Sound Transit Agency Safety Plan

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REVISION TABLE

Date	Revision Summary	Revision Year
07/2020	Original Issue	2020
10/2021	2022 ASP Revision Summary	2022
12/2022	2023 ASP Revision Summary	2023

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ABBREVIATIONS AND DEFINITIONS

Abbreviations and Acronyms

APP	Accident Prevention Plan
APTA	American Public Transportation Association
ASP	Public Transportation Agency Safety Plan
BIL	Bipartisan Infrastructure Law
CAP	Corrective Action Plan
CCB	Change Control Board
CEO	Chief Executive Officer
CFR	Code of Federal Regulations
CRB	Configuration Review Board
CSO	Chief Safety Officer
DECM	Design, Engineering and Construction Management Division
EAMS	Enterprise Asset Management System
EMP	Emergency Management Plan
ESRT	Employee Safety Reporting Tool
FLSSC	Fire/Life Safety and Security Committee
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
ISO	International Standards Organization
KCM	King County Metro
LLR	Link Light Rail
MOW	Maintenance-of-Way
NTSB	National Transportation Safety Board
OSHA	Occupational Safety and Health Administration
PHA	Preliminary Hazard Analysis
RCW	Revised Code of Washington
ROW	Right-of-Way
RTA	Rail Transit Agency
SDS	Safety Data Sheets
SHOP	Safety and Security Hazards Oversight Panel
SOP	Standard Operating Procedure
SRM	Safety Risk Management
SSCP	Agency Safety and Security Certification Plan
SSDCC	Safety and Security Design and Construction Committee
SSMP	Safety and Security Management Plan
SSO	State Safety Oversight
ST	Sound Transit (Central Puget Sound Regional Transit Authority)
STX	ST Express
TLLR	Tacoma Link Light Rail
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation
WUTC	Washington Utilities and Transportation Commission

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Definitions

Accident: An Event that involves any of the following: A loss of life; a report of a serious injury to a person; a collision of public transportation vehicles; a runaway train; an evacuation for life safety reasons; or any derailment of a rail transit vehicle, at any location, at any time, whatever the cause.

Accountable Executive: Single, identifiable person who has the ultimate responsibility for carrying out the Public Transportation Agency Safety Plan of a public transportation agency; responsibility of carrying out the agency's Transit Asset Management Plan; and control and direction over the human and capital resources needed to develop and maintain both the agency's Public Transportation Agency Safety Plan in accordance with CFR 673.

Agency: Sound Transit.

Cause: The combination of simultaneous and sequential factors without any of which the accident or incident could not have occurred.

Chief Safety Officer: 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.

Collision: A vehicle accident in which there is an impact of a transit vehicle with:

- Another transit vehicle
- A non-transit vehicle
- A fixed object;
- A person(s) (suicide/attempted suicide included)
- An animal
- A rail vehicle

Note: Normal yard movements including coupling or uncoupling trains, shifting or setting out cars, etc. are not considered collisions.

Contractor: An entity that performs tasks required by contract, on behalf of the oversight or rail transit agency.

Corrective action plan: A plan developed by a Rail Transit Agency that describes the actions the Rail Transit Agency will take to minimize, control, correct, or eliminate risks and hazards, and the schedule for taking those actions. Either a State Safety Oversight Agency or FTA may require a Rail Transit Agency to develop and carry out a corrective action plan.

Derailment: A derailment occurs when on-track equipment leaves the rail for a reason other than a collision, explosion, highway-rail crossing impact, etc.

Drill: A type of operations-based emergency exercise that is used to test a specific function or capability in a single agency or organization. Drills are commonly used to provide training on new equipment, validate procedures, or practice and maintain current skills.

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Emergency: A serious event that consists of any unwanted operational, civil, natural phenomenon, or security occurrence that could endanger or adversely affect people, property, or the environment**.**

EAMS: EAMS platform is the Agency's asset management system and supports the organization, business practices, and tools used to coordinate and control the Agency's asset management activities.

Employee Safety Reporting Tool: A Microsoft Power App, tailored to Sound Transit's line of business for employees to report non-emergency safety and security concerns or share a daily safety message.

Event: Any accident, incident, or occurrence.

Exercise: An activity designed to promote emergency preparedness; evaluate emergency operations, policies, plans, procedures, and facilities; provide personnel practical opportunities to implement emergency management and response duties; and demonstrate operational capability. Exercises may be discussion or operations based. Discussion based exercises include seminars, workshops, tabletop exercises, and games. Operations based exercises include drills, functional, and full-scale exercises.

Fatality: The condition involving a person who dies as a result of an injury incurred during railroad operations or resulting from an occupational illness, if death occurs within 180 days of most recent diagnosis.

Hazard: 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 damage to the environment.

Hazardous Condition: A set of circumstances that if not identified and corrected has or shall result in personal injury or property damage.

Hazardous Material: Any substance that, due to its chemical, physical, or biological nature, causes safety, public health, or environmental concerns that would require an elevated level of effort to manage.

Highway-Rail Crossing: A location where a public highway, road, street, or private roadway, including associated sidewalks and pathways, crosses one or more railroad tracks at a grade.

Highway User: Automobiles, buses, trucks, motorcycles, bicycles, farm vehicles, pedestrians, or any other mode of surface transportation motorized and un-motorized.

Incident: 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.

Injury: Harm to a person resulting from a single event, activity, occurrence, or exposure of short duration.

International Standards Organization 45001: Certification to this highly documented safety management system developed to mitigate factors that can cause harm to employees and organizations.

Investigation: The process of determining the causal and contributing factors of an accident, incident, or hazard, for the purpose of preventing recurrence and mitigating risk.

National Public Transportation Safety Plan: The plan to improve the safety of all public transportation systems that receive Federal financial assistance under 49 U.S.C. Chapter 53.

National Transportation Safety Board: An independent Federal agency.

Near Miss: An unplanned event that did not result in injury, illness, or damage – but had the potential to do so (also referred to as a "close call").

Occurrence: An event without any personal injury in which any damage to facilities, equipment, rolling stock or infrastructure does not disrupt the operation of a transit agency.

Operations/Maintenance/Emergencies Documentation: This includes all plans and procedures related to system, fire and life, occupational and construction Safety Programs.

Personal (or Bodily) Injury: A condition identified through a verbal statement from a passenger, directly observed, or through the filing of a claim.

Public Transportation Agency Safety Plan : Documented comprehensive agency safety plan for a transit agency that is required by 49 CFR 673.

Qualified Employee: An individual who is competent in a task because of training, and to whom the authority and responsibility to perform a specific assignment has been given by management.

Rail Fixed Guideway System: Any fixed guideway system that uses rail, is operated for public transportation, is within the jurisdiction of a State, and is not subject to the jurisdiction of the Federal Railroad Administration, or any such system in engineering or construction. Rail fixed guideway public transportation systems include but are not limited to rapid rail, heavy rail, light rail, monorail, trolley, inclined plane, funicular, and automated guideway.

Rail Transit Agency: Any entity that provides services on a rail fixed guideway public transportation system.

Risk: The composite of predicted severity and likelihood of the potential effect of a hazard.

Risk Mitigation: A method or methods to eliminate or reduce the effects of hazards.

Risk Probability: the chance that a risk will occur.

Risk Severity: The extent of the damage to the agency, its people, and its goals and objectives resulting from a risk event occurring.

Safety Risk Management: A process within a Rail Transit Agency's Safety Plan for identifying hazards and analyzing, assessing, and mitigating safety risk. One component of a Safety Management System.

Serious Injury: Any injury which:

(1) Requires hospitalization for more than 48 hours, commencing within 7 days from the date of the 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 organ; or

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(5) Involves second- or third-degree burns, or any burns affecting more than 5 percent of the body surface.

Safety: Freedom from harm resulting from unintentional acts or circumstances.

Safety Culture: The shared values, actions and behaviors that demonstrate commitment to safety over competing goals and demands.

Safety Management System: Formal, top-down 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.

Security: Freedom from intentional danger or harm.

State Safety Oversight Agency: An agency established by a state that meets the requirements and performs the functions specified by 49 CFR 674.

System: The combination or interrelation of hardware, software, people, and the operating environment.

System Life Cycle: All phases of the system's life including design, research, development, test and evaluation, production, deployment (inventory), operations and support, and disposal.

System Safety: The application of management and engineering principles and techniques to optimize all aspects of safety, within the constraints of operational effectiveness, time, and cost, throughout all phases of a system life cycle.

Trespassers: Persons who are on that part of railroad property used in railroad operation and whose presence is prohibited, forbidden or unlawful.

Unsafe Condition or Act: Any condition or act that endangers life, health and/or property or decreases the degree of safety normally present.

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0.0 INTRODUCTION

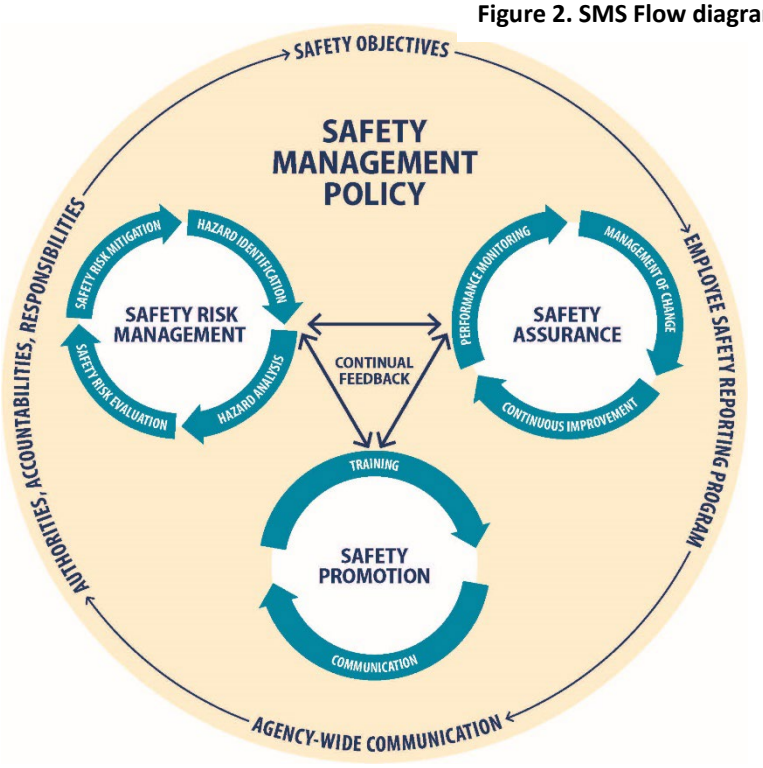
This document is Sound Transit's (ST) Public Transportation Agency Safety Plan (ASP) for the bus and rail systems: Link light rail (LLR), Tacoma Link light rail (TLLR), and ST Express (STX) bus service. Sound Transit works to fulfill the mission and vision of transforming the map of the Central Puget Sound, all the while fulfilling its mission of connecting more people to more places. It is Sound Transit's responsibility to design, build, maintain and operate our service modes to keep employees, contractors, customers and communities safe. The ASP provides a high-level overview of the Sound Transit Safety Management System (SMS) and processes, developed in accordance with 49 CFR 673. This document is to be used by staff, informing them of documented processes and procedures, a reference to functional safety protocols, and a safety resource.

Figure 1. Sound Transit's Mission and vision

This plan establishes accountability and responsibility at the top levels of the organization, evidenced by the Board approval and CEO commitment to the Safety Management Policy statement, which includes providing necessary resources to sustain and improve the Sound Transit safety culture. This document serves as the framework for the Sound Transit SMS (Figure 2), and maps all processes and procedures that support it.

This ASP links supporting plans, manuals, and other safety documentation to the overall processes and components of SMS to create feedback and continuity within the system. A Safety Management System Implementation Plan is maintained to outline developing processes and procedures, opportunities to consolidate process documentation, and other activities associated with implementation.

