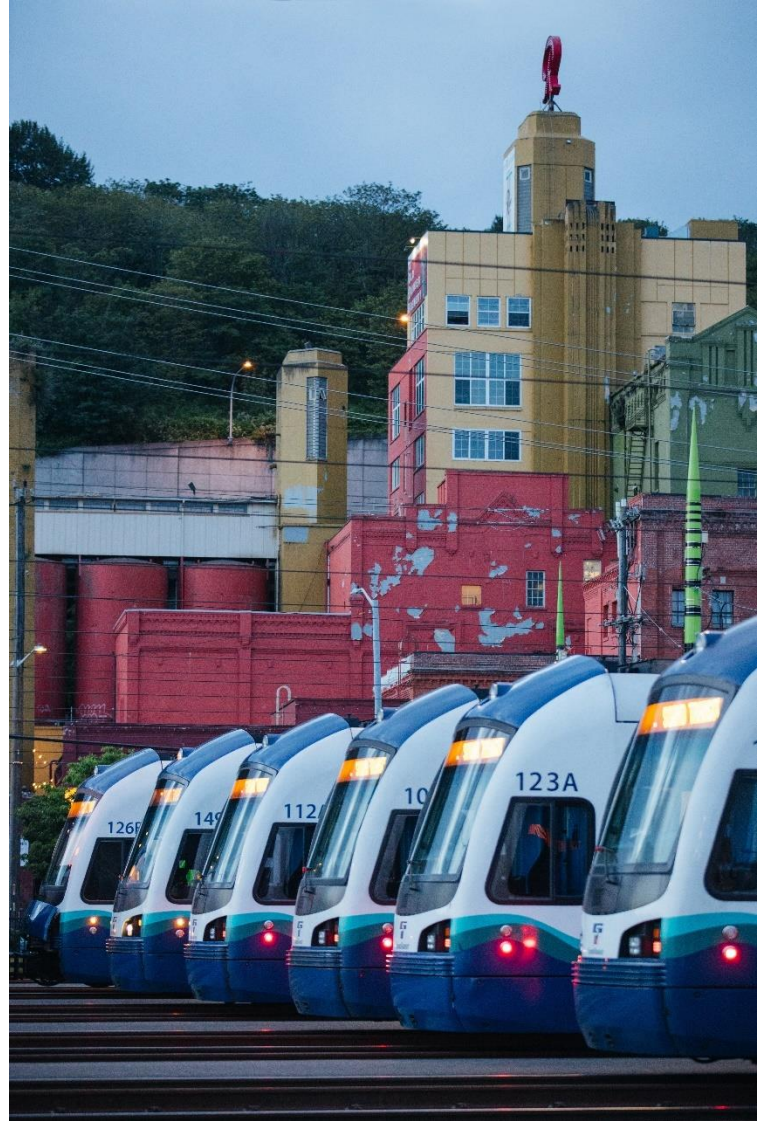# 2022 Link Light Rail Internal Safety Audit
Report # 2022-17

Audit Report

Sound Transit Audit Division

November 30, 2022

Sound Transit's Title VI notice of rights

Sound Transit conducts Title VI equity analyses for service and fare decisions to ensure they are made as equitably as possible.

More information on Sound Transit's Title VI notice of rights and the procedures to file a complaint may be obtained by:

- Phone: 888-889-6368; TTY Relay 711;

- Email: stdiscriminationcomplaint@soundtransit.org;

- Mailing to Sound Transit, Attn: Customer Service, 401 S. Jackson St. Seattle, Washington 98104-2826; or

- Visiting our offices located at 401 S. Jackson St. Seattle, Washington 98104.

A complaint may be filed directly with the Federal Transit Administration Office of Civil Rights, Attention: Complaint Team, East Building, 5th Floor – TCR, 1200 New Jersey Avenue, SE, Washington, DC 20590 or call 888-446-4511.

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Abbreviations

APTA   American Public Transportation Association

ASP   Agency Safety Plan

ESRT   Employee Safety Reporting Tool

ESC   Employee Safety Committee

FTA   Federal Transportation Administration

ISO   International Organization for Standardization

JRSSC   Joint Rail Safety and Security Committee

KCM   King County Metro

KPI   Key Performance Indicators

LCC   Link Control Center

LMS   Learning Management System

MBR   Monthly Business Review

OMF   Operational Maintenance Facility

PTSCTP   Public Transportation Safety Certification Training Program

PSRC   Puget Sound Regional Council

ROW   Right-of-Way

SOP   Standard Operating Procedure

SMP   Standard Maintenance Procedure

SMS   Safety Management System

SoGR   State of Good Repair

SSO   State Safety Oversight

TAM   Transit Asset Management

WSDOT   Washington State Department of Transportation

Executive Summary

Sound Transit's Audit Division performed this modal safety audit to ensure the agency succeeds in its systematic approach of operating the Link Light Rail and responds to changing system conditions in response with the needs of our passengers.

The Audit Division is an independent assurance function that improves how the agency is operated and managed, ensuring public funds are managed transparently, and ultimately keeps employees, contractors, and our riding public safe.

The purpose of this audit was to independently review, evaluate, and ensure that Sound Transit and our contracted operating partners are compliant to Safety Management System (SMS) guidelines, as well as the Agency Safety Plan. The audit team used a risk-based approach to identify safety management system audit topics under review during this cycle.

The scope focused on the application and verification of safety plans and programs documented as part of the ASP and compliance with Federal, State, and Local regulations. Additionally, our work covered the performance of processes and activities related to the operations and maintenance rules for Link Light Rail. Lastly, we reviewed facilities maintenance and safety inspection processes including site visits of each Link station and the Operational Maintenance Facility (OMF) as part of the Field Surveillance portion of the audit.

The techniques we used to complete this audit included a variety of methods, such as reviewing safety program documents, operating and maintenance rules and bulletins, records of evidence of implementation, field observations, and interviews with modal senior management, and safety personnel.

Results Summary

Based on our review of evidence supporting the ASP, interviews with various Link and Safety staff, and observations during our site visits, we conclude that the operations and maintenance of Link light rail, including contracted partners, meets the intent of the required regulatory requirements set forth by FTA, State Safety Oversight Program office and internal regulatory requirements of the Agency Safety Plan.

Overall, we identified **two (2) findings** of non-conformance and **one (1) observation** as opportunities for improvement.

Also, we were unable to audit conformance of ST Procurement comply to the standards of the ASP due to scheduling conflicts. Auditors will carry this area for audit as part of the 2023 Audit Plan.

Each of our noted items is explained further in this report, including requirements and timelines for identified responsible parties to respond to these audit results.

Audit Work and Scope

Sound Transit's Compliance Audit group performed this annual internal safety audit in accordance with 49 CFR Part 674.27(a)(4) and 49 CFR Part 673.27(d), as well as the Washington State Rail Safety Oversight Program Standard.

