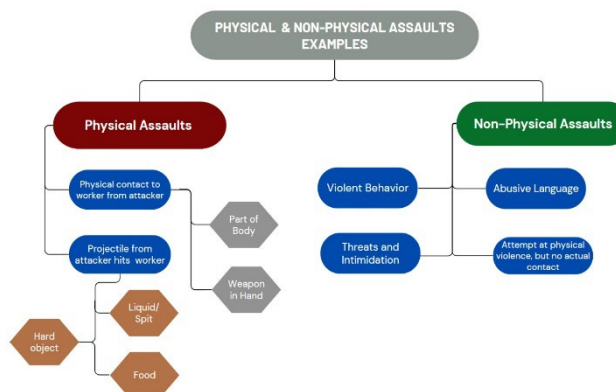
Examples of a non-physical assault include



- A transit rider attempts to strike a supervisor with a metal bar but makes no physical contact.
- A train cleaner accidentally brushes a passenger's foot. The passenger threatens the cleaner with bodily harm. The cleaner is not transported for medical attention.
- A passenger verbally threatens a transit worker.

The assault on transit worker identification process offers the transit system the ability to identify assaults and potential consequences in the operation of their system. Assaults can be identified through a variety of sources, including:

- Worker Safety Reporting Program
- Comments from drivers, passengers, and third parties, including transit system contract agencies
- Safety committee and staff meetings
- Assault assessments
- Incident reports
- Video surveillance footage
- Supervisor or employee observation



In 2012 the Amalgamated Transit Union (ATU) developed a factsheet for local unions entitled Preventing Violence against Bus Operators (ATU 2012).

The fact sheet listed the following risk factors associated with operator assaults:

- Interacting directly with the public.
- Working alone or in isolated areas.
- Having a mobile workplace.
- Working late night or early morning hours.
- Working in high-crime areas.
- Providing services to people who may be experiencing frustration (for example, with fare increases or service reductions).
- Having a workplace where access is uncontrolled.
- Handling money or fares.
- Having enforcement responsibilities.
- Having inadequate escape routes.

Transit Cooperative Research Program Project F-21, “Tools and Strategies for Eliminating Assaults Against Transit Operators” (Countermeasures Assessments & Security Experts, LLC forthcoming), a route-factor threat and vulnerability matrix, was created consisting of 3 risk categories with associated considerations: (1) environmental, (2) operational, and (3) response. Note that, in particular, the second category of “operational considerations” describes potential causal effect vulnerabilities that may result from problem conditions. The research, which remains a work in process, looks at the presence or absence of threats, vulnerabilities, and assault reduction safeguards.

Subject to change, the following definitions are associated with the TCRP Project F-21 matrix:

- **Threat:** Natural or human-made occurrences, individuals, entities, or actions that will damage the system, its facilities, or its patrons. Security threats include any actions that detract from overall security. They range from the extreme of terrorist-initiated bombs to more common events such as theft of services, pickpocketing, graffiti, and vandalism. Threats for purposes of the TCRP Project F-21 are defined as specific activities that will cause harm to the transit system, its facilities, or its patrons. Generally, threat also considers the intent and feasibility of a specific type of attack (e.g., scenario).
- **Vulnerability:** The susceptibility of the system to a particular type of security hazard. Vulnerabilities can be corrected, but in the face of limited resources, a risk analysis is required to prioritize mitigation measures. Because transit systems may cover a vast amount of territory that is unprotected, aspects of the system may be vulnerable to terrorist attack. It is generally assumed that a system is vulnerable to a natural hazard event (earthquake, tornado, etc.) because the natural hazard cannot be prevented regardless of the countermeasure deployed.
- **Environment:** The human-made or human-altered space in which individuals live out their daily lives, through which transit navigates.
- **Operational:** A collection of activities that together assure that transit services are cost-effectively provided to meet the short-term mobility needs of a community.

- **Response:** Arrival of the police/security personnel at a location from which an alarm signal has been received. It can also refer to the length of time it takes the police/security personnel to respond to an alarm.

