**Department of Transportation
Office of the Secretary**
700 E. Broadway Ave., Pierre, SD 57501
Phone: 605-773-3265
FAX: 605-773-3921
Web site: www.sddot.com and
www.safetravelusa.com/sd

State of South Dakota

Department of Transportation

Office of Air, Rail, and Transit

Public Transportation
Safety Plan
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Safety Management System Components

The Safety Management Systems (SMS) is a formal top-down data-driven system consisting of four separate components: Safety Management Policy, Safety Risk Management, Safety Assurance, and Safety Promotions. All of these components are vital to meeting Safety Performance Measures or goals. The Safety Management System is flexible and will vary between agencies due to the size, geographic conditions, and complexity of services of each agency. Each agency will need to implement all four components of SMS to be successful and the Safety Performance Measures will be a statewide goal of individual performances. The statewide Safety Performance Measures will be for all rural, urban, and tribal transit services that participate in the State plan verses implementing their own individual plan.

I. Safety Management Policy

Safety, Accountabilities, and Responsibilities

The Accountable Executive of each agency is ultimately responsible for the success or failure of the Safety Management System (SMS) for their individual transit agency. The Accountable Executive shall:

- actively support and promote the SMS program;
- ensure the Accountable Executive and their staff comply with the SMS processes and procedures;
- assist in ensuring the resources and necessary staff are available to achieve the outcomes of the SMS; and
- continually monitor their area of SMS responsibilities

The Accountable Executive shall designate at least one member of their staff as the SMS/Safety Manager (larger transit agencies may designate more than one staff member as SMS/Safety Manager and split the duties). The SMS Manager shall be held accountable, responsible and given the necessary authorization to ensure an effective and efficient operation of the SMS on a daily basis. The SMS Manger shall:

- direct collection and analysis of all safety information;
- manage hazard identification and safety risk evaluation activities;
- monitor safety risk mitigations;
- advise senior management on safety matters;
- maintain safety management documentation; and
- plan and organize safety training

In addition to appointing a SMS Manager, the Accountable Executive shall create a Safety Committee comprised of representatives from all areas of operation. The Safety Committee shall be active in hazard identification, safety risk evaluation activities, employee reporting system, and planning/organizing safety training.

The structure of the SMS may vary from agency to agency and must also be developed to comply with all of the following principles:

- ensure accountability for SMS performance is at the highest level of the organization;
- implement SMS in a manner that meets state/transit agency safety Performance Objectives;
- establish a meeting or committee structure necessary for the size of the agency to ensure safety information is communicated throughout the agency;
- effectively communicate SMS roles and responsibilities to all relevant individuals; and
- ensure policies and procedures have been communicated to all agency employees

Integration with Public Safety and Emergency Management

Each agency needs to identify and develop plans and procedures in conjunction with local law enforcement, fire and medical services, and emergency management agencies to deal with emergencies and abnormal operations, as well as the return to normal operations. Events including acts of nature, violence, civil disobedience, vehicular accidents, and emergency evacuations from local facilities are just a few events your transit agency could experience.

II. Safety Risk Management

Safety Risk Management is a proactive program, which promotes the identification of potential hazards before they escalate into accidents or incidents and by means of mitigation reduce the severity and physical damage of the event. Under SMS, this is a daily program that will expand the use of both proactive (i.e. employee safety reporting) and reactive (i.e. investigations) methods and sources of information to reduce accidents and incidents.

Safety Hazard Identification

Safety Hazard Identification involves establishing methods and/or procedures to identify and address hazards and hazard consequences before they escalate into incidents or accidents. The methods and procedures utilized by each agency will depend on the size and complexity of each agency's organization. A list of hazard identification sources available to most transit agencies are:

- employee safety reporting program;
- observation of daily operation both internal and external;
- inspections;
- internal safety investigations;
- accident reports;
- compliance programs;
- safety committee reviews;
- industry articles and data reports;
- governmental sources (FTA, NTSB, oversight agency); and
- customer and public feedback

Each transit agency will establish its preferred method for identifying safety hazards based on the type of service it provides and its organizational structure.

Safety Risk Assessment

Safety Risk Assessment is an established method or process to assess the safety risks associated with identified hazards. Lack of a Safety Risk Assessment may result in the likelihood of bodily injury, death, or property damage caused by the identified hazard.

Safety Risk Mitigation

After identifying potential hazards during the Safety Risk Assessment, the agency must develop a comprehensive mitigation plan and corrective actions. Safety Risk Mitigation is an action selected to reduce the likelihood and severity of the identified hazard. Safety Risk Mitigation enables each transit agency to actively manage the safety risk in a manner prescribed by their performance targets, and consistent with initial, ongoing, and revised mitigation strategies.

