



Construction Safety Program

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Revision No. 6.1

Revision Date: **December 14, 2022**

Tri-County Metropolitan Transportation District of Oregon (TriMet)
Safety & Security Division

(01 35 23 Owner Safety Requirements & SP-08 Contract Appendix)

Summary of Revisions

Version No.	Publish Date	Page(s) affected	Description of Revision	Approved By
0	November 2000	Historical Update	Initial issue of document	Safety Div.
1	March 2002	Historical Update	Document updated after the Airport MAX Project	Safety Div.
2	May 2006	Historical Update	Document updated after the Interstate MAX Project	Safety Div.
3	November 2009	Historical Update	Document updated after the South Corridor Light Rail Project	Safety Div.
4	June 2010	Historical Update	Document updated for inclusion into Portland-Milwaukie Light Rail Project Management Plan (PMP)	Safety Div.
5	February 2014	Historical Update	Historical Update	Safety Div.
6	July 2017	Document re-formatted	Document updated after the Portland-Milwaukie Light Rail Project.	Safety Div.
6.1	December 2022	Cover, New Pg2-5 App F, App G	COVID-19 Requirements for All Workplaces (OAR 437-001-0744) Heat and wildfire smoke rules Appendix F – After Action Review Appendix G – Dropped Object Prevention Program	Safety Div.



Revision 6.1 of the TriMet Construction Safety Program consists of a collection of documents and additional requirements described in the following page and sets forth contract minimum safety requirements as an appendix referenced in the general provisions, section 01 35 23 Owner Safety Requirements and SP-08 TriMet Construction Safety.

Construction Safety Program Contents

1. **Construction Safety Program (CSP), Revision No. 6.1, Dec 2022**
2. **Construction Safety Program (CSP), Revision No. 6.0, July 2017**
3. **Heat and wildfire smoke rules**
4. **Public Health Emergencies (COVID-19) - (OAR 437-001-0744)**
5. **Notice of TriMet Construction Safety Program Amendments and Requirements**
6. **Appendix F – After Action Review**
7. **Appendix G – Dropped Object Prevention Program**

1.0 Construction Safety Program (CSP), Revision No. 6.1

TriMet's Construction Safety Program (CSP) is undergoing updates and during this phase, this revision (6.1) of the TriMet Construction Safety Program will consist of a collection of documents and additional requirements to set contract minimum safety requirements and an appendix referenced in the general provisions, section 01 35 23 Owner Safety Requirements and SP-08 TriMet Construction Safety.

The contractor shall provide and maintain a written safety program conforming to all the requirements of the latest version of the TriMet Construction Safety Program. An accepted Contractor Site Specific Safety Plan must be in place before any physical site work begins and updated annually thereafter.

Additionally, the contractor's safety plan and all related elements (documents and implementation) shall be subject to inspection and audit by TriMet at any time and may require plan updates as identified in any inspection and audit findings. The Contractor shall provide access and assistance to TriMet's safety auditor as necessary. During the course of the project, if an element of the contractor SSSP is later identified as missing or lacking, TriMet may require additional or supplemental SSSP information be updated and submitted.

2.0 Construction Safety Program: Revision No. 6.0, July 2017

Revision 6.0 of the TriMet Construction Safety Program (CSP) dated July 2017 is part of the current CSP revision 6.1 in its entirety (attached).

3.0 Heat and wildfire smoke rules

The contractor's submitted Safety Program shall include both a heat and wildfire smoke section that complies with Oregon OSHA rules.

3.1 Heat illness prevention

Oregon OSHA's rules preventing heat-related illnesses require employers to develop a heat illness prevention plan.

Oregon OSHA heat illness prevention resources:

- <https://osha.oregon.gov/Pages/topics/heat-stress.aspx>
- [Heat Illness Prevention Rules Key Requirements](#)

3.2 Protection from Wildfire Smoke

OAR 437-002-1081 applies to all Oregon employers such as general industry, construction, and forest activities. The contractor's site specific safety plans need to incorporate Wildfire Smoke requirements.

Oregon OSHA wildfires resources:

- <https://osha.oregon.gov/Pages/topics/wildfires.aspx>
- [Protection From Wildfire Smoke Rules Key Requirements](#)

4.0 Public Health Emergencies (COVID-19)

With continued changes in respect to COVID-19 rules, it is incumbent upon the contractor to follow all rules and requirements of Oregon Health Authority (OHA), Oregon OSHA and update their safety plans, communicate those changes to project teams and TriMet accordingly.

Though current Oregon OSHA COVID-19 Requirements for All Workplaces (OAR 437-001-0744) may no longer be fully applicable or required for Construction Operations (as of this CSP update), TriMet will still require the contractors Safety Plan to include a Public Health Emergencies (COVID-19) / infectious diseases section that with Risk Assessments and Infectious Control Plan elements.

Oregon OSHA Resources: <https://osha.oregon.gov/Pages/topics/infectious-disease.aspx>

5.0 Notice of TriMet Construction Safety Program Amendments and Requirements

Letter to contractors that TriMet has established two policy updates to our Construction Safety Program (CSP) necessitating the need for contractors to review, update and resubmit their Site Specific Safety Plans (Construction Safety & Security Plans).

6.0 Appendix F – After Action Review

New Construction Safety Program (CSP) section with contractor-required elements.

7.0 Appendix G – Dropped Object Prevention Program

New Construction Safety Program (CSP) section with contractor-required elements.



**TRI-COUNTY METROPOLITAN
TRANSPORTATION DISTRICT OF OREGON
(TRIMET)**

Capital Projects and Construction Division

Construction Safety Program

Revision No. 6.0, July 2017

SOP SSE-004

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Document Disclaimer Statement

This document is maintained by the Tri-County Metropolitan Transportation District of Oregon (TriMet).

This document is available on the TriNet website. Please be advised that TriMet may update this document periodically and it will be incumbent on users to verify that their versions are current. If you have previously printed this document, please check TriNet to confirm the document version status, or contact the TriMet managing director for confirmation of the version if you do not have access to TriNet.

A distribution/notification list has been established for this document to allow for notification of updates to designated personnel who are expected to use this document on a recurring basis; however, such personnel are responsible for confirming the document version status.

Summary of Revisions

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0	November 2000	Initial issue of document
1	March 2002	Document updated after the Airport MAX Project
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5	February 2014	
6	July 2017	Document updated after the Portland-Milwaukie Light Rail Project. Document re-formatted.



Read and Acknowledge

I have read and acknowledged the following manual(s) of the Capital Projects and Construction Division Project Management Program, as indicated below:

- Business Practices Manual, Rev. 1
- Construction Safety Program, Rev. 6
- Project Management Manual, Rev. 1
- Design and Construction Management Manual, Rev. 2
- Inspectors Manual, Rev. 2
- Closeout Binder

Name (Print):

Signature:

Position:

Date:

Please return a copy of this *Read and Acknowledge* form to the Capital Projects and Construction Division executive director at Harrison Square.

Acronyms and Abbreviations

The following acronyms and abbreviations appear in this document. They are defined as indicated:

<u>Acronym</u>	<u>Description</u>
ACGIH	American Conference of Governmental Industrial Hygienists
ADA	Americans with Disabilities Act
AEGC	Assured Equipment Grounding Conductor
ANSI	American National Standards Institute
BPM	Business Procedures Manual (CPCD)
CM	Construction Manager
CPCD	Capital Projects and Construction Division
CSP	Construction Safety Program (i.e. this document)
DC	Design Criteria (CPCD)
DM	Design Manager
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GFCI	Ground Fault Circuit Interrupter
JHA	Job Hazard Analysis
MOW	Maintenance-of-Way
MUTCD	Manual of Uniform Traffic Control Devices
NEC	National Electrical Code
NESC	National Electrical Safety Code
NFPA	National Fire Protection Association
NIOSH	National Institute of Standards and Health
NTP	Notice to Proceed
OCC	Operations Control Center
OCIP	Owner Controlled Insurance Program
OCS	Overhead Catenary System
ODOT	Oregon Department of Transportation
OR-OSHA	Oregon Occupational Safety and Health Administration
OSEA	Oregon Safe Employment Act
OSHA	Occupational Safety and Health Administration (Federal)
PE	Professional Engineer
PEL	Permissible Exposure Limit
PM	Project Manager
PMP	Project Management Plan
PPE	Personal Protective Equipment
RE	Resident Engineer
RWP	Roadway Worker Protection
SOP	Standard Operating Procedure

Acronym**Description**

SSC	Safety and Security Committee
SSCP	Safety and Security Certification Program
TCRC	Transit Change Review Committee
TCP	Traffic Control Plan
USDA	United States Department of Agriculture
USFDA	United States Food and Drug Administration
USCG	United States Coast Guard

Glossary

The following definitions of some of the terms referenced within this document are provided below.

Competent Person	A <i>competent person</i> is defined as "one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them" [29 CFR 1926.32(f)].
Construction Manager	A <i>construction manager</i> (CM) is TriMet's authorized representative, assigned by the PM, charged with the professional administration of a construction contract, and who is not technically a resident engineer (RE) (i.e. not a registered professional engineer (PE) in the state of Oregon).
Consultant	A <i>consultant</i> is a firm or firms under contract to TriMet that is performing services, including but not limited to engineering, design, project control, construction management, surveying, geotechnical investigations, and environmental assessment in support of a project.
Contract	A <i>contract</i> is a formally documented business relationship entered into between the Agency and a Designer/Contractor to provide a scope of work within a budget and schedule. The term <i>contract</i> includes the contract documents, the invitation for bids with addendum, general provisions, special provisions, plans, specifications, bid schedules, attachments and all associated changes. Contracts can be standalone in nature or may be an individual segment or portion of work that comprises an overall project.
Contract Documents	<i>Contract documents</i> are the contract general provisions, special provisions, plans, specifications, bid schedules and their attachments.
Contractor	The <i>Contractor</i> (also known as the <i>prime contractor</i>) is the person, persons, partnership, joint venture, company or corporation entering into a contract to perform the work required by a contract. This term may also be used for a Designer in the context of describing design contract procedures.
DBE	<i>DBE</i> is the abbreviation for Disadvantaged Business Enterprise. The DBE program is intended to ensure a level playing field on which minority, women and other disadvantaged small

businesses can compete for federally assisted highway, transit and airport contracts.

Department	A <i>department</i> is the basic organizational unit of the Capital Projects and Construction Division.
Designer	The <i>Designer</i> is the person, persons, partnership, joint venture, company or corporation entering into a contract to perform the work required by a design contract. Throughout this document the term contractor can mean a designer or a contractor. Also see <i>Contractor</i> .
Design Manager	The <i>design manager</i> (DM) is TriMet's authorized representative, assigned by the PM, charged with the professional administration of a design contract.
Notice to Proceed	A Notice to Proceed (NTP) is a formal notification provided by TriMet to the Contractor, with an official calendar date that the Contractor can begin providing project deliverables or begin work towards achieving contract milestones.
Plans	The term <i>plans</i> includes written descriptions of procedures and activities that the Contractor will submit for approval and adhere to in their day-to-day safety activities.
Project	A <i>project</i> is TriMet's overall objective or endeavor and is either typically comprised of several phases (design, construction, etc.) after the initial scope development or multiple contracts (ex. Portland-Milwaukie Light Rail Transit was a project, comprised of contracts such as the West Segment, Tilikum Crossing, East Segment, Systems, etc.).
Project Manager	A <i>project manager</i> (PM) is TriMet's authorized representative charged with overall management of a project by a director. This may include professional administration of the associated design and/or construction phases. This responsibility may be delegated by the PM to a design manager (DM) or construction manager(CM)/resident engineer(RE).
Resident Engineer	A <i>resident engineer</i> (RE) is a registered professional engineer (PE) in the state of Oregon that is TriMet's authorized representative, assigned by the PM, charged with the professional administration of a construction contract. Confirmation of professional registration can be performed at www.oregon.gov/OSBEELS

Right-of-Way (ROW)	A <i>right-of-way</i> (ROW) refers to properties over which facilities such as highways, railroads or power lines are built and the owner agency has access rights.
Schedule	A <i>schedule</i> illustrates the logical sequence of activities required for the orderly performance and completion of the project.
Scope	<i>Scope</i> is the documentation of specific tasks required to complete a project or any of its parts.
TriMet	<i>TriMet</i> is the Tri-County Metropolitan Transportation District of Oregon, acting through its authorized representative.
Work	The term <i>work</i> refers to the act of furnishing all of the supervision, labor, material, equipment, services and incidentals needed to complete an individual item and an entire contract and carrying out the duties and obligations imposed on a contractor by a contract.

Related Documents

The following Capital Projects and Construction Division documents and manuals are to be used in conjunction with this document:

- Business Practices Manual (BPM)
- Design Criteria (DC)
- Design and Construction Management Manual (DCMM)
- Directive or Standard Drawings
- Drafting Procedures Manual (also Attachment A to the Design Criteria)
- Inspectors Manual (IM)
- Owner Controlled Insurance Program (OCIP) Manual (if applicable)
- Project Management Information System (PMIS) Users Manual (currently Prolog)
- Quality Assurance Program Manual (QAPM)
- Real Estate Acquisition Management Plan (RAMP)
- Records Management Plan (RMP)
- Safety and Security Certification Program (SSCP)
- Technical Specifications (Template)

NOTE: All documents and manuals listed above are issued and managed by the Capital Projects and Construction Division (CPCD) of TriMet, with the exception of the *SSCP*, which is updated and managed by the Safety Department within the Safety, Security and Environmental Services Division along with the *Construction Safety Program (CSP)*. If other reference standards are described within this document the division responsible for the standard will be referenced accordingly.

A. Introduction

1. Purpose and Objectives

1.1 Purpose

The purpose of this program is to establish guidelines that promote safety and assist in the management of the risks associated with construction of TriMet projects. The content of this program is applicable to all TriMet Capital Projects and Construction (CPCD) staff, and all other TriMet employees who may be involved with, or visit a TriMet project.

The programs, policies and procedures outlined in the Capital Projects and Construction Division's (CPCD) *Construction Safety Program (CSP)* do not supersede, replace or remove the requirements of CPCD and their associated contractors to comply with current TriMet Operations Standard Operating Procedures (SOPs) Maintenance Advisories, Track Access requirements and other TriMet Operation's procedures.

1.2 Safety Policy

Safety is the top priority on all TriMet construction projects regardless of cost, complexity or time (i.e. schedule). TriMet's safety policy is to maintain a safe work environment at all times during construction for all contractor project workers, TriMet employees, project visitors and the public.

Safety is an integral part of each project. TriMet demands full participation, cooperation and support by all project contractors, subcontractors and their personnel. The requirements and minimums standards set forth in this program are applicable to all TriMet employees, consultants, contractors, subcontractors, suppliers, and visitors, guests, or invitees on any contract work site.

TriMet's goal is incident-free construction. Together, TriMet and the project contractors shall take every precaution to prevent incidents, protect property from damage, protect the public from injury, and maintain safe rail, pedestrian and vehicular traffic.

1.3 Safety Program

TriMet's CPCD *CSP* is a document that establishes the guidelines to meet the objectives of this policy. It sets forth the requirements and procedures for safety and loss control for all contracted TriMet light rail and bus projects.