ROUTE FACTORS	Threat	Vulnerability
Environmental Considerations		
1. Population Density Along the Route		X
2. Bars and Nightclubs		X
3. Past Incidents of Assault	X	
4. Route and Vehicle Capacities and Passenger Ridership Rates		X
5. Entertainment Venues Along the Route (stations, events, places of congregation)		X
6. Proximity to Crime Hotspots		X
7. Temporal Effects		X
8. Juvenile Crime	X	
9. Gang Activity	X	
10. Prostitution and Vice	X	
11. Drug Trade	X	
Operational Considerations		
12. Known Threats	X	
13. Measures in Place to Address Apparent Security Risks – Vehicle Security Countermeasures		X
14. Measures in Place To Address Apparent Security Risks – Operator Assault Security Countermeasures		X
15. Training and Skill Level of Operators and Crew/Development and Enforcement of Operator Safety-Related Rules and Policies	X	X
16. Delays in Schedule		X
17. Fleet Condition and Maintenance		X
18. Incident Reporting and Management Systems		X
19. Fare Structure and Disputes		X
20. Workplace Violence Policy and Procedure		X
Response Considerations		
21. Measures in Place To Address Apparent Security Risks – Security Personnel		X
22. Police or Security Response Capability Along The Route		X
23. Relationship with Local Law Enforcement		X
24. Passenger Security Inspections, Random Searches, Presence of Uniformed Personnel		X
25. Displacement of Crime	X	

Policies

Transit systems can develop policies to protect transit workers and transit infrastructure based on local, regional or national trends or identified threats. Policies should be developed with the input of employees impacted by the policy and managed for effectiveness over a period of time. In some cases,

performance measures can be developed in tandem with the policy providing the transit system with data to support the policy, make modifications or remove based on results.

The following example security policies may be developed based on trends seen over a period of time, response to seasonal trends, or special situations or elevated threat.

- Fixed route operators are required to inspect the interior of their vehicle upon completion of each route.
- Transit operators will contact dispatch immediately if a passenger refuses to pay the fare.
- Firearms are not permitted on public transit vehicles.
- Operators must complete a one-hour de-escalation training once a year.
- All visitors must check-in with the receptionist to receive a visitor pass.
- Administrative employees are not permitted to use company computers for personal use.
- Whistle blower policy
- Sexual harassment policy
- Employee retribution policy
- Mechanical work on personal vehicles is not permitted on transit property.
- All procurements for light duty vehicles will include a catalytic converter cage.
- Transit vehicles are not to be left running while unattended in revenue service.
- All passengers must pay exact fare; the operator does not carry cash.
- All fare box counts must be conducted by two people.

Workplace Violence

Violent behavior is often preceded by a variety of early warning signs. Unfortunately these signs are often ignored until it is too late. Early recognition of the warning signs of workplace violence is critical to the prevention of incidents.

In recognizing warning signs, be alert for unacceptable or out-of-the-ordinary behavior exhibited by a person. When this behavior is exhibited tell someone in the agency about these concerns so that proactive measures can be taken if necessary. These measures may include a conversation on the part of a supervisor, counseling, EAP support, or other forms of assistance. The goal is not punitive action but prevention through resolution of the issues or situation. Effective Workplace Violence Prevention Programs will include a mechanism for communicating these concerns in a confidential and productive manner.

Some behavioral warning signs to be alert for are:

Unusual Interest in Weapons & Expressions of Violence:

- Demonstrates an unusual fascination with guns and other weapons
- Brings a gun or other weapon to the workplace
- Verbalizes his or her wishes to hurt other employees
- Shares fantasies about acts of revenge
- Makes direct or veiled threats of harm toward others
- Talks about retaliation or “getting even” with someone

- Makes statements that approve of the use of violence to resolve problems
- Discusses a fascination with incidents of workplace violence
- Openly identifies with perpetrators of workplace homicides

Exhibits Signs of Depression:

- Frequent crying and mood swings
- Withdrawal and isolation from others
- Expresses feelings of hopelessness
- Shows signs of alcohol or drug abuse
- Demonstrates a loss of interest in life or work
- Changes in personal appearance and/or hygiene
- Makes statements indicating desperation and comments about committing suicide

Increased Work Problems:

