



ENVIRONMENTAL STEWARDSHIP PROJECT

HEALTH AND SAFETY PLAN

NOVEMBER 11, 2008



Prepared for:

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Prepared by:

CITY OF TACOMA

Environmental Stewardship Project

Health and Safety Plan

Emergency Contact Information

Site Location	Middle and Hylebos Waterways, Swan and Hylebos Creeks and other habitat restoration sites in the greater Commencement Bay Area, Tacoma, WA
Nearest Hospital	<p>Tacoma General Hospital 315 Martin Luther King Jr. Way Tacoma, WA 98405-4234 253-403-1000</p> <p>The location of the hospital is depicted in Figure 1.</p>
Emergency Responders	<p>Police Department 911 Fire Department 911 Ambulance 911 U.S. Coast Guard Emergency 206-217-6000 General Information 206-220-7021 UHF Channel 16 National Response Center 800-424-8802 EPA 800-424-4372</p>
Emergency Contacts	<p>City of Tacoma Public Works Department Mary Henley 253-502-2113 Desiree Pooley 253-502-2126</p>
In an emergency, call for help as soon as possible	<p>Give the following information:</p> <ul style="list-style-type: none"> • Where you are (address, cross streets, or landmarks) • Phone number you are calling from • What happened – type of injury, accident • How many persons need help • What is being done for the victim(s) • You hang up last – let whomever you called hang up first

1.0 SITE HEALTH AND SAFETY PLAN SUMMARY

Site Name: City of Tacoma Habitat Restoration Site Environmental Stewardship Project

Location: Tacoma, WA

Proposed Dates of Activities: 2008-2015

Type of Facility: Aquatic habitat restoration sites.

Land Use of Area Surrounding Facility: Industrial, commercial, residential, and city parks.

Site Activities: Site inspections and monitoring, removal of invasive species, planting, trash removal, work with large woody debris, and other general site maintenance.

Potential Site Contaminants: None.

Routes of Entry: Not applicable.

Administrative and Engineering Controls: None required.

Protective Measures: Gloves, safety vests, hard hats, life vests, work boots, and protective clothing as specified in this plan.

Monitoring Equipment: Not applicable.

2.0 INTRODUCTION

2.1 Purpose and Regulatory Compliance

This site-specific Health and Safety Plan (HSP) addresses procedures to minimize the risk of physical accidents to on-site workers. The HSP covers each of the 11 required plan elements as specified in 29 CFR 1910.120 or equivalent Washington State Department of Labor and Industries regulations. Table 1 lists the sections of this plan which apply to each of these required elements. This site-specific plan meets all applicable regulatory requirements.

2.2 Distribution and Approval

This HSP will be made available to all volunteers, field personnel, and subcontractors involved in field work on this project. For subcontractors, this HSP represents minimum safety procedures and subcontractors are responsible for their own safety while present on site or conducting work for this project. Subcontractor work may involve safety and health procedures not addressed in the HSP. By signing the documentation form provided with this plan (Table 3), project workers also certify their approval and agreement to comply with the plan. The City's Accident Prevention and Safety Plan which provides additional Health and Safety information for City personnel is included as Appendix A.

2.3 Chain of Command

The chain of command for health and safety on this project involves the following individuals:

Project Manager and Project Health & Safety Manager - Mary Henley. The Project Manager has overall responsibility for the successful outcome of the project. The Project Manager may delegate this authority and responsibility to the Field Health & Safety (H&S) Manager. The Project H&S Manager has overall responsibility for health and safety on this project. This individual ensures that everyone working on this project understands this HSP.

Field H&S Manager – Desiree Pooley or other persons as designated. The Field H&S Manager is responsible for implementing the HSP in the field. This individual also observes subcontractors to verify that they are following these procedures, at a minimum. The Field H&S Manager will also assure that proper protective and safety equipment is available and used in the correct manner, and that employees have knowledge of the local emergency medical system should it be necessary.