The TriMet CPCD *CSP* is incorporated into each construction contract. To evidence compliance, each contractor is required to prepare and submit for approval, no less than fourteen (14) thirty (30) days prior to start of construction, a written safety program which addresses all requirements of the TriMet *CSP*. Timelines for safety program

submission depend on contract size, scope and complexity. Contractors and subcontractors are charged with the responsibility for conducting their operations in a manner that ensures safe working conditions at all times for all employees, and for the protection of the public and all others who may come in contact with, or be exposed to, the project. Nothing contained in this program shall relieve any contractor, subcontractor or supplier of the obligations assumed by the contractor under its contract with TriMet, or as required by law.

NOTE: After Notice to Proceed (NTP) is issued, the contractor will typically have either fourteen (14) or thirty (30) days to submit the contractor's site specific safety program for TriMet review and comment. An approved contractor safety plan must be in place before any physical site work begins.

The safety requirements are not to be considered as "all inclusive". Where any portion of these requirements is in conflict with, or less stringent than, any applicable federal, state or local statutory safety regulations, the more stringent requirement shall apply.

1.4 Program Implementation

TriMet requires all TriMet employees, project personnel, including employees, consultants, contractors, subcontractors and construction workers, to fully support, cooperate and participate in the project safety program. The prime contractor is responsible for providing safe working conditions for all project workers, including subcontractors, and for protecting the public and others who may come into contact with the project.

The contractor is responsible for ensuring that all activities and workers comply with TriMet's Roadway Worker Protection (RWP) Program. Construction activities involving or adjacent to freight rail systems should address applicable Federal Railroad Administration (FRA) policies and procedures.

The contractor(s) and their subcontractors are directly responsible for the following:

- a. Plan and execute all work to prevent personal injury, property damage and loss of productive time.
- b. Comply with federal, state and local laws, ordinances, and regulations, industry standards, and TriMet's regulations and requirements.
- c. Maintain a system of prompt response and correction of unsafe practices and conditions.
- d. Complying with TriMet initiated safety audits.
- e. Establish and conduct a documented educational program to stimulate and maintain the interest and cooperation of all employees through site orientations, safety meetings and safety training programs.

- f. Ensure the use of personal protective equipment (PPE) and machine guards.
- g. Promptly notify TriMet or applicable agencies of all incidents and injuries and investigate all incidents and accidents or claims to determine the causes and to take necessary corrective action.
- h. Ensure that a modified work or light-duty program is established and implemented for all contractors, including sub-contractors, prior to project commencement. A modified work or light-duty program/policy shall be submitted for approval to the TriMet OCIP administrator (if applicable) no later than thirty (30) days prior to project commencement.

B. TriMet Responsibilities

1. TriMet's Roles, Responsibilities and Authority

1.1 Project Staff

For each construction project, the TriMet project manager (PM) is responsible for establishing specific roles and responsibilities during construction. The PM will typically delegate the management of the project's construction activities to a construction manager (CM).

NOTE: On many projects, the PM may choose to directly manage the construction phase activities, acting as the CM. There will either be a PM or a CM as the primary point of contact for each construction project and those two titles may be used interchangeably within this document.

All members of the construction team are responsible for familiarizing themselves with the requirements of TriMet's CPCD *Construction Safety Program (CSP)*. All TriMet construction team members shall encourage and support the contractor's efforts to develop an effective safety program and to establish a safety culture on the project that involves all workers. Within assigned roles, each member of the team is responsible for assuring contractor compliance with TriMet's safety program.

It is particularly important that notice of and information related to serious incidents and emergencies be promptly communicated from the construction site to TriMet officials. Lines of communication as outlined in this Program should be followed. All on-site TriMet representatives shall cooperate and assist as appropriate in the timely notification of agency officials.

All TriMet employees are responsible to follow any and all site safety rules developed by the contractor and subcontractor, and approved by the TriMet Safety Department.

CPCD and all contractors and subcontractors will comply with SOPs and directives issued by TriMet's Operations Division.

1.2 Director / Project Manager

The TriMet project manager (PM), assigned by their department director, has overall responsibility for monitoring implementation of and compliance with TriMet's safety program during construction. The PM shall monitor contractor performance through TriMet Safety representatives and the assigned CM and staff.

1.3 System Safety Department

The Safety, Security and Environmental Services Division is responsible for ensuring that TriMet's CSP is consistent with the agency's overall policies and needs. Safety

representatives from the System Safety Department coordinate activities as required with the TriMet construction team through the assigned CM.

On certain large projects, TriMet may employ additional safety representatives or form a construction safety team to assist in the implementation of TriMet's CPCD CSP. These persons supplement the efforts of the construction team and also communicate with all parties involved in TriMet's safety and loss control efforts.

A representative of TriMet's Safety Department may direct the CM to issue stop work orders to any contractor or subcontractor who fails or refuses to take prompt corrective action when given notice of noncompliance with any of the applicable safety requirements. In cases of imminent danger the Safety Department or other CPCD employee representatives have the authority to direct the contractor to immediately suspend work until the imminent danger is removed.

If stop work orders are given to the contractor or subcontractor, a documented safety inspection performed by the TriMet safety representative shall be forwarded to the CM, no later than twenty-four (24) hours from the time of inspection, which includes violations and deficiencies which led to the stoppage of work.

Safety employees will conduct periodic audits of the contractor's and subcontractor's safety documentation, which may include weekly supervisor safety meetings, monthly safety committee meetings, safety training, site safety inspections and any other documents or procedures pertaining to safety on the project.

1.4 Construction Manager

The CM is responsible for the overall day-to-day administration of the construction contract. This responsibility applies to safety management as well.

The CM is assigned to monitor the contractor's performance under the terms of the contract and take all reasonable measures to ensure compliance with it. The CM should assist as necessary to facilitate the contractor's understanding of TriMet's safety plan.

The CM leads the TriMet construction team and is expected to develop an effective relationship with the contractor so that TriMet's CSP is implemented. The CM has the authority to 1) stop work when imminent danger exists, and 2) remove from the worksite any person or contractor who continually or deliberately violates TriMet's or the contractor's safety program requirements. The CM shall delegate authority to staff so that TriMet's CSP is effectively administered.

In the event of an incident, the CM shall ensure that an investigation is promptly initiated and completed. In general, the CM should receive incident reports from the prime contractor within twenty-four (24) hours.

1.5 Weekly Progress Meeting Minutes

During construction, the CM is responsible for properly documenting performance under the contract. On major projects, weekly progress meetings are required.

In order to keep agency management informed, the CM must include the following information as part of the weekly minutes:

1. Most recent data on recordable incident rate and lost time accident rate
2. Recap of incidents for the past week, with action taken
3. Recap job hazard analyses (JHAs) of upcoming activities
4. Safety notices of non-compliant activities issued/closed out
5. Other significant safety issues

1.6 Job Hazard Analysis (JHA)

The CSP requires that the contractor and subcontractors perform a Job Hazard Analysis (JHA) of all work procedures in advance of performing any construction activity. The CM and the contractor should routinely check to ensure that these analyses are being performed and reviewed with the workers before work on an activity commences. Contractors shall submit a completed JHA to TriMet for review no later than seven (7) days prior to any new work activity commencing. Contractors' JHA procedures shall be outlined in the contractor site specific safety plan. The contractor shall maintain a log of all JHAs created on the job.

In addition to JHAs, contractors and subcontractors shall utilize pre-task analysis forms (start cards) prior to starting work for the day. Pre-task analysis forms allow crews to review daily work and to highlight and mitigate safety and health concerns for that day's work. These will not replace the JHA requirements. Pre-task analysis procedures shall be outlined in the contractor site-specific safety plan.

1.7 Track Access Procedures

Specific precautions are necessary when work is performed in or near TriMet's operating light rail track way, or right-of-way. TriMet controls access to the light rail right-of-way in order to avoid conflict or delays with rail operations, and in order to maintain safe movement of trains through work areas. Of particular concern for worker safety is exposure to train movements and to live electrical components including the overhead catenary system (OCS).

Standard Operating Procedures (SOPs) issued by Rail Operations govern track access procedures. Any time work is to be performed by a contractor in or in close proximity to the light rail right-of-way, a Track Access Request/Permit must be submitted and approved by TriMet no later than seven (7) days prior to the start of work. Track access requests are considered and approved/disapproved at weekly track access review meetings that involve Rail Operations, Maintenance-of-Way (MOW) and safety personnel. Special permit conditions such as slow orders, flagging,

power down, etc. may be issued. The contractor will also need to include a description of the work they plan to do.

The CM is responsible for informing the contractor of TriMet's required procedures and for facilitating timely advance application for track access. The CM should work with Rail Operations and Maintenance-of-Way to coordinate track access requests and take reasonable steps to minimize impacts to day-to-day rail operations.

All contractors, subcontractors and their employees that will be working in or in close proximity to the TriMet right-of-way must complete the online Roadway Worker Protection (RWP) training course prior to starting work (see [Appendix E](#)). It is the contractor's responsibility to ensure that all contract and subcontract workers complete this training prior to starting work. This training course can be accessed at <https://www.contractororientation.com/>. TriMet's Safety Department and [contractororientation.com](https://www.contractororientation.com) shall maintain training records. This training is good for one year. [Contractororientation.com](https://www.contractororientation.com) will notify contractors and subcontractors when training will expire, reminding them that the training course must be re-taken. Audits shall be performed by the TriMet system safety specialist to ensure compliance with the permitting system and the training requirements.

During construction of new alignments, CPCD will assign a track access coordinator to conduct weekly Track Access Permit reviews with the contractors and a TriMet safety representative, to coordinate and approve all construction work activities along the new ROW. The project may prepare a special SOP specific to the project following TriMet Standard Operating Procedure 103 and Roadway Worker Protection (RWP) rules. Contractors will submit Track Access Permits weekly, describing the scope of work, location of work and special equipment needs for each work location along the alignment. The permit requester and/or permit holder, as deemed necessary, will attend the weekly Track Access Reviews.

Once the construction Track Access Permit process starts, CPCD will assign an employee in charge (EIC) to conduct daily job briefings and ensure compliance with the TriMet RWP program for all activities, as defined on the Track Access Permit.

2. Emergency Notification Process

Prior to project commencement the CM will identify persons who are to be contacted in the event of a construction emergency. The notification process shall be in accordance with this Program.

2.1 Construction Emergency

A construction emergency includes: All incidents for which emergency services are summoned via 911 – fire, police or ambulance. 911 calls are routinely monitored by the media and are likely to lead to a media inquiry. Contractors and subcontractors shall develop an emergency notification process as part of their site specific safety plan.

Additionally, the CM may handle other serious incidents that do not involve a 911 call in accordance with the emergency notification procedures of this manual. Any incident

likely to create a threat to the public or generate news media attention should be brought to the attention of the CM, system safety specialist, community affairs director and project director who manages the CM team.

Visits to the project site from outside agencies such as Federal OSHA, OR-OSHA, the fire marshal's office or other governing agencies shall be communicated to the following people by the contractor being inspected: TriMet's CM and TriMet's system safety specialist.

2.2 Immediate Notice of Emergencies Required

Notification of emergency incidents must be made as soon as possible after occurrence and within thirty (30) minutes maximum. The CM shall be responsible for informing the following:

- a. Management including their PM and director, the director of community affairs, the executive director of CPCD, and the TriMet general manager (GM).

2.3 Emergency Notification Tree

Each member of the construction team is responsible for understanding and implementing the emergency notification procedures in this Program. Mandated notification is as follows:

- a. On-site inspectors notify the CM, the TriMet system safety specialist and contractor safety representatives
- b. The CM notifies their PM (as applicable)
- c. The PM (or CM, if the PM is not applicable) notifies their department director and the TriMet Operations Control Center (OCC), if the incident impacts TriMet's revenue service
- d. The department director notifies the executive director of CPCD, the managing director of Design and Construction and the community affairs director
- e. The executive director of CPCD notifies the GM and the TriMet Board of Directors (i.e. Board), as warranted
- f. The community affairs director notifies the central TriMet media contact (i.e. the public information officer - PIO), the Line Section community affairs representative and the TriMet Government Relations staff.

If an individual cannot reach a person as mandated in the above "tree", the contacting person should proceed to make the notifications which that "unreachable" person has responsibility.

2.4 Duty to be "Reachable"

The success of the notification "tree" requires designated emergency contact personnel to be reachable at all times. At the commencement of the project the PM, or CM, is responsible for identifying the emergency contact persons and their respective

telephone and, as applicable, pager numbers. The list is to include construction contractor personnel as well as TriMet personnel.

The CM shall distribute the up-to-date emergency contact list quarterly to the project staff, the department director, the managing director, the community affairs director, the TriMet Safety Department and the project construction hotline (where applicable).

2.5 Role of the Construction Hotline

Generally, on a major project, TriMet shall establish a construction hotline. The hotline phone number is monitored night and day. Those who call are informed as to how to reach key emergency personnel. The CM should always inform the hotline of emergency incidents. The hotline may also be used to reach someone if other means fail. Additionally, non-emergency incidents at night should be communicated to the hotline.

2.6 Non-Emergency Notification

Any incident likely to create a threat to the public or generate news media attention should be brought to the attention of the CM/PM, the contractor's project manager or superintendent, the TriMet community affairs director, department director and managing director, even when no emergency services are involved. At night this can be done by informing the project construction hotline and asking them to call the CM, and the community affairs director, if inquiries occur. The hotline's overnight report is received each morning at 9:00 AM in the Community Affairs Department. Non-emergency incidents shall be reported to the PM/CM at that time.

The CM shall inform the TriMet system safety specialist of any non-emergency notification received.

C. Contractor Responsibilities

1. Contractor Roles, Responsibilities and Authority

1.1 Contractor Responsibility

The construction contractor, and subcontractors, not TriMet, has direct responsibility for the safety and health of all construction workers and for the protection of the general public within the area of the project's construction impact. This responsibility cannot be delegated. TriMet's role in the implementation of the safety program is not intended to, nor shall it be interpreted as altering in any manner, the contractor's legal and contractual responsibilities for safety compliance.

TriMet requires the contractor to develop a safety culture and awareness on each project that involves and stimulates proactive safety measures by all workers. The site-specific safety program shall define the duties and responsibilities of the contractor's safety representative and construction supervisors, and incorporate regular procedures including weekly toolbox meetings, to ensure effective implementation of the program.

1.2 Program Implementation

The contractor shall prepare and submit to TriMet for approval, within fourteen (14) / thirty (30) days after receipt of NTP, but in all cases fourteen (14) / thirty (30) days prior to the start of on-site construction, a written project specific or site specific safety program that addresses all requirements of TriMet's *Construction Safety Plan (CSP)*. The contractor's Safety Program shall include a "Return to Work" Program which may be subject to review and acceptance by TriMet. Additionally, within seven (7) days prior to commencing specific construction activities, the contractor shall develop, and submit to TriMet for review specific job hazard analyses (JHAs) of planned activities. In addition, the contractor will review all subcontractor's JHA's before submitting to TriMet for review.

The contractor shall coordinate implementation of the site specific safety program among its subcontractors. The contractor also shall require compliance by subcontractors at all tiers with the contractor's site specific safety program and with the provisions of TriMet's *CPCD CSP*.

The contractor shall:

- a. Protect the health and safety of employees, the public and other persons; prevent damage to property, materials, supplies, and equipment.
- b. Comply with all federal, state and local safety laws and regulations and industry standards including, but not limited to, the application of Regulations from Oregon Safe Employment Act (OSEA) along with respective Oregon Occupational Safety

and Health Codes, 29CFR Part 1926 - Safety and Health Regulations for Construction; 29CFR Part 1910 - Occupational Safety and Health Standards; and the TriMet CSP, regulations and orders; and require compliance with the foregoing by all subcontractors of every tier.