The audit team performed document reviews, interviews, and conducted field visits to assess the overall conditions and adherence to federal, state, and local standards. All audit activities were coordinated with Link, KCM and ST Transportation Safety & Security staff before the audit kick-off meeting and during our 2-week audit process.

Audit Activity	Date(s)
Issuance of Audit Notification Letter:	Sep 27, 2022
Field Observations	Oct 17-21, 2022
Audit Kick-Off Meeting:	Oct 26, 2022
Audit Interviews:	Oct 27-Nov 7, 2022
Audit Close-out Meeting:	Nov 9, 2022

Due to the COVID-19 pandemic, all Compliance Auditors followed agency COVID Return-to-Work processes, completed necessary COVID-19 Safety Training, and ensured they had executive approval to be at Sound Transit locations before to commencing this audit. The team wore all required Personal Protective Equipment (PPE) as prescribed by the Sound Transit Safety Department to keep them safe from incidental COVID exposure.

The audit began with a "Kick-off" meeting to introduce the audit team, review the scope and schedule, and address any concerns before conducting interviews. After the audit fieldwork phase, a closeout meeting took place to provide stakeholders a summary of the results to review and act upon before the final Audit Report.

Objectives

Our objective was to ensure Sound Transit and its contracted partners are compliant to Safety Management System (SMS) guidelines, as well as the Agency Safety Plan. The audit team used a risk-based approach to identify safety management system audit topics under review during this cycle. Furthermore, this audit covered the second year of our three-year audit cycle as required by the Agency Audit Plan.

Additionally, the audit sought to determine if ST Safety and Link processes and procedures meet federal, state, and local requirements, internal processes, and other self-imposed requirements applicable to the standard being audited. Additionally, this audit will inform the agency of potential gaps in processes to improve the agency's SMS implementation.

Scope

The scope of this audit focused on the application and verification of safety plans and programs documented as part of the ASP. The audit follows the 3-year audit cycle, which fulfills the requirements from the FTA and WSDOT Rail State Safety Oversight. The scope of the audit evaluated portions of each component of the ASP as pre-determined by the 3-year audit plan.

> ✓ 49 CFR Part 673.27(d)
> ✓ 49 CFR Part 674.27(a)(4)
> ✓ ST Agency Safety Plan
> ✓ KCM Agency Safety Plan
> ✓ Washington State Rail Safety Oversight Program Standard
> ✓ State/Federal and Local Regulatory Requirements

The audit included a variety of methods of verification, including reviewing safety program documents, records of SMS implementation, operating and maintenance rules and bulletins. Additional verification methods included field observations and interviews with modal senior management and safety personnel.

For awareness purposes, we included the results from the Sept 2022 Safety Management System internal audit as part of the scope of this audit.

Additionally, we conducted on-site field observations at each Link station, including observing trains in revenue service. Our visits included a general safety and security assessment to ensure the agency continues to provide a safe and secure mode of transportation. If we discovered any issues that posed an immediate safety concern, we made management aware to take appropriate actions.

Lastly, we reviewed previous audit results and performed follow-up on any open findings and observations; the results of which are expanded upon further in the report.

For any items we could not verify during this audit, we will continue to monitor these items as part of the Audit Division's monitoring and follow-up process.

Source Documents

The auditors requested and reviewed program policies and procedures as part of audit pre-work. We also collected supplemental documentation once we completed our interviews. This documentation was relevant to verify processes we identified during the fieldwork portion of the audit.

Any documents we reviewed were retained as audit evidence to support conformance or support any issues we observed. A complete list of all documents we reviewed and received is available in Appendix E of this report.

Summary of Results

Positive Practices

We were informed that the agency is in early development of an Integrated Governance Council that is intended to establish processes and guidance to ensure SMS practices are applied to all respective business units within the agency. While this has not been fully implemented as of this audit cycle, we recognize the efforts being undertaken to establish this internal oversight council.

Additionally, the ST Employee Safety Reporting Tool has become a valuable resource for employees to address safety concerns. The tool has continuous oversight and tracking mechanisms in place to ensure corrective actions are assigned, followed up, implemented and communicated with the individuals who raised the concerns.

Lastly, we noted that spot check audits are being conducted throughout each shift by KCM Link management. Those audits focus primarily on LCC radio communications. These audits review verbal communications to ensure compliance to established SOPs.

Summary of Findings and Observations

Overall, our audit resulted in two (2) findings and one (1) observation with recommendations relating to Safety Management Policy portion of the ASP.

The following table summarizes the findings and observations identified from this audit.

Agency Safety Plan	Number of Findings	Number of Observations
Introduction	0	0
Safety Plan	0	0
Safety Management Policy	2	1
Safety Risk Management	0	0
Safety Assurance	0	0
Safety Promotion	0	0

Audit Results

This section goes into further detail on what we found within the scope of this audit.

0.0 - Introduction

We reviewed the Agency Safety Plan (ASP) to ensure the Introduction and each sub-component are aligned and accurately describe the agencies background and function and establishes accountability and responsibility at top levels.

Additionally, the audit team reviewed agency organizational charts, ensured the system description matched the current state of operations and expected outcomes of SMS are listed, tracked and reported as required. **Our review of this section identified zero (0) findings and zero (0) observation with recommendations.**

0.2 Scope and Purpose

This area was captured as part of the ISO 45001/SMS Implementation audit conducted September 2022. The results of that audit pertaining to the scope of the ASP and SMS are listed in Appendix B of this report.

0.5 Expected Outcomes

Expected Outcomes provides the agency a process-focused way to manage safety risk to the optimum level – "As Low As Reasonably Practicable" (ALARP).

The audit team interviewed Sound Transit's Chief Safety Officer, Deputy Director of Transportation Safety & Security, Manager of Security & Safety Management System, and the Program Manager of Safety & Security Data to get an understanding of the process, and where those tie into the expected outcomes.

