

CONSTRUCTION SAFETY & SECURITY PLAN

A SUB-PLAN TO THE PROJECT MANAGEMENT PLAN

APRIL 2015

VERSION 1.0



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TABLE OF CONTENTS

1.	Mangement commitment and Philosophy	5
1.1	Safety and Security Policy Statement	5
1.2	Introduction	5
1.3	Purpose of the Plan	5
1.4	scope	5
2.	Project Description.....	7
3.	Roles and Responsibilities.....	8
3.1	Overview & General Requirements	8
3.2	C-TRAN	9
3.3	Construction Manager	9
3.4	Contractors.....	10
4.	Health, Safety, and Security Requirements	11
4.1	Objectives.....	11
4.2	Conduct of work.....	12
4.3	Types of safety & security events	12
4.4	Existing C-TRAN Guidance.....	13
4.5	Signage	13
4.6	Access Control.....	14
4.7	Visitor Control	14
4.8	Drugs and alcohol usage	14
4.9	Fall Protection	15
4.10	Amber Lights on Vehicles.....	15
4.11	Hazardous materials – Usage and Storage	15
4.12	Tools and Equipment	15
4.13	Lighting.....	15
4.14	Personal Protective Equipment (PPE)	16
4.15	A Safe Work Zone on Streets	16
4.16	Pedestrian Safety	16
4.17	Fire Protection	17
4.18	Severe Weather	17
4.19	Site Inspections	17
4.20	Construction Safety and Security Reporting.....	17
4.21	Emergency Preparedness and REsponse	17
4.22	Security Sensitive Information (SSI).....	19
5	Hazard and Vulnerability Identification & Management.....	19
6	Training	19
7	Contractor Construction Safety & Security Plan.....	20
8	Plan Update.....	22
9	Audit and Review	22
9.1	Audit.....	22
9.2	Review	22
	REFERENCES.....	22
	APPENDIX A – Definitions and Acronyms	23
	ACRONYMS.....	23
	DEFINITIONS.....	24

LIST OF FIGURES

Figure 2-1. C-TRAN Fourth Plain BRT Project.....	8
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ASSUMPTIONS AND DISCLAIMER

This Construction Safety & Security Plan was developed for the C-TRAN Fourth Plain BRT Project (the Project). It was developed in conformance with FTA guidance and conforms with the C-TRAN SSMP for the Project.

REVISION RECORD

VERSION	DATE	COMMENTS
1.0	April 2015	Original Issue

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1. MANGEMENT COMMITMENT AND PHILOSOPHY

1.1 SAFETY AND SECURITY POLICY STATEMENT

A policy statement embracing Safety and Security is included in the Safety and Security Management Plan. This policy sets for the commitment to safety and security by C-TRAN Management for the project.

1.2 INTRODUCTION

This Construction Safety and Security Plan will provide guidance, policies, and requirements on safety and security for the construction phase of the C-TRAN Fourth Plain BRT Project (the Project).

The construction phase of any major project inherently contains specific safety and security challenges that are often not present in other phases. These include activities related to construction equipment, construction materials, fall issues, electricity exposure issues, heat and cold exposure, and other matters commonplace with construction activities. This document identifies risks present in the construction phase, methods and policies to mitigate these risks, and the requirements to ensure the highest levels of safety and security in the implementation of the Project.

This Plan is consistent with and supports the safety and security policy goals established by C-TRAN, and specifically the guidance and requirements of the Safety and Security Management Plan for the Project, which provides the comprehensive structure of the safety and security program for the full project across all tasks and phases.

1.3 PURPOSE OF THE PLAN

The primary purpose of this document is to provide requirements for construction safety and security, including guidance for contractor construction safety and security plans, to minimize risks that may result in injury, illness, or fatality to workers or the public; damage to property; and/or project delays. To mitigate these risks, the Construction Safety and Security Plan (CSSP) establish the minimum acceptable requirements and procedures to be followed by contractors, consultants, and C-TRAN staff in the execution of the project.

This Plan outlines the requirements to ensure that the highest reasonable level of safety and security is maintained during construction of the C-TRAN Fourth Plain BRT Project. Central to this Plan is an understanding of the specific roles in construction safety and security that must be performed by C-TRAN, the Construction Manager (CM) overseeing the work of the contractor, and the contractors themselves.

1.4 SCOPE

This CSSP applies to all Project construction and construction-related field activities and defines minimum requirements for C-TRAN and C-TRAN consultants and contractors, including subs, in the

construction phase of the Project. The requirements contained in this plan are not to be considered all-inclusive, and represent minimum guidelines. For any conflicts between this plan and other requirements the more stringent requirement shall apply.

The Plan covers all elements of BRT project construction, whether on C-TRAN, easements, city streets or other public property. The Plan includes all fixed facilities (stations, depots, control centers) and right-of-way improvements (roadway markings/changes, pedestrian walkways and crossings, etc.) as well as related training, roles and responsibilities, interagency coordination, and emergency preparedness plans and communications in support of construction for these elements.

2. PROJECT DESCRIPTION

This CSSP applies to the Fourth Plain BRT Project, which is C-TRAN's pioneering BRT project. It will be the first BRT project in the Vancouver/Portland region as well as the first BRT line implementation resulting from the Clark County High Capacity Transit System Plan. The proposed 5.9-mile alignment, shown in Figure 2-1, will provide frequent service within C-TRAN's highest ridership transit corridor, connecting downtown Vancouver with the Westfield Vancouver Mall.

