TALSON
SOLUTIONS LLC

Safety Certification Audit Report
Issued September 22, 2023

Projects: **Hilltop Tacoma Link Extensions**

Audit Type: **Safety and Security Audit Profiles 4000, 6000, & 7000**

PREPARED BY (TALSON):

Norman Jones – Auditor	Date:	*September 1, 2023*
Robert Farrow – Auditor		*September 1, 2023*

APPROVED BY (TALSON):

Kenneth Brzozowski – Project Manager	Date:	*September 5, 2023*

APPROVED FOR ISSUE (SOUND TRANSIT):

Patrick Johnson – ST Director, Audit Division	Date:	*September 5, 2023*

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Safety Certification Audit Report

I.   EXECUTIVE SUMMARY

Commencing in July 2023 and extending through August 2023, Talson Solutions, LLC (Talson) and Transportation Resource Associates Inc. (TRA) performed a Safety and Security Certification Audit (SSCA) of Sound Transit's Hilltop Tacoma Link Extension project. The audit was performed on behalf of the Sound Transit's Audit Division and focused on the following areas:

> *Audit Profile 4000 Follow-Up – Integrated Testing Certifiable Items Nos. 173, 370 & 439*
> - ➤ Evaluate open certifiable items noted in Task Order 32 Audit related to integrated testing
>
> *Audit Profile 6000 – Operations and Maintenance Readiness*
> - ➤ Review that contracted and internal trainings have been conducted to mitigate identified risk
> - ➤ Review that The Rule Book, SOPs, SMPs, and standards are updated according to certification requirements
> - ➤ Verify training records and other data to support operations and maintenance readiness
>
> *Audit Profile 7000 – System Readiness, Fire Life Safety, and Safety Certification Reporting*
> - ➤ Verify that Fire Life and Safety items are addresses and coordinated with outside agencies
> - ➤ Review certificates and verification reports for completeness and supported appropriately
> - ➤ Assess compliance to FTA's Oversight Procedure 54
> - ➤ Review Safety Certification Documentation for completeness and assess open issues and workarounds

Talson found that the majority of certification activities being performed by Sound Transit generally align with agency safety and security certification processes, with ***noted exception to tracking and approval for subsequent activities related to discovery of post construction non-conformance safety and security certifiable item standards.***

The sum impact of the audit testing resulted in one (1) finding related to a process enhancement for post construction impacts to certification and one (1) observation relating to the accuracy and availability of uploaded documentation within Sound Transit document retention system. Overall, Talson and TRA do not believe that their findings and observations negatively impact the ability to start revenue services.

The Hilltop Tacoma Link Extension project appears to be substantially complete and ready for operations and service. Standard Operating Procedures (SOP), Standard Management Procedures (SMP), manuals, and other requirements appear to be finalized and adequately address preliminary and operational hazards identified by the agency. Fire Life and Safety, and Emergency Management Procedures have been established as well as appropriate responses to the Threat Vulnerability Analysis. The Safety and Security Certification Verification Report (SSCVR) has been finalized, inclusive of acceptable work arounds. At the time of the audit, submittal of the SSCVR for approval by the Washington State Department of Transportation was pending submission. The submission was expected to occur in early September 2023.

II.   SCOPE AND METHODOLOGY

The SSCA audits are conducted to ensure that system hazards are effectively identified from preliminary engineering to revenue service inclusive of Certifiable Item traceability and mitigation efforts. A Closeout Briefing was facilitated on August 15, 2023 with project team members, Sound Transit management, and Washington State Department of Transportation's Rail Safety Oversight Program Administrators. Continued discussions relating to preliminary findings, observations and potential corrective actions followed the Closeout Briefing.

Notable documentation and relevant dashboards referenced during the audit included:
  ➢ Agency Safety and Security Certification Plan (SSCP), dated April 2023
  ➢ Agency Safety and Security Management Plan (SSMP), dated February 2017
  ➢ Preliminary Hazard Analysis (PHA), dated March 23, 2017
  ➢ Operational Hazard Analysis (OHA), dated April 14, 2023
  ➢ System Security and Emergency Preparedness Plan, dated May 2022
  ➢ Tacoma Link Rule Book Revision 13, dated April 4, 2023
  ➢ Federal Transit Administration Oversight Procedure 54
  ➢ Safety and Security Certification Verification Report, draft August 1, 2023
  ➢ Safety and Security Information Management System (SSIMS) Project Dashboard
  ➢ System Integrated Test Project Plan, dated June 2020

Talson's audit activities included the following for performance of the audit:;
  ➢ Reviewed certifiable items within SSIMS
  ➢ Prepared Audit Profile 6000 SSCA Checklist, inclusive of 20% stratified sampling of certifiable items
  ➢ Interviewed Operational and Emergency Management personnel
  ➢ Assessed relevant documentation including various SOPs, SMPs, procedures and training records
  ➢ Reviewed certification verification documentation and existing workarounds
  ➢ Identified verification methods within the SSCA Checklists along with audit results
  ➢ Communicated preliminary findings with Sound Transit
  ➢ Conducted a Closeout Briefing
  ➢ Produced draft and final reporting

Safety and Security certifiable items within Sound Transit's SSIMS database were selected for conformance testing specific to the following Certifiable Elements: Yard and Shop; Guideway; Traffic Control; Traction Electrification System; Fire Life Safety; Stations; Safety & Security Plans, Procedures, & Training; Communications; and Signaling.