The ASP defines the expected outcomes of SMS as listed below:

Expected Outcome	Agency Processes
A continuously improved safety culture	• Agency annual safety survey • ESRT Data (Report/Mitigations) • Annual internal audit results
Meeting and exceeding safety targets to provide the highest level of safety (ALARP	• Safety target data analysis • Monthly meetings (Safety/Ops/Maintenance/Facilities)
Meeting applicable requirements of regulatory agencies	• FTA & WSDOT SSO Triennial audit results • Monthly SSO Meetings • FTA Circulars
Effectively monitoring and measuring safety performance	• Performance Data • Monthly Committee Meetings • NTD Reporting
Ensuring mitigations are effective and validated	• Risk Assessment/Residual Ratings • Data Analysis QuickBase • Feedback from frontline staff • Safety Inspections

To evaluate Sound Transit's compliance to the ASP and its processes to track and report the Expected Outcomes, the audit team reviewed documentation including:

- ST Safety Culture Survey Results, 2022
- ESRT Dashboard
- WSDOT Monthly Reports, Q4 2021-Q3-2022
- Ridership, Experience, and Operations (REO) Committee Dashboard Metrics

- Joint Rail Safety & Security Committee Meeting Minutes (Nov 2021-Sep 2022)
- TSS-SOP-TSS05: Root-Cause-Analysis Standard Operating Procedure
- TSS-SOP-TSS15: Safety-Security-Assessment Standard Operating Procedure

Through document review and interviews, we concluded that ST Safety and Link light rail meet all requirements of the ASP, WSDOT and FTA to manage safety risk by monitoring and reporting performance data and continuously improve the safety culture.

The expected outcomes identified in the ASP are consistent with regulatory requirements and are tracked and reported as required. Specific processes to manage each expected outcome are explained in more detail throughout the safety plan.

1.0 – Safety Plan

This section reviews the ASPs conformance with federal and state requirements including establishing safety performance targets, review and update of this document, emergency management protocols and coordination with planning stakeholders. **Our review of this section** resulted in zero (0) findings and zero (0) observations with recommendations.

Sub-Sections Reviewed	
1.1	Safety Performance Measures and Targets
1.2	Conformance with FTA Guidelines
1.3	Regulatory Oversight and Acknowledgment
1.4	Review and Update of ASP
1.8	Certificate of Compliance
1.9	Coordination with Planning Stakeholders

We interviewed Sound Transit's Deputy Director of Transportation Safety & Security, Manager of Security & Safety Management System, and the Program Manager of Safety & Security Data to understand how the above requirements are met. Additionally, we checked documentation outlining processes and procedures to ensure they met internal and external requirements.

The following documents were reviewed to verify processes meet the requirements of the ASP:

- ST//KCM/WSDOT Quarterly Meeting minutes
- TSS-SOP-TSS10: WSDOT Monthly Reporting Standard Operating Procedure
- TSS-SOP-TSS07: WSDOT Annual Report Standard Operating Procedure
- Public Transportation Agency Safety Plan 2022 Submittal Letter
- ASP Annual Review History Log
- JRSSC Monthly Meeting Minutes

Performance targets listed in the ASP are tracked and analyzed per FTA requirements and are reported during regular safety committee meetings and to WSDOT SSO office as required.

The ASP is reviewed and updated annually to certify compliance in accordance with the WSDOT Program Standard and internal processes. The audit team verified that the current ASP has been signed by the ST Chief Safety Officer and approved by the WSDOT SSO office. Updates to the ASP and performance targets are shared annually with internal and external stakeholders including WSDOT and the PSRC via email.

Through document reviews and interviews with ST TSS staff the audit team determined that section 1.0 Safety Plan meets the requirements of 49 CFR 673 and WSDOT SSO Program Standard.

2.0 – Safety Management Policy

The intent of the Safety Management Policy is to provide context for the Safety Management System and document the agency's commitment to safety. **A review of this section resulted in two (2) findings and one (1) observation with recommendations.**

The audit team reviewed documentation identified in the ASP and interviewed the Sound Transit Chief Safety Officer, Deputy Director of Transportation Safety & Security, Manager of Security & Safety Management System to gain an understanding of how the SMS is documented and implemented.

We also reviewed the agency's Policy Statement and the R2017-13 Board resolution. Together, each policy meets federal and state requirements, along with ISO 45001:2018 for the agency safety plan.

Additionally, we performed a Safety Management System/SMS Implementation audit in September 2022 that looked into many of the overarching policy requirements of SMS.

However, as we reviewed these documents, we found improvement opportunities exist to clarify and streamline the two policies, eliminate redundancy, and provide staff with one plan to reference. Results from that audit are contained in Appendix C of this report.

2.2 Employee Reporting Program Feedback

To understand and assess the Employee Reporting Program, know how employees report issues, and verify issues are addressed and verified; we first interviewed the Manager of Employee Health and Safety and a Senior Health and Safety Specialist.

They gave us a detailed explanation of how the reporting system functions, provides feedback on the issue, and tracks to resolution. We also reviewed documentation to verify and determine compliance with FTA and ISO 45001:2018 requirements:

- EHS-SOP-EHS02: Safety Risk Management Process Standard Operating Procedure
- *The most recent* ESRT Data Report (open/closed items) as of Sep 2022
- *The most recent* ESRT Data Dashboard as of Oct 10, 2022
- ESRT Weekly Report, current as of Oct 10, 2022
- Employee Safety Committee Charter
- Employee Safety Committee Meeting Minutes from Jan-Sep 2022

Based on reviewing the documentation, we determined that the Employee Safety Reporting Tool is managed as intended per the ASP and the EHS-02 Safety Risk Management Process.

The program has continuous oversight and tracking mechanisms in place to ensure corrective actions are assigned, implemented, and communicated to the initiator of the safety concern. EHS specialists and the Employee Safety Committee track open/closed items Data is tracked by EHS specialists and the Employee Safety Committee using QB and a data dashboard that gives updates in real-time.

2.3 Safety Accountabilities and Responsibilities

2.3.1   Organizational Roles and Responsibilities

The ASP adequately outlines Safety Accountabilities and Responsibilities of employees including specific roles and responsibilities from top down. Although the ASP clearly describes roles of Agency Leadership and Key Staff, it is unclear how these two are defined **(See Observation #1)**.

2.3.2   Operating Contract Relationships

The LLR operation, safety, and maintenance day-to-day activities are contracted to King County Metro (KCM) through an operating and maintenance Intergovernmental Agreement (IGA).

The audit team reviewed the LLR/KCM IGA and the KCM Agency Safety Plan, Revision 1.0 Dated December 2020 to verify roles and responsibilities concerning LLR operations and maintenance. Additionally, the ST ASP states that Sound Transit reviews KCM's ASP annually as part of the revision process. However, during our interviews with the ST Manager of Security & Safety Management System they noted that while annual reviews are completed, there is no documentation verifying the process. **(Finding #1)**

Additionally, KCM has not provided an annual update to Sound Transit for review since the December 2020 edition. **(Finding #2)**

2.4 Plan Implementation
2.5 SMS Documentation and Records
2.6 Access to SMS Documentation and Records

SMS implementation and documentation is managed by the Manager of Security & Safety Management System and tracked using "Smart Sheets" which have replaced the ST SMS Implementation Plan as reference is the ASP.

SMS implementation and documentation was thoroughly reviewed during the Safety Management System/SMS Implementation audit in September 2022. See audit results from ISO 45001/SMS audit in Appendix C of this report.