- c. Appoint a contractor safety representative to provide safety and safety training services under the direction of the contractor's PM. Submit for TriMet's review and approval a resume of experience and qualifications for each proposed contractor safety representative. In the event that more than one safety representative is required, the contractor shall designate a "Primary" safety representative to whom the other safety representatives shall report.

1.3 Project Manager

The contractor's project manager (PM) shall:

- a. Ensure that the contractor's responsibilities set forth in the TriMet CSP are fully complied with.
- b. Supervise the designated contractor safety representatives in the discharge of their duties and responsibilities.
- c. Assign a qualified, full-time, on-site contractor safety representative during the performance of the work.
- d. Take immediate action to correct unsafe or unhealthful work practices or conditions.
- e. Review and implement administrative actions required to maintain complete and accurate safety records as specified by the TriMet CSP.
- f. Attend safety meetings as directed by the CM and the TriMet CSP.
- g. Ensure that appropriate medical treatment and first aid plans and facilities are established and implemented as required by the TriMet CSP.
- h. Plan and execute all work in accordance with the stated objectives of the TriMet CSP and all published safety standards as required by all applicable laws.
- i. Ensure that all subcontractors comply with the TriMet CSP, the approved contractor safety plan and all local, state and federal regulations, standards, ordinances or rules relating to the safety of persons or property.
- j. Ensure that during the project OR-OSHA consultant services are utilized and site visits by OR-OSHA consultants are conducted.

1.4 Safety Representative(s)

- a. Qualifications - The contractor's safety representative(s) shall meet the following minimum qualifications:

- (1) Have at least three years construction safety experience, and be knowledgeable in construction occupational safety and health by virtue of training and/or experience
 - (2) Have attended and completed an OSHA 30 Hour Construction Course and produce document to confirm
 - (3) Be certified current in First Aid and Adult CPR, or its equivalent.
- b. Duties and Responsibilities - The contractor's construction site specific safety plan shall define the safety duties and responsibilities of the safety representative(s) in addition to meeting, at a minimum, all applicable local, state and federal codes. These shall include:
- (1) Have full authority to correct unsafe conditions and practices and shall have the authority to suspend work until such unsafe condition or practice is corrected
 - (2) Make shift safety inspections of the work site(s) and adjacent public areas and take necessary and timely corrective action(s) to eliminate unsafe acts and/or conditions. Inspections shall be documented and made available to TriMet for audit purposes.
 - (3) Review accident and near miss reports, to assure timely submission, and initiate corrective action(s) to prevent reoccurrence.
 - (4) Provide material and updated safety manuals suitable for use in conducting weekly "tool box" safety meetings. Document safety meeting contents and make available to TriMet for audit purposes.
 - (5) Attend, document and audit "tool box" safety meetings.
 - (6) Review weekly safety meeting reports to ensure adequacy of training.
 - (7) Conduct accident/incident investigations and prepare required reports. Ensure timely submission of accident/incident reports to TriMet.
 - (8) Establish and implement a safety-training program for supervisors and employees applicable to their specific jobs. Document safety training and make it available to TriMet for auditing purposes
 - (9) Attend safety meetings as directed by the CM or the TriMet *CSP*.
 - (10) Ensure that every employee receives medical or first aid treatment for all injuries and maintain a written log of first-aid treatment
 - (11) Ensure that all Subcontractor employees comply with job site safety rules and regulations. Ensure that the subcontractors' reports are completed in compliance with the prime contractor's site specific safety plan.

1.5 Construction Supervisors

The contractor's construction safety plan shall define the safety duties and responsibilities of construction supervisors. These shall include the following:

- a. Require the use of proper personal protective equipment (PPE) and suitable tools and equipment

- b. Ensure that his/her assigned crew is instructed in safe work practices for each assignment
- c. Pre-qualify employees for the safe operation of any heavy equipment
- d. Assist in the investigation of all accidents and near misses and take necessary corrective action.

2. Contractor's Safety Plan

The prime contractor shall develop and implement a site-specific safety plan in accordance with the requirements of this program. The site-specific safety plan shall be tailored to the particular project and remain in effect for the duration of the contract. The site-specific safety plan will describe and apply to all shifts and night work. **This plan will be submitted to TriMet no later than fourteen (14) / thirty (30) days prior to the start of on-site work, for review and comment.** A company's corporate safety program/policy shall not replace the requirement for a site-specific safety plan.

The contractor's specific site safety plan will apply to all subcontractors that work on the project. As some subcontractors perform specialized work that may not be covered in the site specific safety plan, addendums to the site specific plan may be necessary. If so, any addendums must be submitted to TriMet's CM and system safety specialist for review prior to work starting.

Updates to the site specific safety plan may be necessary as the project progress. Therefore, any updates shall be submitted to TriMet's CM and system safety specialist for review and comment.

Prime contractors shall perform regular internal self-audits of their site specific safety plan to ensure compliance. The prime contractor will also periodically audit all subcontractors to the site specific safety plan to ensure their compliance. Audit results and remedial actions to correct any deficiencies shall be made available to TriMet upon request.

Following an incident and/or injury, a review of the applicable safety plan section shall be conducted and revisions made where applicable.

Contractors and subcontractors shall ensure that the contents of the safety plan are effectively distributed and understood by employees and visitors, where applicable.

2.1 Statutory Compliance

Each contractor and subcontractor working on TriMet projects is legally obligated to comply with all statutory safety requirements and are contractually obligated to comply with this TriMet *CSP* and other safety requirements specified in the TriMet contract.

Compliance with these combined safety requirements constitute the minimum safety performance required from each contractor.

2.2 Contract Requirements

The contract requirements for this program include, but are not limited to, the TriMet CSP in its entirety, including Appendices [A – Substance Abuse](#), [B – Minimum Safety Requirements](#), [C – Supplementary TriMet Safety Information](#), [D – TriMet Audit Forms](#) and [E – Roadway Worker Protection \(RWP\)](#). Items to be addressed include, but are not limited to, the following:

- a. Assigned duties and responsibilities
- b. Hazard analysis development and procedures
- c. Orientation and training
- d. Accountability for implementation
- e. Performance objectives
- f. Responsibilities of subcontractors
- g. Incident investigation and reporting
- h. Inspections
- i. Oregon OSHA and Oregon DEQ requirements
- j. Pedestrian and vehicular traffic control
- k. Visitor control
- l. Substance abuse
- m. Security of the site
- n. Emergency Response Plan
- o. Toolbox and other regular safety meetings
- p. Standing safety committees
- q. Incentives and awards
- r. Track access procedures and training
- s. Off the job injuries

2.3 Contents of the Contractor Safety Plan (Policies / Procedures)

At a minimum the following elements (plans/programs/procedures) shall be included within the contractor's site specific safety plan:

- a. A procedure for developing and maintaining written job hazard analyses (JHAs) for all operations prior to their commencement and for discussion with the employees involved.
- b. A thorough written Safety Orientation and Training Program which assures that contractor and subcontractor employees at all levels are:
 - (1) Informed of the contractor's safety program.
 - (2) Aware of the hazards involved in the Project.
 - (3) Informed of their individual responsibilities in carrying out their assignments in an efficient and accident free manner.

- (4) Aware of the specific requirements of TriMet's CPCD *CSP*, Oregon Safe Employment Act, Federal Occupational Safety & Health Act of 1970, and local safety rules and regulations.
- c. Newly employed, or personnel transferred to the Project shall be fully instructed in the safety requirements and practices of the Project and be required to attend safety training specific to the project or as required by the TriMet *CSP*.
- d. Developing and implementing annual orientation programs for employees including review of:
 - (1) hazards present in the area in which they shall be working and,
 - (2) the PPE and apparel they shall be required to use or wear
 - (3) training on how to use any PPE required to be worn.
- e. Developing and implementing training classes on safety, first aid, fire prevention and other safety matters. The contractor can seek assistance with these classes from the TriMet system safety specialist assigned to the project, insurance carriers or OR-OSHA's Training Department. Supervisors shall receive specific training in safety practices including but not limited to safety inspections, accident investigations, accident reporting procedures and safe work practices specific to their work assignment.
- f. Cite administrative responsibilities for implementing the contractor's safety plan including identification and accountability of personnel responsible for safety including the name of the contractor's safety representatives and their authority to direct work stoppage and eliminate or correct hazardous conditions.
- g. Set performance objectives for all line supervisors in the achievement of accident-free construction.
- h. Define responsibilities of subcontractors in implementing the requirements of the contractor's safety plan.
- i. Outline procedures for completing and forwarding to the CM all on-site accident and incident reports.
- j. Define procedures for safety inspections, including a means provisions for recording, reporting, identifying safety and health deficiencies and procedures for follow-up inspections to ensure correction of deficiencies.
- k. Delineate responsibilities and procedures for investigating and reporting accidents.
- l. Establish a written Respiratory Protection Program, as required by OR-OSHA standards, for any task during the duration of the project requiring the use of

respiratory protection. Training records shall be made available to the CM or TriMet's system safety specialist.

- m. Establish a written Hazard Communication Program, as required by OR-OSHA standards. Training records shall be made available to the CM or TriMet's system safety specialist.
- n. Establish a Fire Prevention Plan, referencing OSHA and NFPA standards, including a layout drawing showing storage and volume of all flammable and/or combustible liquids, gases or other hazards.
- o. Establish a Traffic Control Plan (TCP) containing a map of the project area showing employee parking locations, traffic control signs, entrance and exit locations, routes of travel, speed limits, barricades, lighting, fencing, etc., as appropriate.
- p. Establish a written Visitor Control and Protection Program
- q. Establish a written Substance Abuse Program
- r. Establish a written Security Program
 - (1) "Security" refers to the protection of both TriMet property and the property of the contractor. It is the contractor's responsibility to provide protection for any property, including equipment or supplies, under his care, custody and control.
 - (2) The contractor shall develop, as part of the contractor's safety plan, a security plan, which describes the methods of protection from the following:
 - (i) Fire
 - (ii) Explosion
 - (iii) Earthquake
 - (iv) Civil commotion
 - (v) Strike
 - (vi) Power failure in any tunnel
 - (vii) Accidents
 - (viii) Bomb or other terrorist threats
 - (ix) Theft of equipment, materials and explosives (see NOTE below)
 - (x) Vandalism
 - (xi) Unauthorized entry

NOTE: The application of explosives on a TriMet project is extremely rare and will be addressed on a case-by-case basis.

- (3) The contractor shall address and provide physical perimeter barriers or fencing and adequate lighting to secure property, and shall reasonably prevent unauthorized access into hazardous areas of the worksite. The physical controls shall appear in the written security plan.

- (4) The contractor shall indicate how security is to be maintained when there are no regularly scheduled shifts.

s. Establish a written Emergency Response Plan

- (1) A plan for safely and expeditiously handling possible emergency situations such as floods, fires, cave-ins, slides, explosions, power outages, earthquakes, accidental chemical releases, windstorms, and similar catastrophic occurrences. Such planning shall take into consideration the nature of operations, site conditions, degree of exposure of persons and property, firefighting equipment, rescue procedures, evacuation plans, and communications, as furnished and supplied by the contractor.
- (2) The plan shall designate and assign onsite responsibility for handling emergencies. Training shall be provided for supervisors and personnel designated to handle the emergency situations.
- (3) The contractor shall provide, and keep in readiness, emergency and rescue equipment designated to handle emergencies.
- (4) The contractor shall coordinate the plan with all affected emergency response agencies and the CM.
- (5) The safety of employees, the public, or property shall not be jeopardized in resuming operations or restoring service.
- (6) Emergency telephone numbers and reporting instructions for ambulance, first aid and medical services, hospital, fire and police or other services shall be conspicuously posted at the work site.
- (7) The plan shall be discussed thoroughly with each employee as part of the orientation program, and periodically at toolbox and supervisors' safety meetings.
- (8) Procedures shall be provided for emergency response at all times, including non-work periods. It is essential that the response be on a twenty-four (24) hour basis. In the event that work is not conducted on a twenty-four (24) hour, seven (7) day basis, provision for notification of responsible contractor's personnel shall be included in the procedure.

- t. Develop a procedure to secure the scene of any serious or fatal accidents. The accident scene shall not be disturbed until the investigating officials have released it. Fatal accident scenes will be released by OR-OSHA and/or the police.

2.4 Administration / Implementation

The contractor shall administer and implement this plan in accordance with the standards of the industry. In addition to those standards, the contractor shall:

- a. Notify the CM immediately of inspections to be conducted by OR-OSHA or any other federal, state or county safety/health or environmental organization/agency at the work site. The contractor shall immediately furnish the CM and TriMet's system safety specialist with copies of all citations and/or warnings of safety violations.

- b. The contractor shall post the following in a location where personnel congregate:
 - (1) Emergency procedures
 - (2) Emergency phone numbers
 - (3) OR-OSHA Job Safety and Health poster
 - (4) Notice of Worker's Compensation carrier
 - (5) OSHA 300 Summary (Posted February-April of each year)
- c. The contractor shall not receive additional payment or reimbursement for compliance with safety items and procedures, which have been identified as required by the TriMet *CSP*, and all applicable laws, regulations and orders.
- d. Ensure that all of its subcontractors and suppliers are provided with a copy of the contractor's construction safety plan and are informed of their obligations with regard to safety prior to commencing work.
- e. Each employee is to formally acknowledge receipt of the safety orientation and training prior to performing or being assigned duties on the project.
- f. Each employee shall receive written information of the safety requirements.
- g. Periodic safety meetings:
 - (1) Supervisors: The contractor shall conduct regularly scheduled supervisory safety meetings at least monthly for all levels of job supervision. An outline report containing subject matter and signature of all attendees shall be maintained by the contractor and available for review on request.
 - (2) Employees: A minimum of one "on-the-job" or "toolbox" safety meeting shall be conducted weekly by each field supervisor or foreman and shall be attended by all employees under their supervision. A record of each meeting, including topic of discussion and signatures of attendees, shall be maintained and available for review on request.
 - (3) Meeting schedules: Shall be made available for review.
- h. All accidents and emergencies, whether to persons, equipment, or property, which occur from operations or work performed on the project must be investigated, reported, and analyzed as prescribed by the TriMet *CPCD CSP*.
 - (1) Immediately report all emergencies and accidents resulting in a fatality, catastrophe, or serious injury to the CM, the OCC, and TriMet's system safety specialist. Copies of the written report shall be delivered to the CM within twenty-four (24) hours of the occurrence of the injury. The contractor shall be responsible for notification to any parties that could be involved in an investigation or be affected by the incident.
 - (2) By the tenth (10th) working day of each month the contractor must submit to the CM the following reports:

- (i) The total number of employee-hours worked (by contractor/subcontractor) and a log of occupational injuries and illnesses (OSHA Form No. 300, or equivalent as prescribed by OR-OSHA 437-001-0700 Recordkeeping and Reporting).
 - (ii) A list of the first aid treatments not reported on the OSHA Form No. 300 by the contractor/subcontractor.
- (3) Only authorized personnel approved by the CM shall be given information pertaining to the event. Questions from the media and other news outlets shall be referred to the CPCD community affairs director.