- Increased lack of motivation
- Increased absenteeism and tardiness
- Sudden decrease in performance, productivity or inconsistent work patterns
- Increased conflicts with others
- Constant complaining about unfair treatment
- Overreaction to criticism (increased hypersensitivity)
- Refusal to acknowledge performance problems and/or blaming others
- Constant and blatant disregard for company policies and procedures
- Talking about the same problems without resolving them
- Misinterpreting communications, requests and directions
- Becoming more accident-prone due to disregard for on-the-job safety

Shows Signs of Domestic Violence:

- Frequent and/or unexplainable visible physical injuries
- Physical injuries which are inconsistent with explanation
- Strong emotional reactions to unusual or excessive phone calls received at work
- Disruptive and unannounced workplace visits by significant other (spouse, partner, family members)

Other Behavioral Concerns:

- Increased emotional outbursts
- Displays of unwarranted anger
- Expresses irrational beliefs and ideas
- Unhealthy obsession with a co-worker
- Unusual or extreme changes in behavior
- Verbal, nonverbal or written threats or intimidation
- Expressions of the perception or belief that others are “out to get them”
- Words or conduct that causes concern that the person may act out in a violent manner

Not all warning signs are actual indicators that a person is about to engage in a violent act. These warning signs should be used only to heighten your concern as to a potential problem. As an employee, your responsibility is to recognize a warning sign and then to communicate this information to an appropriate person in your agency (i.e., manager, supervisor, union officer, human resources representative) if it causes you concern. These observations or concerns should NOT be openly discussed among peers or others either within or outside the agency

3:a:2: Passenger Security

Public and private transportation agencies receiving federal funds to operate their services must ensure their services are safe and secure for the riding public. Agencies transporting the public are open to anyone within the service parameters of the agency. Different modes of service present unique challenges to safety and security just by the nature of their operation.

Fixed route service operates on a fixed route with fixed timepoints and transports anyone who boards and pays the proper fare (or free). These passengers do not need to qualify for the service and are only scrutinized if their behavior impacts the safety of the driver and/or other passengers. Additionally, if a passenger is conducting illegal activities they will not be permitted to ride.

A public demand response service requires the passenger to contact the agency in advance of their intended travel time to reserve a ride and provide basic information. Restrictions on those riders are similar to fixed route and open to the general public.

Specialized or human service agency transportation usually requires additional vetting of the rider to ensure they are qualified to ride the service as it may only provide service to a segment of the population like seniors or persons with disabilities.

All of the above service modes are subject to security challenges by any of their passengers or others in the service area who do not use the transit service. Agencies must be prepared for any and all types of safety and security events through its policies, service design, employee training and infrastructure characteristics.

One of the most common security deterrents are on-board surveillance systems or security cameras where video and voice can be captured of all passengers boarding and alighting the vehicle. These systems have been used to support safety and security challenges including monitoring employee and passenger behavior when issues occur.

Other security measures taken by transit may not be as obvious. These measures may include driver training, hidden security warning systems, on-board communications, cashless fare systems, non-uniformed security personnel or passenger code of conduct.

Law Enforcement

System management must regularly work with the local and state law enforcement to improve security and emergency/incident preparedness and response capabilities. These activities should include:

- Maintaining regular communications with law enforcement.
- Meeting at least once a year to ensure transit issues are understood by law enforcement.

- Developing an emergency contact list for dispatchers.
- Communicating regularly on optimal incident reporting methods that will offer law enforcement all the information they need.
- Participating in cooperative emergency preparedness training programs.
- Establishing appropriate methods of communication for continuous coordination during an emergency.
- Establishing procedures for supplying the unique types of emergency service that may be required in particular emergency situations.

3.b: Asset Security

Infrastructure security varies in response level based on factors unique to each service area. Though crime statistics may be more predominant in large urban areas versus rural areas, each service area may experience a level of crime unique to that area and transit must respond appropriately.

For instance, theft of catalytic converters on gas vehicle has seen an uptick in the last several years impacting both urban and rural transit providers. Theft and burglary can be the result of relaxed security systems as well as internal staff challenges.

Preventing theft and burglary require facility and vehicle security. This facility and vehicle security should focus on:

- key control
- access control
- facility and vehicle lock up procedures
- perimeter fencing,
- alarm systems
- surveillance equipment
- lighting
- security patrols
- employee alertness and training

Preventing employee theft can increase productivity and provide avenues for improved work relations.