Results of document reviews and interviews confirm that the safety policy, employee feedback, roles and responsibilities and SMS implementation plans are established and managed as described in the ASP. However, we identified one item for opportunity for

improvement by defining Key Staff and Leadership. This improvement is listed observation in paragraph 2.3.1 above.

3.0 – Safety Risk Management

3.5 Transit Asset Management
- **State of Good Repair**

To evaluate the State of Good Repair (SoGR) for Link light rail, we interviewed with the Director of Link Light Rail Maintenance; Manager, Light Rail Systems Maintenance, and the Senior Business Analyst. Additionally, we reviewed the following documentation to determine compliance with FTA and 49 CFR Part 625.25(b)(5) requirements:

- Transit Asset Management (TAM) plan (SoGR and MAP-21)
- Asset Inventory

SoGR for capital assets are tracked in the Enterprise Asset Management (EAMS) system, with inventories are provided to ST Finance annually. Assets are set up on an Age-Base replacement model. ST LLR reviews the inventory list, and a physical inventory takes place if a discrepancy is noted.

The audit team determined LLR and Asset Management meet the requirements of CFR 625 and internal processes. Furthermore, additional details from the internal audit of the ISO 55001 Asset Management audit will identify opportunities for improvement.

4.0 – Safety Assurance

Sub-Sections Reviewed	
4.1	Safety Performance Monitoring and Measurement
4.1.1	Rules Compliance and Procedure Review - Maintenance Audits and Inspections - Facilities and Equipment Inspections
4.3	Procurement
4.5	Safety Culture

4.1.1 Rules Compliance and Procedure Review

The intent of safety assurance is to ensure the implementation of appropriate and effective mitigations and monitor the safety performance of Sound Transit. The audit team reviewed the measurement of safety performance, rules compliance, procurement, and safety culture.

The evaluation of rules compliance did not result in any non-compliance issues; however, it was discovered that there has been a significant amount of turn-over of ST maintenance employees and been a consistent development of new processes within ST and KCM operations.

Due to this discovery, the audit team will add this section to the 2023 audit plan to evaluate the progress of new process and procedures. **The audit team's review of this section identified zero (0) findings and zero (0) observation with recommendations.**

To evaluate Link light rail rules compliance procedures, we interviewed the following ST and KCM personnel:

- ST Director Link Light Rail Maintenance
- ST Manager Link Light Rail Maintenance
- KCM Rail Division Director
- KCM Rail Section Manager
- KCM Transportation Director, Link Light Rail
- KCM Rail Supervisor, LCC Communications

To verify conformance, we reviewed the documents listed below to assess the how LLR complies with procedures of the ASP, FTA and WSDOT Program Standard:

- ST KCM Oversight Tracker
- ST Ops, Link Maintenance Craft Review Completed Checklists
- ST Ops, Link Maintenance Task Tracking Log
- ST Link Maintenance Oversight Process
- ST Link Maintenance Oversight Plan (MOP)
- KCM Maintenance Plan
- JRSSC Meeting Minutes from Jan-Sep 2022

Based on information we gathered, we concluded that Link Light Rail rules compliance procedures meet the requirements detailed in the agency safety plan which includes all requirements in 49 CFR 673.27(b).

KCM conducts initial and annual certification for all operators. In the event of a rule infraction, KCM supervisors document the infraction, review video and other data relating to the incident. Additionally, KCM Supervisors periodically perform adhoc ride checks, post incident or infraction ride checks.

Data from ride checks and infractions are reported to JRSSC every two months. The audit team will re-evaluate newly implemented processes and data tracking as an element of the 2023 internal safety audit

KCM has hired a new data analyst to track data and develop dashboards to share information with ST. Communication is a work in progress and new procedures are in development for ST Operations and Safety to track rules compliance procedures performed by KCM.

Maintenance Audits and Inspections

Superintendents perform monthly maintenance reviews to verify compliance to SOP's and SMPs, safety briefings and general safety during maintenance procedures. Results from monthly reviews are filed in SharePoint and data is tracked with PowerBi database for trend analysis. Additionally, ST Maintenance tracks PM maintenance scheduling and completion. The audit team reviewed maintenance records including completed audit

checklist, work orders for each section of maintenance (Signals, Traction Power, Track) and sample 15% of all Standard Maintenance Plans stored in LLR SharePoint.

Maintenance safety briefings take place daily prior to start of the shift and prior to specific tasks. Safety briefings are conducted by supervisors and cover general safety topics depending on the task.

Facilities and Equipment Inspections

To evaluate ST facility maintenance and inspections we performed a field surveillance activity at each LLR station, performed document reviews of inspection and maintenance workorders and reviewed completed inspection reports. Additionally, the audit team conducted interviews with:

- Director, Facilities Services Delivery,
- Deputy Director, Facilities Maintenance,
- Manager, Facilities Maintenance
- Deputy Director of Transportation Safety & Security
- Manager of Security & Safety Management System
- KCM Transit Safety Superintendent
- KCM Transportation Safety Administrator

The following documents were reviewed to assess the how LLR complies with internal process and procedures and the ASP.

- Inspection Work Orders, LLR OMF (Feb-Jun 2022)
- Inspection/Maintenance Work Orders, LLR Stations (Feb-Oct 2022)
- ST Facilities Maintenance Plan
- ST Facilities, FAC-WI-10001 Facilities System Maint. Condition Assessment Report Review Process
- JRSSC Meeting Minutes from (Jan-Sep 2022)
- ST TSS Project Assignments Tracking Log
- KCM/ST Monthly Safety Inspection Reports
- Annual Inspection Checklists
- Station Safety Inspection Data (SharePoint List)
- ST Station Safety Inspection Checklist Metrics (PoweBI)

The audit team reviewed annual and monthly safety inspection checklists and to verify inspections are conducted and tracked by both ST Facilities and ST TSS. Facilities tracks inspections and maintenance in EAMS while ST TSS tracks inspections with a database in SharePoint.

While in the field, we performed a surveillance at each station and observed security personnel and general safety conditions. The auditors only observed minor issues that did not observe pose any safety concerns.

The items we identified related to cleanliness and minor vandalism that had previously been reported via EAMS. The auditors conducted second surveillance of the same stations to ensure and verify the previous issues were corrected.

Additionally, the auditors observed Security personnel de-escalate a potential situation with passengers who were loitering in the station. The agent handled the situation with professionalism and eliminated a potential security situation. The audit of facilities maintenance and inspections resulted in zero (0) findings and zero (o) observations.

4.3 Procurement

During the course of audit, the audit team was unable to verify if processes and procedures of ST Procurement comply to the standards of the ASP. The audit team was unable to coordinate interviews due to conflict of schedules. Currently, ST Audit Division is in the second year of the 3-year audit cycle, therefore we will add Procurement to the scope of the 2023 internal safety audit of Link light rail.

