MBTA'S SAFETY AND SECURITY CERTIFICATION PROGRAM

ACEC MA Transportation Agencies Liaison Committee
July 17, 2024

Safety and Security Certification (SSC)

Defined by the Federal Transit Administration (FTA) as:

The series of processes that collectively verify the Safety and Security Readiness of a project for public use

SSC integrates Safety and Security Requirements into the project lifecycle to achieve *acceptable* risk through MBTA's Safety Risk Management (SRM) and Risk-Based Hazard Analysis (RBHA) processes.

Safety and Security Certification

- Managed and executed via the MBTA SSC Program Plan (SSCPP)
  - Current plan was adopted by the MBTA July 1, 2024
  - The 2015 plan remains in effect for projects initiated prior to July 1, 2024
- Mandated by the Federal Transit Administration
  - Requirements are incorporated into 49 CFR Part 673, 633, and 674
  - Recommended practices found in the FTA Handbook for Transit Safety and Security Certification (2002)
- Mandated by the Federal Railroad Administration in 49 CFR Part 270
- Applies to any project that affects the safety and security of the MBTA

Program Modifications
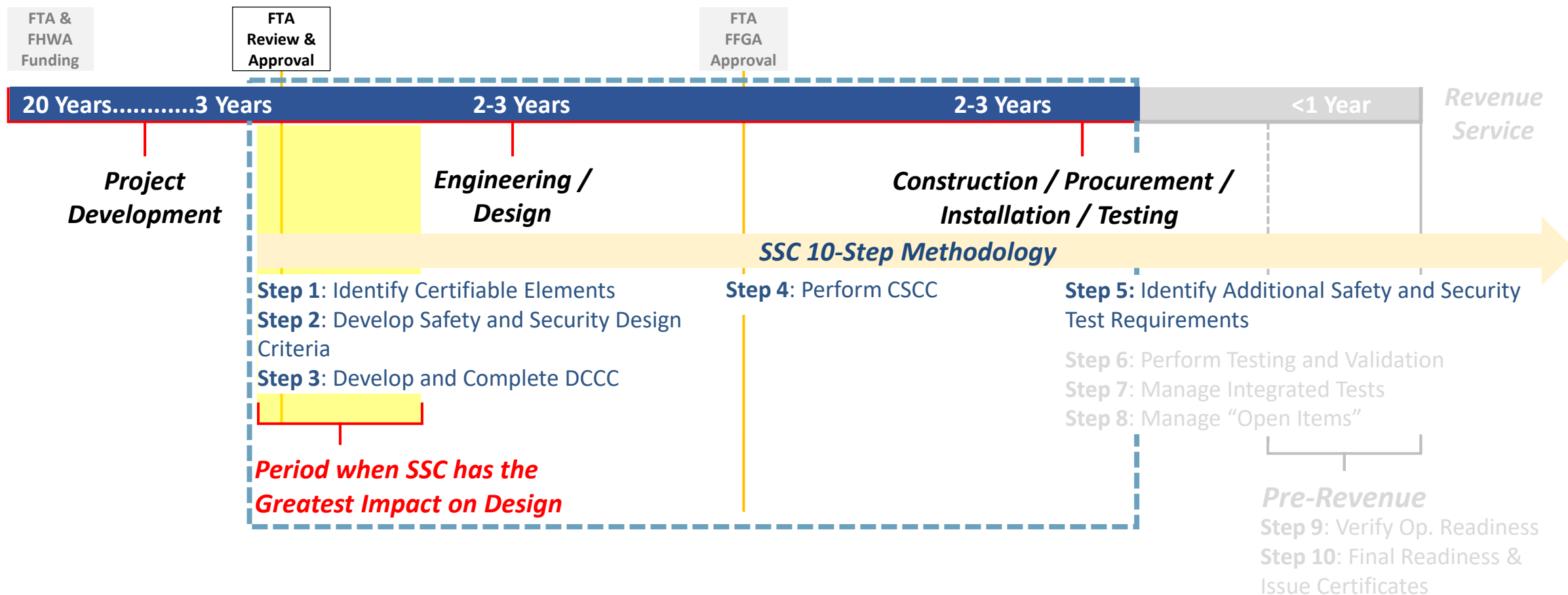
- Better defined Roles and Responsibilities

- Incorporation of 49 CFR Part 673 and 270 requirements

- New Project Assessment Form (PAF)

- Revised contract specifications

- Clarified guidance for the 10-Step Process

- Consideration for multiple contract types

Safety & Security Certification Program Plan

Published by
MBTA Safety Department

Updated
October 5, 2023
Revision 1

Project Lifecycle and Certification

FTA & FHWA Funding	FTA Review & Approval		FTA FFGA Approval		

20 Years...........3 Years	2-3 Years	2-3 Years	<1 Year	*Revenue Service*

Project Development

Engineering / Design

Construction / Procurement / Installation / Testing

SSC 10-Step Methodology

Step 1: Identify Certifiable Elements
Step 2: Develop Safety and Security Design Criteria
Step 3: Develop and Complete DCCC

Step 4: Perform CSCC

Step 5: Identify Additional Safety and Security Test Requirements
Step 6: Perform Testing and Validation
Step 7: Manage Integrated Tests
Step 8: Manage "Open Items"

Period when SSC has the Greatest Impact on Design

Pre-Revenue
Step 9: Verify Op. Readiness
Step 10: Final Readiness & Issue Certificates

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Design and the SSC Process

- A systematic approach to **Safety Risk Management**

- Begins with design and continues into the start of revenue service by:

  - **Identifying** potential hazards and security vulnerabilities as early as possible
  - **Developing** mitigations that will reduce the level of risk acceptable to the MBTA
  - **Incorporating** accepted mitigations into design
  - **Tracking and Verifying** that mitigations are incorporated into all project phases