Figure 2. SMS Flow diagram



0.1 ST BACKGROUND

The Central Puget Sound Regional Transit Authority (Sound Transit) was authorized by the Washington legislature and codified in the Washington State Law (Revised Code of Washington Chapter 81.112 – Regional Transportation Authorities). Sound Transit was created in 1993 to plan, build and operate the commuter rail, light rail, express

bus services and facilities for the Central Puget Sound region, to serve the counties of King, Pierce and Snohomish. On November 5, 1996, voters within the 3-county Sound Transit district approved an increase in local taxes to fund the local share of Sound Move investments.

Board of Directors

Sound Transit is governed by an 18-member Board made up of local elected officials proportional to the population included in the Sound Transit district. Three members are from Snohomish County; 10 from King County; and 4 from Pierce County. The last seat is held by the Washington State Secretary of Transportation.

The Board establishes policies and gives direction and oversight. It is empowered under state law to identify ballot measures for voter approval of regional transit projects and maintains the Long-Range Plan that identifies potential projects to submit to voters.

At critical milestones of every voter-approved project, the Board makes key decisions by adopting budgets, identifying alternatives to include in environmental review, selecting the preferred alternative, determining the final project to be built and establishing baselines for project scope, schedule and budget. The Board also approves major contracts.

The Board and its committees work in open, regularly scheduled meetings. There are four Board committees: the Executive Committee, the Rider Experience and Operations Committee, The System Expansion Committee, and the Finance and Audit Committee.

Delegation of Authority and Accountability in SMS

The Board of Directors has delegated the authority and accountability for day-to-day operation and safety of Sound Transit to the Chief Executive Officer (CEO). The Executive Director of Operations oversees activities of FTA regulated Tacoma Link Light Rail, Link Light Rail, ST Express, and the FRA regulated Sounder Commuter Rail (SCR).

The Sound Transit CEO has designated the Chief Safety Officer (CSO) as the SMS Executive and delegated the CSO authority for the day-to-day Agency oversight of safety for all operating systems. Reporting directly to the CEO, the CSO is responsible for the implementation and operation of the Agency's SMS.

This ASP will be approved for implementation under Sound Transit authority and accepted by the Chief Executive Officer and the ST Board of Directors. ST Board approval documentation can be provided upon request.

0.2 SCOPE AND PURPOSE

Scope

The ASP applies to the Link light rail, Tacoma Link light rail, and ST Express services. The Sounder Commuter Rail safety program requirements are documented in the current SCR System Safety Program Plan (SPP), which was modified to comply with the FRA 49 CFR 270 rule.

The SMS applies to all agency activities and duly applies to all employees and the safety oversight of our contracted activities. Contractors, consultants, and partners are required to meet applicable FTA, Labor & Industries, or other minimum requirements in establishing safety plans in accordance with any federal or state legislation and contractual obligations. See Section 4.3 Procurement for safety related

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specifications. The methods and processes contained in the ASP are applicable to all phases of the rail and bus transit system life cycle.

Sound Transit's Link Light Rail and ST Express operating partner, King County Metro (KCM) has developed an Agency Safety Plan that governs the activities of KCM's organization and as it relates to their safety management processes and operating practices for the ST-owned services.

Sound Transit's ST Express operating partners, King County Metro (above), Pierce Transit, and Community Transit have also developed Agency Safety Plans to comply with CFR 673.

The scope of this plan is audited, in cooperation with our partners, to ensure full implementation of the Safety Management System throughout Sound Transit and ST owned services.

Purpose

ST's ASP will incorporate all the elements of our safety programs, referencing documents of record, and aligning all safety processes under one umbrella. The SMS will increase effectiveness, check that the processes are working as intended, and align departments under a common objective.

The SMS is intended to work in conjunction with the other ST management systems, including environmental, asset management, quality, and information security. Additionally, Security and Emergency Management remain part of our safety processes and will play a major role in the policies and procedures developed for FTA compliance.

0.3 ORGANIZATIONAL CHART

The ST Organizational Overview has been included in this plan in Appendix 2. Additional organizational charts can be provided upon request. Organizational charts are updated on a quarterly basis for all staff, and are retained on the ST intranet site, The Hub.

0.4 SYSTEM DESCRIPTION

System descriptions for LLR, TLLR, and STX have been included in Appendix 1. Descriptions will be reviewed and updated as needed by the Manager- Security & Safety Management System annually.

0.5 EXPECTED OUTCOMES

The expected outcomes of SMS provide the agency a process-focused approach to managing safety risk to the optimum level – As Low As Reasonably Practicable (ALARP). This goal is reflected in the safety activities integrated during the planning, design, construction, operation, and maintenance phases of transit projects and services. The expected outcomes of SMS include:

- A continuously improved safety culture
- Meeting and exceeding safety targets to provide the highest level of safety (ALARP)
- Meeting applicable requirements of regulatory agencies
- Effectively monitoring and measuring safety performance
- Ensuring mitigations are effective and validated

Operational and Employee Safety committee charters contain mode-specific goals around continuous improvement and reducing risk. These goals are written using the SMART methodology and are reviewed and revised annually. Employee Safety and Operational Safety modal committee charters can be provided upon request.

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1.0 SAFETY PLAN

This section incorporates ST's conformance with 49 CFR 673, including establishing safety performance targets, review and update of this document, emergency management protocols and coordination with planning stakeholders.

1.1 REGULATORY UPDATES TO THE AGENCY SAFETY PLAN

This safety plan has been updated with guidance from the previous year. Additionally, there will be references throughout the plan that refer to the Bipartisan Infrastructure Law (BIL) Congress passed in late 2021, including the following:

- An Infectious Disease Plan that establishes strategies to minimize exposure of the public, personnel and property to communicable diseases.
- A safety committee consisting of an equal number of frontline employees and management representatives. The existing ST Employee Safety Committee (ESC) was revised to adapt to the new requirements and an escalation path detailing operational partners' ESCs was published. The ESC shall review and recommend risk-based mitigations or strategies and identify gaps and safety deficiencies for continuous improvement. Additionally, the ESC will approve the ASP and any updates prior to the Board of Directors.
- A risk reduction program to improve safety by reducing the number and rate of accidents, incidents, and assaults on transit workers. This will include measures to reduce visibility impartments for bus operators as well as barriers to protect operators from assault. Safety committees shall establish performance targets for this program using a three-year rolling average. Failure to meet the performance target would require Sound Transit to allocate specified federal funding to risk reduction projects.
- A safety training program will provide operations and maintenance personnel continuing safety education and training, along with de-escalation training.

1.2 SAFETY PERFORMANCE MEASURES AND TARGETS

Sound Transit's safety performance measures are based on the measures established under the National Public Transportation Safety Plan. Numbers and rates were calculated using the National Transit Database (NTD) Time Series data. The reduction targets are derived from an analysis of the average three-year safety performance against the metrics defined below in Figure 3; rail mode has a reduction target of 0.5%, and bus fixed routes have a reduction target of 5%. Sound Transit has changed to an average of three years based on BIL requirements.

Safety performance monitoring focuses on the routine observations and continual data collection of our operations and maintenance activities.

The FTA has established safety performance criteria and state of good repair standards that all transit agencies must meet. This ASP includes safety performance targets that meet or exceed the required safety performance criteria and state of good repair standards.

Sound Transit currently produces many key performance indicators that are reported internally to ST, and externally to the NTD, WSDOT, and the FTA. In accordance with the requirements of 49 CFR 670, ST addresses safety performance in the following four categories:

- Fatalities: the total number of reportable fatalities and rate per total unlinked passenger trips by mode

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- Injuries: the total number of reportable injuries and rate per total unlinked passenger trips by mode
- Safety Events: the total number of reportable events and rate per total vehicle miles by mode
- System reliability: mean distance between failures by mode

Figure 3. 2023 Safety Performance Targets

Metric	Rail Mode	Bus Fixed Route Mode
	2023 Target - 0.5% reduction	2023 Target – 5% reduction
Fatalities	0	0
Rate	0.00	0.00
Injuries	13.20	10.89
Rate	0.22	0.11
Safety Events	29.05	20.71
Rate	0.54	0.22
System Reliability*	2.53	11.25
Vehicle Revenue Miles (VRM)	8,021,504	9,951,333

*System Reliability is measured by major mechanical failures per revenue mile.

1.3 CONFORMANCE WITH FTA GUIDELINES

This ASP addresses all requirements and standards as set forth in the FTA's Public Transportation Safety Program (NPTSP) and the National Public Transportation Safety Plan. Additional areas of compliance around the risk reduction program will be put in place once FTA updates the NPTSP to include applicable performance measures. ST will comply with any minimum safety performance standards, monitor any FTA standards that may be established through the public notice and comment process, and revise the ASP according to the process listed in section 1.4.

1.4 REGULATORY OVERSIGHT AND ACKNOWLEDGEMENT

The State Safety Oversight Agency for Sound Transit's rail mode is the Washington State Department of Transportation (WSDOT). Sound Transit coordinates with the WSDOT State Safety Oversight (SSO) Office on SMS performance and SMS implementation on a continuous basis.

1.5 REVIEW AND UPDATE OF ASP

The ASP is reviewed annually by the Safety Department to certify its compliance and make necessary updates, corrections and modifications in accordance with ST practices and WSDOT Program Standard guidance. The Manager- Security & Safety Management System is responsible for initiating, developing, and revising the ASP on behalf of Sound Transit, as well as confirming compliance with state and FTA regulations. The Manager will seek feedback from affected departments, management review, operational partners, and internal audits to determine if any changes are needed. Updates to the ASP may be initiated due to changes to the WSDOT Program Standard, system expansion, major system modifications, audit results, operating procedures or environment, procedures, instructions, or rules affecting safety.

Changes, excluding nominal administrative changes, will be presented to the Employee Safety Committee and the Chief Executive Officer for adoption by the Board of Directors. The Manager-Security & Safety Management System will update the revision table indicating a review and certification of compliance has taken place.

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Following the ASP review, the Safety Department will provide the revision to WSDOT for compliance review and final approval. The revised ASP is submitted annually on or before February 15th to meet requirements set forth by the current revision of the WSDOT Program Standard. The Transportation Safety & Security Director is responsible for notifying WSDOT of any changes or modifications to the ASP or any significant safety issues. WSDOT is responsible for reviewing the ASP to ensure the plan meets the Program Standard requirements. Any WSDOT recommendations to enhance or modify the ASP will be considered and the ASP will be revised accordingly.

1.6 PUBLIC SAFETY AND EMERGENCY MANAGEMENT

PUBLIC SAFETY AND SECURITY OPERATIONS

The Public Safety division works to provide a secure transit experience for Sound Transit customers and a secure operational/working environment for agency employees and contractors.

Strategic Objectives

Key to achieving the overarching goal of providing a secure transit system are the following four mutually re-enforcing strategic objectives:

- **Minimize/Deter Crimes**
  - The primary strategic objective of the Public Safety division is the protection of life and physical safety. Any type of violent act against an employee, contractor or customer is unacceptable, and resources (both organic and contracted) should be consistently allocated to keep the number of violent crimes to the lowest level possible.
- **Promote that the System is Safe**
  - This objective de-emphasizes the current static security model and requires a continual balance of real and perceived security issues vs. available security resources (technology, budget and staffing).
- **Respond and Manage Critical Incidents**
  - The Public Safety division cannot predict or plan for security incidents, however, must be able to respond quickly and effectively. This includes the critical objective of providing accurate and complete information to agency executive management and effective coordination with relevant public safety agencies.
- **Enable Safe and Secure Transit Operations**
  - Through a range of programs and procedures, Security Operations seeks to minimize any actions or activities disruptive to normal transit operations (i.e., vandalism, property damage, assaults on operators, etc.).

EMERGENCY MANAGEMENT AND PREPAREDNESS PROGRAM

Excerpt:
It is the policy of Sound Transit to fully support an on-going Emergency Management program as required by 49 CFR 673.11(a)(6). The Sound Transit Emergency Management Plan (EMP) has been developed to define Sound Transit's commitment to implementing and administering an emergency program for all operations within Sound Transit that achieve the highest practical level of preparedness and response for our customers, employees, and members of the community impacted by Sound

Transit's operations and services. It is Sound Transit's policy to work in coordination with impacted jurisdictions and agencies in which Sound Transit operates.
The Agency's emergency response activities are documented in a designated Emergency Management Plan; the objectives are documented in 1.3.4.