D. Safety Meetings

1. TriMet Safety Security Committee

On certain projects, a TriMet Safety Security Committee (SSC) may be formed. The SSC has the primary function to review overall safety progress for the project by:

- a. Monitoring the administration and application of the CPCD *CSP* to ensure that the program is maintained and enforced.
- b. Recommend solutions to safety problems and ensure their implementation.
- c. The SSC shall meet monthly, or as required by the Chair. Any member may request that the Chair call a meeting at any time.
- d. The committee members shall be as follows
 - TriMet system safety specialist (Chair)
 - TriMet PM
 - TriMet CM
- e. The committee shall report the status of the *CSP* to TriMet's project director on a monthly basis.
- f. The committee shall have written procedures and protocols for addressing safety programs updates and implementation of changes to policies or procedures.

2. TriMet / Contractor Safety Meetings

For each construction contract, TriMet and the contractor shall establish meetings and/or committees necessary to implement an effective safety program.

- a. Weekly Owner or Construction Progress Meetings - On all projects, the CM and contractor should discuss safety at TriMet/contractor progress meetings and document significant matters
- b. Coordinated Safety Committee - A Coordinated Safety Committee may be established for each contract, including civil and/or systems contracts. The primary functions of this committee include the following:
 - (1) Review safety progress and ensure that the objectives of the TriMet *CSP* are being met.
 - (2) Make and implement recommendations as necessary.
 - (3) Review near misses, injuries, third party injuries, and property damage incidents
- c. This committee should meet monthly or as mutually established for the contract. The committee members should include the following:

- TriMet's system safety specialist (Chair)
- TriMet's CM
- The contractor's PM
- The contractor's primary safety representative
- A safety representative from each major subcontractor

3. Contractor Weekly Toolbox Meetings

Every contractor is required to conduct weekly toolbox meetings with its workers and its subcontractors' workers. The primary purpose of this series of meetings is for the contractor to communicate to the workers information related to safety matters and to reinforce compliance with all contract and regulatory requirements. The contractor establishes the time and place for the meeting. The meeting shall be documented and attendance sheets signed for future audits, to ensure compliance.

TriMet staff members are encouraged to attend these weekly toolbox meetings as frequently as possible, to communicate updates within the TriMet *CSP* to the contractor, and to focus the contractors' attention on particular safety issues as the project circumstances warrant.

E. Noncompliance

1. Contractor Responsibility

The contractor is responsible for compliance with all safety requirements applicable to the construction contract. In the event of noncompliance with safety requirements, the contractor shall take immediate action to correct the non-compliant conditions.

If the contractor or subcontractor fails in a timely manner to take corrective action that eliminates a non-compliance item, the CM may issue notice of non-compliance, retain monies to correct the non-compliance through an alternative means, and/or take other appropriate actions.

If the contractor or subcontractor fails in a timely manner to take corrective action that eliminates an imminent danger to the workers or public, the CM or the TriMet Safety Department may issue a stop work order regarding the work in question until the danger is corrected.

2. Construction Manager Authority

The CM has the authority to perform the following:

- a. Notify the contractor of non-compliant conditions and of the remedial action required. This notice, when delivered to the contractor or the contractor's representative at the site of the work, shall be deemed sufficient notice of the noncompliance to immediately implement remedial action.
- b. Issue a stop work order stopping all or part of the work, if the contractor fails or refuses to take remedial action within the time specified in the notice, or immediately in case of imminent danger. The work shall be immediately suspended upon the receipt of such an order. The order will remain in effect until satisfactory remedial action has been taken by the contractor and has been approved by the CM.
- c. Require removal from the project of:
 - (1) Any TriMet, contractor or subcontractor's employee who, in the CM's opinion, is willfully and/or repeatedly non-compliant with safety requirements.
 - (2) Any piece of equipment that is deemed unsafe by the CM or the TriMet system safety specialist.
 - (3) Any subcontractor who is deemed to be unsafe, or exhibits a disregard of the contractor's safety plan and the TriMet CPCD *CSP*.
 - (4) Replace the contractor's safety representative for nonperformance of safety/security duties.

(5) Correct, at contractor's expense, any unsafe conditions if the contractor fails to correct the condition within the time specified on a notice of non-compliance or stop work order issued by TriMet or other governmental agency with the authority to enforce safety regulations.

d. In rare cases a contractor or subcontractor may be removed from the job temporarily, or in extreme cases permanently, for continual safety infractions. TriMet's project director, CM, and system safety specialist will make this determination, if necessary.

3. Contractor Cost Responsibility

The contractor shall not be entitled to additional compensation or time resulting from any notice, direction or order given, or other action taken by TriMet or any governmental agency with jurisdiction, pursuant to non-compliance with the safety requirements of this contract and/or of applicable laws and regulations.

Appendix A – Substance Abuse

1. Introduction

TriMet is committed to the establishment of a drug-free, alcohol free, and safe and healthy construction environment.

2. Policy

TriMet strictly prohibits any person working on a construction work site from using, being under the influence of, possessing, distributing, or selling alcoholic substances or beverages, intoxicants, illegal drugs, controlled substances not medically authorized, drug paraphernalia, or other substances, including prescription drugs which may impair job performance.

All contractors shall establish and implement a substance abuse program that complies with the requirements of this Section. The contractor is not limited by the requirements set forth in this Section and may adopt additional requirements, where the contractor determines that such additional testing is in the best interests of the contractor and the safety of its employees, others on the work site, or the public.

3. Prohibited Substances

The contractor must prohibit its employees from using, being under the influence of, possessing, distributing, or selling any and all illegal controlled substances, and any and all substances or drugs that are not approved for medical use by the USDA or the USFDA. This includes use of, or impairment by, any illegal drug, misuse of legally prescribed or over-the-counter drugs, illegally obtained prescription drugs, or use of another person's prescription.

4. Prescription Drugs

TriMet does not prohibit the appropriate use of legally prescribed drugs. Employees of TriMet contractors must report the use of medically authorized prescription drugs or substances that may impair job performance or mental or motor function to their immediate supervisor, and on request, provide proper written medical authorization from their physician. Failure to report such drugs or substances may be cause for removal from any TriMet contract work site.

5. Prohibited Activity

The contractor must prohibit its employees from using, possessing, distributing, selling, manufacturing, or dispensing alcoholic substances or beverages, intoxicants, illegal drugs, controlled substances not medically authorized, drug paraphernalia, or other substances, including prescription drugs, which may impair job performance or mental or motor function while such contractors or employees are on TriMet premises or in the course of conducting TriMet-related business. This means that an employee of a

contractor must not report to work or continue to work for TriMet if he or she has engaged or is engaging in a prohibited activity. If TriMet or the contractor reasonably suspects an employee of a contractor has engaged in or is engaging in a prohibited activity that results in that contractor or employee not being fit for duty due to drug or alcohol use, the contractor may suspend the employee from duty pending an investigation. The contractor must remove from duty those employees who fail to pass a drug or alcohol test or whom the contractor confirms engaged in a prohibited activity.

6. Submission of Program to TriMet

The contractor shall, within fourteen (14) days following notice of award, submit to TriMet its substance abuse program. The contractor's program shall comply with the requirements of this Section, particularly those specified in [Section A.11](#), below.

7. Compliance

The contractor's program shall become a contract requirement. The contractor's failure to fully implement or enforce the program shall be considered a breach of the contract. TriMet may hold all or any portion of any payment due the contractor, until compliance can be demonstrated.

8. Program Requirements

The contractor shall develop and implement a substance abuse prevention program, which conforms to the minimum requirements of this Section. The program shall contain at least the following elements:

- a. Policy statements describing the contractor's policies on prohibited alcohol/drug use on construction workplaces and premises.
- b. Categories of "safety sensitive" employees, if applicable¹
- c. Specific information concerning employee behavior that is prohibited.
- d. Specific circumstances under which an employee will be tested for prohibited drugs/alcohol.
- e. Procedures for notification of prescription drug use.
- f. Procedures that will be used to test for drugs, to protect the employee and the integrity of the process.
- g. Procedures to safeguard the validity and confidentiality of test results and to A requirement that an employee submit to alcohol/drug testing, as appropriate ensure that the results are attributed to the correct employee.
- h. A requirement that an employee submit to alcohol/drug testing, as appropriate.

- i. A pre-employment testing, random testing throughout the project life, and post accident testing requirement that a refusal to submit to an alcohol/drug test constitutes a failure to pass an alcohol/drug test.
- j. Consequences for an employee who fails to pass or refuses to submit to a drug test as required will be dealt with by the contractor as per their submitted program.

9. Removal from Work Site

TriMet reserves the right to remove any employee who violates any provision of the substance abuse program from a TriMet contract work site. The contractor shall develop appropriate standards for the return of employees found in violation of the contractor's substance abuse program. At a minimum, the requirements of this section shall be imposed.

10. Education and Training

The contractor shall provide to every employee materials explaining the policy and requirements under the drug and alcohol policy.

11. Other Requirements

Except as expressly provided in this section, nothing shall be construed to affect the authority of the contractor to negotiate or implement more stringent elements of the substance abuse program.

¹ The Department of Transportation's drug and alcohol requirements govern all employees who perform a safety-sensitive function pursuant to 49 CFR Chapter 655.4. Pursuant to TriMet's authority, TriMet has extended its own drug and alcohol requirements to all contractors, not just those performing safety-sensitive functions.

Appendix B – Minimum Safety Requirements

The contractor's safety program shall comply with all applicable Federal, State and Local safety codes and standards. The codes and standards will include but are not limited to the following: Oregon Occupational Safety and Health Administration (OR-OSHA) Rules and Regulations, Occupational Health and Safety Administration (OSHA) Rules and Regulations, National Fire Protection Agency (NFPA), National Electric Code (NEC), American National Standards Institute (ANSI), and Oregon Department of Transportation (ODOT) Regulations, Federal Railroad Administration (FRA), U.S. Coast Guard (USCG).

NOTE: The information contained in this appendix is provided as a resource and does not supersede or override regulations prescribe in the documents listed in the above paragraph. The following sections are to provide summary of applicable regulations. The official regulations should be consulted to determine all requirements necessary to ensure compliance with Federal, State, and Local safety codes and standards.

1. Fire Prevention / Fire Protection

- a. The contractor's safety representative shall conduct fire hazard inspections of the entire project on a regular basis. Immediate correction of substandard conditions is mandatory. Documentation of the inspection should be kept on file and made available upon request.
- b. Particular care shall be taken when welding and cutting in locations where combustibles are exposed. When such welding or cutting is done, the surrounding area must be protected and an adequate number of approved fire extinguishers must be immediately available. A hot work permit system shall be established for all hot work processes. Hot work permit system information will be kept on site and permits made available for inspection.
- c. The operation and maintenance of temporary heating equipment shall create no fire hazards. The use of solid fuel salamanders shall be prohibited. Clothing must not be dried by placing on or near heaters.
- d. All flammable and combustible materials shall be stored, stacked and handled with due regard to their fire characteristics. Flammable liquids must be stored in an approved manner, and dispensed only in acceptable safety containers by rated and approved pumps.
- e. Rubbish and debris shall not be allowed to accumulate. Jobsites shall be kept clean and orderly during the duration of the project.

- f. Appropriately rated fire extinguishers shall be located throughout the work site as required by local fire protection authority, OR-OSHA and/or Federal OSHA. The fire extinguishers shall be checked at least once each month and certified annually. Records shall be kept as to service and maintenance.

2. Requirements of Contractor Personnel

- a. The contractor shall be responsible for requiring the use of required personal protective equipment (PPE) for its employees. Employees must be trained on the proper use and limitations of the PPE that is provided for them. PPE must meet requirements as listed in OR-OSHA Code.
- b. Full-length pants without excessive length or flared bottoms shall be required. Shirts must cover the entire mid-section and the sleeves must cover the entire shoulder. Sleeveless shirts, tank tops, net shirts, halter tops, etc., shall not be worn on the construction site.
- c. Long hair shall be confined under a hardhat or net.
- d. Gambling, fighting or horseplay shall not be tolerated.
- e. No employee shall possess a firearm or other weapon on TriMet property or projects.

3. Protection of the Public and Property

In addition to the requirements identified within the specific contract documents, the following provisions are required:

- a. The contractor shall take all necessary action to prevent injury to the public or property damage. When performing work adjacent to operating tracks, the contractor shall take all necessary action to protect rail/transit traffic.
- b. Work shall not be performed in any area occupied or in use by the public unless specifically permitted by the contract or in writing by TriMet or its designated consultant.
- c. When it is necessary to maintain public use of work areas involving sidewalks, entrances to buildings, lobbies, corridors, aisles, stairways, and vehicular roadways, the contractor shall protect the project and public with appropriate guardrails, barricades, temporary fences, and adequate visibility. Such protection shall guard against harmful radioactive rays or particles, flying materials, falling or moving materials and equipment, hot or poisonous materials, explosives and explosive atmospheres, flammable or toxic liquids and gases, open flames, energized electric circuits, or other harmful exposures.

- d. Sidewalks, entrances to buildings, lobbies, corridors, aisles, doors, or exits that remain in use by the public shall be kept clear of obstructions to permit safe ingress and egress of the public at all times, and be ADA compliant.
- e. Appropriate warnings, signs and instructional safety signs shall be conspicuously posted where necessary. In addition, a flag person shall control the moving of motorized equipment in areas where the public might be endangered.
- f. Sidewalk sheds, canopies, catch platforms, and appropriate fences shall be provided when it is necessary to maintain public pedestrian traffic adjacent to the erection, demolition or structural alteration of outside walls on any structure.
- g. A temporary fence shall be provided around the perimeter of work zones adjacent to public areas, except where a sidewalk shed or fence are provided by the contract or as required by subsection c. above.
- h. Adequate warning signs and lighting shall be maintained along the guardrails, barricades, temporary sidewalks and other obstructions to the public.
- i. Temporary sidewalks, in accordance with the requirements of the local ordinances and/or contract documents, shall be provided when a permanent sidewalk is obstructed by the contractor's operations.
- j. Guardrails shall be provided on both sides of vehicular and pedestrian bridges. Pedestrian walkways elevated above adjoining surfaces, or walkways within six (6) feet of the top of excavated slopes or vertical banks shall be protected with guardrails, except where sidewalk sheds or fences are provided as required by subsection c. above. Guardrails shall be made of rigid materials capable of withstanding a force of at least two hundred (200) pounds applied in any direction at any point in their structure. Guardrail height shall be a minimum forty-two (42) inches and a maximum of forty-five (45) inches high. Top rails and posts must be two inches by four inches (2x4) dressed wood or equal material. Posts shall not be over eight (8) feet apart.
- k. Barricades shall be provided where sidewalk sheds, fences or guardrails, as referenced above are not required between work areas and pedestrian walkways, roadways or occupied buildings. Barricades shall be secured against accidental displacement and shall be maintained in place except where temporary removal is necessary to perform the work. When a barricade is temporarily removed, a watchman shall be placed at all openings.
- l. Fuel-burning types of lanterns, torches, flares, or other open-flame devices are prohibited.