A BRT project represents an investment in bus facilities and operations that is intended to improve the speed, reliability and convenience of bus service. The Fourth Plain BRT Project will include the following features:

- Transit signal priority treatments and signal coordination throughout the BRT corridor;
- Queue jump lane(s) to bypass queues at certain congested intersections;
- Enhanced stations that provide level boarding;
- Pre-paid ticketing and proof-of-payment fare verification;
- Low-floor, multi-door, low-emission articulated BRT vehicles;
- Real-time passenger information (information display signs); and
- Branding of the service to create a unique identity and image.

The BRT service will replace Routes 4 (Fourth Plain) and 44 (Fourth Plain Limited) along the corridor and be supported by the existing local bus network. The frequency of the BRT service will be every 10 minutes throughout weekday daytimes; 15 minutes during off-peak morning and evening weekday periods, and Saturday and Sunday daytime periods; and 30 minutes during late evening and weekend off-peak periods. It is expected that up to seven buses will be needed during peak service times. The BRT service will operate in curbside lanes with right-side boarding.

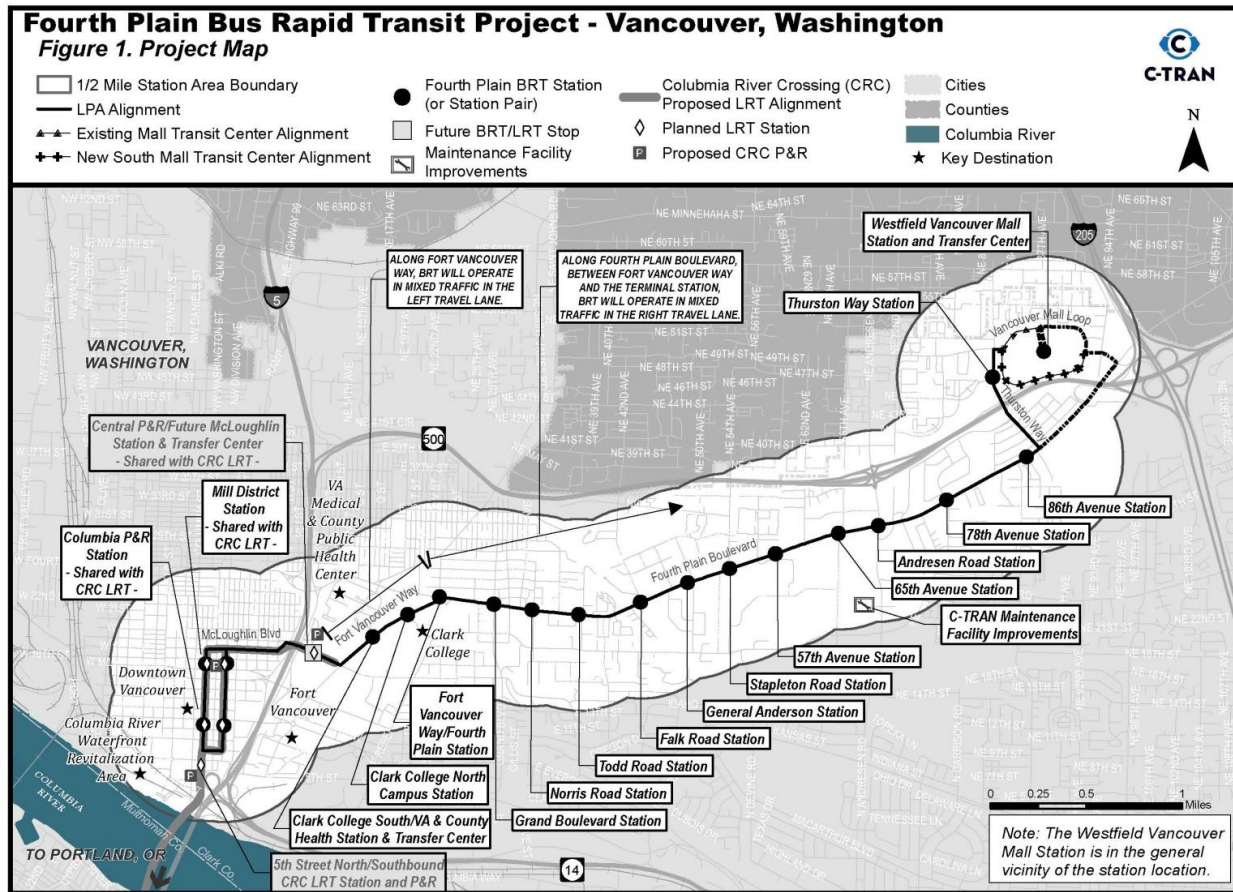


Figure 2-1 C-TRAN Fourth Plain BRT Project

3. ROLES AND RESPONSIBILITIES

3.1 OVERVIEW & GENERAL REQUIREMENTS

All personnel on the Project must fully support, cooperate with, and comply with the construction safety and security program and mission of C-TRAN as set forth in the Safety and Security Management Plan for this Project. C-TRAN personnel, contractors and subcontractors, consultants and sub-consultants, and vendors shall operate responsibly and in accordance with this Plan to ensure the safe and secure working conditions at all relevant locations, at all times.

The following entities have specific roles and responsibilities to ensure safety and security during the construction phase.