4.5 Safety Culture Assessment

To assess how safety culture is assessed and measured at Sound Transit, we interviewed the ST Chief Safety Officer, Deputy Director of Transportation Safety & Security, Manager of Security & Safety Management System. In addition to interviews, we reviewed the following documents to assess how the safety culture is measured:

- ST Safety Culture Survey Results 2022
- *The most current* ESRT Dashboard
- Public Transportation Safety Certification Training Program Refresher
- *The most current* SMS Implementation Smart Sheets
- ST HUB Safety articles/Daily Safety Message

Through interviews and document review, we determined that ST is following its SMS implementation plan and is continuing to build a robust safety culture. For example, daily safety messages have become a norm for all formal meetings, safety articles are located on the ST HUB for employees to reference.

SMS training is provided to new employees as part of orientation and an annual safety culture survey is provided to employees. Data from the survey is tracked reviewed by ST TSS and provided to ST employees.

The Employee Safety Reporting Tool (ESRT) allows employees the opportunity to raise non-emergency safety or security concerns throughout the agency ST owned property and service. ST Safety analyzes all reported concerns in a timely and effective manner and reports back to the employee initiating the concern with the corrective actions (mitigations) taken. The communication loop is a priority to enable a transparent safety reporting process.

The audit team conducted a Safety Management Audit to include SMS Implementation in September 2022. The objective of this audit was to identify gaps in the agency's SMS implementation and conformance to ISO 45001 standards. Outcomes from this audit are tracked by ST TSS and ST Audit to ensure mitigations are in place to continue building a positive safety culture. Results from this audit are referenced in Appendix C of this report.

5.0 – Safety Promotion

Sub-Sections Reviewed	
5.1	Safety Communication
5.1.1	CSO Executive Briefings
5.1.2	Hazard Information and Event-Base Communication
5.1.3	Internal Communication
5.2	Competencies and Training
5.2.1	Public Transportation Safety Certification Training Program

5.1 Safety Communication

      5.1.1 CSO Executive Briefings

The Chief Safety Officer's role is to educate the CEO and executive leadership on SMS, reporting to WSDOT SSO, and inform the agency of safety policies and programs affecting capital and operational projects. **The review of the audit team identified zero (0) findings and zero (0) observations with recommendations.**

The audit team conducted interviews with the ST Chief Safety Officer, Deputy Director of Transportation Safety & Security, Manager of Security & Safety Management System to assess the frequency and effectiveness of communication between the CSO, CEO and executive leadership. Additionally, the following documents provided by ST TSS were reviewed to determine required reports were prepared and presented per the ASP requirements:

- Monthly CEO Safety & Security Metrics (Current as of Oct 2022)
- Quarterly Executive Summary Reports (operational and safety certification)
- SMS Accountable Executive Briefing (PowerPoint)

We confirmed regular meetings are held between the CSO and CEO. Although a new CEO was hired shortly before this audit, initial conversations have been held and a formal briefing with CSO, ST Safety, and the CEO will take place. The audit team reviewed the Accountable Executive Briefing and safety metrics were presented to the "Acting" CEO and planned for the new CEO.

In addition to one-on-one meetings with executive leadership, the CSO participates in the following regularly scheduled meetings with documents prepared and presented by ST TSS staff:

- Quarterly Performance Review (QPR) meetings
- System Expansion and Service Deliver Governance Council
- DCEO's Direct Reports Meeting
- Board and CEO briefing review meetings

5.1.2 Hazard Information and Event-Base Communication
5.1.3 Internal Communication

To verify hazard communication procedures, we interviewed the following personnel from LLR and ST TSS:

- Deputy Director of Transportation Safety & Security
- Manager of Security & Safety Management System
- KCM Rail Division Director
- KCM Rail Section Manager
- KCM Transportation Director, Link Light Rail
- KCM Rail Supervisor, LCC Communications
- KCM Transit Safety Superintendent
- KCM Transportation Safety Administrator

Link light rail and KCM LCC maintain and follow standard operations procedures to communicate emergency events and hazard information. The LCC initiates a "Alert Sense Quick Alert message depending on severity of situation. ST Communications sends public notifications as necessary.

Internal communication is conducted via Command Post emails and followed-up during monthly safety meetings. Additional internal communication concerning hazards is conducted during employee safety committee meetings. We reviewed the following documents to verify communication procedures.

- TSS-SOP-TSS15: Safety Security Assessment Standard Operating Procedure
- SS-SOP-TSS13: Safety and Security Certification Verification Report (SSCVR)
- JRSSC Meeting Minutes
- ST Employee Safety Committee Meeting Minutes
- KCM SOP 6.1 Link Control Center (LCC) Callout Procedure
- KCM SOP 1.2 Operator Reports to Link Control Center

5.2 Competencies and Training
5.2.1 Public Transportation Safety Certification Training Program (PTSCTP)

At the time of our audit, oversight of ST safety training was transitioning from Human Resources to the ST Health and Safety. A new staff position has been created and hiring will take place soon. During the audit, employee safety training was managed by Employee Health and Safety Specialist.

We verified that safety training including SMS is provided to all new employees as an agency onboarding requirement then bi-annual refresher training is required from then on.

PTSCTP training is a requirement for all "Key Staff" dictated by 49 CFR 672 regulation. Bi-annual refresher training is conducted by the Manager, Security and Safety Management.

We also reviewed the PTSCTP training and training tracking sheet for ST Safety staff. Although training is tracked and provided to safety employees, the ASP does not clearly define Key Staff outside of ST Safety including who is required to PTSCTP training. **(See Observation #1)**.

We interviewed the following staff to verify safety training is conducted as described in the ASP:

- Deputy Director, Transportation Safety & Security
- Manager, Security and Safety

In addition to interviews with ST TSS staff the audit team reviewed the following documents:

- PTSCTP Training
- ROW Training
- PTSCTP Individual Training Plan Components
- TSS Roles and Responsibilities Tracking Sheet
- SMS Training
- ST New Hire Onboarding Requirements

Through interviews and documents review the audit team determined that the agency safety training meets the 49 CFR 672 regulation, ASP, and WSDOT Rail Safety Oversight Program Standard.

Conclusion

Based on document reviews, site visits and interviews with ST Safety, LLR and KCM staff, we conclude that Sound Transit and King County Metro is committed to the highest standards of Safety Management System (SMS) guidelines. Continuous improvement efforts identified by this audit will help improve safety and risk controls.

Overall, we appreciate the transparency and cooperation of all Link Light Rail and safety staff and operating contractors who contributed to the evaluation of SMS implementation and the ASP.

Findings & Observations

All findings and observations are outlined further in the attached Appendix A.