2.4 Site Work Activities

The following work tasks will be accomplished:

- Monitoring and inspection of the habitat restoration sites;
- Habitat assessment;
- Trash removal;
- Removal of invasive species;
- Planting; and
- General site maintenance activities.

These field site activities are described below.

2.5 Site Description

The Commencement Bay Natural Resource Trustees (Trustees) have established restoration projects throughout the Puyallup River Watershed. However, there are no longer regulatory or legal requirements to provide additional maintenance, monitoring, or adaptive management at these restored sites. The need for those activities still remains and in an urban environment, active site stewardship is necessary to continue to protect these investments and ensure continued success. The City has undertaken this stewardship project in connection with the settlement of an enforcement action taken by the United States Environmental Protection Agency (EPA) for violations of CERCLA.

The eleven restoration sites that are included in this project are located throughout the greater Commencement Bay area and are located adjacent to either marine waters or creeks. Sites are located within industrial, commercial, and residential areas.

3.0 HAZARD EVALUATION AND CONTROL MEASURES

This section discusses the symptoms of heat stress and hypothermia, and other physical hazards. Table 2 lists the potential hazards associated with each site activity and the recommended site control to be used to minimize each potential hazard.

3.1 Toxicity of Chemicals of Concern

Contact with chemicals of concern is generally not expected on this project. Any herbicide application required on this project will be performed by or under the direct supervision of an appropriately licensed applicator.

3.2 Potential Exposure Routes

Exposure to chemicals of concern is not expected on this project.

3.3 Air Monitoring

It is not anticipated that air monitoring will be required on this project.

3.4 Heat and Cold Stress

Heat Stress.

Work in Impermeable Clothing - Use of impermeable clothing reduces the cooling ability of the body to evaporation reduction. This may lead to heat stress. If such conditions occur during site activities, appropriate work-rest cycles will be maintained and drinking of water or electrolyte-rich beverages (Gatorade® or equivalent) to minimize heat stress effects. If ambient temperatures exceed 85° F, monitoring of employee pulse rates may be conducted at the discretion of the Field H&S Manager.

Each employee will check his or her own pulse rate at the beginning of each break period. Take the pulse at the wrist for 6 seconds and multiply by 10. If the pulse rate exceeds 110 beats per minute, then reduce the length of the next work period by one third.

Example: After a one-hour work period at 85 degrees, a worker has a pulse rate of 120 beats per minute. The worker must therefore shorten the next work period by one third, resulting in a work period of 40 minutes until the next break.

Outdoor Heat Exposure - WAC 296-62-095 applies to work performed in the outdoor environment. When working in the conditions identified in the WAC, each employee will be given access to a minimum of one quart of potable water per hour. All employees will be properly trained in heat stress recognition and response if weather and assigned work conditions are anticipated.

Hypothermia. Hypothermia can result from abnormal cooling of the core body temperature. It is caused by exposure to a cold environment and wind-chill; wetness or water immersion can play a significant role as well. The following section discusses signs and symptoms as well as treatment for hypothermia. However, these conditions are not anticipated for the habitat monitoring and maintenance activities covered by this plan.

Signs of Hypothermia. Typical warning signs of hypothermia include fatigue, weakness, lack of coordination, apathy and drowsiness. A confused state is a key symptom of hypothermia. Shivering and pallor are usually absent and the face may appear puffy and pink. Body temperatures below 90° F require immediate treatment to restore temperature to normal.

Treatment of Hypothermia. Current medical practice recommends slow rewarming as treatment for hypothermia, followed by professional medical care. This can be accomplished by moving the person into a sheltered area and wrapping with blankets in a warm room. In emergency situations where body temperature falls below 90° F and heated shelter is not available, use a sleeping bag, blankets and/or body heat from another individual to help restore normal body temperature.

3.5 Other Physical Hazards

Trips/Falls. As with all field work sites, caution will be exercised to prevent slips, trips, and falls on rain slick, slippery, or uneven surfaces, stepping on sharp objects, etc. Work will not be performed on elevated platforms or steep hillsides without appropriate fall protections. When possible, personnel will stand well in from the edges, decks or embankments.