3.2 C-TRAN

C-TRAN is the owner and sponsor of the Project. As such, C-TRAN maintains a key level of responsibility for safety and security during construction, as far as reasonably possible, for activity and sites within its control. Accordingly, C-TRAN must:

- Develop a Safety and Security Management Plan (SSMP) and policy;
- Develop a safety and security plan for construction (this document) and detail the requirements to be included in the contractor's safety and security plan;
- Communicate the requirements of this plan to relevant parties charged with its implementation and compliance;
- Develop and implement a communication protocol to cover the release of information related to construction safety and security for internal and external distribution;
- Review construction safety and security activity reports of the Construction Manager (CM) and Contractors;
- Advise, as necessary, the relevant parties charged with the development of construction safety and security plans;
- Ensure all C-TRAN personnel accessing construction sites are properly trained, as designated by this plan, the CM and site operator, in appropriate construction safety and security and adhere to personal protective equipment requirements;
- Immediately notify appropriate parties, of any observed behavior or condition that may cause injury, illness, damage, or a security incident on a project site and require immediate corrective action;
- Take immediate action if imminent danger exists to preserve life or property, to include, if appropriate, calling 911 or stopping work at a site; and
- Perform audit activities or require audit activities to be performed to ensure the requirements of this Construction Safety and Security Plan are implemented.

3.3 CONSTRUCTION MANAGER

The Construction Manager (CM) is responsible to oversee the work of contractors in the implementation of construction of the project. As such, the CM must:

- Review contractors' Construction Safety and Security Plans (CSSP) to ensure compliance with the requirements detailed in this Plan. Contractor plans must indicate that sufficient resources have been allocated for construction safety and security efforts;
- Monitor implementation of, and compliance with, contractors' CSSP(s);

- Maintain a log of safety and security events; reconcile with and compare the contractor-maintained logs of safety incidents and security breaches to the CM's log and oversee the contractor investigation and conclusion on accident/incident's root causes and methods to prevent a re-occurrence; ensure contractor's corrective actions have been made;
- Audit the contractors' CSSP to ensure that it remains current and effective, given progress of the work, changes in the surrounding areas, police or OSHA advisories, or other events or changes;
- Take immediate action if imminent danger exists to preserve life or property, to include, if appropriate, calling 911 or stopping work at a site;
- Report to C-TRAN any safety or security concerns, including those relating to the safety and security capabilities of the contractors' in the execution of project;
- Facilitate communication with external agencies, such as Vancouver Fire or Police, regarding site activities; and
- Audit contractor safety and security training activities to ensure all personnel accessing construction sites are trained.

3.4 CONTRACTORS

The contractors on the project are responsible for all health, safety, and security matters within their project sites and for health and safety in adjacent areas affected by the construction sites (such as a traffic lane approaching the work site that must be merged into an adjacent lane). The contractor is responsible for all contracted work for the project, whether or not any aspect of this work is subcontracted. As such, each contractor must:

- Develop a comprehensive Construction Safety and Security Plan (CSSP), to be submitted to the C-TRAN Fourth Plain BRT Project Manager for approval;
- Work to ensure that worksites are as safe and secure as possible for site employees and visitors;
- Ensure that worksites do not expose workers or visitors to any unsafe or unhealthy conditions or practices and that security vulnerabilities are minimized;
- Comply with all applicable local, state, and Federal labor and occupational health and safety regulations, including US of Code of Federal Regulations Title 29, State of Washington Safety and Health Core Rules (Chapter 296-800 WAC), State of Washington Department of Labor and Industries, relevant sections of the City of Vancouver code, Clark County code and other application regulations.
- Implement the approved CSSP and provide sufficient resources to ensure that all employees and all subcontractors, vendors, and visitors are familiar with the plan;
- Appoint a safety and security manager, with construction safety experience, and ensure that the safety and security manager or other trained designee is available during all working hours;
- Comply and cooperate with audits and information requests from the CM and C-TRAN;

- Comply with and operate in good faith with the Safety and Security Working Group (SSWG), other C-TRAN Committees, the City of Vancouver/Clark County (Police, Public Works, and other departments), and other safety or security/police agencies;
- Develop and provide construction safety and security training and specialized job hazard training to all contractor employees, as well as providing an appropriate level safety and security awareness training for site visitors;
- Develop and test emergency procedures;
- Limit all worksites to authorized and trained personnel only; C-TRAN reserves the right for staff and designated individuals to visit worksites at any time without advance announcement, if properly trained for construction site activity;
- Provide to C-TRAN and the CM contact information of the Contractor's key project leadership, including safety and security site manager and backup to ensure the ability to reach the contractor on a 24/7 basis;
- Take immediate action if imminent danger exists to preserve life or property, to include, if appropriate, calling 911 or stopping work at a site; and
- Update the CSSP as needed given changing external conditions, project progress, results of audits or reviews, and/or other factors.

4. HEALTH, SAFETY, AND SECURITY REQUIREMENTS

This section details the health, safety, and security requirements during the construction phase of the Project. Contractors CSSPs shall address and incorporate all elements of this section (further detailed in Section 3.4 Contractor Roles and Responsibilities and Section 7.0 Contractor Construction Safety and Security Plan of this document).

4.1 OBJECTIVES

The objectives of this Chapter are to:

- Ensure a safe, healthy, and secure environment for workers, equipment, property, authorized visitors at worksites, and passing pedestrians and vehicles;
- Ensure safe traffic operations on city streets near or adjacent to construction sites;
- Implement appropriate emergency response requirements;
- Prevent escalation of an emergency and minimize the consequences;
- Prevent or minimize illnesses or injuries on job sites;
- Prevent or minimize security incidents on job sites;
- Ensure assistance is provided as quickly as possible to those persons affected by any incident or accident;
- Facilitate the preservation of evidence so that an accident or incident may be effectively investigated;

- Ensure that vital information is communicated to relevant stakeholders in a timely manner;
- Facilitate the efficient restoration so that work can be resumed; and
- Ensure compliance with relevant local, state, and Federal safety, labor, and security guidelines and requirements.