Next Steps

For the items raised, the Audit staff will work with the Safety staff to determine the party responsible for addressing the finding's root cause and mitigations. The party's responsible for corrective actions will be provided with the appropriate response form, and they will be required to use this form to submit a proposed Corrective Action Plan **14 days** upon issuance of the Final Audit Report.

Definitions:

a. **Findings** are requirements where Sound Transit is non-compliant with a policy, procedure and/or regulation and must be corrected, and documented in writing on a corrective action plan. Action plans should also include a specific, measurable amount of time it will take to reduce the risk rating and correct the issue.

b. **Observations with Recommendations** does not mean the issue is deficient, however, the auditor has determined that the issue poses the potential risks of becoming a finding in the future if recommended changes are not put in place to prevent occurrence.

For Observations with Recommendations, responders are not obligated to complete the recommended actions because the identified issue is compliant but are still required to submit the Observation with Recommendations Form. Action plans must be submitted within **30 days** of the distribution of this report.

Recommendation responses shall be sent back using the template response format provided and will be tracked, verified, and if necessary, escalated to achieve satisfactory closure to prevent recurrence.

For recommendations, acceptable responses include:

(1) Accepted

(2) Accepted with Modification (include modification description) or

(3) No Action Taken with Justification (include justification explanation and evidence) and changes are not made to prevent a future reoccurrence.

Appendix A: Findings & Observations Table

The following table summarizes the observations listed in the audit report. Please refer to **Appendix B: Audit Hazard Risk Rating Process** for more information.

The table below provides space for the responsible party to respond to each finding and observation. Once received and approved by the appropriate authority, the Audit Division will periodically follow up to ensure that the mitigations are put in place to the identified concerns. Additionally, we will collect and document objective evidence for verification and closure purposes.

Finding(s):

There were two **(2)** Findings associated to this audit.

Finding #1	2.0 Safety Management Policy	4E

Finding: Through interviews with ST TSS personnel and KCM Safety, it is unclear whether ST has performed annual reviews of the KCM ASP. Additionally, there is no documented evidence that coordination of a review process has taken place.

Responsible Party: ST TSS

Reference: ST ASP: 2.3.2 Operating Contract Relationships – Link Light Rail – King County Metro

Finding #2	2.0 Safety Management Policy	4E

Finding: Through interviews with ST TSS personnel and KCM Safety, it is unclear whether KCM has provided an updated ASP for ST Review. Additionally, there is no documented evidence that coordination of a review process has taken place.

Responsible Party: KCM Safety

Reference: ST ASP: 2.3.2 Operating Contract Relationships – Link Light Rail – King County Metro

Observations with Recommendations:

At the time of the audit, we identified one **(1)** Observation with Recommendations where if not addressed have the potential to become a finding in the future.

Observation #1	2.0 Safety Management Policy

Observation: ST TSS; There is no clear definition of "ST Leadership", or "Key Staff" as listed in section 2.3.1 Organizational Roles and Responsibilities.

Recommendation: Define or clearly state in the ASP what positions are considered "ST Leadership" and "Key Staff" or remove the terms and list the specific job titles and the responsibilities under those positions.

Responsible Party: ST TSS

Reference: 2.3.1: Organizational Roles and Responsibilities

Appendix B: Audit Finding Risk Rating Process

To aid process owners in prioritization of the audit findings resulting from the audit, a level of audit risk will be assigned by assessing two factors: 1.) the probability that the associated problem will occur at some point in the future, and 2.) the impact or severity of that problem in relation to the overall business process.

Using the same Risk Assessment Matrix already in used throughout the agency and based on the MIL-STD-882-E; audit findings are qualitatively assessed based on the worst credible case that is anticipated from the result of human error, design inadequacies, component failure or a malfunction.

Risk Rating Scale

	Severity	Catastrophic (1)	Critical (2)	Major (3)	Marginal (4)	Negligible (5)
Probability	Frequent (A)	High (1A)	High (2A)	High (3A)	Serious (4A)	Medium (5A)
	Probable (B)	High (1B)	High (2B)	Serious (3B)	Serious (4B)	Medium (5B)
	Occasional (C)	High (1C)	Serious (2C)	Serious (3C)	Medium (4C)	Low (5C)
	Remote (D)	Serious (1D)	Medium (2D)	Medium (3D)	Low (4D)	Low (5D)
	Improbable (E)	Medium (1E)	Medium (2E)	Low (3E)	Low (4E)	Low (5E)
	Eliminated (F)	Eliminated				

Resolution Requirements

Risk Score	Risk Level	Risk Rating	Minimum Actions	Risk Acceptance / Responsibility
1A, 1B, 1C, 2A, 2B, 3A	High	Unacceptable	Stop work & immediate correction required to reduce risk.	Not Acceptable. Executive Team is informed.
1D, 2C, 3B, 3C, 4A, 4B	Serious	Undesirable	Mitigation strategy required to reduce risk within 30 days of identification of risk.	Acceptable with risk controls and monitoring. Director-level committee review and approval.
1E, 2D, 2E, 3D, 4C, 5A, 5B	Medium	Acceptable w/ review	Monitor and consider actions to further reduce risks.	Acceptable with risk controls and monitoring. Technical Level committee review and approval.
3E, 4D, 4E, 5C, 5D, 5E	Low	Acceptable	Acceptable without further mitigation. May be accepted by the business unit in coordination with Audit and Safety.	Acceptable without further mitigation. May be acceptable by the business unit with coordination with Audit and Safety.
N/A	Eliminated	Eliminated	No actions needed.	N/A

Risk Matrices

Severity	Catastrophic (1)	Critical (2)	Major (3)	Marginal (4)	Negligible (5)
System Disruption / Operations	> 24 hrs Substantial or total loss of operations	12 – 24 hrs Partial shutdown of operation	4 – 12 hrs Prolonged disruption of operations	1 – 4 hrs Brief disruption of operations	<1 hour Minor to No disruption
Financial	>$5,000,000	$1,000,000 – 4,999,999	$249,999 – 999,999	$10,000 – 249,999	< $10,000
Reputational	Prolonged negative media coverage for >30 days and / or irreparable reputational damage, resulting in government intervention	Ongoing negative media coverage for >14 days but ≤ 30 days causing serious reputational damage, resulting in government intervention.	Ongoing negative media coverage >7 days but ≤14, causing major reputational damage and possible government intervention	Ongoing negative media coverage for ≥ 24 hours but ≤ 7 days, causing some reputational damage	Negative media coverage for ≤ 24 hours, causing minor reputational damage
Injury	Several deaths (≥3) and / or numerous (≥3) serious injuries (excluding suicides or by natural causes)	1 -2 deaths and/or 2 or more serious injuries	Multiple minor injuries and possible serious injury (Ambulance transport)	Minor injury such as bruising, abrasions, bleeding; possible medical services required	No injuries
Equipment	Total loss of equipment or system interruption requiring more than 30 days to repair.	Significant loss of equipment or system interruption requiring more than 14 days but less than 30 days to repair.	Some loss of equipment or system interruption requiring more than 24 hours but less than 14 days to repair.	Minor system loss of equipment or system interruption requiring less than 24 hours to repair.	Minor damage to equipment or minor system interruption with no immediate repair necessary.
Regulatory	Cease and desist orders are delivered by regulators. Critical assets and facilities are forced by regulators to be shut down.	Governmental, regulator investigations, and enforcement actions, lasting longer than a year. Violations that result in multiple large non-financial sanctions; **OR** Regulators force the removal and replacement of management positions. Regulators begin agency monitoring activities.	Violations that result in significant fines or penalties above and beyond what is codified or a regulator enforces non-financial sanctions; **OR** Significant new and updated regulations are enacted as a result of an event.	Violations that result in fines or penalties	Self-reported or regulator identified violations with no fines or penalties