As with any overwater work, there is a possibility of falling in the water. Personal flotation devices will be worn at all times when on a vessel.

At least one person trained in First Aid and CPR will be on site at all times.

Traffic. At times, field activities will be completed in areas of potentially heavy traffic on adjacent roadways. Personnel will wear an ANSI approved, class 2 vest and use traffic cones around the immediate work area. In addition, personnel will be alert to potential traffic hazards (e.g., blind corners).

Confined Spaces. Confined space entry is not anticipated for this project.

Noise. Noise may be encountered when using small mechanical equipment (i.e., brushcutter, drill, chainsaw, etc.). Hearing protection will be required when working with or near this equipment.

Sharps. Sharp objects (i.e., needles) may be encountered during performance of field activities on this project. Flags will be provided to volunteer or subcontractor personnel to locate the objects. These individuals should then contact the Field H&S Manager who will arrange for proper handling and disposal.

Poison Oak. Poison oak is present on some of the habitat restoration sites. This plant should be identified and avoided to minimize the chance for exposure. If it is necessary to come in contact with this plant, the appropriate PPE measures will be taken to protect the worker from exposure. Tyvek suits will be provided as well as nitrile glove liners. All contaminated clothing will be disposed of properly.

3.6 Sediment Sampling

It is not anticipated that sediment sampling will be performed as a part of this project.

3.7 Groundwater Sampling

It is not anticipated that groundwater sampling will be performed as a part of this project.

4.0 PROTECTIVE EQUIPMENT

Work for this project will be conducted in Level D and modified Level D. Levels A, B and C are not anticipated for this project.

5.0 SAFETY EQUIPMENT LIST

The following Safety Equipment must be available on site:

- First aid kit;
- Eye wash kit;
- Mobile telephone;
- Safety-toe boots;
- Safety glasses;
- Safety vests;
- Life jackets (when working off-shore);
- Hard hat (when overhead hazards are present); and
- Fire extinguishers.

6.0 WORK ZONES

It is not anticipated that migration of chemicals from the work area will be a possibility and therefore it is not necessary to establish exclusion, contamination reduction, and support zones for this effort.

7.0 MINIMIZATION OF CONTAMINATION

It is not anticipated that contamination will be encountered on this project.

8.0 DECONTAMINATION

It is not anticipated that decontamination of either equipment or personnel will be needed on this project.

9.0 DISPOSAL OF CONTAMINATED MATERIALS

Not applicable.

10.0 SITE SECURITY AND CONTROL

Site security and control will be the responsibility of the Field H&S Manager or their designee. Field activities will be conducted on the shorelines of the waterways, Commencement Bay,

creeks, on private properties, and at the end of a dead end street, and public access/security may be an issue of concern. If security issues are identified during field activities, notify the Project Manager and a response plan will be developed. In general, when working in isolated areas, individuals should not work alone, and each team of personnel should have at least one cell phone or radio to call for assistance.

11.0 SPILL PLAN

Sources of bulk chemicals subject to spillage are not expected to be encountered in this project. Accordingly, a spill containment plan is not required for this project. Incidental spills will be dealt with in accordance with appropriate regulations.

12.0 EMERGENCY RESPONSE PLAN

The Emergency Response Plan outlines the steps necessary for appropriate response to emergency situations. The following paragraphs summarize the key Emergency Response Plan procedures for this project. City of Tacoma personnel and subcontractors will be responsible for identifying an emergency situation, notifying the appropriate personnel or agency, evacuating the hazardous area, and attempting to control only very small hazards that could present an emergency situation. Personnel will not be responsible for handling the emergency.