III. Safety Assurance

Safety Assurance is the process by which the Accountable Executive and SMS Manager ensure that mitigation plans are implemented, adhered to, are appropriate, effective, and sufficient in reducing the potential consequences of all identified hazards. By carefully reviewing and analyzing the agencies' collected data, the agency will be able to determine if mitigation strategies are effective, and no new hazards have been created by implementing the mitigation plan. In addition to analyzing data, an employee safety reporting program is essential to the success of the Safety Assurance function.

Safety Performance Monitoring and Measurement

The SMS will generate data which will provide information as to whether their Safety Risk Mitigation is appropriate and effective. This data review will also indicate if their agency's safety performance is in line with the established safety objective and performance targets. The sole purpose of Safety Performance Monitoring and Measurement is to examine safety performance and maintenance activities, not individual employees. Safety Performance Monitoring and Measurement activities include:

- monitor employee safety reporting;
- monitor service delivery activities (include field observations);
- monitor operational and maintenance data;
- conduct daily safety surveys;
- conduct safety audits, studies, reviews, and inspections;
- conduct safety investigations;
- evaluate data and information from external agencies or peers

Management of Change

Agency changes in policy, procedures, or operations may introduce new and unforeseen hazards and safety risks. The SMS team should review the suggested change and determine if current mitigations are sufficient or if new mitigations are necessary to reduce any new risks or hazards that may result under the new change.

Continuous Improvement

Constant evaluation of the SMS organizational structure, processes, resources, and analysis of the local data and information in a timely manner is necessary to ensure the SMS is effectively and efficiently maintaining your agency's safety performance goals.

IV. Safety Promotion

Safety Promotion is achieved by means of communication, training, and management's commitment to establishing and maintaining an effective SMS. Training not only provides the employees with the necessary knowledge and skills to perform their job safely, but also gives them a share of ownership in the agency's safety mission.

Safety Communications

To create and maintain a positive safety culture, open communication between staff and management is essential. Frequent communications pertaining to potential hazards and safety risks within the agency will keep safety a top priority and encourage employees to openly communicate safety concerns to the Safety Committee and/or management.

Competencies and Training

For a successful SMS program, it is critical all employees receive thorough training with respect to their role and responsibilities. A comprehensive training program shapes an employee's perception of executive management's commitment to safety agency wide. Employee safety reporting and procedures must be emphasized during the safety training and continued throughout the year.

Safety Performance Measures

The South Dakota Department of Transportation – Transit Safety Program shall monitor, analyze, and improve the transit safety performance based on four measurable areas. The Safety Performance Measures are:

1) fatalities;
2) injuries;
3) safety events; and
4) system reliability

Each measurable goal will be explained in detail below and are based on the National Transit Data Safety and Security Reporting Manual.

Fatalities goal is defined in terms of total number of reportable fatalities and rate per total vehicle revenue miles. In case of an accident with fatalities or suicides the conditions below determine if the event is reportable.

- The death of the victim must occur within 30 days of the event.
- Suicide
- Deaths resulting from illness or other natural causes are not reportable.

GOAL: One fatality per total revenue miles.

Injuries goal is defined in terms of total number of reportable injuries and rate per total vehicle revenue miles. In case of an accident with injuries, the conditions below determine if the injury is reportable or not.

- Each person immediately transported from the scene for medical attention, whether or not they appear to be injured, should be reported as an injury, including trauma.
- Transport may be by any means such as, but not limited to; emergency personnel, transit supervisor, personal vehicle.

Injuries not to include:

- A person seeking medical attention under his or her own power, e.g. walks away to seek medical attention.
- Illnesses that require transport for medical attention.

NOTE: Other Safety Occurrences Not Otherwise Classified (OSONOC) events resulting in two or more injured are to be reported as a major event.

GOAL: Fifty injuries per total revenue miles.

Safety Events (Total number of reportable events and rate per total vehicle revenue miles)

- Includes ALL property damage equal to or exceeding $25,000.00 including damage to private vehicles and property.
- Includes tow away for a transit revenue vehicle or non-revenue transit vehicle.
- Includes evacuation of a transit facility or vehicle due to potentially unsafe conditions.
- Includes evacuations for service or maintenance-related issues.
- Includes passenger/patron self-evacuations.
- Collision which includes suicides or attempted suicides that involve contact with a transit vehicle.
- A reportable event may involve a non-revenue vehicle operated by your transit agency on transit facility or property.
- Fires
- Accidents

GOAL: Seventy five events per total revenue miles.