4.2 CONDUCT OF WORK

Project managers and contractors shall familiarize their staff and work crews with known hazards on jobsites, provide training, and ensure work proceeds in a safe and secure manner. Jobsite rules must be followed and no work shall be conducted in an unsafe manner or unsafe environment. Project and contractor staff shall not tamper with or otherwise render any safety or security measure ineffective, to include alarms, signage, notices, guardrails, lighting, or any other measure.

Contractors shall ensure that hazard analyses and vulnerability assessments are undertaken and completed, and that mitigations of hazards and vulnerabilities are implemented. Any hazards or vulnerabilities that cannot be mitigated to an acceptable risk level must be communicated to all work crews and visitors as set forth in section 5.

4.3 TYPES OF SAFETY & SECURITY EVENTS

The variety of safety and security events, impacts, locations, levels of severity, and combinations with other elements or other emergencies makes it impossible to define and plan for every scenario. However, general types of events can be identified that may be faced by contractors, whether natural (e.g., flooding), accidental (e.g., fall), intentional (e.g., theft), or technological (e.g., communications failure). Contractor CSSPs must adequately address reasonable possibilities.

Listed below are safety and security events and emergencies for which C-TRAN and contractors must be prepared to respond to. This list may be expanded by the contractor, CM, or C-TRAN in the future.

- natural events such as extreme temperatures;
- structural collapse or imminent collapse of structures or buildings;
- fire or smoke at or near works areas;
- accidental or intentional release of hazardous and non-hazardous material;
- loss of power, lighting or communications at job sites;
- collision involving private vehicles and/or construction vehicles/equipment;
- person struck by vehicle or construction equipment;
- unauthorized access onto the worksite;
- theft of material or equipment from job sites;
- vandalism or criminal acts;
- response to injuries, fatalities, medical emergencies or equipment/facility damage;

- pandemic of communicable or infectious disease;
- site evacuation, including persons with disabilities; and
- other scenarios deemed reasonable and appropriate.

4.4 EXISTING C-TRAN GUIDANCE

In addition to complying with all relevant local, state, and Federal regulations, and ANSI and OSHA guidance, C-TRAN currently has a number of plans, rules, procedures, and programs covering safety and security. Contractors, consultants, and C-TRAN project staff shall comply and coordinate with these policies, including future policies not yet adopted. While the project must comply with all C-TRAN policies, key C-TRAN documents are as follows:

- Safety & Security Management Plan for the C-TRAN Fourth Plain BRT Project
- Emergency Preparedness Plan (EPP)
- Emergency Bus Mobilization Plan
- Safety and Accident Prevention Program
- Coach Operator Procedures
- Paratransit Operator Procedures
- Standard Operating Procedures for Mobile Transit Security Officers
- Safe Watch, Adverse Weather and Rider Safety and Security Program
- Drug and Alcohol Policy
- Safety and Health Policy
- Chargeable Accident Procedure Policy
- Operator Emergency Response Plan
- Industrial Illness Prevention Policy
- Threat and Vulnerability Risk Assessment Procedure
- Sharing the Road with Cycles and use of bicycles on C-TRAN

4.5 SIGNAGE

Proper signage shall be placed on the exterior of each worksite so that persons approaching the site from any public street, sidewalk or known or anticipated access point are sufficiently informed that they are approaching a controlled area.

Signage must identify the site as a worksite, with restricted public entry, and warn of the potential dangers. A phone number must be provided for notification of hazardous or emergency conditions or to report suspicious or inappropriate activity.

Signage shall be placed within the site prohibiting unauthorized crewmembers from operating machinery or equipment for which they are not qualified or trained, informing site crews and visitors of Personal Protective Equipment (PPE) requirements and any other safety or security requirements.

4.6 ACCESS CONTROL

Appropriate access controls shall be implemented at all worksites. Access control shall include barriers, fencing and gates or other methods to prevent unauthorized individuals and vehicles from entering the worksite.

All worksites on and along public roadways shall provide physical separation through traffic control and pedestrian control, using barrels, barriers, tape, signage, or other means as appropriate. Work performed in close proximity to traffic must comply with all governmental regulations, including, but not limited to regulations cited in Section 3.4 of this Plan. Work zones must be adequately protected from live traffic, as prescribed in the *Manual on Uniform Traffic Control Devices for Streets and Highways*, Chapter 6C, “Temporary Traffic Control Elements” and City of Vancouver standard traffic control plans (See also Section 4.15, below, “A Safe Work Zone on Streets.”)

4.7 VISITOR CONTROL

Contractor shall keep entry/exit records of all construction work zone visitors. Each visitor shall be briefed and trained as appropriate concerning the hazards and dangers present at the work site before they are allowed to enter. All authorized work site visitors shall be required to wear proper personal protective equipment (PPE) per Section 4.14, Personal Protective Equipment (PPE).