Objectives of the Emergency Management Plan

The EMP is aligned with the National Response Framework, which guides how the United States responds to all types of disasters and emergencies. It also aligns with the National Incident Management System (NIMS) (2017), which provides a systematic, proactive approach for all levels of government, nongovernmental organizations, and the private sector. Incident management describes the activities of an entity to identify, analyze, and correct hazards to prevent future occurrences and escalation of hazards into emergencies. NIMS supports cross-sector coordination—regardless of cause, size, location, or complexity—to reduce loss of life and property and harm to the environment. NIMS supports the National Preparedness Goal's five primary preparedness mission areas:

Emergency response objectives include:

- **Prevention**
  - Prevention is characterized by actions taken prior to the onset of an incident/event.
- **Protection**
  - Protection involves efforts from all levels of Sound Transit to remain ready to secure the agency and its operations against various incidents/events.
- **Mitigation**
  - Similar to prevention, Sound Transit engages in continuous improvement activities to incorporate lessons learned and to bridge gaps in emergency management.
- **Response**
  - Being able to effectively manage incidents and events after they occur is crucial to Sound Transit's ability to serve the communities within its jurisdiction.
- **Recovery**
  - Planning for recovery is critical, even before an incident happens. No matter the incident, it is important to begin the recovery process to restore the ability to provide service as quickly and safely as possible.

Infectious Disease Plan

Sound Transit's Infectious Disease Plan is used to identify mitigations and strategies to minimize the exposure of the public, personnel and property to unsafe conditions. These guidelines are consistent with federal and state health authorities to minimize exposure to infectious disease. The previous plan has been updated to conform to the requirements laid out in the BIL.

Emergency Roles and Responsibilities

Sound Transit emphasizes the importance that all levels of the organization understand their responsibilities during emergencies. A description of responsibilities for the Board of Directors, Executive Department, Public Safety Division and Law Enforcement, Communications, Legal, Finance, Information Technology, and coordination with First Responders is documented in section 3.0 of the Emergency Management Plan.

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Sound Transit will develop procedures to fulfill the responsibilities outlined in this section, highlighting which department representatives will mobilize to the incident scene, while others will mobilize to the designated coordination center, depending on incident location and level.

1.7 DRILLS AND EXERCISES

Emergency drills and practical exercises are important tools for planning and preparing for emergency situations. Both drills and exercises provide an opportunity to implement inter-agency communication and coordination with local first responder agencies and other stakeholders. Scenario based exercises allow partners to further hone their skills, proficiencies and procedures in preparation for an emergency or critical incident(s). FTA Regulations require a minimum of one full-scale exercise per year; Sound Transit performs additional exercises. A schedule of these events may be provided upon request.

1.8 AFTER ACTION REPORTS

After-Action Reports (AAR) provide a detailed and/or critical analysis of past training or an event. It is primarily used as a tool to provide feedback after a training exercise or incident. It is developed to reassess leadership decisions, training protocols, and/or implementation of policies and procedures to identify areas of improvement for future use. The AARs are regularly reviewed and updated by the Sr. Emergency Management Specialist for Drills & Exercises. While the purpose of an AAR is to identify areas of improvement rather than findings, any items that rise to the level of findings are documented through the CAP process.

1.9 CERTIFICATION OF COMPLIANCE

Sound Transit will certify that this Agency Safety Plan meets the requirements of 49 CFR 673, 49 CFR 674, and the WSDOT Program Standard. Sound Transit will self-certify this ASP initially and annually thereafter through the FTA's Certification and Assurances process.

1.10 COORDINATION WITH PLANNING STAKEHOLDERS

Sound Transit disseminates and makes available safety performance targets to the state regulatory authorities, Puget Sound Regional Council (PSRC) and other stakeholders to aid in the planning process. ST will provide a complete copy of this ASP to PSRC and WSDOT, highlighting the proposed performance targets to aid in their planning process. Future revisions will be shared with both organizations.

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2.0 SAFETY MANAGEMENT POLICY

The SMS components lay the foundation of ST's safety culture, and specifically the Safety Management Policy component frames the organization for success. This component documents ST's commitment to safety, which defines our objectives, accountabilities and responsibilities.

POLICY STATEMENT

Sound Transit is committed to implementing a Safety Management System that consistently fulfills the highest expectation of our customers through the delivery of high-quality service without adverse effects to the safety of passengers, employees, contractors, emergency responders and the public; and complies with applicable legal regulations, industry best practices and other requirements.

We continue to improve and embed our safety culture in all our activities, recognizing the importance and value of effective safety management and acknowledging at all times that safety is paramount.

Sound Transit's overall objective is to proactively manage safety hazards and their associated safety risk, with the intent to eliminate unacceptable risk in our transit operations. To that end, we will continuously examine our operations for hazards, and apply lessons learned and process improvement to our capital program to ensure that our system growth is influenced through operational experience. We have established a non-punitive employee safety-reporting program, trained staff on SMS principles, and strive for continuous improvement of our safety performance.

All levels of management and all employees are accountable for the delivery of the highest level of safety performance, starting with the Accountable Executive: Sound Transit's CEO. ST will integrate the management of safety among the general responsibilities of all employees, as defined in all ST job descriptions.

As required by the Federal Transit Administration, we have established annual safety performance targets to help us measure the safety of our transit system. In addition to our overall safety objective, we will continue to track and trend leading and lagging indicators to ensure the success of our system, identify opportunities for improvement, and actively track and follow-up on voluntary hazard identification reports.

The Board of Directors has memorialized the Chief Executive Officer's responsibilities and overall Sound Transit commitment to safety in R2017-13, which can be found on the Hub in its entirety.

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Julie Timm
Chief Executive Officer
Sound Transit
Ph. 206-398-5450
401 S. Jackson St.
Seattle, WA 98104

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2.1 SAFETY MANAGEMENT POLICY COMMUNICATION

Sound Transit's Safety Policy will be distributed to all personnel via internal communications. Additionally, through ST bi-annual SMS awareness refresher training, the policy statement will be shared with all staff. For more information on Training and Communication, please see Section 5.0 Safety Promotion.

2.2 EMPLOYEE REPORTING PROGRAM AND FEEDBACK

Sound Transit has developed a process for employees to report hazards, unsafe conditions and near miss occurrences to management. Employees are encouraged to report transparently; Sound Transit affords protection from punitive measures by providing employees the opportunity to submit reports transparently or anonymously.

Sound Transit is aware that different concerns need different feedback. Below are the reporting methods with a description of appropriate reporting channels.

1. If there is a medical emergency or an employee or another person is in danger, the employee must call 911. Employees must then call or text the Security Operations Center at 206-398-5268 so they may meet First Responders.
2. If an employee witnesses an incident or intentional act that feels unsafe on or near ST property, they should call or text the Security Operations Center (SOC) at 206-398-5268. Personnel in the SOC log these reports, respond to the employee via text and utilize radios to dispatch on-site security to the employee's location, if necessary.
   If there are non-emergency safety and security concerns, the employee should submit concerns via the Employee Safety Reporting Tool. A training guide for utilizing the reporting tool can be found on the Hub and in the reporting tool form. The Employee Health and Safety group will route the concern to the appropriate safety discipline. Feedback on concerns is provided directly through email to the reporting party, summarizing the status, actions taken to address the reported issue, and final resolution. All personnel may search reported concerns directly from the tool to identify actions taken and status. Reporting to the Employee Safety Committee and Senior Management may occur through the reporting tool. An employee may also directly contact a member of the ESC.

3. If an employee has a Sound Transit Facilities concern, they should enter an **EAM** ticket via ST Hub (ST Links>EAM). Feedback is provided through the EAM system or email, providing status information, and actions taken to address the reported issue.
   Examples include:
   - Maintenance of building/ST properties (e.g. office moves, furniture moves, maintenance requests, building heating/cooling, ST-owned transit facilities, etc.).
   - Non-emergency safety concerns (e.g. trip/fall hazards).
   - Spills: ESMS-304 Assessing and Responding to Spills

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These methods of reporting are all part of the hazard identification subcomponent, and the larger Safety Risk Management process documented in Section 2.0. Reported safety concerns will follow the process documented in Section 3.0.

Standards of Conduct and Workplace Misconduct

ST has outlined its Standards of Conduct and Examples of Workplace Misconduct within the Employee Handbook. These sections specifically describe employee behaviors that result in disciplinary actions. Each employee receives an electronic or hardcopy of this handbook at the start of their tenure. The handbook is updated periodically and is available via the Hub.

2.3 SAFETY ACCOUNTABILITIES AND RESPONSIBILITIES

To achieve the ASP goals, all Sound Transit personnel need to be involved and have ownership for safety. Specifically, taking into consideration the safety implementations of their decisions in their respective roles. All ST employees have general safety-related tasks under the ASP as documented in the following section.

2.3.1 ORGANIZATIONAL ROLES AND RESPONSIBILITIES

Chief Executive Officer (CEO)

The Sound Transit CEO is the Accountable Executive and is responsible for reviewing and approving the ASP, ensuring the agency SMS is implemented, resourced, and continually improves. The CEO may delegate risk management decisions to the Chief Safety Officer; however, they are ultimately responsible for accepting safety risks or hazards at ST. Specifically, the ST CEO is responsible for:

- Control and direction over human and capital resources needed to develop and maintain both the ASP and the Transit Asset Management (TAM) Plan
- Designating a Chief Safety Officer
- Ensuring that Sound Transit's SMS is effectively implemented throughout ST's public transportation system
- Ensuring action is taken to address substandard performance in ST's SMS
- Sound Transit's Safety Performance
- Carrying out ST's TAM Plan
- Establishment and implementation of the ASP

Chief Safety Officer (CSO)

The CSO has been designated by the Accountable Executive as the SMS Executive. This position directly reports to the Accountable Executive and is adequately trained to perform their duties. Training requirements for this position are included in Section 5.2. The CSO is also responsible for:

- Day-to-day Implementation and operation of ST's SMS
- Ensuring action is taken to address substandard performance in ST's SMS
- Advising Accountable Executive on SMS progress/Status
- Communicating safety information and safety performance
- Ensuring ST policies are consistent with the ASP Goals
- Advocating for and promoting safety culture

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Agency Leadership

Agency Leadership is considered the Executive level staff of Sound Transit. ST Leadership is responsible for:

- Implementation and operation of the SMS as it applies to their respective business units
- Accountable for business unit oversight, day-to-day operations and maintaining compliance with the ASP
- Modification of policies to align with the implementation of the ASP and other regulations

Deputy Chief Executive Officers

The Deputy Chief Executive Officers (DCEO) are Chairs of the System Expansion and Service Delivery Council and Business Administration Councils, and members of the Executive Council with the CEO.

Executive Council

Addresses the agency's highest-priority issues and strategic questions to advise and recommend on necessary executive decisions both externally to customers, voters, communities, partners, and the Board of Directors, as well as internally to the organization; forum to understand CEO direction and coordinate timely, clear expectations with two leadership Councils.

System Expansion & Service Delivery Council

Supports external agency business functions primarily related to system expansion and service delivery, and external affairs (e.g., Government and Community Relations, and Communications); serves as a meaningful governing body to advise and recommend on key agency decisions impacting capital project delivery, operations, the customer experience, and safety.

Business Administration Council

Supports internal ST business functions, including cross-cutting, end-to-end processes; serves as a meaningful governing body to advise and recommend on key agency decisions related to these areas, driving work to unify and automate core enterprise processes and workflow, and ensure exceptional internal customer service.

Key Staff

Key staff include the Safety Department, some Internal Audit staff, and some modal Operations staff who have primary responsibility for overseeing safety. Those identified as Key Staff have been enrolled in the Public Transportation Safety Certification Training Program of the FTA. A list of staff can be provided upon request. Responsibilities include:

- Compliance with the programs and processes identified within the ASP
- Supporting the development, implementation and operation of SMS within the ASP
- Maintaining documents that support the implementation of the ASP; as a representative of the CSO in the Link Rules and Procedures Committee (LRPC)
- Maintaining individual certifications in compliance with 49 CFR 672 Public Transportation Safety Certification Training Program (PTSCTP)

- Reviewing and investigating employee reports and implementing corrective actions, as appropriate, in a timely manner
- Investigating employee injuries and documenting findings of investigations in the reporting system
- Verifying ASP compliance and reporting deviations to the Safety Department

2.3.2 OPERATING CONTRACT RELATIONSHIPS

LINK LIGHT RAIL – KING COUNTY METRO

Daily activities of LLR operation, safety, and maintenance are contracted out to King County Metro (KCM), through an operating and maintenance Intergovernmental Agreement (IGA). King County Metro is required to maintain a PTASP that documents their day-to-day administration of the KCM SMS, and internal processes for the agency that is supported by the IGA and Sound Transit's ASP. Sound Transit reviews KCM's ASP annually as part of the revision process.