12.1 Plan Content and Review

The principal hazards addressed by the Emergency Response Plan include the following: fire or explosion, medical emergencies, uncontrolled contaminant release, and situations such as the presence of chemicals above exposure guidelines or inadequate protective equipment for the hazards present. However, in order to help anticipate potential emergency situations, field personnel shall always exercise caution and look for signs of potentially hazardous situations, including the following as examples:

- Visible or odorous chemical contaminants;
- Drums or other containers;
- General physical hazards (i.e., traffic, moving equipment, sharp or hot surfaces, slippery or uneven surfaces, etc.);
- Live electrical wires or equipment;
- Underwater cables;
- Persons under the influence; and
- Meth labs.

These and other potential problems should be anticipated and steps taken to avert problems before they occur.

The Emergency Response Plan shall be reviewed and rehearsed, as necessary, during the on-site health and safety briefing. This ensures that all personnel will know what their duties shall be if an actual emergency occurs.

12.2 Plan Implementation

The Field H&S Manager shall act as the lead individual in the event of an emergency and evaluate the situation. He/she will determine the need to implement the emergency procedures, in concert with other resource personnel including City of Tacoma and contractor personnel and the Project Manager. Other on-site field personnel will assist the manager as required during the emergency.

In the event that the Emergency Response Plan is implemented, the Field H&S Manager or designee is responsible for alerting all personnel in the affected area by use of a signal device (such as a hand-held air horn) or visual or shouted instructions, as appropriate.

Emergency evacuation routes and safe assembly areas shall be identified and discussed in the on-site health and safety briefing, as appropriate. The buddy-system will be employed during evacuation to ensure safe escape, and the Field H&S Manager shall be responsible for roll-call to account for all personnel.

12.3 Emergency Response Contacts

Site personnel must know whom to notify in the event of Emergency Response Plan implementation. The following information will be readily available at the site in a location known to all workers.

- Emergency Telephone Numbers: see list at the beginning of this plan;
- Route to Nearest Hospital: see list and route maps included as Figure 1 of this plan;
- Site Descriptions: see the general description at the beginning of this plan and more detailed information in the site specific work plans; and
- If a significant environmental release of contaminants occurs, the federal, state, and local agencies noted in this plan must be notified within 24 hours. Contact the Project Manager as soon as possible and he/she will be responsible for notifying agencies listed on page 1. If the release to the environment includes navigable waters also notify the National Response Center.

In the event of an emergency situation requiring implementation of the Emergency Response Plan (fire or explosion, serious injury, tank leak or other material spill, presence of chemicals above exposure guidelines, inadequate personnel protection equipment for the hazards present, etc.), cease all work immediately. Offer whatever assistance is required, but do not enter work areas without proper protective equipment. Workers not needed for immediate assistance will decontaminate as needed per normal procedures (if possible) and leave the work area, pending approval by the Field H&S Manager for re-start of work. The following general emergency response safety procedures should be followed.

12.4 Fires

City of Tacoma personnel will attempt to control only very small, incipient stage fires and only if trained to do so. If a large fire occurs or an explosion appears likely, evacuate the area immediately. If a fire occurs which cannot be controlled with a 10-pound ABC fire extinguisher, then immediate intervention by the local fire department or other appropriate agency is

imperative. Also, if a fire occurs within the vicinity of poison oak/ivy plants, it should be noted that this situation poses severe smoke inhalation hazards.

Use the following steps for evacuation:

- If time allows, contact the local fire department (phone number – 911) for immediate intervention and rescue;
- Perform head-count to ensure that all project personnel have evacuated safely; and
- Inform Project Manager of the situation.

12.5 Medical Emergencies

Contact the Field H&S Manager listed in the plan if a medical emergency occurs. If a worker needs to leave the site to seek medical attention, another worker will accompany the patient to the hospital. When in doubt about the severity of an accident or exposure, always seek medical attention as a conservative approach. Notify the Project Manager of the outcome of the medical evaluation as soon as possible. For minor cuts and bruises, a first aid kit will be available.

- If a worker is seriously injured or becomes ill or unconscious, immediately request assistance from the emergency contact sources noted on page 1.