4.8 DRUGS AND ALCOHOL USAGE

No person shall be working on or otherwise present at any C-TRAN construction site while under the influence of alcohol or any prescription drug that was not specifically prescribed to that person and taken in the directed amounts. No person shall operate any vehicle or machinery, or work in hazardous areas while under any narcotic or drug that impairs judgment or cause dizziness or drowsiness unless there is written approval by the attending physician. Particular concern shall be applied if this individual performs a safety sensitive role and/or operates equipment or machinery at the job site. Any person found in such condition must be immediately removed by the site foreman. Contractor shall enforce all alcohol and drug-free workplace policies and requirements.

The use of illegal drugs and alcohol is strictly prohibited on all C-TRAN construction projects. As part of their Construction Safety and Security Plan, construction contractors and all subcontractors are required to have a Substance Abuse Program that addresses the prohibited use of alcohol and drugs, including pre-placement, periodic, for cause, and post-accident/incident testing.

4.9 FALL PROTECTION

Fall protection must be provided as stipulated by the American National Standard Institute safety requirements. If such systems are utilized, they must meet the American National Standard Institute safety requirements (ANSI/ASSE Z359.1 – 2007 (Version 3.0)).

4.10 AMBER LIGHTS ON VEHICLES

Amber warning lights shall be used on all vehicles in work zones to identify them in protected areas from adjacent traffic and other work or construction vehicles and to improve their visibility within traffic areas.

4.11 HAZARDOUS MATERIALS – USAGE AND STORAGE

The use of any toxic materials must be properly labeled, handled only with proper PPE, and used as directed by the manufacturer and in compliance with the material safety data sheets (MSDS). Use of all such materials must be in accordance with OSHA specifications.

All hazardous materials, if stored on site, must be properly stored in safe, designated locations in appropriate containers, and shall be adequately protected from inappropriate access. MSDS for all materials used on site must be kept at the worksite and be available for audit, or in case of accidental or intentional release or exposure. C-TRAN and Contractor safety and security personnel shall be advised as to what material is on site and where within the site it is located to allow for any personal protective equipment (PPE) or ventilation requirements that must be followed when patrolling or handling such material. All hazardous materials shall be disposed of through proper means and locations based on the material type.

4.12 TOOLS AND EQUIPMENT

All tools and equipment shall be either securely locked up each day before leaving a worksite or shall be removed from the site. No machinery or equipment shall be left unsecured and unattended such that a non-authorized person may move, start, and/or operate such machinery or equipment.

4.13 LIGHTING

All worksites shall have adequate lighting to provide a safe and secure working environment. If natural light is insufficient for the task or to provide a safe environment and to support police, security, or C-TRAN patrols of worksites, supplemental lighting will be provided. If CCTV will be used, the lighting shall be sufficient to provide adequate illumination for the CCTV system.

4.14 PERSONAL PROTECTIVE EQUIPMENT (PPE)

All personnel, including visitors to the work site locations associated with the project, shall wear the following minimum PPE:

- Head protection complying with ANSI/ISEA Z89.1-2014.
- High visibility, retro-reflective clothing (class 2 or 3) complying with ANSI/ISEA 107-2010, Manual on Uniform Traffic Control Devices (MUTCD) 6E.02, 29 CFR 1926.201(a) and in keeping with best practices of the American Traffic Safety Services Association (www.atssa.com) shall be worn at all times, including within traffic work zones.
- Eye Protection complying with ANSI/ISEA Z87.1-2010 shall be worn at all times when on the worksite.
- Foot protection complying with ASTM F2413-11 or ANSI Z41-1999 shall be worn at all times when on the work site. Work boots are the required protective footwear; no tennis type shoes are permitted.
- Hearing protection with a Noise Reduction Rating (NRR) appropriate for the exposure shall be worn by personnel exposed to noise levels in excess of the 29 CFR 1926.52 Table D-2 Permissible Exposure Limit (PEL). When in the field, personnel must have hearing protection devices readily available for use.

4.15 A SAFE WORK ZONE ON STREETS

Work zones must be adequately protected from live traffic through the use of barriers, cones, and other methods, as prescribed in the *MUTCD*, Chapter 6C, "Temporary Traffic Control Elements," the City of Vancouver's standard traffic control plans, and any traffic control permits acquired by the Contractor(s). Furthermore, the traffic approach to worksites in the "advance warning area" must be implemented as per the *MUTCD*, Section 6C.04, to provide drivers with adequate warning of the changing street patterns ahead.

4.16 PEDESTRIAN SAFETY

Safe paths, with clear signage and direction, must be provided for pedestrians to keep them safe and segregated from worksites, as follows:

- Pedestrians shall not be led into conflicts with vehicles/equipment and construction operations;
- Pedestrians shall not be led into conflicts with vehicles moving through or around the worksite;
- Pedestrians shall be provided with a convenient and accessible path that minimizes backtracking or requiring excessive additional walking;
- Pedestrian pathways shall be separated from vehicular traffic; and
- If re-routed pedestrian pathways require a street crossing, sufficient signage and warning shall be given to the pedestrian at the closest approaching intersection, to minimize backtracking to a crosswalk and/or to minimize hazardous behavior such as mid-block crossing.

4.17 FIRE PROTECTION

The project shall conform to all OSHA and NFPA requirements on fire protection for all welding, cutting, and other work for which fire is either used or a potential outcome.

4.18 SEVERE WEATHER

The project activities shall include procedures to address severe weather that affects construction sites, including the protection of machines/equipment and the crew working on location. Protection and hydration must be provided for workers in extreme heat. Rain must not be permitted to enter electrical equipment, which may cause electrocution to the user.