As detailed in the IGA, section 3.0, KCM Rail Operations and Maintenance are responsible for the safety of LLR employees, including safety leadership, interpretation of policies and work rules, enforcement of rules and policies, and education of staff relative to safe work practices/procedures. KCM Rail Operations and Maintenance is directed by the KCM Division Director of Rail. The primary responsibility of the KCM Division Director of Rail is the overall direction of all KCM rail operations, including development of operations and maintenance programs, and oversight of all contracted services for rail-related tasks. The KCM Division Director of Rail meets regularly with the ST Executive Operations Director - Light Rail to discuss all aspects of the LLR system.

ST EXPRESS – KING COUNTY METRO, COMMUNITY TRANSIT, PIERCE TRANSIT

The regional bus day-to-day activities for operation, safety, and maintenance are contracted to three different agencies: Pierce Transit, Community Transit, and King County Metro. In coordination with and oversight by the ST Express Operations Manager, these agencies administer individual PTASPs that apply to the ST Express regional operations and are reviewed annually by ST. Safety assurance activities and contract oversight activities are tools to assure the safety of the system and ensure best-in-class safety systems in the Pacific Northwest.

SOUNDER COMMUTER RAIL- BNSF, AMTRAK, STACY & WITBECK INC.

Sounder commuter rail falls outside of the scope of this plan. A complete description of the roles and responsibilities of Sound Transit, BNSF, Amtrak, and Stacy & Witbeck, Inc. are included in the current Sounder Commuter Rail (SCR) System Safety Program Plan.

2.4 PLAN IMPLEMENTATION

The ASP focuses on the activities that are required to provide a high level of safety. The ASP elements include the long-term approach to implement Safety Management Systems within ST. The ASP also delineates activities to be performed by the safety committee to ensure its involvement on a continuing basis.

While Sound Transit is pursuing ISO 45001 certification, the ASP is currently scoped to conform with FTA requirements only. This ASP outlines the methods to assure that safety is an integral and continuous

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part of all life-cycle activities of a transit system. The ASP complies with all state and federal laws and mandates by systematically monitoring all phases of operation.

ST's intranet, the Hub, includes information on various functions within the agency including safety. The intranet is the prime method of communication to employees of updates or revisions to the Safety Management Policy. Training is provided on a bi-annual basis and is documented thoroughly in the Safety Training Plan. The Safety Training Plan also details the level of safety training required for each ST staff position. Sound Transit contractors, operating partners, and consultants are expected to maintain all necessary safety trainings, certifications, etc. per awarded contract or agreement.

Additionally, the Sound Transit SMS Implementation Plan serves as the living implementation plan for Sound Transit's Safety Management System. It specifies current SMS processes and procedures; and describes the activities and actions needed to implement the ASP and move towards ISO certification and is reviewed annually.

2.5 SMS DOCUMENTATION AND RECORDS

This ASP is controlled and managed by the Safety Department, as described in section 1.4. ST maintains SMS-related documents, records, and other information as dictated by regulatory compliance of 49 CFR 673.31 and best practice. All documents and records are maintained for a minimum of three years in the ST SharePoint that provide original dates, revisions dates, and permissions to ST employees for access to this critical documentation.

ST is required to maintain all versions of documents related to the ASP, including those related to implementation of the SMS, and results from SMS processes and activities, for a minimum of three years from creation. ST acknowledges that not all departments and divisions have yet developed full documentation to support these requirements of the ASP, however this item is being tracked as part of the implementation process.

2.6 ACCESS TO SMS DOCUMENTATION AND RECORDS

This ASP contains links to documents accessible to ST personnel to facilitate use of these processes and procedures in day-to-day work. Links herein are not accessible to external users, but all SMS documentation and records will be made available to Federal and State entities on request.

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3.0 SAFETY RISK MANAGEMENT

Safety Risk Management (SRM) is integrated into pre-revenue activities such as agency design requirements and criteria, design development, specification preparation, equipment selection, construction, and testing, through revenue procedures and operations. The minimum standards of safety established by State Safety Oversight (SSO) and referenced in 49 CFR 674.25(a) and the Washington State Rail Safety Oversight Program Standard, include governance of the above activities. The SRM process is used to identify, analyze, evaluate, and mitigate safety risk of the overall system, as required in 49 CFR 673.25(a) for all elements of the system.

Staff applies methods of hazard identification, assessment and resolution to minimize or eliminate hazards during design and construction, as specified in the Agency Safety and Security Management Plan, Agency Safety and Security Certification Plan, and Construction Safety and Security Manual. The SRM process also applies to operational, maintenance, and other employee safety activities, changes to the existing ST system, modifications, new extensions, new procedures, and organizational changes; these are tracked through CRB and the Link Rules & Procedures Committee (LRPC). The methodology for Employee Health and Safety management is documented in the Accident Prevention Program (APP), as referenced in Section 3.4. Hazards are assessed and evaluated primarily by the Safety Department with a focus on collaborating with the affected department(s). Employee and technical safety committees, composed of front-line employees and management, contribute by identifying, recommending and analyzing the effectiveness of risk-based mitigations or strategies to reduce consequences identified in ST's safety risk assessment.

This process directly interacts with the Safety Assurance process, as documented in Section 4.0, so that risk treatments (mitigations) can be evaluated for effectiveness over time. Feedback between the two processes is essential to ensure that risk mitigation does not introduce additional hazards into the system.

3.1 HAZARD IDENTIFICATION

Hazard identification is initiated during the planning phase of a project and continues into operations. Ongoing operational hazard monitoring and measurement of these identified hazards happens during the safety assurance process.

Generally, hazard identification is performed in two phases: pre-revenue and transition to/through revenue service. In addition, the Safety Department identifies hazards through specific and scheduled inspections and observations, dependent on safety discipline.

Pre-revenue Hazard Identification

Hazards identified during the pre-revenue stage can be derived from:

- Preliminary Hazard Analysis (PHA) workshops
- Operational Hazard Analysis (OHA) workshops and report
- Consultation with Authorities Having Jurisdiction (AHJ)
- Value Engineering (VE) workshops and report
- ST and Consultant design team experience
- Historical data from previous projects
- Sound Transit accident/incident data and experience
- Accident/incident data from other rail systems, or other systems with similar characteristics
- Applicable industry standards

- Design data and drawings
- Hazard Analysis Guidelines for Transit Projects, DOT-FTA-MA- 26-5005-00-01, January 2000
- Construction safety audits, inspections, and surveillances
- Capital Project Safety & Security Certification Audits (SSC)
- Other Hazard Analyses as required

Transition to and Through Revenue

Defining the physical and functional characteristics of a project creates the foundation of the hazard identification process. These characteristics are presented in terms of the major elements that comprise the project, such as personnel, facilities, systems, equipment procedures, the public and the environment. The hazards are identified using several methods, including the following examples:

- Employee Safety Reports
- Inspections, audits, and surveillance
- Historical hazard or accident data
- Operational experience
- New Procurements
- System Modification
- Safety Data Trend Analysis
- Changes to Critical Items List
- Emergency Drill/Exercises
- Data provided by FTA
- Data provided by WSDOT
- Special Studies or Investigations

The rating of hazards is limited to those hazards that directly or indirectly affect the safety and security of the public, passengers, employees, rolling stock, and facilities. ST performs reactive hazard identification through analysis of events, including investigations of adverse incidents, reporting from employees and contractors via the ESRT or Safety Committee meetings, etc. From a proactive view, ST systematically identifies all reasonably foreseeable hazards, their functions, and interfaces using wide-ranging expertise from a competent team. These may result from audits and inspections, change management, and failure trends.

All identified hazards and mitigations from pre-revenue are tracked within SSIMS and then transferred via Operational Hazard Assessment Reports into the Safety Metrics application. All open hazards in Safety Metrics are available for monitoring and measurement in the operational environment.

3.2 SAFETY RISK ASSESSMENT

Hazards are analyzed by identifying the likely severity of consequence and probability of occurrence. The hazard analysis process continues until it can be shown that each hazard has been controlled to an acceptable level.

The hazard categorizations are determined through standardized analysis performed by ST, consultant, and/or contractor staff. The analyses used as inputs depend on the hazard investigated, but may incorporate preliminary hazard analysis (PHA), Fault Tree Analysis, and Failure Mode and Effect Criticality Analysis among other standardized methods of evaluation.

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Following identification of a hazard, an assessment is performed to determine the hazard rating. Hazard severity and probability are used to measure the hazard's magnitude and the priority for applying control measures. The Safety Risk Matrix is used to assess the level of risk for each identified hazard and to determine what, if any, action(s) must be taken to correct or lower the risk to an acceptable level.

Each Hazard Category in the Safety Risk Assessment Matrix requires a specific level of action, see Section 3.3 Risk Treatment. The decision authority for each Hazard Category is also shown.

Risk Resolution requirements shown in the Safety Risk Matrix are used to prioritize hazardous conditions and focus available resources on the most serious hazards requiring resolution while effectively managing available resources. No level of agency management is authorized to accept a risk that is based in a violation of law, code, or regulation.

3.3 RISK TREATMENT

The Risk Treatment or hazard resolution and control process involves the analysis and corrective action taken to reduce the risk associated with an identified hazard to the lowest practical level. Using the assessment and evaluation results, hazards are mitigated to an acceptable level by one or more of the below described methods:

Design for Elimination or Minimum Risk: Where possible, hazards will be eliminated through design. In many cases, hazards are inherent and cannot be eliminated through design. In other cases, eliminating the hazard is not practical or financially feasible. If the hazard cannot be eliminated, it will be reduced to an acceptable level by incorporating the principles of system safety, using fail-safe devices and principles in design, incorporating high-reliability system components, and using redundant or backup hardware and software devices.

Utilize Safety Devices: Hazards that cannot be eliminated or controlled through design selection shall be controlled to an acceptable level using fixed, automatic, or other protective safety design features or devices. These are permanent system design features that improve safety by automatically controlling the risk of hazard without human interaction. Provisions shall be made for periodic functional checks of safety devices.

Install Warning Devices: When either design or safety devices cannot effectively eliminate or control an identified hazard, warning devices can be used to detect the hazardous condition and to generate an adequate warning signal to correct the hazard or provide for personnel evacuation. Warning devices should be standardized to minimize the probability of incorrect reaction of personnel to these warning signals.

Develop Procedures and Instruction: When it is impossible or impractical to eliminate hazards through design selection or adequately reduce its associated risks through safety or warning devices, then approved procedures and training programs must be used. However, this is the lowest level of control, and relies on training to recognize the hazard and personnel actions to avoid the hazard. Procedures may include the use of personal protective equipment. Precautionary notations and warning signs must be standardized.

Hazard resolution often requires a combination of the methods of control. The use of warning, caution and other forms of written advisories alone to control undesirable risks will be carefully reviewed to ensure that no other additional measures are possible. Hazards classified as "unacceptable" are not permissible.

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Safety Risk Assessment is detailed in the ST Hazard Management Manual. Assessing risks within ST enables personnel to effectively manage risk and make reasonable decisions. Risk communication is addressed through committees and escalated as required to executive level staff through all steps of the risk management process.

3.4 ACCIDENT PREVENTION PROGRAM

The Accident Prevention Program (APP) is the agency's written plan describing its total health and safety program to prevent accidents, illnesses, and injuries on the job, as required by WAC 296-800-140. The program is tailored to the needs of Sound Transit's workplace/operation and to the types of hazards involved.

This program covers the Employee Health and Safety Group responsibilities and describes agency policy and general procedures concerning employee health and safety. The APP is available to all employees and is initially introduced to new employees during their Employee Safety Orientation.