12.6 Plan Documentation and Review

The Field H&S Manager will notify the Project Manager as soon as possible after the emergency situation has been stabilized. The Project Manager will notify the appropriate regulatory agencies, if applicable. If an individual is injured, the Field H&S Manager or designee will file a detailed Accident Report within 24 hours.

The Project Manager and the Field H&S Manager will critique the emergency response action following the event. The results of the critique will be used in follow-up training exercises to improve the Emergency Response Plan.

13.0 TRAINING REQUIREMENTS

City of Tacoma employees, subcontractors, and volunteers who perform site work must understand potential health and safety hazards. Volunteers will be required to sign a liability waiver prior to working on any of the sites covered by this plan.

Mary Henley, the designated Site Health and Safety Manager, has completed 24-hour initial health and safety, 8-hour refresher, and current first-aid and CPR training courses.

Prior to the start of each new activity, the Field H&S Manager or designee will review applicable health and safety issues with all employees and subcontractors working on the site, as appropriate. These briefings will also review the work to be accomplished, with an opportunity for questions to be asked.

14.0 REPORTING, REPORTS, AND DOCUMENTATION

The Field Health and Safety report (Figure 2) will be completed monthly by the Field H&S Manager or designated individual. In the event that accidents or injuries occur during site work, the Project Manager will be informed. City of Tacoma staff and subcontractors working on this project will be required to sign the Record of H&S Communication document (Table 3), copies of which will be kept on site during work activities and the original signatures recorded in the project files.

15.0 MEDICAL SURVEILLANCE

All City personnel are given a pre-employment medical exam. Additional medical surveillance will be performed as necessary but is not anticipated on this project.

TABLES

Table 1 – Required Health and Safety Plan Elements

Table 2 – Activity Hazard Analysis

Table 3 – Record of Health and Safety Communication

FIGURES

Figure 1 – Hospital Location and Directions

Figure 2 – Health and Safety Report

APPENDICES

Appendix A – City of Tacoma Accident Prevention and Safety Plan

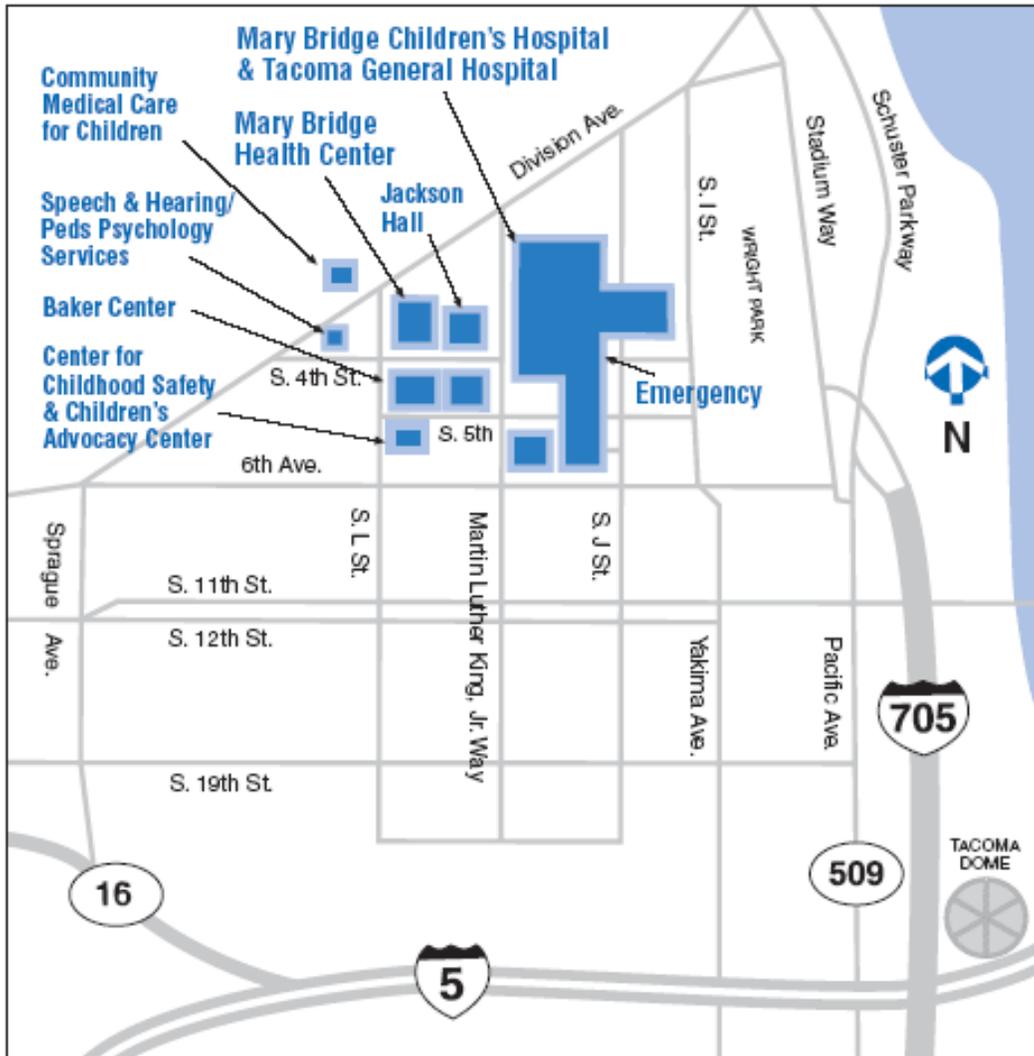
Table 1
Required Health and Safety Plan Elements