Talson selected 20% (36) of the 185 closed Security Certifiable Items that were populated in SSIMS for Safety and Security Audit Profile 6000. Verification testing was done through assessing

data within the SSIMS dashboard utilizing the following ratings as part of the audit process and are noted within the Audit Checklist:

- **Acceptable:** No deviation from the implemented SSCP or SSMP standards.
- **Conditionally Acceptable:** Minor deviation of the implemented SSCP /SSMP standard and unlikely to result in a nonconforming product or service.
- **Unacceptable:** A significant breakdown or partial breakdown in processes that resulted in a nonconforming product or service. Corrective action must be documented formally and include a root cause analysis.

Ratings below "Acceptable" may or may not equate to the assignment of an audit finding or observation, based on the judgement of the auditor. If an audit finding or observation is assigned, justification will be listed in Section III of the audit report.

Safety Audit Profile 6000 Verification Testing Results:
Sampling of construction conformance testing CIs within SSIMs resulted in:
- ➢ *Acceptable* testing for 24 out of 27 (89%)
- ➢ *Conditionally Acceptable* testing for 3 out of 27 (11%)

Safety Audit Profile 6000 Summary of Certifiable Items Testing						
Total CIs	IDs Sampled	Acceptable	Unacceptable	Conditionally Acceptable	Not Applicable	Comments
159	27	24	0	3	0	Doc Reference / Upload

Security Audit Profile 6000 Verification Testing Results:
Sampling of construction conformance testing Certifiable Items within SSIMs resulted in:
- ➢ *Acceptable* testing for 0 out of 9 (0%)
- ➢ *Conditionally Acceptable* testing for 9 out of 9 (100%)

Security Audit Profile 6000 Summary of Certifiable Items Testing						
Total CIs	IDs Sampled	Acceptable	Unacceptable	Conditionally Acceptable	Not Applicable	Comments
26	9	0	0	9	0	Doc Reference

Below are the definitions of a Finding and an Observation, along with the acceptable response requirements. Definitions:

A. **Findings** indicate areas where Sound Transit or another entity is non-compliant with its own established policy, plan, procedure and/or regulation and which 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 correct the issue and reduce risk.

B. **Observations** do 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.

III.   FINDINGS

The audit resulted in one (1) finding:

Subsequent to further review of the SSCP and SSMP, Talson/TRA determined that there was no provision for standards related to the discovery of post-construction non-conformances of specific safety and security certifiable items. Currently, the process for identification and tracking of undesired construction results rests with the Sound Transit operations team through the creation of a System Enhancement and Optimization Log which is designed for listing of disputed items to punch-list with contractors. However, items from the log that may involve nonconformance with certifiable item requirements are disconnected from the certification verification process and not formally documented therein. As a result, hazards cannot be brought to resolution in accordance with SSCP requirements without proper documentation describing deviation from requirements and subsequently new efforts to mitigate risks.

If conformance to safety and security requirements is altered due to the identification of a new risk or mitigation is impacted, a formal process should be incorporated into the SSCP and SSMP to formally document the nonconformance and to ensure an acceptable corrective action and/or workaround is accurately noted in a revised SSCRV. A formally approved and documented processes for identification of subsequent non-conformances and modified certification verification will provide for better transparency and authorization.

IV. OBSERVATIONS

The audit resulted in one (1) observation:

Observation No. 1
Certifiable item forms within SSIMs had missing references to uploaded documents and listed files that were not uploaded or located. These have been marked as Conditional Acceptable within the audit checklist and shared with Sound Transit staff. Security Certifiable items did not reference any SOP/SMP documentation uploaded as did the Safety Certifiable Items.

- Safety Audit Profile 6000: 3 out of 27 samples (11%) had missing uploaded documentation
- Security Audit Profile 6000: 9 out of 9 samples (100%) did not reference uploaded documentation

See the below examples for further clarification of the Conditional Acceptable rating:

Adequate Reference for Safety Certifiable Item No. 218: References Noted in SSIMS

Operational Conformance

2. Conduct preventative maintenance activities in accordance with manufacturer's gu associated incidents.
TLR-SMP-20022 Monthly siemens TPSS Preventive Maintenance Inspection
TLR-SMP-30008 De-energizing and Energizing the Mainline TPSS
TLR-SMP-30012 Quarterly Mainline TPSS Preventive Maintenance Inspection
TLR-SMP-30013 Annual Mainline TPSS Preventive Maintenance Inspection

In-Adequate Security Certifiable Item No. 296 Missing References within SSIMS

Operational Conformance

Facilities will be providing SMP's for regular maintenance of station and platform.

V.   CONCLUSIONS / REQUIREMENTS

Talson found that the overall certification activities align to the Agency's SSCP with notable exceptions for suggested enhancements. Comments regarding the noted finding and observation should be provided within the prescribed timeline in the attached Audit Response Form (ARF) after the issuance of the Final Audit Report.

VI.   AUDIT RESPONSE FORM (ARF)

This audit report identified one (1) finding and one (1) observation that require a response from the appropriate Sound Transit staff. Findings and observations can be addressed separately, but a management corrective action for Findings should be submitted within 15 days of the final distribution of this report and corresponding ARFs. Verification of conforming corrective action and root cause explanation will be reviewed by Talson upon submission of the ARFs by Sound Transit.

VII. DISTRIBUTION:

Safety and Security Audit Dates:	July 2023 – August 2023
Organization:	Sound Transit *(Auditee)*
Responsible Party:	Branden Porter, Director, Transportation Safety & Security *(Auditee)*
Talson Auditor(s):	Ken Brzozowski, Norman Jones, and Robert Farrow *(Auditor)*

Report To:
- Branden Porter, Director, Transportation Safety & Security

Distribution List:
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- Michael Flood, ST Senior Auditor, Audit Division
- Molly Hughes, WSDOT State Safety Oversight Program Administrator
- Andrew Royer, WSDOT State Safety Oversight Program Administrator

Attachments:
- Safety & Security AP 6000 Checklist
- SCCA ARF