3.5 TRANSIT ASSET MANAGEMENT

Effective asset management is an important way Sound Transit can continue to provide world-class service as new assets come into service and existing assets age. Sound Transit's asset management program conforms with the Moving Ahead for Progress in the 21st Century Act (MAP-21) and in the coming years will mature to also conform with international asset management practices, including ISO 55000 series of asset management standards.

ST recognizes that transit asset management has value far beyond simple compliance. It represents an opportunity for ST to innovate; train and grow its employees; reach quantifiable efficiencies in its operations and business processes; and become a best-in-class transit provider for its customers. The guiding principles for the program are articulated in Sound Transit's Asset Management Policy. Further information on the Transit Asset Management program is in the Transit Asset Management Plan.

The State of Good Repair (SoGR) standards are defined by the National Safety Program and National Transit Asset Management (TAM) System, found in 49 CFR Part 625. These set forth conditions when safety risk analysis must be performed on capital assets such as equipment, rolling stock, infrastructure, and facilities. Sound Transit documents safety performance objectives in the TAM plan based on this definition and makes informed investments to strive for a SoGR for all assets.

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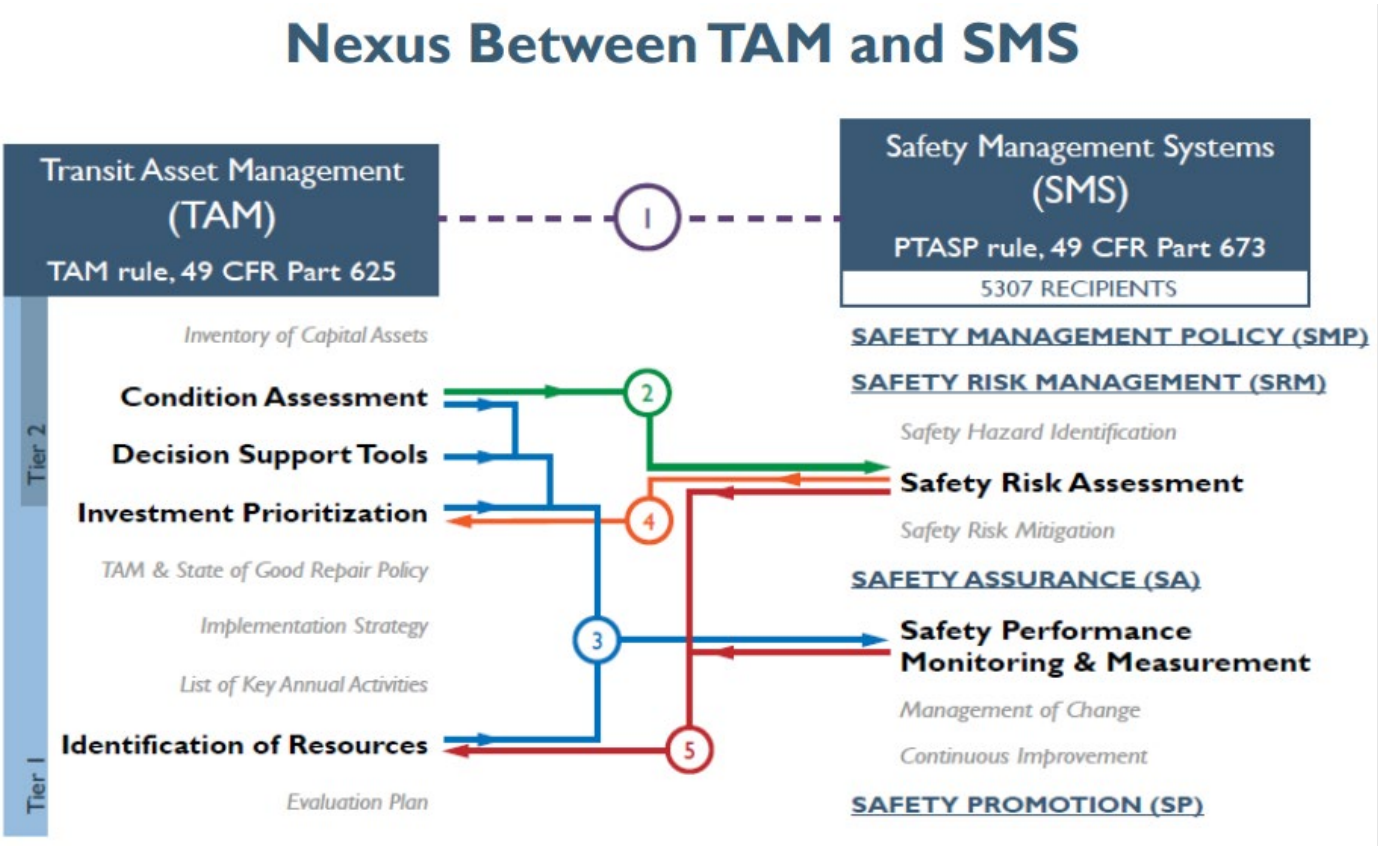
Figure 8. FTA Nexus between TAM and SMS



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4.0 SAFETY ASSURANCE

Safety assurance ensures that ST implements appropriate and effective mitigations and monitors the safety performance of Sound Transit. Safety assurance also helps assess changes to see if the changes impact the safety of the system.

Safety assurance includes three subcomponents:

- Safety Performance monitoring and measurement
- Management of change
- Continuous Improvement

4.1 SAFETY PERFORMANCE MONITORING AND MEASUREMENT

4.1.1 RULE COMPLIANCE AND PROCEDURE REVIEW

Proactive revision schedules including development, management and enforcement of policies, and rules and procedures, ensures the safe operation and maintenance of equipment along with monitoring the efficacy of safety risk mitigations, causal factor investigations and examining internal safety reports as noted in 49 CFR 673.27(b).

As mentioned in section 1.1, a risk reduction program will be initiated in 2023, to improve safety by reducing the number and rates of accidents, incidents and assaults on transit workers. These items will be monitored and reviewed based on targets set by the safety committee.

LINK LIGHT RAIL

Link light rail rules compliance and procedure review is conducted by KCM (see KCM ASP Section 7.2). Sound Transit Operations maintains a Link Maintenance Oversight Process which documents the quality oversight of contracted maintenance activities including Quality Control, Material Control, Personal Safety, Equipment Operations, Best Maintenance Practices, Training, and Configuration Management. KCM maintains SOP 1.8 Ride Check-Performance Evaluation and records of operator ride checks through their learning management systems. The results of the KCM ride checks are available upon request. Sound Transit Operations maintains an oversight program that includes Track, Power and Signals, SCADA, Vehicle Maintenance, Non-revenue Vehicles, Operations and the Maintenance Service Center.

Standard Operating Procedure 1.1 governs matters pertaining to the development, issuance and revision of Link light rail rules and procedures. The Link Rules and Procedures Committee (LRPC) meets monthly to prioritize and review any additions, changes or deletions.

TACOMA LINK LIGHT RAIL

Tacoma Link light rail compliance and procedure review is conducted by the Tacoma Light Rail Director, who shall ensure safety requirements are established, reviewed on a regular basis, and updated as necessary. Rules are reviewed annually for adequacy. The Tacoma Link light rail Director shall also oversee all safety testing for rules and procedures using pass/fail criteria. Only personnel who are certified (successfully pass rule and procedure tests) shall be allowed to operate equipment. The Tacoma Link light rail Director is responsible for establishing training/retraining standards and shall review these standards on an annual basis. The Tacoma Link Safety and Security Committee evaluates implications of existing WSDOT oversight rules, under which ST is governed, and any potential modifications to these requirements.

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ST EXPRESS REGIONAL BUS

Sound Transit Express bus service utilizes monthly regional data sessions and quarterly meetings with STX contractors to discuss and address any open issues around safety performance. Contractors ensure compliance with procedures for operations and maintenance within their respective ASPs: Community Transit ASP Section 6.1, Pierce Transit ASP Section 4.1, and KCM ASP Section 7.2.

4.1.2 SAFETY DATA

The Safety Department analyzes data to assist in maintaining a safe work environment for all employees and a safe system for our customers. Analysis of data may result in recommendations for corrective actions. The Safety Data Handling Manual details how the Safety Department collects and analyzes data. The principal approach used in achieving ASP goals are accomplished by charging all ST personnel with safety. ST uses a proactive approach that stresses review of systems and the proposal of modifications to these systems from a safety perspective before events occur. The ASP also requires employees to examine the effects that their actions may have on the safety of other interrelated systems, described in more detail in Section 4.3 Management of Change.

All personnel are responsible for ensuring that safety-related tasks meet and comply with the guidance in the ASP. All ST staff are responsible for working safely and following established rules, procedures, policies and safe-work practices. The intent of this section is to provide a description of ASP responsibilities that will assist ST's efforts in achieving optimal safety. The Transportation Safety and Security Data Manual provides a general representation/overview of the various processes and procedures involving data. Specific procedures and responsibilities are listed in procedure manuals, rulebooks, plans, program manuals, policies and other controlling documents.

Safety Risk Management Databases

Safety and Security Information Management System (SSIMS)

A Safety and Security certification database has been developed to update and track project Certifiable Items and provide users with continual interface and capabilities to report the certification status for the design, construction, testing, and pre-revenue phases of the project. This database is called the Safety and Security Information Management System (SSIMS). Project documentation is assembled and maintained in the project Safety and Security Certification records on SSIMS SharePoint. Contents of the records include the following:

- Certifiable Items list;
- SSIMS Forms for each Certifiable Item;
- Support documentation;
- Scanned Certificates of Conformance for all certifiable elements; and
- Scanned System Certificate of Conformance for the project.

Safety Metrics Application

The Employee Health and Safety Group and the Transportation Safety and Security Divisions capture and analyze operational safety data in the Safety Metrics application. The Safety Metrics application is comprised of several modules that track safety data such as "events" (i.e. accidents, incidents), audit findings, Corrective Action Plans (CAPs), hazards, etc. Event data for all modes of travel are captured in the Safety Metrics application.

KCM's database Safety and Security Management is the database of record for all events related to Link light rail. Event data is transmitted to Safety Metrics each Monday with data from the previous week and undergoes quality review.

Security Database

Passenger and pedestrian reported security issues are logged in the Security team's Computer Aided Dispatch (CAD) system. The CAD system, Omnigo, tracks all incidents responded to by security personnel. Call data includes the time and date of the initial call, the type of incident (i.e. theft, assault, disorderly conduct), the location of the incident, and any notes associated with the incident.

4.1.3 TRANSIT SAFETY INSPECTIONS AND ASSESSMENTS

On a quarterly basis, key staff conduct safety and security inspections at all ST-owned stations. Safety staff works with ST Facilities to create work orders to correct and/or repair identified issues. Standard Operating Procedure TSS-SOP-TSS27, details the process for inspections and identifies triggers for Safety and Security Assessments. Assessments are performed to proactively apply an all-hazards approach to assess safety hazards or security vulnerabilities within the operating system before they result in harm or damage.

4.1.4 TRANSIT SAFETY ACCIDENT AND INCIDENT INVESTIGATION

WSDOT has the primary responsibility for accident and incident investigation and has delegated these responsibilities to Sound Transit. The Transportation Safety and Security Director is the primary contact for WSDOT. Investigation procedures for rolling stock accidents and incidents are controlled by the individual modes. The FTA has published guidelines for performing RTA accident investigations .

LINK LIGHT RAIL

Link Light Rail accidents and incidents are reported through the Link Control Center and investigations are conducted by Sound Transit's operating partner, King County Metro (KCM). KCM has developed and presented investigation procedures for ST review and approval on the Link Light Rail service:

- SOP 4.1 Documenting Rail Accidents and Incidents
- SOP 4.2 On-Scene Rail Accident Investigation

Training criteria and records for those conducting investigations are established and ensured by KCM. Sound Transit safety personnel who review investigation reports are required to receive the Transportation Safety Institute's (TSI) Rail Incident Investigation certificate.

TACOMA LINK LIGHT RAIL

Tacoma Link Light Rail accidents and incidents are reported to the Tacoma Link Control Center, the controller assigns the investigation to the field supervisor. TLLR staff adhere to the following procedures when investigating:

- SOP 107.07 Accident Investigations

Other TLLR Emergency Operating Situation procedures may also apply.