System Reliability (Mean distance between major mechanical failures)

- Mean distance is measured by revenue miles operated divided by the number of major mechanical failures.
- Major mechanical system failures prevent a vehicle from starting or completing a scheduled revenue trip because actual movement is limited or because of safety concerns.
- Major breakdowns include: brakes, doors, engine issues, engine cooling systems, steering, axles, suspension, and wheel chair lifts. This list is not all inclusive, and can be adjusted.

GOAL: 1failure per 15,000 total revenue miles.

Glossary of Definitions

Accident means an event that involves any of the following: a loss of life; a report of a serious injury to a person; a collision of a transit (revenue or non-revenue) vehicle; an evacuation for life safety reasons.

Account Executive means a single identifiable person who has ultimate responsibility for carrying out the Safety Management System and control or direction over the human and capital resources needed to develop and maintain both the Safety Management System and Transit Asset Management Plan.

Event means an accident, incident, or occurrence.

Hazard means any real or potential condition that can cause injury, illness, or death; damage to or loss of the facilities, equipment, rolling stock, or infrastructure of a public transportation system; or to the environment.

Incident means an event that involves any of the following: a personal injury that is not a serious injury; one or more injuries requiring medical transport; or damage to facilities, equipment, rolling stock, or infrastructure that disrupts the operations of a transit agency.

Major Mechanical Failures are failures caused by vehicle malfunctions or subpar vehicle condition, which requires that it be pulled from service.

Passenger means a person other than an operator who is on board, boarding, or alighting from a vehicle on a public transportation system for the purpose of travel.

Safety Assurance means the process within a transit agency's Safety Management System that functions to ensure the implementation and effectiveness of safety risk mitigation, and to ensure that the transit agency meets or exceeds its safety objectives through the collection, analysis, and assessment of information.

Safety Management Policy means a transit agency's documented commitment to safety, which defines the transit agency's safety objectives and the accountabilities and responsibilities of its employees in regard to safety.

Safety Management System means the formal, top-down, data-driven, 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 risks and hazards.

Safety Objective means a general goal or desired outcome related to safety.

Safety Performance means an organization's safety-effectiveness and efficiency, as defined by safety performance indicators and targets, measured against the organization's safety objectives.

Safety Performance Indicator refers to a data-driven, quantifiable parameter used for monitoring and assessing safety performance.

Safety Performance Measure is an expression based on a quantifiable indicator of performance or condition that is used to establish targets and to assess progress toward meeting the established targets.

Safety Performance Monitoring means activities aimed at the quantification of an organization's safety effectiveness and efficiency during service delivery operations, through a combination of safety performance indicators and safety performance targets.

Safety Performance Target means a quantifiable level of performance or condition, expressed as a value for a given performance measure, achieved over a specified timeframe to safety management activities.

Safety Promotion means a combination of training and communication of safety information to support SMS as applied to the transit agency's public transportation system.

Safety Risk means the assessed probability and severity of the potential consequence(s) of a hazard, using as reference the worst foreseeable, but credible, outcome.

Safety Risk Assessment means the formal activity whereby a transit agency determines Safety Risk Management priorities by establishing the significance or value of its safety risks.

Safety Risk Management means a process within a transit agency's Safety Plan for identifying hazards, assessing the hazards, and mitigating safety risk.

Safety Risk Mitigation means the activities whereby a public transportation agency controls the probability or severity of the potential consequences of hazards.

Safety Risk Probability means the likelihood that a consequence might occur, taking as reference the worst foreseeable-but credible condition.

Safety Risk Severity means the anticipated effects of a consequence, should it materialize, taking as reference the worst foreseeable-but credible condition.

Serious Injury means any injury which: (1) Requires hospitalization for more than 48 hours, commencing within seven days from date of injury was received; (2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose): (3) causes severe hemorrhages, nerve, muscle, or tendon damage; (4) involves any internal organs; or (5) involves second- or third-degree burns, or any burns affecting more than5 percent of the body surface.

State of Good Repair means the condition in which a capital asset is able to operate a full level of performance.

Vehicle Revenue Miles (VRM) means the miles that vehicles are scheduled to or actually travel while in revenue service. Vehicle revenue miles include:
- Layover/recovery time. Exclude:
- Deadhead;
- Operator training;
- Vehicle maintenance testing; and
- School bus and charter services.

Definitions are from the National Public Transportation Safety Plan – January 2017.