Required Plan Element	Section
Confined Space Entry	3.5 Other Physical Hazards
Decontamination	8.0 Decontamination
Emergency Response Plan	12.0 Emergency Response Plan
Medical Surveillance	15.0 Medical Surveillance
Names of Key Personnel	2.3 Chain of Command
Personal Protective Equipment	4.0 Protective Equipment 5.0 Safety Equipment List
Safety and Hazard Analysis	3.0 Hazard Evaluation and Control Measures
Site Control	6.0 Work Zones 10.0 Site Security and Control
Spill Containment	11.0 Spill Plan
Training	13.0 Training Requirements

**Table 2
Activity Hazard Analysis**

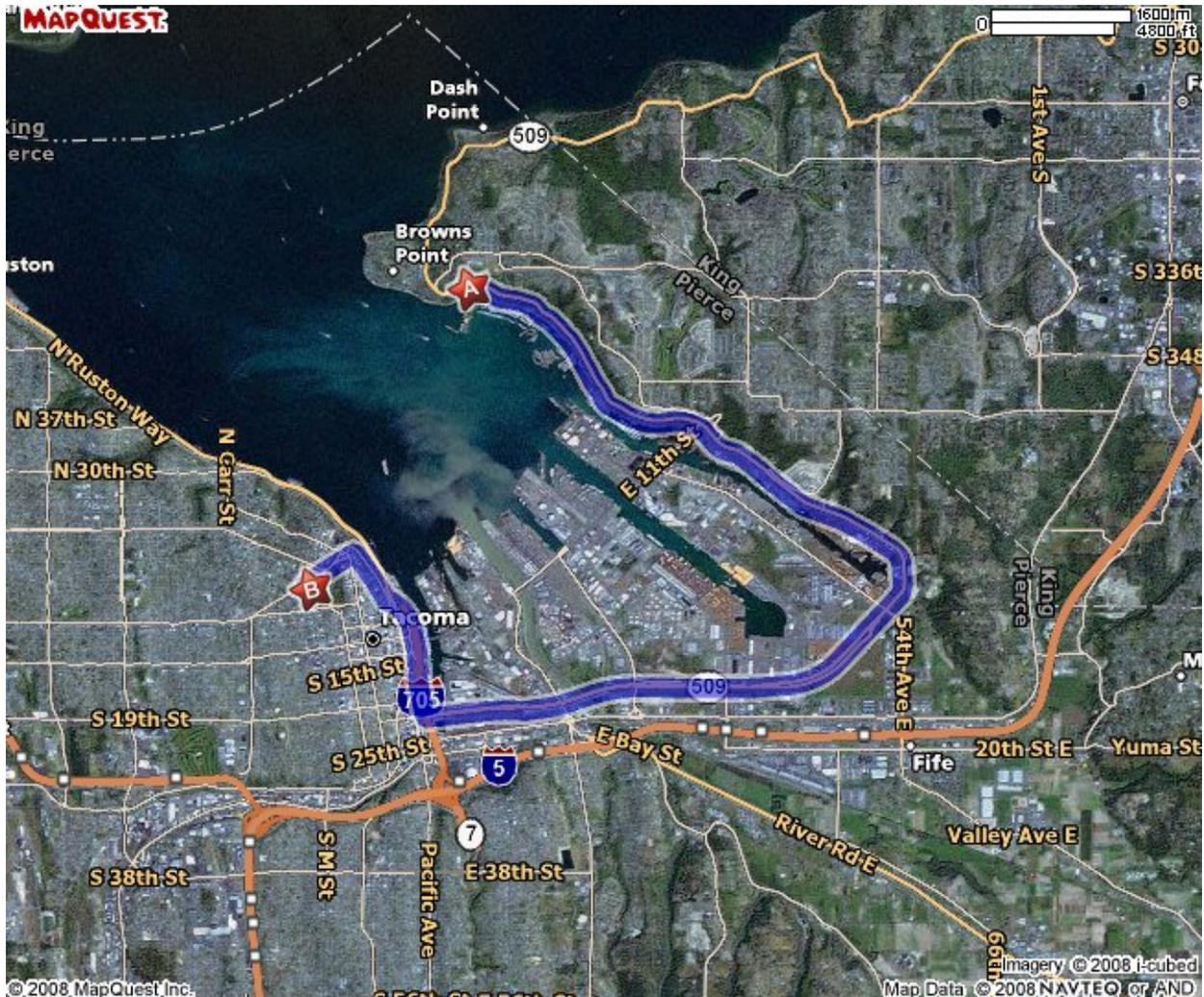
Activity	Hazard	Control
Monitoring, Inspection, Photo Documentation, and Planting	Slipping on wet or slippery surfaces.	Wear appropriate slip-resistant boots.
	Tripping on uneven surfaces.	Walk carefully and don't take chances.
Invasive Plant Removal	Scratches, stings, or puncture wounds by thorned or stinging plants.	Wear appropriate protective clothing, gloves, and eye protection.
	Tripping on uneven surfaces.	Walk and step carefully and don't take chances.
	Getting hit by vehicle.	Wear safety vest, use cones, and use caution when working in close proximity to traffic.
	Getting hurt by mechanical equipment.	Use caution and keep sufficient distance when working near someone who is using weed whackers, chainsaws, etc. Wear eye and ear protection as appropriate.
	Poison oak stings.	Know how to identify poison oak and stay away from it. If stung, wash immediately with warm water and soap.
	Heat stress.	Keep well hydrated. Maintain appropriate work-rest cycles and monitor heart rate as needed.
Trash Removal	Cuts from sharp objects.	Use appropriate work gloves. Do not handle needles. Mark the location with flagging and contact the Field H&S Manager.
	Back strain.	Use proper lifting techniques for heavy objects.