- Responsible parties include:

  - MBTA PM Team, **Design Consultant**, Construction Manager, Installer, Testing and Commissioning Manager, MBTA Safety, Subject Matter Experts (SME's)

Roles and Responsibilities

Legend:										
P – Primary responsibility for document										
S – Secondary function or assistance										
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N – No activity										
	MBTA PM	DC PM	Construct. PM	MBTA Safety	MassDOT S&EM	SMEs	SMRC	SMWG	FLSC	ORC
Project Safety and Security Management Plan (SSMP)										
Project-Specific Safety & Security Certification Plan (SSCP)		P								
Certifiable Elements List (CEL), with Sub-Elements		P								
Preliminary Hazard Analysis (PHA)		P								
Security Assessment (SA)		P								
Certifiable Items List (CIL)		P								
Operational Hazard Analysis (OHA) (Baseline & Verified)		P								
Baseline Design Criteria Conformance Checklist (DCCC)		P								
100% Verified DCCC		P								
Baseline Construction Specification Conformance Checklist (CSCC)		P								
100% Verified CSCC		S								
Baseline Testing Verification Conformance Checklist (TVCC)		P								
100% Verified TVCC		S								
Closeout Safety and Security Design Review Documents		P								
Op. Readiness Conformance Checklist (ORCC) (Baseline & Verified)		S								
Closeout Tracking Log (PHAs, OHAs)		S								
Signed Interim Certificates		S								
Signed Certificates of Conformance (COC)		S								
Signed Project System COC		S								
Project SSC Verification Report (SSCVR)		S								

* SSCPP Table 25, Example Responsibility Matrix

- Responsibilities are defined in SSCPP Sections 2.1 and 7.2
- Responsibilities are based on the individual project needs
- SSC activities will be specified in the Project Assessment Form
- Identify a qualified SSC representative
  - Qualified means the individual has completed a recognized SSC training course as identified in the standard specification.

Roles and Responsibilities

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SSC Step 1

Project-Specific SSCP

A management tool used to execute the SSC program for individual projects; it establishes roles and responsibilities and defines key activities.

* SSCPP Table 25, Example Responsibility Matrix

Roles and Responsibilities

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* SSCPP Table 25, Example Responsibility Matrix

SSC Step 1

Certifiable Elements List (CEL)

Compilation of all identified certifiable elements* for a project; the CEL also includes sub-elements for each identified element.

*Certifiable Element: Project components that can affect the safety and security of transit agency passengers, employees, contractors, emergency responders, or the general public. These elements define the scope of the project's certification program.

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Roles and Responsibilities

Legend:	MBTA PM	DC PM	Construct. PM	MBTA Safety	MassDOT S&EM	SMEs	SMRC	SMWG	FLSC	ORC
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* SSCPP Table 25, Example Responsibility Matrix

RISK

SSC Step 1

Preliminary Hazard Analysis (PHA)

The process to identify and categorize potential hazards associated with the operation of a proposed or early-stage project.

Roles and Responsibilities

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* SSCPP Table 25, Example Responsibility Matrix

SSC Step 1

Security Assessment

Process for identifying, assessing, and mitigating security threats and vulnerabilities. *ref. Threat and Vulnerability Assessment*

Roles and Responsibilities

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Signed Project System COC										
Project SSC Verification Report (SSCVR)										

SSC Step 1

Certifiable Items List (CIL)

A compilation of all identified certifiable items* for all certifiable elements of a project.

Certifiable Item: Individual components of each certifiable element for the project.

* SSCPP Table 25, Example Responsibility Matrix

Roles and Responsibilities

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SSC Step 2

Operational Hazard Analysis (OHA)

An analysis used to identify, document, analyze, and mitigate operational hazards caused by operating and support (i.e., maintenance) personnel.

* SSCPP Table 25, Example Responsibility Matrix

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Roles and Responsibilities

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* SSCPP Table 25, Example Responsibility Matrix

SSC Step 2 and 3

Design Criteria Conformance Checklist (DCCC)

A comprehensive checklist identifying design criteria and specifications associated with each certifiable item.

Roles and Responsibilities

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Project SSC Verification Report (SSCVR)										

* SSCPP Table 25, Example Responsibility Matrix

SSC Step 4

Construction Specification Conformance Checklist (CSCC)

A comprehensive checklist outlining construction and installation specifications associated with each certifiable item.

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Signed Project System COC											
Project SSC Verification Report (SSCVR)											

* SSCPP Table 25, Example Responsibility Matrix

SSC Step 5

Testing Verification Conformance Checklist (TVCC)

A comprehensive checklist outlining testing specifications and requirements for each certifiable item.

Roles and Responsibilities

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Signed Project System COC										
Project SSC Verification Report (SSCVR)										

Closeout Documents

Documents used to support the final safety and security verification of the design phase.

* SSCPP Table 25, Example Responsibility Matrix

Additional Resources

2024 Safety & Security Certification Program Plan

https://www.mbta.com/engineering/safety-resources

✓ 2024 Safety & Security Certification Program Plan

✓ Safety and Security Certification Workbook

✓ Safety and Security Certification Workbook (FRA Only)

✓ Project Assessment Form

MBTA SSCPP Training Program

Register Online in Cornerstone
https://massdot.csod.com/

The Safety and Security Certification Program Training is now open to all consultants involved in the Safety and Security Certification Program. Consultants will be required to complete at least part of the Safety and Security Certification Program training **if they are responsible for participating in the certification process**. Coordinate with your MBTA PM to determine which modules are required.

MBTA's Safety and Security Certification Program

Thank You

For more information related to the Safety and Security Certification at MBTA, contact
SafetyandSecurityCertification@mbta.com