Training criteria and records for field supervisors conducting investigations for TLLR incidents are required to complete an orientation and procedure review process conducted by the Tacoma Link

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Transportation Manager. Managers and field supervisors are required to attend the TSI Rail Incident Investigation course.

ST EXPRESS REGIONAL BUS

ST Express accidents and incidents are investigated by the contract operators: King County Metro, Community Transit, and Pierce Transit.

WSDOT INVESTIGATIONS

In the event that WSDOT conducts an investigation on Link light rail or Tacoma Link light rail, ST will review the report and provide a response within 30 days with proposed corrections or adoption. Once the investigation has been closed, ST will add any or all corrective actions to the Corrective Action Plan log, per Section 4.5.3.

4.1.5 REPORTS AND DOCUMENTATION

The WSDOT State Rail Safety Oversight Program Standard defines reportable, or notifiable, events in "Chapter 6: Accident notification." Sound Transit will refer to the most current Program Standard to ensure compliance with all reportable and notifiable activities.

Accident reports, written investigation reports and findings, using the appropriate WSDOT form or supplying comparable information, are due to WSDOT within 45 calendar-days after the reportable accident date or unacceptable hazardous condition is discovered. This report must identify the causal factors contributing to the occurrence in the form of a Root Cause Analysis and, if appropriate, contain a CAP and an implementation schedule to prevent a recurrence of the accident, or to mitigate the unacceptable hazardous condition.

All accident reports are submitted to the Transportation Safety and Security Director for review and approval. The Transportation Safety and Security Director shall then submit the report to WSDOT for review and approval, with both an investigation report and recommended plans describing how the identified hazardous condition or actions identified during an accident investigation will be or has been mitigated. Other incidents that do not belong to the WSDOT reportable occurrences but are employee accidents/incidents are reported using the internal reporting as described in the ST APP.

The Transportation Safety and Security Director is responsible for preparing an annual summary report covering all reportable occurrences over the previous calendar year. The annual summary report shall be submitted using the WSDOT Safety and Security Program Annual Report form. The Transportation Safety and Security Director shall submit the WSDOT Safety and Security Program Annual Report to WSDOT as prescribed in the WSDOT Program Standard.

4.1.6 EXTERNAL REPORTING NOTIFICATION AND THRESHOLDS

The Transit Safety group keeps work instructions and standard operating procedures on how to report to WSDOT, National Transit Database (NTD), and other regulatory bodies. Guidelines for all notification requirements have been created for the Transportation Safety & Security Staff using the current version of the WSDOT Program Standard.

4.1.7 CORRECTIVE ACTION PLANS

Corrective Action Plans (CAP) are an integral part of the Safety Risk Management and Safety Assurance processes. A CAP is developed with the intent of addressing identified hazards, safety deficiencies or

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findings, utilizing the CAP SOP. Each CAP shall identify the action to be taken by ST, an implementation schedule, and the individual or department responsible for the implementation. The ST Transportation Safety and Security Director shall submit the CAP to WSDOT for approval within 30 calendar days after the need for the CAP has been identified by either ST or WSDOT. Depending on the complexity of the issue requiring corrective action, and at WSDOT's discretion, additional time may be granted to ST to prepare the CAP.

The CAP must be submitted to WSDOT for review and approval. The ST Transportation Safety & Security Director shall develop and maintain a CAP log, which identifies all CAPs approved by WSDOT and tracks their status. This log is submitted quarterly to WSDOT. As CAPs are closed out, the Transportation Safety & Security Director shall submit verification that corrective actions are implemented as described in the CAP, or that a proposed alternative action has been implemented. ST provides WSDOT with:

- Verification that the corrective action(s) has been implemented as described in the CAP, or that a proposed alternate action(s) has been implemented subject to oversight agency review and approval; and
- Periodic reports requested by the oversight agency, describing the status of each corrective action(s) not completely implemented, as described in the CAP.

ST submits CAPs to WSDOT for approval monthly after the need for the CAP has been identified by either ST or WSDOT. Depending on the complexity of the issue requiring corrective action, and at WSDOT's discretion, additional time may be granted to prepare the CAP.

If an emergency or immediate corrective action is necessary to ensure safety, ST will act according to the Safety Risk Management process and implement a mitigation prior to receiving formal approval from WSDOT. Proper notification and ongoing communication between ST and WSDOT will ensure coordinated and timely permanent mitigations, provided subsequent review and approval.

4.2 MANAGEMENT OF CHANGE

Management of Change is a systematic approach to preventing or mitigating risk to the agency, including degradation of safety, health or environment as a result of changes made to how one may construct, operate, manage, or repair systems or processes. Sound Transit's safety risk assessment process is a critical component of SMS and helps the agency identify and understand how changes to our systems affect safety.

4.2.1 CONFIGURATION MANAGEMENT AND SYSTEM MODIFICATION

System modifications are carefully evaluated and considered from concept to design and implementation to determine how the change might affect the safety of the system. ST evaluates the proposed modification for its potential to create additional hazards or reduce the effectiveness of existing hazard controls. ST coordinates the integration of new equipment, system expansion, modification, and system rehabilitation from the design and procurement effort through construction, inspection, testing, and start-up. Further information regarding our configuration control can be found within the Agency Configuration Control Policy, and the Configuration Review Board Charter. Additionally, capital program changes are managed through the Capital Program Change Control Board, and the Material Review Board.

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4.2.2 SAFETY AND SECURITY MANAGEMENT AND CERTIFICATION PROCESS

The Safety and Security Certification program verifies that safety and security related requirements are incorporated into rail transit projects. The goal is to verify that safety and security standards and requirements are met or exceeded throughout the projects' phases and a final safety and security certificate for revenue operations is issued. ST self-certifies rail transit projects, subject to the safety oversight of WSDOT. The Sound Transit Project Director and Safety and Security Certification Manager ensure compliance with the Agency Safety and Security Management Plan (SSMP), Agency Safety and Security Certification Plan (SSCP), and project-specific SSMPs and SSCPs. The CEO has final authority and responsibility for system safety and security. The Chief Safety Officer approves and has oversight of the SSMP and SSCP.

SAFETY AND SECURITY MANAGEMENT PLAN PURPOSE

Excerpt from 2022 SSMP Sec 1.2 Purpose of the Agency SSMP

The SSMP describes the integration of safety and security activities including methods for identifying, evaluating, mitigating, and resolving safety hazards and security vulnerabilities of systems. The Agency SSMP does the following:

- Documents Sound Transit's philosophy and commitment to achieve the highest practical level of safety and security for our customers, employees, contractors, and the public;
- Describes processes and procedures that minimize risk of injury and property damage, and maximizes the safety and security of Sound Transit customers;
- Integrates safety and security functions and activities throughout Sound Transit's organizational and reporting structure.

SAFETY AND SECURITY CERTIFICATION PLAN PURPOSE

Excerpt from Section 1.3, Purpose of the Agency Safety and Security Certification Plan:

Rail transit agencies are to describe the safety certification process to ensure that Safety and Security hazards and vulnerabilities are adequately addressed. This Agency SSCP is intended to ensure that all facilities, systems equipment, procedures and plans, training programs and emergency preparedness programs are reviewed for compliance with safety and security requirements and certified by the transit agency prior to revenue service. This document outlines the overall approach for preparation and implementation of Safety and Security Certification that will be used for Sound Transit projects.

4.3 PROCUREMENT

Sound Transit ensures that materials and services obtained do not degrade the safety of the transit system. This involves including safety requirements in contracts and obtaining Safety Data Sheets (SDS). The SDS Program has established specific procedures for the acquisition and dissemination of information regarding hazardous materials. Approved SDS information can be accessed via the Chemical Approval SDS system on the Hub. Materials are evaluated by the Safety Department for safety implications prior to purchase and/or use.

Generally, specifications are in written descriptions, performance requirements, drawings, prints, commercial industry standards, and other descriptive literature references. All items to be procured shall be evaluated for Health and Safety compliance with current applicable regulatory specifications. Requestors of services from Procurements and Contracts Department are responsible for identifying

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material or services that have potential safety impact; and for ensuring that such material or services meet safety requirements of Federal and State compliance regulations, Washington Industrial Safety and Health Act (WISHA) standards or identifying the requirements for Safety review. Additionally, DECM, in partnership with Portfolio Services Office (PSO), proactively controls the safety requirements of the services procured on ST capital projects and other operational contracts. DECM and Procurement and Contracts maintains procedures and specifications for the health and safety of our employees and customers.

4.4 CONTINUOUS IMPROVEMENT

Continuous improvement is the process in which ST examines its safety performance to identify safety deficiencies and carries out a plan to address the identified safety deficiencies. It consists of formal activities designed to evaluate the effectiveness of the SMS. This process includes Internal Safety Audit and Management Review.

The Manager- Security and Safety Management System reviews all audit findings, identified gaps and opportunities for improvement, and management review feedback to update and maintain critical SMS processes. The SMS Implementation Plan is updated to reflect the current improvement activities that have been identified.

4.4.1 INTERNAL SAFETY AUDIT

Annual internal safety audits are conducted by the Audit Division to ensure compliance is maintained and objectives are met. The Audit Division is independent of operations, maintenance and implementation of safety processes. The Audit Director maintains the Agency Audit Plan with 3-year audit schedules.

Internal safety audit policies and procedures are maintained and updated by the Audit Division and are available upon request. Results of the annual internal safety audit activities are documented in a report and submitted to WSDOT annually by February 15th as required by the WSDOT Program Standard.

The report summarizes the results of the internal safety audit, and any deficiencies or instances of noncompliance are recorded. These findings are shared with the responsible department who then develops a corrective action plan, as described in Section 4.5.3.

4.4.2 MANAGEMENT REVIEW OF SAFETY PERFORMANCE

Management Review is conducted annually by the CSO and the CEO. This review includes internal safety audit reports, safety performance reports (including year-over-year NTD numbers), corrective action plan summaries, ASP changes and other SMS reports. When deficiencies in the Safety Management System and/or the safety programs are identified, corrective action plans are initiated to resolve and mitigate those deficiencies under the direction of the CEO.

4.5 SAFETY CULTURE ASSESSMENT

Sound Transit has set an agency-wide goal to establish a robust and proactive safety culture. To accomplish this goal, ST has created an Agency Goal Team to develop a five-year work plan. This plan includes establishing a baseline for our current safety culture and an assessment tool to measure the effectiveness of our overall safety and efficacy of our employees in safety related matters.

Sound Transit conducts a Safety Culture Survey annually to measure employee perceptions of various aspects of the agency's safety culture. These include criteria on leadership's commitment to safety, the timely resolution of safety issues and whether employees feel comfortable voicing safety concerns

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without fear of reprisal. Data is collected confidentially, with the aggregated results for each criterion published across the agency. A full list of the Agency Safety Culture Survey questions is available upon request.

In addition to measuring perception, the Agency Goal Team has identified several performance measures that are indicative of ST's safety culture. These include the time to mitigate safety issues, mean time to respond to employee reported safety concerns, rate of passenger and pedestrian injuries, and rate of passenger and pedestrian complaints. Safety Culture Performance Metrics are available upon request.

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5.0 SAFETY PROMOTION

Safety promotion has two sub-components:

- Safety Competencies and Training
- Safety Communication

Safety promotion provides increased safety awareness through safety training and communications. This process helps employees develop the skills needed to perform their job safely and have shared ownership of Sound Transit's safety program. Management commitment is demonstrated through visibility of safety throughout ST.

5.1 COMPETENCIES AND TRAINING

Employees

Sound Transit utilizes a Learning Management System called ST University to provide and track training, and employees are required to complete initial core safety training within 30 days of their start date. During the onboarding process, managers are responsible for assigning additional safety trainings for employees based upon their role and potential exposures from their work-related tasks. This includes de-escalation training for all operations and maintenance personnel. Sound Transit will work with contracted partners to establish training for front-line employees and to confirm training records.

Sound Transit has committed to having all employees initially trained in the Transportation Safety Institute's SMS Awareness training course available online, and bi-annually thereafter with a ST developed SMS refresher course.