4.19 SITE INSPECTIONS

Daily inspections of construction sites, by competent trained persons, shall be performed to ensure the physical and behavioral conformance with this Plan, the Contractor CSSP, and applicable local, state, and Federal regulations. Each inspection shall be logged. Any findings of non-conformance shall be escalated as a safety/security finding and brought to resolution in a timely manner. For findings of imminent danger, corrective action must be taken immediately; if immediate corrective action is not possible, the job location shall be shut down until the condition can be remedied and the C-TRAN Project Manager must be notified upon securing the site. For emergency matters, 9-1-1 shall be called immediately and the C-TRAN Project Manager shall be notified.

4.20 CONSTRUCTION SAFETY AND SECURITY REPORTING

Anyone witnessing or otherwise having knowledge of unsafe behavior or an unsafe condition on or around the construction site shall immediately report it to the foreman, supervisor or designated Safety and Security Manager at the site. The responsible party must take immediate action to remedy the situation. If the unsafe condition or practice cannot be immediately corrected (e.g., a risk resulting from defective equipment), then work shall be halted at the impacted part of the job site or job task and the C-TRAN Project Manager is to be notified. For all emergencies on the site, 9-1-1 shall be called immediately if a life-threatening situation is present.

A written report following the incident shall be submitted to the CM and C-TRAN within three hours of the event, to include details of the event, persons involved, time/date and work conditions of the event, action taken, and suspected/known causes of the event. A full report to be submitted within three days of the incident shall include the above information as well as detailed findings as to the cause of the event and the corrective action taken to prevent, if possible, future recurrences.

4.21 EMERGENCY PREPAREDNESS AND RESPONSE

Emergency preparedness plans for each job site must be prepared by the responsible contractor to ensure response to emergencies on the job site.

Emergency preparedness plans and procedures must be able to address any reasonably conceivable, realistic event whether natural (e.g., flooding), accidental (e.g., car collision into worksite), intentional (e.g., arson), or technological (e.g., communications failure).

The emergency preparedness plans/procedures, at a minimum, must address:

- Emergency contact lists and phone numbers for:
 - Emergency response (911, the nearest hospital, and Clark Regional Emergency Services Agency (CRESA))
 - C-TRAN management
 - Facilities/businesses/residences immediately adjacent to each job site
- Staff training, both initial and refresher training, to familiarize staff on safe and secure practices maintaining a safe and secure work environment, as well as how to respond in the event of emergencies;
- Emergency drills and table top exercises, if appropriate, to simulate emergency events and to test procedures and inter-agency (response agencies) coordination and communication;
- Medical First Aid response. Each work location shall have a crew member certified in first aid. At each work location, the name of the trained crewmembers shall be identified as well as the location of the first aid kit. All fixed worksites shall have a first aid kit. For activities that are not fixed at one location, a kit may be kept in a work truck but must be present at all times for all shifts. The use of, distribution, locations, and signage for automated external defibrillator (AED) machines, if used, shall be documented and provided to all worksite crews.

In addition to the emergency preparedness activities the preparedness plan shall include:

- Stakeholder notifications—identifying who is to be called for a particular incident type and who is responsible for making contact;
- Media plan which directs all media requests for project information, during normal or emergency situations, to C-TRAN unless expressly permitted by the C-TRAN Project Manager;
- Scene management shall include evidence preservation and access control;
- Process and requirements for data collection and reporting of safety and security incidents;
- An event log of all safety and security incidents to include event, time, affected parties/work;
- Process to determine the cause of safety and security incidents. It shall include root causes and identify responsible parties to develop or determine corrective actions to prevent a re-occurrence of the event or to prevent similar events from occurring;
- Process to return to normal construction operations following a safety or security incident. Based on the incident, and whether control of the site is lost (e.g., to the police), this process shall identify the resources required, notifications to be made and by whom, and time required to resume normal construction or site operations; and
- Process for monitoring, evaluating, and updating of plans and procedures.

4.22 SECURITY SENSITIVE INFORMATION (SSI)

Some construction drawings and documents may fall under the category of documents that are Sensitive Security Information (SSI). SSI documents must be handled with extreme care and are only provided on a need to know basis. All SSI documents provided to contractors must be handled in accordance with 49 CFR Parts 15 and 1520 and C-TRAN policy on Sensitive Security Information, as outlined in the Safety & Security Management Plan.

5 HAZARD AND VULNERABILITY IDENTIFICATION & MANAGEMENT

A central element of a construction safety and security program is the management of construction site hazards and vulnerabilities. A key tool to support this is a safety and security risk assessment, which identifies hazards and vulnerabilities for the physical construction aspects of the project and then develops methods to mitigate or control such risks to acceptable levels or to eliminate them. Contractor CSSPs must include a methodology for assessing hazards and vulnerabilities within their work site areas. The hazard assessment methodology must conform to the C-TRAN hazard and vulnerability program, outlined in the Project SSMP and ensure mitigation of unacceptable risk. Contractors must perform the hazard and vulnerability assessment prior to performing work on the project. The outcome from the risk assessment and the plan for appropriate mitigations must be provided to the CM for approval prior the start of field work on the project.

Detailed guidelines for performing an assessment can be found in Section 4 of the *C-TRAN Fourth Plain BRT Project SSMP* and shall be used as a reference.

6 TRAINING

The Contractor shall develop a health, safety and security training program and provide instructional health, safety, and security training for all staff working at construction sites. Training shall advise all employees at construction sites of the potential hazards on the site; the knowledge and procedures to identify, mitigate, and/or avoid such hazards; and actions to be taken in the event of a health, safety, or security incident.