Probability Level	Likelihood of event in specific item	MTBE in Operating Hours **	Occurrence in time
Frequent (A)	Will occur frequently.	<1,000 oh	1 per week, likely to occur several times per month
Probable (B)	Will occur several times.	1,000 – 100,000 oh	1 per month, likely to occur several times per year
Occasional (C)	Likely to occur sometime.	100,000 – 1,000,000 oh	Once per year, likely to occur several times within 10 years
Remote (D)	Unlikely but possible to occur.	1,000,000 – 100,000,000 oh	1 per 10 years or likely to occur several times within 100 years
Improbable (E)	So unlikely, occur may not be experienced.	>100,000,000 oh	1 per 100 years
Eliminated (F)	Risk removed / eliminated	Never	N/A

Appendix C: Safety Management Audit Results

4.1 Understanding the organization and its context	*The rating remains at Compliance at Risk.* - Internal and External stakeholders are not identified to the extent required to conform to OH&S standards. - Limited documentation exists to determine external and internal issues relevant the purpose and strategic direction. The Agency Safety Plan (ASP) is the only document currently published which is not formatted to comply with ISO standards.
4.2 Understanding the Needs and Expectations of Workers and other Interested Parties	- Rating remains *Compliance at Risk* - Not all interested parties (i.e., stakeholders) are identified or documented. - Stakeholder needs and expectations are not clearly identified or reviewed. - Needs and expectations relevant to the SMS are not clearly defined or documented.
4.3 Determining the Scope of the OH&S System	- Rating remains at *Compliance Unlikely.* - The scope needs greater clarification and definition. There are plans to expand the scope from OH&S to better align with FTA requirements for SMS implementation. The expanded scope would include transit safety, including operations and maintenance of the system as well as public interface with the system. There are also plans to obtain certification for only Tacoma Link operations and maintenance prior to obtaining certification for other modes or for the agency as a whole.
4.4 Management of the OH&S system	- Rating improved to *Compliance at Risk.* - There is no documented plans or processes to align clauses 4.1, 4.2 and 4.3 to the agency business practices.

Clause 5: Leadership

5.1 Leadership and Commitment	- Rating has fallen to *Compliance Unlikely* - A Top Management council has not been identified. - There is no formal management review process developed or documented including a documented commitment for directing and supporting workers to contribute to the effectiveness of the OH&S management system - There has been a lack of engagement from Top Management/ST Leadership. Additionally, it is unclear who the executive

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████████	sponsor/advocate is for the work of gaining ISO certification for safety management. • There is a lack of clarity of agency commitment towards ISO certification, identified in the Agency Five-Year Strategic Plan 2020, Agency Goal 1.1. There is a lack of staff clarity on the status of the five-year plan, and the timeframe the issuance of a new strategic plan and of what the requirements will be for ISO certification and for the asset management system.
5.2 OH&S Policy (SMS Policy)	• Rating has fallen to *Compliance at Risk*. • Two policies in place, Board R2017 and Agency Safety Plan, together both meet the requirements of SMS/OH&S. There is minimal mention of a commitment to safe & healthy work conditions and prevention of injury/illness. The Board Policy should refer to the ASP policy statement to eliminate confusion. • There is a lack of clarity of agency commitment towards ISO certification, as the Agency Five-Year Strategic Plan 2020, goal 1.1. There is a lack of staff clarity on the status of the five-year strategic plan, and the timeframe the issuance of a new strategic plan and of what the requirements will be for ISO certification and for the safety management system.
5.3 Organizational Roles, Responsibilities, and Authorities	• Rating remains at *Compliance Unlikely*. • Top Management/ST Leadership has not adequately assigned the roles and responsibilities for implementing the safety management system. This is especially the case, for the roles and responsibilities of agency departments outside of the Transportation Safety & Security division that are critical to the success of the safety management system and for ISO certification.
5.4 Consultation and Participation of Workers	• Rating remains at *Compliance Unlikely*.

Clause 6: Planning

6.1.1 Actions to Address Risks and Opportunities (General)	• Rating remains at *Compliance Unlikely*. • There is no proactive risk assessment approach established for the OH&S management system. There are no management system risk assessment plans or processes documented. • There is poor agency wide alignment for how risks are identified and managed. Without an agency-wide risk management framework, the risk management requirements of ISO for Safety Management will have critical roadblocks to implementation.

6.1.2.1 Hazard Identification	• Rating remains at *Compliance Likely,* as there are no significant deficiencies.
6.1.2.2 Assessment of OH&S Risks and other Risks	• Rating remains at *Compliance at Risk.*
6.1.2.3 Assessment of OH&S Opportunities and other Opportunities	• Rating remains at *Compliance Unlikely*. • There are no processes for consistently and systematically assessing risks or opportunities to the SMS and its intended outcomes and planning of associated actions to address them.
6.1.3 Determination of Legal Requirements and other Requirements.	• Rating improves to *Compliance Likely,* as there are no significant deficiencies identified.
6.1.4 Planning Action	• Rating remains at *Compliance as Risk*. • There is no planning process to integrate and implement actions into the OH&S management system.
6.2.1 OH&S Objectives	• Rating remains at *Compliance at Risk.* • Although, Transportation Safety & Security staff is very focused on identified objectives for the safety management system, there is concern that these objectives may no longer be aligned with the agency's goals and objectives. A new Five-Year Agency Strategic Plan, may have significant impact on these objectives, and require the asset management team to rewrite their objectives for the asset management system
6.2.2 Planning to achieve Asset Management objectives	• Rating remains at *Compliance at Risk.* • Roles and responsibilities involving plans to achieve OH&S objectives have not been established beyond low-level committees. • Stakeholders have not been identified when planning how to achieve its OH&S objectives, including how the results are evaluated, including indicators for monitoring the progress of achievement of objectives.