A program to eliminate employee theft involves:

- knowing the frequently used schemes
 - Solution - tracking trends in security events like theft and vandalism
- keeping a closer eye on possible vulnerabilities
 - Solution – conduct threat and vulnerability exercises
 - Solution – conduct regular and random evaluations or inspections
- finding employees that can be trusted
 - Solution – proper vetting and background checks
 - Solution – challenge with additional responsibility
- making it hard to steal
 - Solution – maintain accurate asset inventories

- Solution – secure assets
 - Solution – provide clear division of labor with appropriate oversight
- working together with employees
 - Solution – involve employees with policy and procedure development
 - Solution – provide tools for success – training, maintained equipment etc..
 - Solution – solicit ideas for improvement from employees
- providing alternatives to stealing
 - Solution – cross train employees to allow variety of work and learn new skills
 - Solution – evaluate other incentives if pay increase is not an option
- determining and distributing clear, written policies on ethical behavior
- setting an example

According to TCRP Synthesis 146 Transit Security Preparedness - A security preparedness strategy is dependent on the risks to the transit system. Agencies must consider the costs, time to implement, training requirements, and ease of use of each strategy, as well as the interplay between multiple countermeasures and deployment strategies implemented.

An effective preparedness strategy today is a comprehensive strategy, one that is multifaceted and layered, taking into account the benefits of systematic security approaches deployed jointly or in tandem. It includes the following:

- Policies, plans and protocols that specifically describe the agency's approaches and are integrated into the daily business of the agency;
- Security staffing decisions that can be difficult, since adding personnel is often the most costly operating expenditure that an agency will face;
- Technology that requires technical staff, cybersecurity resilience, a proactive approach to additions/upgrades, and willingness to address the issues, such as privacy and civil rights, that can arise; and
- Training for employees, contractors, and partners that covers all aspects of an agency's security strategy and provides actionable information to better handle emergencies and security events.

Sixty percent of the Transit Security Preparedness survey respondents rate their agency's efforts to address their major security challenges as somewhat or very successful. However, only 25% say they have implemented any security risk reduction program that they consider to be exceptional or exemplary. Particular issues of concern to the respondent agencies were

- Assaults. Almost 85% of the agencies experienced assaults against passengers in the past year, and 75% experienced assaults against operators in the same period.
- Fare evasion. Almost 92% of the survey participants experience incidents of fare evasion, with 35% of the agencies having more than 100 incidents in the past year.
- Trespassing. Three-quarters (75%) of the transit agency respondents experienced trespassing incidents in the previous year, and more than 25% had more than 100 trespassing incidents in the previous year.
- Quality of life issues. All of the transit agency respondents experienced disorderly persons/conduct and drunkenness/liquor law violations in the previous year. More

than 60% of the transit agency respondents experienced eating/drinking/loud music infractions in the previous year.

- **Homelessness/vagrancy.** Almost 85% of the Transit Security Preparedness agency respondents experienced homeless/vagrancy incidents in the previous year, with 32% having more than 100 incidents of each in the previous year.

A security preparedness strategy is dependent on the unique operational parameters of the transit agency. However, this study found that there are common themes in all effective security preparedness approaches.

- **Information sharing is essential.** Sharing and collaboration with federal agencies and other transit agencies for intelligence provide critical information on current and potential future risks and what can be done to reduce those risks, through both lessons learned and examples of effective implementation practices. Threat and criminal trending can be accessed through these partnerships, allowing a data-based approach for security.
- **Collaboration and cooperation are also essential.** Federal and state agencies can provide resources, audits, and access to security programs that support system security.
- **Partnering with local law enforcement needs to be part of every transit agency's security program,** even if not contracted for or part of formal agreements. Because all transit agencies operate within one or more jurisdictions, positive working relationships and collaboration with all jurisdictions in the transit service area are necessary to support agency security.
- **Engagement of employees and of passengers and public is important.** Employees are the "eyes and ears" of the agency and often essential participants in agency security-related initiatives. The riding public also are "eyes and ears" for the agency. Both the riding and the nonriding public influence the perception of the security of the agency and play a major role in influencing the community and political support for the security preparedness program an agency can implement.