All training shall be conducted by a qualified competent person familiar with the work and hazards at the job sites, and deemed competent in terms of education, relevant experience, and instructional capability. Training shall conform to ANSI/ASSE *Criteria for Accepted Practices in Safety, Health, and Environmental Training*, ANSI/ASSE Z490.1-2009.

All training sessions shall be documented and made available upon request to C-TRAN. Documentation shall include training dates, participant name, training subject, instructor name, and evidence of satisfactory understanding of the training material by the participant. Training material shall also be made available to C-TRAN upon request.

No employee shall commence work on a C-TRAN jobsite without first receiving health, safety, and security training, and demonstrating satisfactory understanding of the content taught.

Personnel designated to respond to emergency incidents prior to the arrival of police, fire, or emergency medical personnel, such as for an injury or heart attack on the job site, shall undergo specific training to ensure they are proficient in first aid procedures and fully understand their roles and responsibilities.

7 CONTRACTOR CONSTRUCTION SAFETY & SECURITY PLAN

Contractors shall develop their own Construction Safety and Security Plan (CSSP) for the construction of the C-TRAN Fourth Plain BRT Project. The Contractors' CSSP shall conform to and incorporate all elements of this document, and include any other relevant matter not explicitly stated in this document. The Contractor CSSP shall conform to all applicable local, state, and Federal regulations on construction safety, health, and security. The plan shall be submitted to the C-TRAN Safety Manager for approval before construction work in the field commences.

The Plan shall identify, in detail, how the objectives listed in Section 4.1 will be met. In addition the Contractor CSSP shall provide an adequate discussion and/or policy/procedures on the following:

- Designation of safety and security roles and responsibilities within the contractor organization at all levels including any subcontractor roles;
- Allocation of personnel, of the contractor and all subcontractors, to implement the contractor safety and security program and for the on-site management of an emergency;
- Safety/security training and orientation;
 - New hire training;
 - Refresher training, by employee role;
 - Job hazard training;
 - First aid training for selected personnel;
 - Safety/security briefings or discussions with staff;
- Risk and hazard analysis to include the potential consequence of each type of safety and security event or emergency, including the likelihood of occurrence and potential severity if the event does occur, the risks arising from a safety incident or security event, and measures to eliminate or mitigate the identified safety risks and security vulnerabilities;
- Provision of communications equipment and communications protocols for safety and security;
- Compliance with applicable City of Vancouver, Clark County, Washington OSHA requirements, Washington Department of Labor and Industries and US Dept of Labor, US DOT, and other Federal regulations;
- Work Site Safety and Security;
 - Traffic and pedestrian control approaching and adjacent to worksites;
 - Fall protection;
 - Electric shock protection;

- Personal protective equipment (PPE);
- Hazardous materials control and response/Right-to-Know;
- Protection of the public and neighboring facilities/businesses/residences from construction activities;
- Detailed safety rules and security procedures for normal operations;
- Procedures for a safety or security incident;
- Fire prevention and response;
- Security risk mitigation plans to include theft, workplace violence, trespassing, vandalism, perimeter and access control, patrols, and lighting;
- Reporting procedures;
 - Internal and external hazardous conditions;
 - injuries, accidents, near-misses, and security incidents;
- Emergency Preparedness processes;
 - Coordination plans with relevant emergency services;
 - Emergency notification to C-TRAN;
 - Emergency preparedness and response procedures;
- Incident/Accident Investigation;
 - Preservation of evidence;
 - Post-incident analysis/investigations and after-action reporting;
- Recovery procedures for the restoration of normal work;
- Audits and reviews;
 - Safety and security inspections and follow-up;
- Administration and update of the Plan; and
- Other health, safety, and security elements not listed above, yet discussed in this Plan, or topics that become relevant after the work is begun due to changes in regulations, in the threat/safety environment, or through directives from Clark County, the City of Vancouver, or C-TRAN.

The Contractor CSSP must identify all emergency resources including people (within the Contractor organization, the subcontractor organization(s), and at C-TRAN), equipment, facilities, and materials. The type and scale of resources shall be consistent with potential safety and security events, the severity of such events, and the location of the worksite (e.g., on a major arterial vs. work performed outside a traffic right of way).

8 PLAN UPDATE

The Contractor's CSSP shall be updated as needed (e.g., as personnel, phone numbers, or procedures change), fully reviewed at least annually, and updated to include new or updated territory/sites, staff, procedures, legislation, standards, project progress, changes to neighboring facilities, or other aspects related to safety and security matters. Updated plans shall be submitted to the C-TRAN Project Manager for approval, indicating which sections of the Plan have been updated or changed from the previous edition.

9 AUDIT AND REVIEW

Audits and reviews of the Contractor CSSP shall be undertaken as outlined below.

9.1 AUDIT

C-TRAN shall audit the Contractor to ensure compliance with this Plan and the Contractor's CSSP, to ensure a safe, healthy, and secure environment, both physically and behaviorally, for workers, equipment, property, visitors and the general public at and near work sites.

Though C-TRAN may visit any Contractor site at any time, formal audits will occur:

- at least once every year;
- after a major safety or security incident; and/or
- as otherwise required by C-TRAN management.