Clause 7: Support

7.1 Resources	• The rating remains at *Compliance at Risk*. • Factors to determined resources needed for the establishment, implementation, maintenance and continual improvement of the OH&S management system have not been identified. • There is no tool in place to manage data consistently for the establishment, implementation, maintenance and continual improvement of the OH&S management system. (An IT solution is slated for 2022/2023).
7.2 Competence	• Rating remains at *Compliance at Risk*.
7.3 Awareness	• Rating remains at *Compliance Likely* as there were no significant deficiencies identified.
7.4 Communication	• Rating remains at *Compliance at Risk*. • When establishing communication processes, there is a lack of scope and understanding when interested parties are considered.
7.5 Documented Information	• Rating remains at *Compliance at Risk*. • Documented information. As an ISO certified SMS in implemented formal documentation control will need to be an integral part of the ISO system. There is coordination across the agency in documentation that is required, but this is fragmented through several groups. Without an agency-wide document control protocol obtaining this is possible, however, this will be more difficult to achieve and maintain.

Clause 8: Operation

8.1.1/8.1.2 Operational Planning and Control (General/Eliminating Hazards and Reducing OH&S Risks)	• Rating remains at *Compliance at Risk*. • There is no scope defined to ensure that outsourced processes are controlled (see 8.4).
8.1.3 Management of Change	• Rating has fallen to *Compliance Unlikely*. • There is no systematic process to review the consequences of unintended change and take action to mitigate any adverse effects.
8.1.4 Procurement	• Rating has fallen to *Compliance at Risk*. • Procurement processes do not define and apply occupational health and safety criteria for the selection of contractors.

	• The type and degree of control to be applied to outsourced functions and processes has not been defined within the OH&S management system. IGA's lack clarity.
8.2 Emergency Preparedness & Response	• Rating remains at *Compliance Likely* as no significant deficiencies were identified.

Clause 9: Performance Evaluation

9.1 Monitoring, measurement, analysis and evaluation	• Rating remains at *Compliance at Risk*.
9.2 Internal Audit	• **Was not fully reviewed by ST Compliance Auditors due to the auditors could not review their own process.** • **2021 AMCL baseline gap assessment and 2022 SMS Internal Audit conducted.**
9.3 Management Review	• Rating remains at *Compliance Unlikely*. • There is no formal management review process established.

Clause 10: Improvement

10.1 General	• Rating remains at *Compliance at Risk*.
10.2 Incident, Nonconformity, and Corrective Action	• Rating remains at *Compliance at Risk*.
10.3 Continual Improvement	• Rating remains at *Compliance at Risk*.

Appendix D: Personnel Interviewed

ST Express Sound Transit Staff
David Wright, ST Chief Safety Officer
David Lundeen, ST Manager Health & Safety
Vadim Motso, ST Senior Health & Safety Specialist
Erin Brumbaugh, ST Deputy Director-Transportation Safety & Security
Melissa Durel, ST Manager-Security & Safety Management System
Karl Shoemaker, ST Director Link Light Rail Maintenance
Will Chevalier, Manager Light Rail Maintenance
Ross Edwards, ST Program Manager-Safety & Security Data
Joe Forgette, ST Acting: Director, Facilities Service Delivery
Presley Morrissey, ST Deputy Director-Facilities Maintenance
James Wentworth, ST Manager-Facilities Maintenance
Jim Glenn, ST Manager-Facilities Maintenance
Paul Gonzales, ST Manager-Facilities Operations
Evan Inkster, KCM Rail Division Director
Amanda Nightingale, KCM Rail Section Manager
Gabe Rukeyser, KCM Rail Supervisor
Alfred Azen, KCM Rail Supervisor, LCC Communications
Richard McKinney, KCM Transit Safety Superintendent
Charity Catalfomo, KCM Transportation Safety Administrator

Appendix E: Documents Reviewed

ST Agency Safety Plan, Feb 2022
WSDOT Rail Safety Oversight Program Standard, Version 5.0 Mar 2022
ST Safety Culture Survey Results, 2022
CSR Data – Incidents, Delays, LRV Events, Station Events, ROW Events
ST Station Safety Inspection Checklist / Results Database Dashboard
ST Station Safety and Inspection Data (Open/Closed Items)
Employee Health and Safety SOP: EHS SOP 02, Safety Risk Management Process, R0.0 Nov 2021
Employee Safety Reporting Tool Data Dashboard
Public Transportation Safety Certification Training Program, Refresher Training Presentation, May-22
WSDOT Annual Reporting Standard Operating Procedure, R1.0, Jul 2022
WSDOT Monthly Report, Q4 2021-Q3 2022
ST Ridership Experience Operations (REO) Dashboard Metrics
Operational Hazard Analysis Standard Operating Procedure, R0.0, Jul 2022
Employee Safety Committee Charter, Jun 2020
Employee Safety Committee Meeting Minutes, Jan-Oct 2022
ST TSS-SOP-TSS05 Root Cause Analysis, Rev 0.0 Dec 2021
ST TSS-SOP-TSS15 Safety Security Assessment, Rev 0.0 Jan 2022
SS-SOP-TSS13, Safety and Security Certification Verification Report (SSCVR)
TSS-SOP-TSS11 Design Conformance Verification, Rev 0.0 Jul 2022
The Safety and Security Hazards Oversight Panel (SHOP) Charter DRAFT
Joint Rail Safety and Security Committee (JRSSC): Meeting Agenda/Minutes Jan – Sep 2022
Joint Rail Safety and Security Committee (JRSSC) Charter
Transit Asset Management Plan, 2018
ST Facilities Maintenance Plan, Dec 2018
ST Facilities, FAC-WI-10001 Facilities System Maint. Condition Assessment Report Review Process, Rev1.0 May 2022
ST Facilities, Inspection/Maintenance Work Orders, LLR OMF
ST Facilities, Inspection/Maintenance Work Orders, LLR Stations
Annual Inspection Checklists
ST TSS Project Assignments Tracking Log (facilities)
Public Transportation Safety Certification Training Program Refresher, May 2022
PTSCTP Individual Training Plan Components TSS Roles and Responsibilities Tracking Sheet, Nov 2022
ST Link Maintenance Oversight Process, Rev 12 Feb 2018
ST Link Maintenance Oversight Plan (MOP), Rev 1.0 Aug 2022
KCM Maintenance Plan, Rev IV 2020
KCM SOP 6.1 Link Control Center (LCC) Callout Procedure
KCM SOP 1.2 Operator Reports to Link Control Center

ST/KCM Field Observation Reporting Data, current as of Oct 2022
- Train Observations
- Station Observations
- LCC Observations