All employees are responsible to attend all required training and communicate their training needs, deficiencies in training programs and hazards associated with their training.

Contractors

ST contractors, consultants, and operating partners are responsible for their own safety training programs and certifications per their company policies and guidelines. Contractors are required to report any hazards identified during their job duties to the appropriate Sound Transit program/project manager. ST can verify safety training through internal safety audits and contractor oversight activities, as needed.

5.1.1 PUBLIC TRANSPORTATION SAFETY CERTIFICATION TRAINING PROGRAM

Sound Transit has designated key staff with direct safety oversight within the Safety Training Program. Identified roles, the CSO and Safety department personnel, are required to complete the courses dictated in the 49 CFR 672 regulation and attend a bi-annual refresher course developed by the Manager – Security and Safety Management System and the Program Manager Safety Training.

5.1.2 CHIEF SAFETY OFFICER TRAINING

The CSO is expected to attain the suite of courses offered by TSI that comply with the requirements codified in 49 CFR 672: Public Transportation Safety Certification Training Program. Additionally, the CSO is expected to have both the Rail and Bus Transit Safety and Security Program certificate.

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5.2 SAFETY COMMUNICATION

5.2.1 CSO EXECUTIVE BRIEFINGS

The CSO and the CEO communicate in a variety of ways. Direct communication outside of these structured methods is conducted on an as needed basis.

- Monthly report that goes to the CEO and the Executive Team
- Monthly 1-on-1 briefings between the CSO and the CEO
- Quarterly Executive Summary from Executive Safety and Security and Risk Management Oversight Committee (SSRMC) Report
- CSO's participation in agency's Quarterly Performance Review (QPR) meetings, System Expansion and Service Deliver Governance Council, DCEO's Direct Reports Meeting, and Board and CEO briefing review meetings
- CSO briefing CEO, as accountable executive, for certain hazards, per our governing documents
- CSO annual report to the ST Board of Directors on safety performance

5.2.2 HAZARD INFORMATION AND EVENT-BASED COMMUNICATION

Key incidents and hazard information are shared during safety briefings throughout the organization, as well as to and from our operating partners and through Employee Safety Committee meetings. Feedback and other hazard information is conveyed via reports to senior management and through accepted internal communication methodologies, including Command Post email and the Security Operations Call-Tree.

5.2.3 INTERNAL COMMUNICATION

Safety staff coordinates with the Communications Department to share important safety updates with staff. The Communications Department manages the strategic plan and editorial calendar for 'official' employee-facing communications including a set of owned channels, norms for cadence, brand standards, and content mix. The team consults with program managers to determine specific needs for employee-facing information delivery and recommends the appropriate channel mix and creative development strategy based on the topic and impact to staff. Owned channels include stories within the employee newsletter (News Link), Hub intranet content, All-hands meetings, Management-focused meetings, and multi-channel campaigns. Additionally, there are staff emails called *News You Can Use* sharing industry updates and news, a monthly newsletter called Sound Transit News Link with a dedicated section for safety and weekly Public Safety Briefs. The Communications Department does not control all available channels, and at times will recommend the use of "do-it-yourself' tactics such as posters, Department meetings, targeted email, Lunch & Learns or other training events, Administrative team news planning or other venues as appropriate.

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APPENDICES

APPENDIX 1 SYSTEM DESCRIPTIONS

LINK LIGHT RAIL

HISTORY

In 1993, the Central Puget Sound Regional Transit Authority was created. The Central Puget Sound Regional Transit Authority Board of Directors considered the Joint Regional Policy Committee's System Plan too large, so it focused on reducing its scope while trying to retain most of its benefits. The agency proposed to implement the first phase of a new regional rail and express bus network over 16 years, with an estimated cost of $6.7 billion (1995$). The light rail portion of the proposal included a rail system stretching south from Lynnwood to Tacoma via Northgate, the University District, downtown Seattle, Rainier Valley, SeaTac - plus an east-west line across I-90 to Mercer Island, Bellevue and Redmond/Overlake. This proposal again proved to be too large and, in 1996, the Central Puget Sound Regional Transit Authority developed a new ten-year regional transit system plan known as Sound Move. Sound Move specified several transportation solutions for the region, including a shorter light rail line from the University District to SeaTac, and was approved by voters in November 1996.

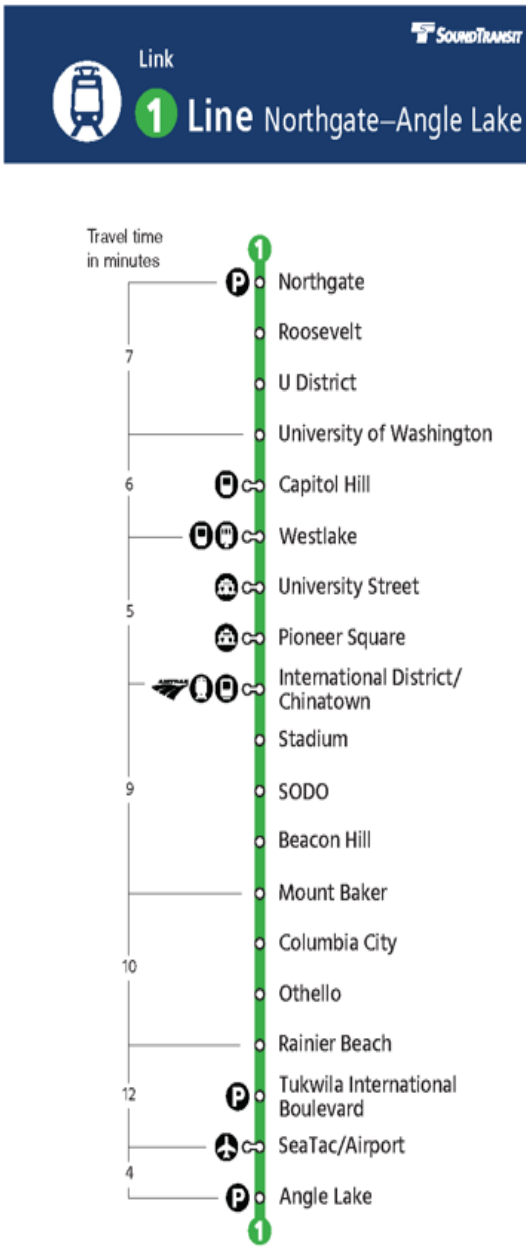

Figure 9. Link (1 Line) System Map

Initial Segment: 13.9 Miles

LLR began revenue service on the Initial Segment in July 2009. The Initial Segment consists of 13.9 miles of double-tracked line between the north end of the Downtown Seattle Transit Tunnel (Pine Street Stub tunnel ventilation structure) and the intersection of South 154th Street and State Route 518, connecting the cities of Seattle, Tukwila and SeaTac. The Initial Segment alignment consisted of approximately 4.5 miles of aerial structures, 2.4 miles of tunnels, and 7.0 miles of at-grade right-of-way. The Initial Segment included 12 stations: Westlake, University Street, Pioneer Square, International District, Stadium, SODO, Beacon Hill, Mount Baker, Columbia City, Othello, Rainier Beach, and Tukwila International Boulevard Stations, as well as the Operations & Maintenance Facility.

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The Initial Segment starts in a cut-and-cover tunnel under Pine Street and travels through the Downtown Seattle Transit Tunnel (DSTT) utilizing existing stations at Westlake, University Street, Pioneer Square, and the International District.

From the International District Station (IDS) the alignment extends south along the east side of the Metro E-3 Busway to the Stadium Station south of Royal Brougham Way, continuing to the SODO Station north of Lander Street. After crossing Lander Street at-grade, it transitions to elevated track before turning east. It travels on the elevated tracks along the south side of Forest Street and crosses over Airport Way. The Operations and Maintenance Facility (OMF) is south of South Forest Street and west of Airport Way on the site of the old Rainier bottling plant south of downtown Seattle. The OMF is a four-story structure that includes component repair shops, an electronics repair shop, a signals and communications lab, back-up control room, training rooms, and office space for management and administrative personnel.

The light rail route enters Beacon Hill in a tunnel that starts under Interstate 5 and continues approximately one mile to the east where it emerges at McClellan Street and 25th Avenue. The deep subway Beacon Hill Station, with elevator access only, is located at the intersection of Lander Street and Beacon Avenue.

The light rail route emerges from the Beacon Hill tunnel to an elevated station at South McClellan Street. The route continues on elevated tracks to South Walden Street, and then runs at street level in the center median of Martin Luther King Jr. Way South to a point just north of the Boeing Access Road.

The route crosses I-5 on the south side of Boeing Access Road and then travels on elevated tracks along the west side of East Marginal Way, crossing over the Duwamish River and State Route 599. The route continues in a combination of elevated tracks and short at-grade sections on the west side of State Route 599, then along the west side of I-5. Near South 151st Street, the route turns west on elevated tracks along the north side of State Route 518 to the Tukwila International Boulevard Station and park-and-ride lot at South 154th Street.

Airport Link Extension: 1.7 Miles

The Airport Link Extension opened in December 2009 and consists of 1.7 miles of elevated and at grade double track that travels south from the Tukwila International Boulevard Station (southern terminus of the Initial Segment) on an elevated structure, crossing over SR-518, and transitions to at-grade north of the South 160th Street Bridge. The alignment continues south in the median of the re-aligned North Airport Expressway, crosses over South 170th Street, and continues on an elevated structure to the site of the light rail station near the main terminal/garage of the SeaTac International Airport. The SeaTac Airport Station directly connects pedestrians to the airport ticketing concourse via a covered, pedestrian-only walkway, and to SeaTac's City Center via a pedestrian overpass.

University Link Extension: 3.15 Miles

The University Link Extension opened in March 2016 and consists of 3.15 miles of underground double track through twin tunnels from Pine Street Stub (northern terminus of the Initial Segment) beneath the Capitol Hill District and Lake Washington Ship Canal to the University of Washington's Husky Stadium. The University Link (commonly known as U-Link) Extension includes two stations: Capitol Hill and University of Washington.

South 200th Link Extension: 1.6 Miles

The South 200th Link Extension opened in September 2016 and consists of 1.6 miles of elevated, double-tracked guideway that travels from the SeaTac Airport Station (southern terminus of the Airport Extension) in an aerial configuration along the west side of International Blvd., turns southwest to cross South 188th Street, and continues in an aerial configuration along the east side of 28th Avenue South. The South 200th Street Extension includes one station: Angle Lake.

Northgate Link Extension: 4.3 Miles

The Northgate Link Extension opened in October 2021 and extends 4.3 miles from the University of Washington Station (UWS) to Northgate Station. From UWS, trains continue north in an approximately 3.3-mile twin-bore tunnel to the U District Station under Brooklyn Avenue NE, south of NE 45th Street. Continuing north through the tunnel, the route reaches Roosevelt Station, just west of 12th Avenue NE, between NE 65th Street and NE 67th Street. From Roosevelt Station, trains move to the surface at Maple Leaf Portal located immediately north of the Lake City Way interchange with I-5. From the portal, trains will continue north at grade level along I-5, then cross over First Avenue NE, south of NE 100th Street on an elevated structure and connect to the elevated Northgate Station.

STATIONS

LLR currently operates 19 passenger stations. Stations are located in tunnels, on aerial segments, and at ground level. The stations have either a center platform, or two side platforms. The list below details distances between stations, types of alignment, and orientation of station platforms.

- The station platforms are 380 feet long; station platforms are 14 inches (350 mm) above the top of rail to match the floor height of the low-floor LRVs.
- Access to the at-grade stations is by walkways and ADA-conforming ramps. At the aerial and tunnel stations, access is by stairs, elevators, and escalators. Beacon Hill station, a deep tunnel station, is accessible by high-speed elevators only. Each station is equipped with ticket vending machines, closed circuit television (CCTV), public address systems, passenger information systems and passenger emergency telephones.
- Underground/tunnel stations also have specially configured fire detection and suppression systems, and systems that monitor and control the emergency ventilation for the tunnels and underground stations; these are controlled locally at an Emergency Management Panel or workstations in the Fire Command Center, and at the LCC through the SCADA and the Fire Alarm Control Panel.
- Crime Prevention through Environmental Design (CPTED) has been incorporated into the design of the stations and other facilities.