9.2 REVIEW

C-TRAN and Contractors shall ensure that the Contractor CSSP is reviewed regularly and updated to ensure that it remains relevant and effective. The following instances shall trigger a review:

- an annual review date (the Plan shall be reviewed at least once every 12 months);
- after a major safety/security incident has occurred;
- after a site inspection or random site visit finds a safety or security vulnerability within the contractor's existing safety and security program;
- when there has been a significant change in circumstances; and/or
- as otherwise required by C-TRAN.

REFERENCES

1. USDOT, Final FTA Circular 5800.1, Safety and Security Management Guidance for Major Capital Projects, August 1, 2007.
2. FTA, Safety and Security Management Plan (SSMP), Frequently Asked Questions, September 2007.

3. USDOT Research and Special Programs Administration, FTA-MA-90-5006-02-01, Handbook for Transit Safety and Security Certification, Final Report, November 2002
4. USDOT, FHWA, Manual on Uniform Traffic Control Devices for Streets and Highways, 2009 Edition, with Revision 1 and 2, May 2012
5. US Code of Federal Regulations (CFR) Title 29 — Labor, Current year
6. American National Standards Institute (ANSI)/American Society of Safety Engineers (ASSE) Z490.1-2009, “Criteria for Accepted Practices in Safety, Health, and Environmental Training”
7. C-TRAN Emergency Response Plan (ERP), February 2014
8. C-TRAN Security and Emergency Preparedness Plan (SEPP), January 2015

APPENDIX A – DEFINITIONS AND ACRONYMS

ACRONYMS

The following is a list of acronyms used in this document with their terms spelled out. The terms are then defined in a separate alphabetical list below that.

ANSI – American National Standards Institute

ASSE – American Society of Safety Engineers

ASTM – American Society for Testing and Materials

BRT – Bus Rapid Transit

CFR – Code of Federal Regulations

CM – Construction Manager

CPTED – Crime Prevention through Environmental Design

CRESA – Clark Regional Emergency Services Agency

CSSP – Construction Safety and Security Plan

C-TRAN – Public Transportation service for the Vancouver, WA and surrounding areas

ERP – Emergency Response Plan

FTA – Federal Transit Administration

MUTCD – Manual on Uniform Traffic Control Devices

NFPA – National Fire Protection Association

OSHA – Occupational Safety and Health Administration

PCS – Project Controls Specialist

PPE – Personal Protective Equipment

SEPP – Security and Emergency Preparedness Plan

SSCP – Safety and Security Certification Plan

SSI – Sensitive Security Information

SSMP – Safety and Security Management Plan

SSWG – Safety and Security Working Group

DEFINITIONS

The following definitions are provided to ensure a uniform understanding of terms as they apply to the SSMP:

- Certificate of Compliance – A written statement, issued prior to revenue service and signed by the Safety and Security Working Group (SSWG) and C-TRAN General Manager/CEO attesting that a project element complies with specified system safety and security requirements.
- Certification – The action of attesting that a particular element meets or exceeds all applicable safety and security requirements.
- Construction Manager (CM) – Consultant hired by C-TRAN to oversee construction activities, inspect contractor work, and to ensure compliance with safety requirements.
- Crime Prevention Through Environmental Design (CPTED) – A method of crime prevention based on the design and use of the facility.
- Design Consultant – Responsible for facilities design and engineering as well as design services during construction.
- Design Review – The formal review of a design for the purpose of identification and remedy of design deficiencies that would affect fitness-for-use and/or identification of potential improvements of operational, maintenance, safety, security, and economic issues.
- Federal Transit Administration (FTA) – Agency of the Federal Government that oversees public transportation.
- Hazard – Any real or potential condition that can cause injury, illness, or death to personnel, damage to, or loss of equipment or property, or damage to the environment.
- Integrated Test Plan (ITP) – A testing plan whereby various completed components are tested individually upon completion and then together to ensure their compatibility and integration.
- Project Controls Specialist (PCS) – Member of the CM staff assigned to assist the BRT Project Manager in the areas of schedule control, change control, and program management.
- Revenue Service – The time when transit vehicles are available to the general public and there is an expectation of carrying passengers. These passengers either directly pay fares or are subsidized by public policy or contractual arrangement.
- Safety – Freedom from harm resulting from unintentional acts or circumstances.
- Safety and Security Certification Plan (SSCP) – A plan for verifying satisfactory compliance with a predetermined and approved set of formal safety and security requirements. Specifically, it involves issuing Certificates of Compliance that documents the system safety and security requirements of the Fourth Plain BRT Project have been achieved.

- Safety and Security Working Group – C-TRAN staff charged with the task of certifying the design and construction of the Fourth Plain Project is in compliance with established safety and security requirements.
- Security – Freedom from danger resulting from intentional acts or circumstances.
- Sensitive Security Information (SSI) – Information regarding the transit system which, if released, might make the system vulnerable to security threats.
- System – A composite, at any level of complexity, of personnel, procedures, materials, tools, equipment, facilities, and software. The elements of the composite entity are used together in the intended operational or support environment to perform a given task or achieve a specific purpose, support, or mission requirement.
- System Safety – The application of engineering and management principles, criteria, and techniques to achieve acceptable risk, within the constraints of operational effectiveness, time, and cost throughout all phases of the system life cycle.
- System Security – The application of operating, technical, and management techniques and principles to the security aspects of a system throughout its life to reduce threats and vulnerability to the most practical level through the most effective use of available resources. For the purpose of the SSMP, security includes only the segment of the project from the design phase to the start of revenue service.
- Vulnerability – Characteristics of passengers, employees, vehicles, and/or facilities that increase the probability of a security incident.