4. Safety Guidelines for Project Tours / Visitors

TriMet's CM and the contractor's PM have the authority to approve or disapprove tour requests. It is of the utmost importance that a high degree of protection is afforded to all persons touring any project construction site. The following guidelines have been prepared as general instructions for those individuals responsible for the organization, direction and safe conduct of such tours:

- a. All groups will be accompanied at all times on the jobsite by a member of the contractor or TriMet staff who will be aware of current conditions/phases of the particular project(s).
- b. Community affairs tours are coordinated through the project's Community Affairs Department and approved by the CM who may develop specific rules for the tours. TriMet's system safety specialist will review all tour plans and rules prior to the tour being given.
- c. Project staff or other contractual employees authorized by TriMet who are escorting technical and/or other official visitors in hazardous work areas will comply with the safety precautions required under the contract for that site. Hardhats, high visibility green or orange safety vests, and appropriate eye and foot protection are required. The number of escorted persons on such tours should be proportionate to the degree of hazards and operating space involved.
- d. Personnel tours that do not involve technical inspections need to be authorized through the CM, allowing maximum advance notice.
- e. All visitors and tour groups must be accompanied by a TriMet or other authorized representative familiar with the job site, and must wear appropriate protective equipment as necessary.

5. Personal Protection Equipment (PPE)

- a. Only equipment complying with OR-OSHA and/or Federal OSHA safety standards shall be used. All contractors shall be responsible for the compliance by their employees.
 - (1) Head Protection: Approved hard hats shall be made available by the contractor and worn at all times while on the construction site. Hard hats shall meet the requirements of ANSI Z89.1 or ANSI Z89.2 as appropriate, as specified by OR-OSHA and/or Federal OSHA. Metallic hard hats shall not be worn.
 - (2) Eye Protection: Approved eye protection shall be made available by the contractor and worn at all times while on the construction site. Approved eyewear shall consist of prescription or non-prescription safety glasses, with side shield as necessary, and with or without tint, which meet ANSI Z87.1

1989 requirements. Certain operations (i.e. welding, working with chemicals/hazardous liquids, etc.) will require additional protections such as goggles, face shields, helmets, etc.

- (3) Respiratory Protection: Respiratory protection devices approved by the National Institute of Occupational Safety and Health (NIOSH) shall be supplied by the contractor and worn by all employees when exposed to hazardous concentrations of toxic or noxious dust, fumes or mists as required by OR-OSHA regulations and the contractor's respirator program.

Where respiratory protection is required the contractor shall have a written respiratory protection program in accordance with applicable OR-OSHA and/or Federal OSHA standards.

- (4) Hearing Protection: Approved hearing protection shall be made available by contractors, and such protection shall be worn by all employees exposed to sound levels in excess of OR-OSHA's and/or Federal OSHA's Permissible Exposure Limits (PEL).
- (5) Hearing Conservation: When sound levels exceed OR-OSHA standards and engineering or administrative controls are not practical or effective, the contractor shall develop and implement a written Hearing Conservation Program. At a minimum the program shall incorporate the following provisions:
 - (i) Identify those operations or areas, which exceed OR-OSHA permissible exposure limits for noise.
 - (ii) Provide and require the use of hearing protectors for employees exposed to sound levels in excess of the permissible exposure limits.
 - (iii) Provide for pre-placement and annual audiometric tests of exposed employees.
 - (iv) Inform employees of hazardous areas through signage or instruction.
 - (v) Demonstrate the proper use and maintenance of hearing protectors.
- (6) Fall Protection: Full body harness and double locking lanyards meeting OR-OSHA safety standards shall be made available by the contractor and shall be worn by all employees exposed to falls from the unprotected height of six (6) feet or more. The use of wire rope lanyards is prohibited.
 - (i) The contractor shall submit a Fall Protection Work Plan that addresses all work places where the employees are assigned and where fall hazards of six (6) feet or more exist. The Fall Protection Work Plan shall
 - a. Identify all fall hazards in the work area
 - b. Identify who the competent person is for the worksite
 - c. Describe the method of fall arrest or fall restraint to be provided

- d. Describe the correct procedures for the assembly, maintenance, inspection and disassembly of the fall protection to be used.
 - e. Describe the correct procedures for the handling, storage and securing of tools and materials.
 - f. Describe the method for providing overhead protection for workers who may be in, or pass through the area below the worksite.
 - g. Describe the rescue method for prompt, safe removal of injured workers. Workers trained in the use of fall protection shall also be trained in rescue procedures for that specific jobsite.
 - h. Be available on the job site for inspection by the TriMet system safety specialist.
 - i. All employees shall be trained prior to being assigned to work at heights at or greater than six (6) feet. All training shall be documented and shall be available for review by the TriMet system safety specialist.
- (7) Work Boots: The contractor is required to assure that its employees wear suitable work boots on the project. A serviceable pair of work boots that meet ASTM 2413-05 I/75/C/75 requirement made of leather or similar material shall be worn. Boots must lace up and cover the ankle. Athletic/tennis shoes, sandals, Romeo's, cowboy boots and other similar shoes are not permitted. Employees working directly with the handling, cutting, and installation of rail shall wear boots meeting the ASTM 2413-05 I/75/C/75/Mt75 standard. (Mt75 refers to metatarsal protection.).
- (8) Rubber Boots: Shall meet ASTM 2413-05 I/75/C/75 standards and all rubber boots shall be worn with puncture-proof inner soles.
- (9) Safety Vests: High visibility fluorescent green safety vests or rain jackets shall be made available by the contractor and worn by all personnel at all times when on the project. Safety vests and rain jackets must meet the ANSI/ISEA 107-1999 Class 2 National Standard for High Visibility Safety Apparel. When working in live traffic, the appropriate vest for the speed of the traffic must be worn.
- (10) Other Personal Protective Equipment: Other such required equipment to be used under unusual circumstances, such as high temperature work, handling corrosive liquids, etc., not specifically covered in this section shall be reviewed with the TriMet system safety specialist.
- (11) Maintenance: Personal protective equipment may not be altered in any manner. Altered equipment shall be repossessed, repaired or destroyed. Personal protective equipment that makes contact with the wearer's skin or hair and which has been worn or used previously shall not be reissued to another employee until the article has been cleaned and sanitized.

6. First-Aid and Medical Facilities

- a. Prior to the start of construction, the contractor shall arrange for facilities to provide prompt medical attention of injured employees.
- b. A telephone or cellular phone shall be made available at the site before construction begins. Telephone numbers and locations of emergency facilities including, but not limited to hospitals, physicians, fire and medical services, and police shall be posted in conspicuous locations at the worksites and at all telephone locations.
- c. First aid supplies and equipment shall be accessible for immediate use. The size and number of first aid kits/stations shall meet the requirements established by Oregon OSHA.
- d. At least one person shall be available at all times on each worksite, who has a valid certificate in First Aid/CPR training from the American Red Cross, Medic First Aid, Mine Safety and Health Administration, or an equivalent training program that can be verified. A minimum ratio of one such qualified person for every ten employees shall be maintained throughout the course of construction. Said persons shall affix suitable emblems of training on both sides of their hard hats for identification. The worksite bulletin board shall display a current list of first aid trained personnel.
- e. Maps and directions to the nearest medical facility shall be posted and kept at all construction sites.
- f. Mobile medical response for injuries occurring on the job site(s) may be considered or utilized during the construction project. TriMet and the Contractor, prior to the startup of the project, will determine if there is a need for mobile medical response.

7. Safety Inspections – General

- a. The contractor shall perform frequent and regular inspections of the worksites, materials, and equipment. Work site inspections shall be conducted at a minimum of once per shift.
- b. Detailed written inspection records shall be maintained and available for review on request. Records shall indicate the identified safety and health issues and deficiencies, and the actions, timetable, and responsibility for correcting them and signed and dated by the person performing the inspection. Any safety infractions found shall be shared with the any other contractor or subcontractors performing work in the immediate area of the hazard.
- c. The TriMet system safety specialist or TriMet Safety Department staff shall perform site safety inspections on a regular basis. Findings will be documented and presented to TriMet's CM and the contractor's safety staff for review. Infractions found will be corrected immediately.

At any time during the duration of the project, if serious and/or life threatening violations of health and safety are found, TriMet Safety staff have the authority to issue a stoppage of work. Issues will be corrected immediately and work will not commence until all issues have been abated.

8. Hazardous Substance Communication, Agents and Environments

8.1 General

- a. No person shall be exposed to any chemical or physical agent via inhalation, ingestion, skin absorption, or physical contact in excess of the acceptable limits specified in the American Conference of Governmental Industrial Hygienists (ACGIH) "Threshold Limit Values and Biological Exposure Indices". Sampling of the chemical to ensure these limits are not being exceeded may be requested by the CM or the TriMet system safety specialist.
- b. In the event of conflicts between ACGIH and other standards or regulations, such as OR-OSHA, OAR 437 Div. 2-100 the more stringent standards shall be followed and action taken to mitigate the exposure shall be to the point of meeting the more stringent standard.
- c. The contractor shall comply with all applicable standards and regulations to reduce contaminant concentration levels to acceptable limits.
- d. Sampling data shall be kept on file and made available to the TriMet system safety specialist and CM.

8.2 Hazard Evaluation

All operations, materials, and equipment shall be evaluated to determine the presence of hazardous environments or if hazardous or toxic agents may be released into the work environment. Any areas identified as having hazards of this nature shall be corrected accordingly following applicable safety and health standards.

8.3 Testing and Monitoring

- a. Individuals performing testing and monitoring shall be trained in testing and monitoring procedures and hazards: testing devices shall be used, inspected and maintained in accordance with the manufacturer's instructions, a copy of which shall be maintained with the devices or place of storage.
- b. Records of all testing and monitoring shall be maintained on-site and shall be made available to the CM and TriMet safety staff on request.

8.4 Hot Substances

- a. Heating devices and melting kettles shall be placed on a firm, level foundation and protected against traffic, accidental tipping, or similar hazards.
- b. A sufficient number of fire extinguishers, rated not less than 10# A:B:C, shall be available at all locations where heating devices and melting kettles are in use.
- c. Heating devices and melting kettles shall not be left unattended when in use.
- d. Bituminous-material melting kettles shall be provided with an effective lid or hood and a thermometer in operating condition.
- e. Bituminous-material melting kettles shall not be used or operated inside, atop, or within twenty-five (25) feet of buildings or combustible material.
- f. Enclosed areas in which hot substances are heated or applied shall be ventilated to the point at which exposure levels are below the ACGIH limits. If the ACGIH limits cannot be reached, other mitigations such as administrative controls or respiratory protection must be instituted.
- g. Ladles, equipment, and material shall be moisture-free and preheated prior to being used or placed in heated material

8.5 Abrasive Blasting

- a. Written operating procedures shall be developed for abrasive blasting operations, including pressurized pot procedures (filling, pressurizing, depressurizing, maintenance and inspection).
- b. No employee shall be allowed to work in abrasive blasting operations unless he/she has met the medical requirements, has the training and experience, and has been provided the proper PPE, specified by the OR- OSHA requirements.
- c. Pressurized systems and components shall be inspected, tested, certified and maintained.

9. Confined Space

- a. A Confined Space Entry Program shall be established according to OR-OSHA Code.
- b. The contractor shall establish and implement the means, procedures, and practices by which permit spaces can be safely entered, including a written permit system.
- c. Employees shall be trained so that they can safely work in and around the permit space. Training shall include the following:

- (1) Hazards (including recognition of exposure signs and symptoms and the consequences of exposure) which may be encountered while entering, working in, or exiting the confined space;
 - (2) Training on use of air testing equipment which shall included at a minimum calibration, use, and recording of data displayed on the meter, and interpretation of data obtained from testing instruments;
 - (3) PPE (i.e. retrieval lines, respirators, clothing) needed for safe entry, work, and exit;
 - (4) External barriers, and their proper use, needed to protect entrants from external hazards;
 - (5) Emergency procedures for evacuating or rescuing workers.
- d. The contractor shall provide information on the permit-space entry program and its enforcement to employees under the control of a subcontractor who are required to enter the confined space.

10. Traffic Control and Signaling

- a. Adequate and appropriate traffic controls shall be provided for all operations on or adjacent to a highway, road, street or railway. The traffic controls shall be in accordance with the contract provisions.
- b. When operations are such that signs, signals, and barricades do not provide the necessary protection on or adjacent to a highway or street, flaggers or other appropriate controls shall be provided. Signaling directions by flaggers shall conform to the Manual of Uniform Traffic Control Devices (MUTCD). Flaggers must be Oregon Department of Transportation (ODOT) certified, and carry a current card.
- c. The contractor is responsible for obtaining jurisdiction approval of proposed maintenance of traffic plans.

11. Signs, Tags and Barricades

- a. Signs and symbols required by OR-OSHA Chapter 437, Sub-section G 1926.200, shall be usable at all times when work is being performed, and shall be removed or covered promptly when hazards no longer exist.
- b. Tags shall be used as a temporary means of warning employees of an existing hazard, such as defective tools, equipment, etc. They shall not be used in place of, or as a substitute for accident prevention signs.
- c. For protection of employees, barricades shall conform to the portions of the American National Standards Institute (ANSI) D-6.1-1971 MUTCD for streets and highways, relating to barricades.

12. Housekeeping

- a. During the course of construction, work areas, passageways and stairs, in and around buildings and structures, shall be kept clear of debris. Construction materials shall be stored in an orderly manner. Storage areas and walkways on the site shall be maintained free of depressions, obstructions and debris.
- b. Materials, tools, equipment, cords and electric lines shall be stored in an orderly and secure manner.
- c. Receptacles shall be placed at appropriate locations for the disposal of rubbish and debris.
- d. Trash and waste materials shall be promptly removed and disposed.
- e. Air and water lines, and welding and burning leads shall be located to eliminate tripping hazards.
- f. Any protruding nails, etc. shall be immediately removed or completely bent over.
- g. Oil, grease and water spills shall be cleaned up immediately or covered with approved absorbent materials.
- h. All tools, scaffolding, rubbish and materials shall be removed from the work area at the completion of the work.

13. Electrical

13.1 General

- a. All electrical work, installation and wire capacities shall be in accordance with the pertinent provisions of the National Electrical Safety Code (N.E.S.C.) National Electrical Code (NEC), OR-OSHA and/or Federal OSHA.
- b. Live parts of wiring or equipment shall be effectively guarded to protect all personnel or objects from coming in contact.

13.2 Flexible Cords

- a. Electric wire and flexible cord passing through work areas shall be protected from damage; flexible cords and cables passing through holes shall be protected by bushings or fittings.
- b. Flexible cord shall be used only in continuous lengths without splice or tap; except hard service flexible cords No. 12 or larger with molded or vulcanized splices may be used if the splices are made by a qualified electrician, the insulation used is equal to the cable being spliced and wire connections are soldered.

13.3 Safe Clearance Program

Prior to any work on live equipment (hot work) a written Safe Clearance Program shall be established, which shall include communication, and electrical hot work permit. A written safety checklist shall be included for all electrical hot work performed. Such records shall be maintained on file and made available upon request.

13.4 Ground-Fault Circuit Interrupter (GFCI) Protection

The contractor is responsible for providing ground fault circuit interrupter (GFCI) protection on all receptacle outlets that are in use on the construction site and are not part of the permanent wiring of a building or structure. Receptacles on the ends of extension cords are not part of the permanent wiring and therefore the cord's receptacle must be of the GFCI type, whether or not the extension cord is plugged into permanent wiring.

13.5 Assured Equipment Grounding Conductor (AEGC) Program

In lieu of a GFCI program the contractor must establish and implement an assured equipment grounding conductor (AEGC) program as described below.