Applicable Threat and Vulnerability Exercise

CRITICAL ASSET ANALYSIS

Critical Assets	Level of Criticality (Rate as High, Medium, Low)	Level of Vulnerability (Rate as High, Medium, Low)
Vehicles		
Buses/vans		
Administrative vehicles		
Radios		
Surveillance System		
Mobile Data Systems		
Other		
Maintenance Area		
In-house		
Entrances/exits		
Restrooms		
Equipment		
Parts Inventory		
Other		
Back-up Generator		
Storage Lots		
Maintenance Vehicles		
Entrances/exits		
Fuel areas		
Other		
Office Facilities and Equipment		
Office furniture		
Computers		
Phone systems		
Radio system		

Entrances/exits		
Restrooms		
Storage areas		
Revenue collection facilities		
Employee parking lots		
Computer Servers		
Security Systems		
Other		
Transit Support		
Transit Center		
Bus Stops		
Bus Shelters		
People		
Drivers		
Other staff		
Passengers		

Section 3.c: Data Security

According to the American Public Transportation Association's (APTA) Enterprise Cyber Security Working Group (APTA SS-ECS-RP-001-14), Cybersecurity is a growing concern for public transit chief information officers (CIOs) and managers of transit system data.

"Cybersecurity is a growing concern that all transit agencies from large to small must recognize and take appropriate actions on. With the unprecedented pace and complexity of cyberattacks, a transit agency must be proactive and adopt a holistic approach at the strategic level to protect its organization's critical information and fulfill its obligation to its customers. Cyber

vulnerabilities are exploited not only directly by means of information technology (IT), but the threat also has grown to a level of sophistication in which social engineering has been leveraged to exploit individuals. A transit agency's cybersecurity strategy must be tightly woven into the fabric of the organization at all levels. While eliminating cyberthreats is impossible, transit agencies must take a full-spectrum risk-based approach. No longer is cybersecurity an IT department problem. It has manifested to become a critical management issue that requires some aspect of involvement at the highest level."

Target

With the growing dependence on information and communication technology by governments, business, individuals and the networks linking to the end users, cyberspace is increasingly becoming an attractive target. An effective cyberattack against a transportation agency will seek to compromise the confidentiality, availability and/or integrity of the agency's information by exploiting the enterprise's ICT system:

- **Confidentiality:** Preserving authorized restrictions on information access and disclosure, including means for protecting personal privacy and proprietary information. A loss of confidentiality is the unauthorized disclosure of information.
- **Availability:** Ensuring timely and reliable access to, and use of, information. A loss of availability is the disruption of access to or use of information or an information system.
- **Integrity:** Guarding against improper information modification or destruction; this includes ensuring information non-repudiation and authenticity. A loss of integrity is the unauthorized modification or destruction of information.

Cyberattacks may exploit and target specific system layers within the transit agency, including but not limited to the following:

- **Operational systems:** These systems integrate supervisory control and data acquisition (SCADA), original equipment manufacturer (OEM) and other critical component technologies responsible for the control, movement and monitoring of transportation equipment and services (i.e., train, track and signal control). Often such systems are interrelated into multimodal systems such as buses, ferries and metro modes.
- **Enterprise information systems:** This describes the transit agency's information system, which consist of integrated layers of the operating system, applications system and business system. Holistically, enterprise information systems encompass the entire range of internal and external information exchange and management.
- **Subscribed systems:** These consist of "managed" systems outside the transportation agency. Such systems may include Internet service providers (ISPs), hosted networks, the agency website, data storage, cloud services, etc.

Facilities

Not all cyberthreats and attacks are from digital, software or network manipulation. Many attacks come in the form of compromising physical hardware of an organization's ICT infrastructure. Transit agencies must assess six major areas of physical and environmental security controls with respect to the transportation information ecosystem in which the organization is able to protect against Internet Service Provider interruptions, physical damage,

unauthorized disclosure/access, loss of system integrity, and theft. The six major areas identified are areas of concern to evaluate from a perspective of securing transit agencies' physical ICT hardware. Transit agencies should refer to all federal, state and local requirements with respect to safety and security and ensure compliance of physical structures and facilities.