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Section	Miles	Station	Right-of-Way	Vertical Alignment	Platform
Northgate Link Extension: 4.3 miles					
	4.3	Northgate Station	Exclusive	Aerial	Center
		Roosevelt Station	Exclusive	Tunnel	Center
		U District Station	Exclusive	Tunnel	Center
University Link Extension: 3.15 miles					
	3.15	Capitol Hill Station	Exclusive	Tunnel	Center
		University of Washington Station	Exclusive	Tunnel	Center
Initial Segment: 13.9 miles					
Downtown Seattle Transit Tunnel	1.8	Westlake Station	Exclusive	Tunnel	Side
		University Street Station	Exclusive	Tunnel	Side
		Pioneer Square Station	Exclusive	Tunnel	Side
		International District Station	Exclusive	Tunnel	Side
South Downtown Seattle	2.8	Stadium Station	Semi-exclusive	At-grade	Center
		SODO Station	Semi-exclusive	At-grade	Side
		Beacon Hill Station	Exclusive	Tunnel	Center
		Mt Baker Station	Exclusive	Aerial	Side
Rainier Valley	4.3	Columbia City Station	Mixed-traffic	At-grade	Side
		Othello Street Station	Mixed-traffic	At-grade	Side
		Rainier Beach Station	Mixed-traffic	At-grade	Center
Tukwila	5.0	Tukwila Intl Blvd Station	Exclusive	Aerial	Side
Airport Link Extension: 1.7 miles					
	1.7	Airport Station	Exclusive	Aerial	Center
South 200th Street Extension: 1.6 miles					
	1.6	Angle Lake Station	Exclusive	Aerial	Center

Figure 10. Link Stations

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TACOMA LINK LIGHT RAIL

Tacoma Link (T-Line) is a 1.6-mile at grade light rail line serving the heart of downtown Tacoma. The line extends from the Tacoma Dome north to the Theater District (see map, figure 11).

Alignment

The system begins at the Tacoma Link OMF at McKinley Street on East 25th Street. This single-track segment turns north onto Pacific Avenue. At South 21st Street, the line becomes double tracked. At Hood Street, near South 17th Street, the alignment shifts from Pacific Avenue to Commerce Street. Double tracking continues along Commerce Street to South 9th Street with the line reverting to single track for the final block from South 9th to South 8th Street, site of the original Theater District station.

The track of the entire alignment is embedded in the street. The trackway is located in dedicated lanes for most of the route and in mixed traffic along the remainder. The line crosses eleven traffic signal-controlled intersections and four pedestrian signal-controlled crossings.

Signals (Train and Traffic)

The operation on street-median rights-of-way, where LRVs are subject to traffic signals at intersections, presents the potential for delays to trains. The coordinated downtown traffic signal system in Tacoma shall recognize the approach of a train to an intersection and, under most circumstances shall provide priority to the train and to certain non-conflicting vehicular traffic to allow the LRV to continue through the intersection safely. Under some circumstances, however, a train can receive a stop signal and be required to stop prior to the intersection. These conditions may include initiation of a conflicting pedestrian crossing phase prior to the call for priority, a call for priority during the "rearm" interval that occurs following the crossing of an earlier train, and the timeout of a granted priority due to a delay to the train following the request. The operator on a stopped train held by a traffic signal may request priority for the train by use of the Train to Wayside Communication System (TWC) request button or the manual call button in the operating cab.

Stations

There are five stations on the line. In addition to the terminals, Tacoma Dome Station and North/South 11th Street on Commerce Street Station, the stations include South 25th Street station, Union Station/19th Street station on Pacific Avenue and Convention Center station. Each station is of simple design with low-level boarding platforms, shelter canopies, pedestrian and street lighting, street furniture, and information aids. Public address, variable message signage, and emergency telephones are not provided. Ticket vending machines are installed but not active, as the line is ride-free with no fare charged until the opening of the Hilltop Tacoma Link Extension. Station platforms are 90 feet long except for Commerce Street Station's two-sided platforms, which are 42-feet long and 18-feet wide. ST Facilities Maintenance maintains the Tacoma Link stations.

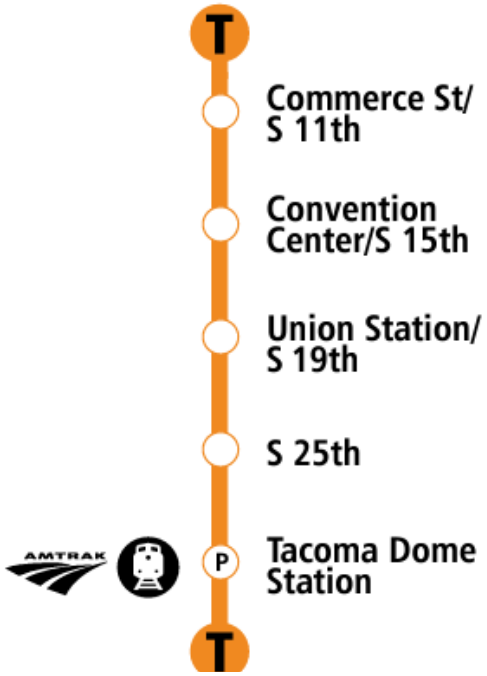

Figure 11. Tacoma Link System Map

Operations and Maintenance Facility

The Tacoma Link OMF is located just east of the Tacoma Dome station and is the southern terminus of the line. The OMF provides ongoing daily maintenance, running repair, and regular inspections. Heavy maintenance and bodywork is performed both on- and off-site. The OMF also houses the administrative offices for Tacoma Link Operations and the train operator check-in/dispatch area. Facilities Maintenance maintains the Tacoma Link OMF.

Light Rail Vehicles

Sound Transit procured LRVs for the Tacoma Link initial segment service. The vehicle is manufactured by Škoda and supplied by Inekon, in the Czech Republic, and is based on their Astra car, with several differences for the US market.

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For the Hilltop Tacoma Link Extension, Sound Transit procured five new LRVs from Brookville Equipment Company located in Brookville, Pennsylvania. The Liberty NXT LRV being manufactured is a new redesigned platform of their original Liberty Streetcar.

Differences from 1 Line Light Rail Vehicles

The Tacoma Link LRVs are substantially different from the 1 Line Link LRVs. Major differences in the Tacoma vehicles include the following: the vehicles are shorter, narrower, operate at 750 Vdc instead of 1500 Vdc, the vehicles are designed to operate under normal conditions as single vehicles only, and use bridge plates for wheelchair access instead of level boarding. The supplier of the propulsion is Siemens.

ST EXPRESS REGIONAL BUS SERVICE

Sound Transit's ST Express bus service was launched in September 1999 with nine regional routes. Today, Sound Transit has 28 bus routes that connect the major urban centers of Bellevue, Everett, Tacoma, and Seattle with other cities and communities in the Central Puget Sound area. The service area covers the urbanized areas of Snohomish County, East King County, Seattle, South King County, and Pierce County.

Sound Transit currently employs three operating partners by intergovernmental agreement to operate and maintain ST Express service: King County Metro (KCM), Pierce Transit (PT) and Community Transit (CT). These three partners operate the 28 routes using 307 buses within Snohomish, King and Pierce Counties.

The ST Express fleet includes 40- and 60-foot diesel buses, 60-foot hybrid buses, 40-foot natural gas buses, 45-foot coaches and 40-foot double-deck diesel buses. All buses have bicycle racks and air conditioning, and many buses "kneel" to help passengers board. Sound Transit contracts with Community Transit, King County Metro and Pierce Transit to drive and maintain ST Express buses.

Future Expansion

Voters approved a second phase of mass transit, Sound Transit 2 (ST2), in 2008 and a third phase of mass transit expansion, Sound Transit 3 (ST3), in 2016. Under the plans, the regional light rail system will reach over 50 miles by 2023 expanding to Northgate, Lynnwood, Bellevue, Overlake, and Kent/Des Moines and over 110 miles by 2041 with expansions to Everett, Issaquah, Kirkland, West Seattle, Ballard, and Tacoma. Frequent peak service will operate on the 83-mile Sounder commuter rail line from Everett to DuPont, while ST Express bus will continue to serve major regional travel corridors with new Bus Rapid Transit (BRT) corridors along SR 522 and I-405.

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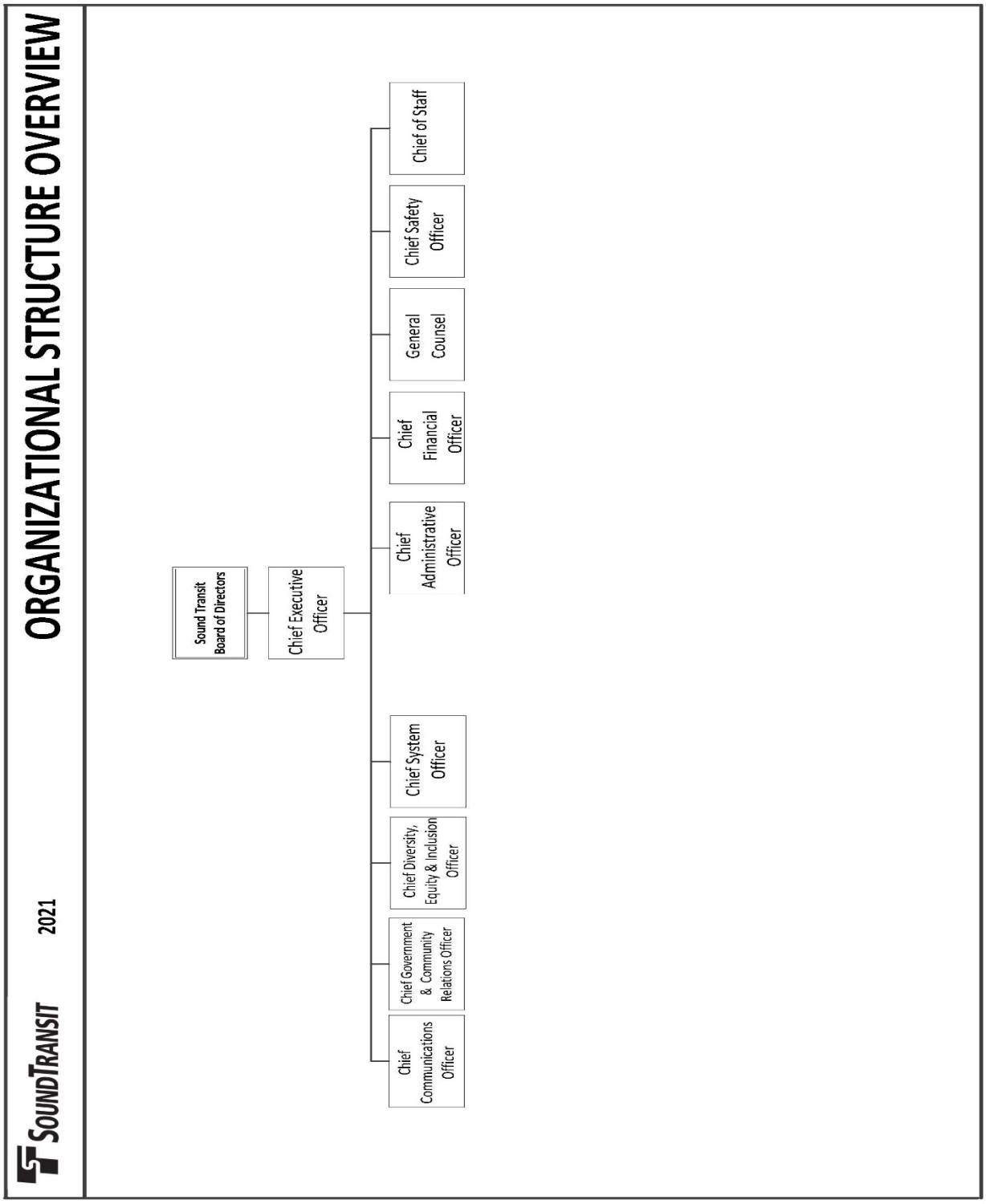
APPENDIX 2 ORGANIZATIONAL STRUCTURE OVERVIEW



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