- a. The AEGC program shall apply to all cord sets, receptacles and connected equipment.
- b. A written description of the program, including type of electrical equipment and wiring and safety precautions, shall be included in the contractor's safety program.
- c. The contractor shall designate one or more qualified persons familiar with the Code requirements to supervise the implementation of the program.
- d. Each cord set, attachment cap, plug and receptacle or cord sets, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, shall be visually inspected before each day's use for external defects such as deformed or missing pins or insulation damage, or for indication of possible internal damage. Equipment found to be defective or damaged should be removed from service immediately and not used until repaired.
- e. The following test shall be made on all cord sets, receptacles which are used for construction operations, and cord and plug connected equipment required to be grounded:
 - (1) All equipment grounding, conductors, and receptacle outlets shall be tested for continuity and shall be electrically continuous.
 - (2) Each receptacle and attachment cap or plug shall be tested for correct attachment of the equipment-grounding conductor and to insure that the grounding conductor is connected to its proper terminal.

- (3) Tests shall be performed before first use, before equipment is returned to service following repairs, before equipment is used following an accident which could have damaged the grounding system, and at intervals not to exceed three (3) months or the appropriate calendar quarter, except that the intervals may be six (6) months for cord sets and receptacles which are fixed and not exposed to damage.
- f. A color-coding system or other system shall be implemented. The contractor shall maintain a written record of tests and inspections and such record shall indicate the last date it was tested or the interval for which it was tested. This record shall be kept by means of log and color-coding, or other effective means.
- g. Assured Equipment Grounding Conductor (AEGC) Program Color Code:

White (Winter)	January, February, March
Green (Spring)	April, May, June
Red (Summer)	July, August, September
Orange (Fall)	October, November, December

14. Lock-Out / Tag-Out Procedure

The contractor shall develop a procedure intended to provide a controlled method for rendering electrical equipment or operating systems (including mechanical, stored or piped) inactive when equipment or systems are down for any reason, such as maintenance, repair, removal or replacement of equipment and installation of new equipment, per N.E.S.C., N.E.C., OR-OSHA and/or Federal OSHA requirements.

Any contractor working on or within ten (10) feet of the OCS system will be required to follow TriMet's existing lockout/tagout procedure, and may also be required to obtain a track access permit. Any contractor working on or within ten (10) feet of newly installed OCS will have to develop a written lockout/tagout procedure directly related to the new OCS system. Construction considerations and interaction with the existing OCS system must be part of the plan.

All lockout/tagout procedures must be reviewed and approved by TriMet's System Safety Department, fourteen (14) days prior to the start of work.

15. Material Handling and Storage

- a. All material shall be stacked, blocked, interlocked, and limited in height so that it is stable and secured against sliding or collapse.
 - (1) Material shall be stacked as low as practical and in no case higher than twenty (20) feet.

- b. Material stored inside buildings under construction shall not be placed within six (6) feet of any hoist way or floor opening, nor within ten (10) feet of an exterior wall, which does not extend above the material stored.
- c. Access ways shall be kept clear. All persons shall be in a safe position while materials are being loaded or unloaded from trucks, or other material carriers.

16. Ropes, Slings, Chains and Accessories

- a. The use of ropes, slings, and chains shall be in accordance with the safe usage recommendations of the equipment manufacturer and Oregon OSHA code.
- b. The safe working load of ropes, slings, chains, accessories, and rigging equipment shall be determined prior to use and affixed to the lifting device. The safe working load shall be observed and shall not be exceeded. For items of rigging used in combination, the safe working load shall be that of the weakest item.
- c. Use of job-fabricated rigging hardware is prohibited unless designed and certified by a professional engineer and tested at 125 percent of the rated safe working load. All tests shall be documented and available on site.
- d. The installation, maintenance, and repair of ropes, chains, and slings and rigging accessories shall be performed only by the manufacturer or in accordance with the manufacturer's written instruction and tested to meet pre-damaged specifications prior to use. All tests shall be documented.
- e. Rigging used for material handling shall be inspected prior to use on each shift to ensure that it is in good repair and safe to use. Defective equipment shall be immediately removed from service.
- f. No shock loading of lifting equipment shall occur under any circumstance. If accidental shock loading does occur, the lifting device must be retested and certified prior to being put back into service.

17. Hoisting Equipment, Pile Drivers and Conveyors

17.1 General

- a. The contractor shall comply with the manufacturer's recommendations: rated load capacity; specifications and limitations applicable to installation, operation, maintenance, inspection and testing of all temporarily installed cranes, derricks, cableways, and other hoisting equipment, including attachments.
- b. Any employee that will operate a crane must be certified on the specific equipment they will be operating. Documentation of current training must be provided to

TriMet's CM and TriMet's Safety Department prior to the equipment being used on the project, and a copy kept with the operator while on site.

- c. When information is not available from a manufacturer, it shall be developed and/or determined by a professional engineer, competent in the field. All manufacturers' and/or engineers' information, including operating, inspecting and testing instructions, shall be available at the work site for review on requests. All permanently installed personnel or material hoisting equipment, including elevators, to be used by the contractor for construction purposes, shall, as a minimum, be inspected, tested, and certified by the State Agency having jurisdiction, prior to initial use and annually thereafter.
- d. Rated load capacities, operating speeds, special warnings, and all other information required by the manufacturer and/or professional engineer and applicable ANSI standard, shall be posted where clearly visible to the operator(s) of the hoisting equipment. The operator of the equipment shall strictly adhere to the load capacities and instructions. Except for testing, hoisting equipment shall not be loaded in excess of posted maximum loads considering boom angle, outrigger support, and other limiting factors. All rated equipment must have the maximum load rating displayed in a highly visible location.

17.2 Inspection

- a. Prior to initial onsite operation, at twelve (12) month intervals, following major repairs or modification, or when required by the CM, power cranes, aerial lifts, derricks, cableways, and other hoists and hoisting systems shall be thoroughly inspected and satisfactorily complete a performance test that demonstrates the equipment's ability to safely handle and maneuver rated loads. These tests and inspections shall be conducted in accordance with the requirements of the manufacturer and OR-OSHA. Test and inspection reports shall be made available, on request.
- b. Hoisting equipment shall be inspected prior to use at the start of each shift by a competent person to determine whether or not it is in safe operating condition. Any damage or deficiencies shall be corrected prior to use. Provisions shall be made for routine lubrication and maintenance of all hoisting equipment. Written records of all deficiencies and repairs shall be available for review by TriMet.
- c. Hooks, wire rope, bearings, gears, friction clutches, chain drives and other parts subject to wear must be inspected at regular intervals and repaired or replaced as required.
- d. All cranes, hoisting equipment and systems installed as part of the Work and not used for construction shall be inspected and tested in conformance with the contract specifications.

- e. All repairs to any part of a hoist, crane, conveyer or other lifting device must be made by a person that is familiar with the equipment and trained in repair. All repairs must be certified by approved methods prior to putting equipment back in service.

17.3 Critical Lifts

A Critical Lift Plan (and erection drawings) shall be prepared and submitted to the CM by the contractor prior to any lift where the load exceeds seventy-five (75) percent of the rated maximum load capacity.

17.4 Personnel Platforms

- a. The use of a crane or derrick to hoist employees on a personnel platform is prohibited, except when the erection, use, or dismantling by conventional means of reaching the worksite is not possible because of structural design or worksite conditions.
- b. Whenever personnel platforms are utilized, the design, rigging, operation and procedure shall strictly comply with all OR-OSHA regulations

18. Mobile and Stationary Mechanized Equipment

18.1 Earthmoving, Hauling, Forklifts, and Material Handling Equipment

- a. Only individuals who are qualified to operate the equipment shall operate vehicles and mobile equipment. Operators must be qualified on the specific type of equipment they will be operating. Qualifications will be determined by the general contractor and records of qualification maintained for auditing purposes.
- b. Vehicles and mobile equipment shall not be operated at speeds greater than are reasonable and safe considering the operating environment. The operator must have the equipment under control at all times.
- c. Equipment outfitted with a quick coupler device to allow changes between implements shall be operated with safety bolt and or pin in place at all times. If quick coupler device is not outfitted with the capability to install a safety bolt or pin, it will not be allowed on the project.
- d. No vehicle shall be stopped, parked, or left standing on any road or in any location in such a manner to endanger personnel or property. Vehicles shall not be left unattended unless the engine has been stopped, brakes set securely, implement on the ground, and the gears engaged.
- e. Vehicles used during night work shall be equipped with headlights and taillights in good condition. Such equipment shall be equipped with back-up lights which function automatically when the vehicle is put in reverse gear.

- f. All bi-directional earth moving, haulage, or compacting equipment shall be equipped and maintained with automatically operated reverse signal alarm, audible above the surrounding noise level. If necessary, a spotter may be required for safe operator of any large equipment in the reverse gear.

19. Scaffolding

Scaffolding shall be erected, dismantled or altered under the supervision of a competent person and in compliance with the requirements of the most current OR- OSHA code.

20. Ladders, Stairways and Ramps

20.1 Ladders

Ladders shall meet all provisions of the OR-OSHA code, in addition to the following:

- a. Metal ladders are not allowed to be used on TriMet projects. Fiberglass or wood ladders in good repair should be used. Special cases can be evaluated for use of job made ladders or specialty ladders, should the need arise.
- b. Provision shall be made for routine inspection and maintenance of all ladders. Broken or damaged ladders shall be removed and destroyed.
- c. All ladders shall be secured to prevent displacements.
- d. Ladders are not to be used as horizontal supports in which employees work from or materials are placed.
- e. Ladders shall not be placed in access ways or other locations where they may be displaced unless protected by barricades or guards.
- f. The area immediately adjacent to the top and bottom of a ladder shall be kept free of debris, materials, equipment or other obstructions.

20.2 Stairways

Stairways shall be constructed for access to fixed scaffolds, walkways and work platforms affixed to buildings and structures for access over extended periods of construction, or when employees routinely carry tools and materials.

21. Floor and Wall Holes and Openings

- a. All floor and roof openings into which persons can potentially walk or fall through shall be guarded by a physical barrier or covered. The cover shall be substantial and clearly marked with the word "HOLE".
- b. All floor and roof holes through which equipment, materials or debris can fall shall be covered.

- c. Any floor or roof hole that cannot be covered or guarded must have an attendant stationed at the hole or opening to keep people from falling through. The attendant must remain at the hole or opening until the opening is closed or covered by materials that are substantial in strength.
- d. OR-OSHA regulations regarding floor and wall holes shall be followed.

22. Concrete, Masonry and Formwork

- a. All equipment and materials used in concrete construction and masonry work shall meet the applicable requirements as prescribed in the most current version of OR-OSHA code.
- b. Employees working more than six (6) feet above any adjacent working surface, placing reinforcing steel in walls, piers, columns, etc., shall be provided with fall protection, such as a full body safety harness and shock-absorbing lanyards.
- c. Employees shall not be permitted to work above vertically protruding reinforcing steel unless such steel has been covered to eliminate an impalement hazard.
- d. The riding of concrete buckets for any purpose is prohibited.

23. Tools

23.1 Grinding Tools

The installation, guarding, use and care of grinding tools shall comply with the standards set forth in the current OR-OSHA standard.

23.2 Woodworking Tools

The installation, guarding, use and care of power-operated woodworking tools shall comply with the standards set forth in the most current version of OR-OSHA codes.

23.3 Hydraulic-Powered Tools

The manufacturer's safe operating pressure for hoses, valves, pipes, filters and fittings shall not be exceeded.

23.4 Powder Actuated Tools

Powder-actuated tools shall be designed, maintained, and used in accordance with the standards set forth in the current edition of OR-OSHA codes.

23.5 Lever and Ratchet, Screw and Hydraulic Jacks

The manufacturer's rated capacity shall be legibly marked on all jacks and shall not be exceeded. Jack stands shall be used to support any lifted material.

23.6 Chain Saws

- a. All chain saws shall have an automatic chain brake or kickback device.

- b. The idle speed shall be adjusted so that the chain does not move when the engine is idling.
- c. Operators will wear PPE: eye, ear, hand, foot (safety shoes), and leg protection are required.
- d. Chain saws will not be fueled while running or hot, or near open flame; saws will not be started within ten (10) feet of a fuel container.
- e. A chain saw must never be used to cut above the operators' shoulder height.

24. Welding and Cutting

24.1 General

- a. All welding and cutting apparatus, equipment and operations shall be in accordance with the standards and recommendations set forth in the current edition of OR-OSHA.
- b. Welding apparatus and equipment shall be inspected daily, prior to use. Defective apparatus and equipment shall be removed from service, replaced, or repaired and re-inspected before being used again.
- c. Fire extinguishers shall be immediately available wherever welding or cutting is being performed.
- d. Use shielding to protect persons in the vicinity from eye burn.

24.2 Hot Work Permit

- a. A hot work permit is required whenever there is particular risk of fire when welding, cutting or grinding operations that may ignite materials, fumes or vapors, or inside any structure.
- b. A completed copy of the permit shall be posted in the immediate work area. Copies of all hot work permits shall be maintained in contractor's project office and made available for review upon request.

25. Locating Utilities

- a. Prior to any underground work being performed, all utilities within the work area shall be located in accordance with the local jurisdictional agencies requirements. TriMet underground services must also be located within the work area prior to work starting.
- b. The contractor shall contact all utility agencies with respect to area or work and also an underground service alert agency.

- c. All calls to utility agencies or respective agencies shall be documented on a log showing who placed the call, what agency was contacted, the contact telephone number, the name of the person contacted and the date and time of the call. The above records shall be maintained on file and made available upon request.
- d. The contractor shall take all necessary steps to ensure the protection of the utilities from damage. In the event of damage to a utility, the contractor shall affect immediate repair.

26. Excavation and Trenching Operations

- a. Oregon law requires contractors to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. You may obtain copies of the rules by calling the center at (503) 232-1987. One of the requirements of these rules is that excavators must notify the center at least two (2) business days, but not more than ten (10) business days, before commencing with an excavation. To comply with this requirement, call 503-246-6699 (in the local Portland calling area) or call 1-800-332-2344.
- b. Prior to the start of any excavation work, the site shall be carefully inspected for conditions, particularly soil conditions that require precautionary measures. A competent person or PE should address what type of soil is present and the type of safety measure that will need to be taken.
- c. Prior to opening an excavation, underground installations (e.g., sewer, telephone, water, fuel, electric lines) shall be located and protected from damage or displacement. Utility companies and other responsible authorities shall be contacted to locate and mark the locations and, if they so desire, direct or assist with protecting the underground installations.
- d. When persons will be in or around an excavation(s), the excavation(s), the adjacent areas, and protective systems shall be inspected daily, as needed throughout work shifts, and after every rainstorm or other hazard-increasing occurrence by a competent person.
- e. If evidence of a situation which could result in possible cave-ins, slides, failure of protective systems, hazardous atmospheres or other hazardous condition is identified, exposed workers shall be removed from the hazard and all work in the excavation stopped until all necessary safety precautions have been implemented.
- f. In locations where oxygen deficiency or gaseous conditions are known or suspected, air in the excavation shall be tested prior to the start of each shift or more often if directed by the designated authority. A log of all test results shall be maintained at the work site.