- **Access control:** Unauthorized access to a transit agency's information network or premises places the whole organization at risk. Physical access control should not be limited to physical hardware storage but needs to extend and include location of communication transmission wires, electric power sources, HVAC and any other resources possessing a link to ICT infrastructure.
- **Fire safety:** Building fires are a significant threat, and prevention is of high importance. Fires have the potential to take human life, as well as complete destroy hardware and data. Transit agencies must evaluate the fire safety of the physical environment and develop plans to mitigate potential losses in the event of a fire.
- **Supporting utilities:** Failures in heating and air conditioning systems and electricity services may cause service interruption and damage equipment. Transit agencies identify and implement redundancies to ensure uninterrupted service.
- **Building structure:** Natural disasters may weaken and compromise the safety of the building. Transit agencies need to develop contingency plans to identify alternative locations for business operations and information security.
- **Interception of data:** Data may be intercepted, posing a significant risk to any transit agency. Data interception could occur through direct observation, interception of transmission or electromagnetic interception (i.e., Wi-Fi).
- **Portable media:** Viruses, worms and other malware that are used to exploit an information system may be carried on portable media. Such portable media are easily concealed and pose a significant risk to any transit agency. Transit agencies should treat portable media as a controlled object and implement policies and procedures in authorizing the use and transportation and use of portable media with their IT equipment.

Section 3.d: Resources and Training

[National Institute of Standards and Technology](#) (NIST) NIST is a non-regulatory U.S. federal agency responsible for developing standards and guidelines, including minimum requirements, and for providing adequate information security for all agency operations and assets. The SP 800 series provides guidance, description, details and standards in establishing and implementing information security programs. NIST's mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards and technology in ways that enhance economic security and improve our quality of life.

Additionally, transit agencies should consider utilizing the [Cyber Security Evaluation Tool \(CSET®\)](#) from the [Department of Homeland Security \(DHS\)](#). It is a tool that assists organizations in protecting their key cyber assets. This tool provides users with a systematic and repeatable approach for assessing the

security posture of their cyber systems and networks. It includes both high-level and detailed questions related to all industrial control and IT systems.

[National Initiative for Cybersecurity Education](#) (NICE) The National Initiative for Cybersecurity Education (NICE) has evolved from the Comprehensive National Cybersecurity Initiative, and extends its scope beyond the federal workplace to include civilians and students in kindergarten through post-graduate school. The goal of NICE is to establish an operational, sustainable and continually improving cybersecurity education program encouraging sound cybersecurity practices that will enhance the nation's security. NICE will be represented by four components:

- Component 1: National Cybersecurity Awareness. Lead: DHS
- Component 2: Formal Cybersecurity Education. Co-Leads: Department of Education (DOE) and National Science Foundation (NSF)
- Component 3: Cybersecurity Workforce Structure. Lead: DHS supported by the Office of Personnel Management (OPM)
- Component 4: Cybersecurity Workforce Training and Professional Development. Tri-Leads: Department of Defense (DOD), Office of the Director of National Intelligence (ODNI), DHS.

Transportation Safety Administration's ["Ten Basic Cybersecurity Measures For The Public Transportation Industry"](#)

To provide transportation cyber security officials, transportation agency general managers and other related stakeholder groups basic guidance and proactive steps for reducing vulnerability to a cyber attack. This guide provides an overview of systematic methods for establishing a continuing process for security improvement that is consistent with and based upon similar security initiatives of the U.S. government.

Federal Information Security Management Act (FISMA) [The Federal Information Security Management Act of 2002](#) is a U.S. federal law that recognizes the importance of information security to the economic and national security interests of the United States. FISMA has brought attention within the federal government to cybersecurity and emphasized a "risk-based policy for cost-effective security." FISMA requires agency program officials to conduct annual reviews of the agency's information security program and report the results to the Office of Management and Budget. The Office of Management and Budget uses this data to assist in its oversight responsibilities and to prepare this annual report to Congress on agency compliance with the act.

[National Center for Applied Transit Technology](#) (NCATT) - "N-CATT's mission is to provide small-urban, rural, and tribal transit agencies with practical, replicable resources that help them apply technological solutions and innovations".