- g. The sides of all excavations in which employees are exposed to danger from moving ground shall be guarded by a support system, sloping or benching of the ground, or other equivalent means.
- h. Excavations less than five (5) feet in depth and which a "competent person" examines and determines there to be no potential for cave-in do not require protective systems.
- i. A qualified person shall design the support system and meet accepted engineering requirements.
- j. All materials used for shoring shall be in good condition, free of defects and of the proper size.
- k. Properly designed and constructed trench shields or boxes may be used in lieu of shoring or sloping if such device provides equal or greater protection than required sloping or shoring protection. Tabulated data for shoring systems and any designs must have sign off from a PE registered in the state of Oregon or Washington State.
- l. Excavations four (4) feet or more in depth shall be equipped with ladder(s) or steps whereby no more than twenty-five (25) feet of travel is necessary to reach each means of exit.
- m. Excavated materials shall be set at least two (2) feet from the excavation wall so as to minimize soil failure.
- n. Every precaution shall be taken to prevent falls of people, materials, equipment and tools into the excavation. Open cuts in or adjacent to thoroughfares shall be adequately barricaded and posted. Lighting shall be provided during hours of darkness. Guardrails or fences shall protect pedestrian traffic. Sidewalks shall not be undermined if used by the public during construction, unless properly shored.
- o. Temporary walkways, extending past the curb lines, shall be substantial and provided with protection at both ends and overhead, if needed. Pedestrian traffic shall not be routed into the street without total means of protection. Walkways and passageways shall be lighted if used during hours of darkness and full consideration for the disabled shall be applied in all design and construction.
- p. Plank walkways shall be built with lumber, which is free of nails, large knotholes, and splinters. Planking shall be parallel to the movement of traffic and shall be securely fastened down. Butt-joining shall be used to avoid tripping hazard. Exposed ends shall be beveled.
- q. Pipes, hoses, power lines, etc. crossing sidewalks and walkways shall be covered, run preferably underneath or be covered by troughs with beveled-edge boards.

- r. Trucks or other equipment routed across walkways or into public thoroughfares shall be directed into traffic by a posted signalman. Trucks and pedestrians shall not be on the walkway at the same time.
- s. Structures adjacent to excavations shall be braced to prevent settlement and lateral movement. Consideration of moving traffic loads shall be taken into account when excavations are located adjacent to sidewalks, streets, or other pavements.
- t. All excavation activities must meet the most current OR-OSHA code.

27. Demolition

- a. Prior to initiating demolition activities the following surveys and planning shall be accomplished:
 - (1) An engineering survey of the structure by a competent person, to determine the structure layout, the condition of the framing, floors, walls, the possibility of unplanned collapse of any portion of the structure (any adjacent structure where employees or property may be exposed shall be similarly checked), and the existence of other potential or real demolition hazards.
 - (2) A demolition plan, by a competent person, and based on the engineering survey and the hazardous materials survey for the safe dismantling and removal of all building components and debris.
 - (3) A hazardous materials survey, shall be conducted by a competent person to determine if any hazardous building materials, hazardous chemicals, gases, explosives, flammable materials, or dangerous substances have been used in any building construction, pipes, tanks, or other equipment on the property, identified hazardous materials or substances shall be controlled or eliminated before demolition is started, unless provided by TriMet.
- b. All electric, gas, water, steam, sewer and other service lines shall be shut off, capped, or otherwise controlled outside the building line before demolition is started. In each case, any utility company that is involved shall be notified in advance.
- c. All demolition activities must meet the most current OR-OSHA code.

28. Track Installation

- a. All on-track equipment shall be inspected daily and maintained at all times in a safe condition. For each day of use, the daily inspection checklist shall be kept in the vehicle. Records shall be kept of inspections and available for review.
- b. Workers riding on rail equipment must be in a seat with a secured seatbelt. If equipment does not have a seat and seatbelt, no riders will be allowed.

- c. Footboards, grab rims and steps on all on track equipment shall be maintained in good condition.
- d. Equipment shall come to a full stop for employees to get on/off.
- e. Workers must not project any portion of their body beyond the side or rear of any moving piece of equipment.
- f. Workers shall not go between or in front of moving engines or cars to couple or uncouple, or connect or disconnect hoses.
- g. Care shall be taken to see that signals are not given to move the engine or car while a worker is between or under them.
- h. Cars shall be uncoupled only with the pin lift lever. If the lever does not work, full protection shall be secured before pulling the pin by other means.
- i. All coupler release levers on cars carrying rails shall be wired down or removed to avoid inadvertent use.
- j. Radio communication between the supervisor of the unloading crew and locomotive engineer shall be maintained. Signals shall be established and understood between the unloading crew and the train crew prior to the start of all unloading operations.
- k. An effective communications system shall be established between the person guiding the strings of rail onto/off of flat cars and the operator of the winch or pulling mechanism.
- l. Workers shall be kept clear of all wire ropes and rail during the pulling of welded rail.
- m. Employees must expect the movement of trains, engine or cars at any time, on any track, in either direction.
- n. Track maintenance equipment shall not be left on live tracks.

29. Non-Ionizing Radiation (Lasers)

- a. Only continuous wave (CW) lasers with output power levels of $10\text{mW}/\text{cm}^2$ (10 milliwatts per square centimeter) or less and installed and operated in accordance with the manufacturer's instructions shall be used on construction sites. The use of lasers exceeding $5\text{mW}/\text{cm}^2$ requires the use of anti-laser eye protection devices.
- b. Areas in which lasers are used shall be posted with standard laser warning signs.

30. Highway-Rail (Hy-Rail) Equipment

- a. Highway-Rail General Operations – Insulated and Non-Insulated Vehicles

The contractor shall develop a written plan for the operation of highway-rail equipment. Any employee that will be required to operate a highway-rail piece of equipment must be trained. Training records shall be kept on file for audit purposes.

Hy-rail vehicles shall comply with the following general requirements:

- (1) Approach street crossings with caution and proceed only when safe. Non-insulated and insulated vehicles may require flaggers when passing through an intersection.
 - (2) Do not exceed safe operating speeds given all the circumstances, and in no event:
 - (i) Fifteen (15) mph on tangent track
 - (ii) Ten (10) mph on mainline curves with restraining rails
 - (iii) Ten (10) mph through mainline switches
 - (iv) Five (5) mph on all auxiliary or yard tracks
- b. Daily inspection of Highway-Rail Equipment
- (1) The operator shall be responsible for the safe operation of the rail-mounted vehicle, or heavy equipment operated off-rail
 - (2) The operator shall inspect the rail-mounted vehicle or heavy equipment daily, prior to use, and record the inspection results on a daily equipment checklist. This checklist shall be made available to TriMet for review immediately upon request.
 - (3) The operator shall report to the assigned master mechanic or superintendent, all items which require maintenance or repair for safe operation, and ensure their correction prior to use.
 - (4) For all rail-mounted vehicles, the operator shall maintain with the vehicles the daily equipment checklist for the day of use. The checklist may be removed from the equipment and turned in, as per the contractor's own procedures, as the end of working day.
 - (5) The contractor shall not operate a rail-mounted vehicle or heavy equipment, which is red-tagged by TriMet Safety.
 - (6) Failure to comply with this policy shall result in appropriate disciplinary action.
- c. Platform / Station Areas
- All rail-mounted equipment vehicles, when approaching station areas, shall:
- (1) Stop before driving into the platform area
 - (2) Sound horn or back-up alarm
 - (3) Proceed when safe to do so at less than ten (10) mph
 - (4) Secure highway-rail equipment on-grade
 - (5) Ensure that no equipment or load projects out from the vehicle in a way that could contact the station amenities or platform
- d. Hy-Rail Vehicle Runaway Protection

Contractor shall establish and implement a plan that secures highway-rail equipment against unwanted movement. Wheel chocks and/or chains are mandatory when highway-rail equipment is stationary, but on-graded tracks. Use of rail skids, derails, barriers or other effective mechanisms are required to protect work zones and/or public areas from runaway vehicles when highway-rail vehicles require periodic movement on graded tracks.

31. Working Over or Near Water

The contractor is responsible for developing a working over or near water safety plan. The plan must meet the requirements of Oregon OSHA 1926.106. Employees working over or near water must be trained on the plan prior to starting work in any area where the plan is applicable. The plan is to include PPE required, location of rescue equipment, and operation of rescue equipment, detailed rescue procedures, and any other pertinent information. A JHA for working over or near water shall reference the governing plan, and a review of the plan shall occur at regular intervals. The plan shall be updated in the event of changing conditions, a change in work practices, or new procedures occurring over or near water.

32. Working On or Adjacent to Existing Railroads

Work performed on or adjacent to an existing railroad may require additional safety procedures and precautions as prescribed by the controlling entity. Contractors will be responsible for ensuring that their employees receive appropriate training and that they comply with the railroad's program. Contractors may not be required to develop their own program, however consulting with the railroad regarding their requirements should be done to ensure compliance.

Roadway Worker Protection (RWP) Training may be required by the controlling property for any person working on or near the existing railroad. If this is the case, the contractor will ensure that all employees are trained prior to starting work and maintain training records that are made available to TriMet's CM and/or TriMet Safety Department personnel.

Appendix C – Supplementary TriMet Safety Information

(AVAILABLE UPON REQUEST)

The CM will provide the appropriate TriMet policies and procedures that will apply to the construction project. Emergency procedures that apply to specific sections of the alignment, such as the tunnel, must be obtained and understood prior to work commencing. As the project progresses, additional policies and procedures may need to be obtained and must be understood and followed. The CM will ensure any applicable policies and procedures will be provided to the contractor throughout the duration of the project.

Appendix D – TriMet Audit Forms

Audit forms have been developed to ensure compliance with the TriMet Capital Projects and Construction Division’s *Construction Safety Program (CPCD CSP)*. These forms are provided to assist the contractor with tracking items that will be audited. Contractors will be audited periodically throughout the project to ensure compliance with the TriMet CPCD CSP.



Audit Activity: Contractor Safety Program Compliance Audit

Company / Project: <<Contractor, Project Name>>

Date: <<Date>>

Audit Conducted By: <<Auditor’s Name>>

Program Requirements			
Element	Control	Meets Requirements Yes/No/NA	Auditor’s Notes
Policies and Procedures	A procedure for developing and maintaining written hazard analyses for all operations prior to their commencement and for discussion with the employees involved.		
Orientation	A thorough written safety orientation and training program which assures that all contract employees have been informed of the contractor's safety program, hazards involved in the project, and their individual responsibility to work in a safe manner.		
Orientation	Documentation demonstrating that all employees/ new or transferred to the project have been instructed to the specific safety requirements and hazards specific to the project.		
Training	Documentation demonstrating that safety training is being conducted in accordance with OSHA standards that require initial and annual training.		
Policies and Procedures	Documentation demonstrating that identify of those accountable and responsible for the execution of the contractor's safety		

Program Requirements			
Element	Control	Meets Requirements Yes/No/NA	Auditor's Notes
	plan. To include names of the contractor's safety representative who has direct authority to direct work stoppage and eliminate or control hazards.		
Policies and Procedures	Performance objectives have been set for all line supervisors in the achievement of accident free construction.		
Policies and Procedures	Documented and defined responsibilities of subcontractors in implementing the requirements of the contractor's safety plan.		
Accident Investigation/ Reporting	Documented procedures and responsibilities for investigating reporting immediately all onsite accidents/incidents/near misses to the TriMet CM and TriMet system safety specialist. Written report shall be submitted to TriMet CM and TriMet system safety specialist within twenty-four (24) hours.		
Accident Investigation/ Reporting	Written procedures in place that ensures that the scene of any serious or fatal accidents is secure. The scene shall not be disturbed until the investigating officials have released it. Fatal or serious accident scenes will be released by OR-OSHA, and or Fire/Police to TriMet Safety. TriMet Safety will complete the internal investigation and will authorize final release.		
First Aid	First Aid supplies are maintained and readily available to all employees. Size of first aid kits and locations shall be in compliance with OR-OSHA. A First Aid log is maintained at the work site for all "first-aid" only incidents.		
Inspections	Documentation demonstrating those responsible for conducting safety inspections. And procedures for conducting job site safety inspections. To include frequency, means of recording, reporting, identifying safety and health deficiencies and procedures for follow-up inspections to ensure corrective action.		
Respiratory Protection	A written respiratory protection program as required and outlined by OR-OSHA is in place that covers all tasks that requires the use of respiratory protection. Training		

Program Requirements			
Element	Control	Meets Requirements Yes/No/NA	Auditor's Notes
	documentation is maintained and available for review.		
Hazard Communication Program	A written hazard communication program, as required by OR-OSHA is in place. Training records are maintained and available for review. Copies of Material Safety Data Sheets (MSDS) are available to all employees and maintained at the construction site.		
Fire Prevention Plan	A written fire prevention plan in compliance with OR-OSHA and NFPA standards, including a layout drawing showing means of storage and volume of all flammable and/or combustible liquids, gases or other hazards. Complies with TriMet's Fire Prevention/Fire Protection requirements under Appendix B- Minimum Safety Requirements .		
Traffic Control Plan	A written and, jurisdictional, approved traffic control plan containing a map of the project area showing employee parking locations, traffic control signs, staging areas, entrances and exits, routes of travel, speed limits, barricades, lighting, fencing, flaggers, etc. as appropriate and updated as needed. Traffic control devices conform with the Manual of Uniform Traffic Control Devices (MUTCD). Flaggers must be Oregon Department of Transportation (ODOT) certified. A current certification card must be carried by all flaggers.		
Site Access Control Program	A written visitor control and protection program is in place.		
Substance Abuse Program	A written substance abuse program is in place that demonstrates at a minimum, the requirements as outlined in the contract under TriMet's substance abuse program requirements. Documentation in place demonstrating that all contract workers are aware of the policy.		
Security	A written security program is in place that outlines steps to be taken to protect both TriMet and contractor property and equipment. It shall be the contractor's responsibility to provide the protection		

Program Requirements			
Element	Control	Meets Requirements Yes/No/NA	Auditor's Notes
	through the completion of the project, and acceptance by TriMet.		
Emergency Response	A written emergency response plan is in place. The plan provides for the safe and expeditious handling of possible emergencies such as floods, earthquakes, fires, cave-ins, slides, explosions, power outages, accidental chemical releases, windstorms, and other catastrophic occurrences.		
Emergency Response	The plan shall take into consideration the nature of operations, site conditions, degree of exposure of persons and property, firefighting equipment, rescue procedures, evacuation plans, and communications, as furnished and supplied by the contractor.		
Emergency Response	The plan shall designate and assign onsite responsibility for handling emergencies. Training shall be provided for those designated to handle the emergency situations.		
Emergency Response	The contractor shall provide, and keep in readiness, all emergency response equipment.		
Emergency Response	The contractor shall coordinate the plan with all affected emergency response agencies and the TriMet CM.		
Emergency Response	The safety of employees, the public, or property shall not be jeopardized in resuming operations or restoring service.		
Emergency Response	Emergency contacts and telephone numbers, with reporting instructions shall be posted at the work site. This includes 911, Ambulance, Hospital, Fire and Police, contractor and TriMet Contacts.		
Emergency Response	The plan is covered as part of the site orientation program, and covered periodically at toolbox and supervisor's safety meetings.		
Fall Protection	A written fall protection program is in place that meets the requirements of OR-OSHA and as outlined in TriMet's <i>CPCD Construction Safety Program</i> .		
Required Postings	The contractor has the following information posted and readily available to all employees: Emergency Procedures, Emergency Phone Numbers, OR-OSHA		

Program Requirements			
Element	Control	Meets Requirements Yes/No/NA	Auditor's Notes
	Job Safety and Health Poster, Notice of Workers Compensation carrier, OSHA 300 Summary (posted February-April of each year).		
Safety Meetings	Regularly scheduled safety meetings are held at least monthly for all levels of supervision. Reports on file showing, date, subject matter, and signatures of attendees.		
Safety Meetings	A minimum of one "on-the-job" or "toolbox" safety meetings are being held weekly by each field supervisor or foreman, attended by all employees under their supervision. Records of such meetings are on file, showing topic of discussion and signed by all in attendance.		
Safety Meetings	Method in place to record and discuss daily pre-work safety topics, "START" cards, JHA's, etc.		
Personal Protection Equipment (PPE)	All PPE must meet OR-OSHA and/or Federal OSHA, ANSI, ASTM, and NIOSH applicable standards. This includes: hard hats, eye protection, respiratory protection, fall protection equipment, hearing protection, work boots, reflective vest, gloves, etc.		
Hearing Protection	When noise levels exceed OR-OSHA standards and engineering or administrative controls are not practical or effective, a written Hearing Conservation Program is in place that is in compliance with OR-OSHA.		
Safety Inspections	The contractor has demonstrated that frequent and regular inspections of the worksites, materials and equipment are being conducted. Work site inspections shall be conducted at a minimum of once per shift. Detailed written inspections that identify safety and health issues, deficiencies, and corrective action taken to address findings are in place. Timetable for corrective action with responsibility for corrective action, dated and signed by the person performing the inspection is part of the inspection process.		
Confined Space	A written Confined Space Entry Program is in place and complies with OR-OSHA standards for confined space entry.		

Program Requirements			
Element	Control	Meets Requirements Yes/No/NA	Auditor's Notes
	Documented training for all affected employees can be demonstrated.		
Abrasive Blasting	Written procedures are in place that demonstrates safe, abrasive blasting operations and procedures. Documented employee training for affected employees outlining safety requirements, procedures and appropriate personal protective equipment as specified by OR-OSHA standards.		
Housekeeping	Housekeeping is required and in place as part of the daily, weekly and monthly inspection program and complies with the requirements outlined in TriMet's CPCD Construction Safety Program.		
Electrical Safety	A written assured equipment grounding conductor program is in place. A means of testing and inspecting equipment, electrical cords, plugs, receptacles daily or prior to use is in place. A means of tagging out and removal from the job site all damaged electrical equipment is in place. Assured equipment grounding Color Code Program is in place.		
Lock-Out/Tag-Out	A written Lock-Out/Tag-Out program is in place outlining procedures, responsibilities and training requirements as required by OR-OSHA, N.E.S.C., NEC. Contractor has in place written Lock-Out/Tag-Out procedures that comply with TriMet's Lock-Out/Tag-Out procedures directly related to a new OCS system or interaction with existing OCS systems.		
Hoisting Equipment	Contractor has in place a written program that describes all lift equipment in use, inspection requirements, manufacturer's safe operating procedures and operator training requirements per OSHA standards. All repairs must be made by a trained and authorized person. All repairs must be documented and made available upon request. A critical lift plan must be submitted to the TriMet CM for any lift where the load exceeds 75% of the rated maximum load capacity.		
Mobile and Stationary	Written safe operating procedures in place for all earthmoving, hauling, forklifts, and		

Program Requirements			
Element	Control	Meets Requirements Yes/No/NA	Auditor's Notes
Mechanized Equipment	material handling equipment. Documented employee training certifying that authorized employees are qualified to operate each type of equipment.		
Scaffolding	Written program outlining compliance with OR-OSHA.		
Ladders	Documented training for ladder safety. To include ladder selection, ladder placement. Documented provisions for routine inspections and maintenance per OR-OSHA.		
Concrete Masonry and Form Work	Documented training for all employees conducting concrete masonry and form work. Equipment and materials used shall comply with applicable requirements.		
Tools	Program in place outlining the safe operation and maintenance of all stationary and hand held power tools. Including method for regular inspection and maintenance. Documented training in place.		
Welding/Cutting	Written program documenting safe welding and cutting apparatus, equipment, and operations complying with OR-OSHA "Hot Work" permit procedures in place whenever there is a risk of fire due to welding, cutting or grinding operations. Permits must be maintained on site and on file and available for inspection.		
Utility Locates	Procedures and documentation in place to ensure that all utilities within the work area have been located in accordance with the local jurisdictional agencies requirements. TriMet underground utilities must also be located within work area before work begins. Log in place that documents date, agency, phone number, contact names and status.		
Excavation/ Trenching Operations	Written program in place outlining excavation and trenching safety and training requirements in compliance with OR-OSHA and Oregon Utility Notification Center.		
Demolition	An approved engineering survey and demolition plan on site for all demolition work.		

Program Requirements			
Element	Control	Meets Requirements Yes/No/NA	Auditor's Notes
Track Installation	Written track installation program, in compliance with TriMet's CPCD <i>Construction Safety Program</i> is in place. Documented employee training records maintained.		
Highway - Rail Equipment	Contractor has in place a written plan for the operation of highway-rail equipment. Program defines the training requirements, safe operating procedures and equipment inspection as outlined in TriMet's CPCD <i>Construction Safety Program</i> .		
Working Over Water	Contractor has in place a written plan for working over water that complies with the requirements of TriMet's CPCD <i>Construction Safety Program</i> and OSHA requirements		
Working on or adjacent to existing railroads	Contractor has in place a written program that outlines procedures that ensure compliance with the Roadway Worker Protection (RWP) program from the controlling railroad. Training records are maintained and available for review.		

Appendix E – Roadway Worker Protection (RWP)

TriMet's Roadway Worker Protection (RWP) program details the on-track safety applicable to all roadway workers, contractors and invitees involved in conducting work in TriMet's Right-of-Way.

All contractors, sub-contractors and invitees must complete TriMet's online RWP Training, prior to starting work. Online training is available at Contractororientation.com. The course cost is \$20.00 per person. The course takes approximately one (1) hour to complete.

After successfully completing the course the worker will receive a temporary certification card, followed by a permanent card in the mail. This card must be in the workers possession at all times while working in TriMet's Right-of-Way. The RWP certification is good for one (1) year from the date of issuance. Contractors will receive an email notice when certification is about to expire.

August 11, 2022

To: TriMet Construction Contractors

From: Manager, Construction Safety & Risk, TriMet Safety & Security Division

Subject: Notice of TriMet Construction Safety Program Amendments and Requirements

The health and safety of our employees, contractors, trade partners, customers and the public are of paramount importance. To that end, TriMet has established two policy updates to our Construction Safety Program (CSP) necessitating the need for contractors to review, update and resubmit their Site Specific Safety Plans (Construction Safety & Security Plans).

Policy amendments include insertion of two new appendixes with contractor-required elements:

1. After Action Review (AAR) – Appendix F

When an incident, including a near miss, occurs on a TriMet project, it should be used as an opportunity to identify process improvements to prevent the future occurrence of incidents. After Action Reviews are an effective method of identifying root causes of incidents, developing corrective measures to prevent reoccurrence, and improving safety and performance across a project.

2. Dropped Object Prevention Program – Appendix G

Many of our projects and the contractors on those projects have falling object protection as part of their corporate and Site Specific Safety Plans to ensure jobsite safety and compliance with the OSHA fall protection standard. TriMet's dropped object program requirements addresses the need to protect the public (overhead road work) and TriMet operations (work above the ROW) as well as introduce best practices to existing falling object safeguards.

Note per TriMet's Construction Safety Program (CSP) Part C. (Contractor Responsibilities), section 2. (Contractor's Safety Plan), "updates to the site specific safety plan may be necessary as the project progress" and must be submitted to TriMet project team and system safety specialist for review and comment.

If you have questions about the contents and requirements in this notification, contact your TriMet Project Manager or Construction Manager. The Safety & Security Division can also clarify or provide further information as needed.

JON GILMORE
Manager, Construction Safety & Risk
TriMet Safety & Security Division

Appendix F – After Action Review

Purpose

To provide minimum requirements for After Action Reviews (AAR) on TriMet Projects. These requirements apply to TriMet personnel, contractors, subcontractors and visitors on TriMet projects.

Goal/Objective

To help determine the causal factors involved in an incident, in order to prevent future occurrences.

Why Focus on After Action Reviews

Properly conducted After Action Reviews (AARs) are an effective method of identifying root causes of incidents and developing corrective measures to prevent reoccurrence.

The intent of an AAR is not to place blame but an in-depth discussion of an event that enables employers (owners' team, CMCG, Subs) and employees to review and discuss an event to discover for themselves what happened and develop a strategy for improving performance and safety across the project.

Requirements

1. **Contractor's Safety Plan:** The prime contractor shall develop and implement an After Action Reviews (AARs) process into their site-specific safety plan (also sometimes referred to as a Construction Safety & Security Plan) that conform to the requirements and expectations outlined in this Appendix.

In addition to incident reports required in the TriMet Construction Safety Program (CSP), After Action Reviews (AAR) will be conducted based on the incident severity or as directed by TriMet. Incident severity and AAR requirements are as follows.

2. **Incident Severity AAR Triggers:**

- Accident/Incident resulting in severe injury or a fatality. Near miss that would have resulted in a severe injury or a fatality. Incident causing at least \$1,000 in property damage. AAR required.
- Accident/Incident resulting in a lost time or recordable injury. Incident causing at least \$500 in property damage. AAR required.
- Accident/Incident resulting in a first aid case or minor property damage. Depending on the potential severity, an AAR may be required. Evaluation by TriMet required.
- Near misses must also be reported and will be evaluated by TriMet for potential severity and possible completion of an AAR. Evaluation by TriMet required.

3. **Additional AAR Determinations:**

- A TriMet established review team will meet as soon as possible to review first aid, minor property damage and near miss incidents to determine if an AAR will be required.
 - *It is essential that contractors report incidents in a timely manner in accordance with the TriMet CSP requirements to facilitate the TriMet and AAR review(s).*

4. After Action Review Meeting:

- When an AAR is required, it should be scheduled within 72 hours or less.
 - A date and time will be set for the AAR (led by the contractor).
 - TriMet project staff and safety to participate in ARR.
 - Effected employee (worker) should be part of AAR.

5. After Action Review Process

- Contractor provides TriMet notification of an incident
- Contractor Initial investigation
- Contractor to initiate After Action Review (AAR) determined by Incident Severity
 - TriMet will further evaluate first aid, minor property damage and near miss incidents to determine if an AAR is required.
- AAR scheduled (led by the contractor)
- AAR conducted (led by the contractor)
- Minimum requirements for AAR include
 - Date/time of the event
 - Location of event
 - Persons involved (personnel should be available to review the incident at the AAR)
 - Training records for individual(s) involved.
 - Documentation for tools/equipment involved (manuals, inspection and maintenance records, etc.)
 - Damage/injury assessment
 - Description of the event including timeline.
 - Root cause analysis
 - Action Required(AR)/Corrective Action Plan (CAP)
- Contractor submits completed AAR
- Contractor will also maintain a file copy of the AAR, including documentation of completion of ARs/CAP requirements. This is an auditable item for any project safety audits.
- Follow-up
 - Updates as applicable on injury recovery/damage repair
 - Status of ARs/CAP

Recommended After Action Review (AAR) Meeting Components

- **Review what was supposed to occur.** The AAR facilitator, project leadership (contractor and TriMet) along with effected employees, reviews what was supposed to happen. This review is based on the intent, training objectives and tasks. This information is usually found in the JHA or the Start Card for a specific task.
- **Establish what happened.** The AAR facilitator and effected employees determine what actually occurred during the event, phase or operation. The facilitator attempts to gather as many views or perspectives as feasible and possible. This helps to establish a common understanding of the event. Leaders then understand the complexity of an event and work to solve sometimes complex and ill-defined problems quickly.
- **Determine what was right or wrong with what happened.** Establish the strong and weak points of the task performance, based on the intended result of the specific task. The AAR facilitator should guide the discussions to ensure maximum input that is operationally sound and relevant to the event.
- **Determine how the task should be done differently next time.** The AAR facilitator guides the discussion in self-determining how the task(s) might be performed more effectively in the future. The AAR participants identifies problems and provides solutions as well as identifies who is responsible for making the recommended changes. Additionally, the facilitator guides the discussion to determine if there is a more safe and effective way to perform the tasks to achieve the intended result.

Appendix G – Dropped Object Prevention Program

Purpose

To provide minimum requirements for dropped object hazard control programs on TriMet projects. These requirements apply to TriMet personnel, contractors, subcontractors and visitors on TriMet projects.

Goal/Objective

Ensure that dropped object hazards are controlled on TriMet projects.

Definition

A dropped object is:

- Any object that falls from a higher elevation that has the potential to cause death, injury or equipment, environmental or property damage. Dropped objects may be characterized as static or dynamic.
- Static dropped objects are objects that fall without the application of external force. Examples would include objects that fall because of corrosion or improper installation.
- Dynamic dropped objects fall as a result of an externally applied force. Examples include tools or materials being kicked or dropped from overhead work surfaces. Wind and vibration are two additional examples of external forces.
- Dropped objects include, but are not limited to, tools, materials and equipment in use, stored or left behind on an elevated work surface.

Why Focus on Dropped Objects?

Dropped objects are regularly the principal cause of incidents in construction and general industry and contribute to the total risk level for these activities.

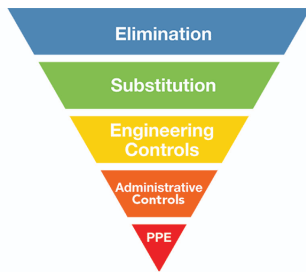
The consequences of a falling objects include:

- Personnel injury/death
- Structural damage
- Damage to equipment
- Damage to property
- Environmental damage

Requirements

Contractors shall develop and submit a Dropped Objects Hazard Control Plan to TriMet Project Management as part of their Site Specific Safety Plan (SSSP). The program shall include, at a minimum, the following elements:

1. A site specific, dropped object hazard analysis. The hazard analysis shall identify, evaluate, and prescribe controls for potential dropped object hazards associated with the work. Controls shall be selected based on best practices using recognized hierarchy of controls preferences:



- Elimination
- Substitution
- Engineering controls
- Administrative controls
- Personal protective equipment (PPE). PPE shall not be a sole remedy for falling object exposures.

2. Documented, effective training for employees by a competent person in the nature of dropped object hazards in the work area and the contents of the Dropped Objects Hazard Control Program.

- Training will be provided prior to assignment to work covered by the Dropped Objects Hazard Control Program.
- Retraining in relevant topics shall be provided when:
 - The employee has been observed working in an unsafe manner;
 - The employee has been involved in an accident or near-miss incident;
 - When there are changes to the program.
 - When conditions change.

3. Documented daily workplace inspections. Dropped objects inspections will address physical conditions, work practices, work plans and training. Inspections shall include:

- The name of the inspector(s)
- The location, date and time of the inspection.
- Observations made during the inspection.
- Corrective actions taken when required.

4. Documented process for program updates and/or revisions based on:

- Changes/additions to the scope/methods of work.
- Changes in the work environment.
- Changes in personnel
- Identified program deficiencies.

5. Documented process for helping ensure awareness and compliance (e.g. signage, toolbox talks, safety stand downs, pre-task plans, etc.)