**Figure 1
Hospital Location and Directions**



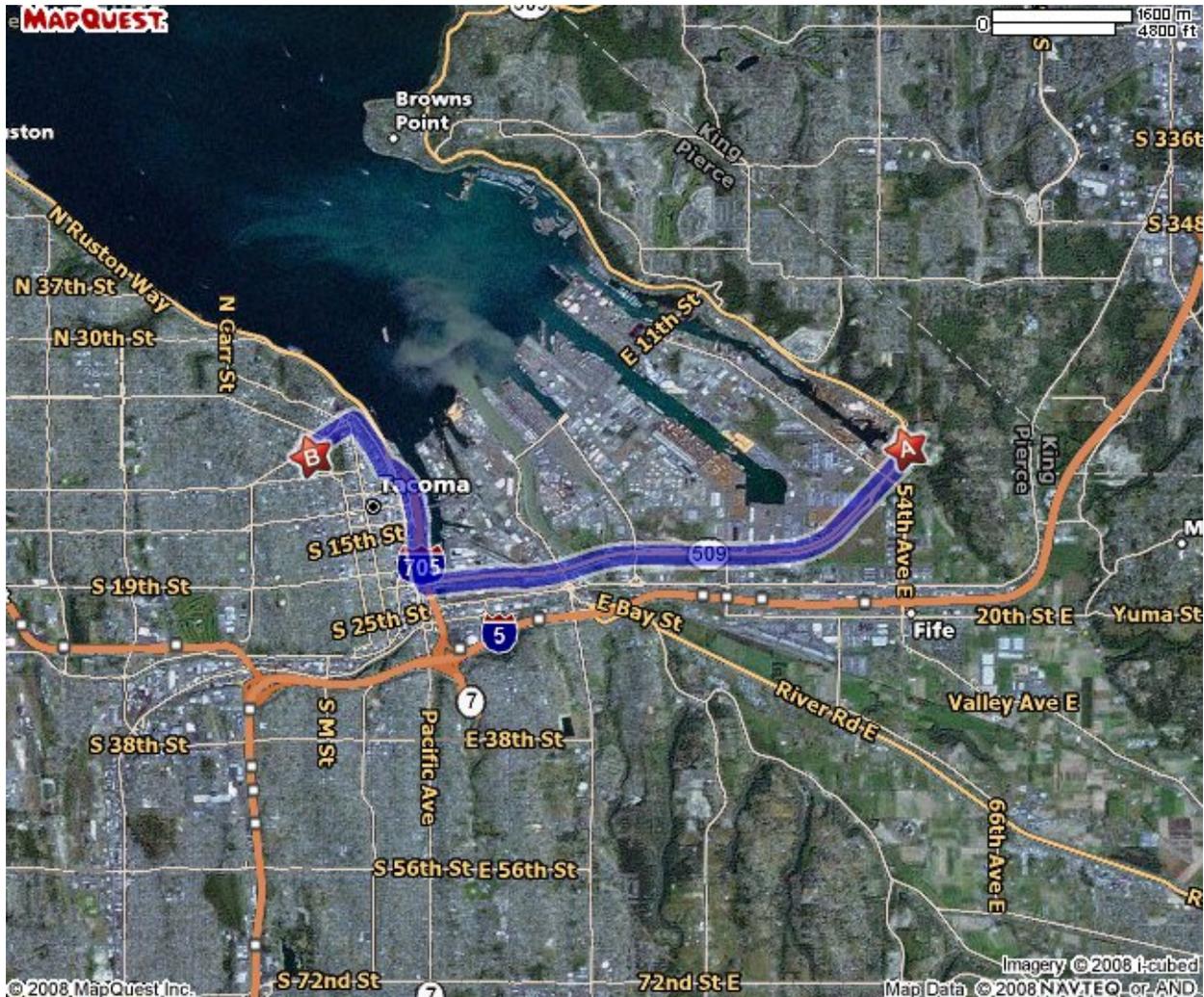
From I-5, take the City Center exit onto I-705. Follow directions to Schuster Parkway, exiting on Stadium Way. Turn right onto Stadium Way. Follow approximately 1/2 mile, turning left onto Division Avenue. Continue on Division for four blocks. Turn left on South J Street. The Emergency Department entrance is located to the right on South J Street.

**Yowkwala, Squally Beach, and Skookum Wulge Mitigation Sites
(adjacent to Marine View Drive)**



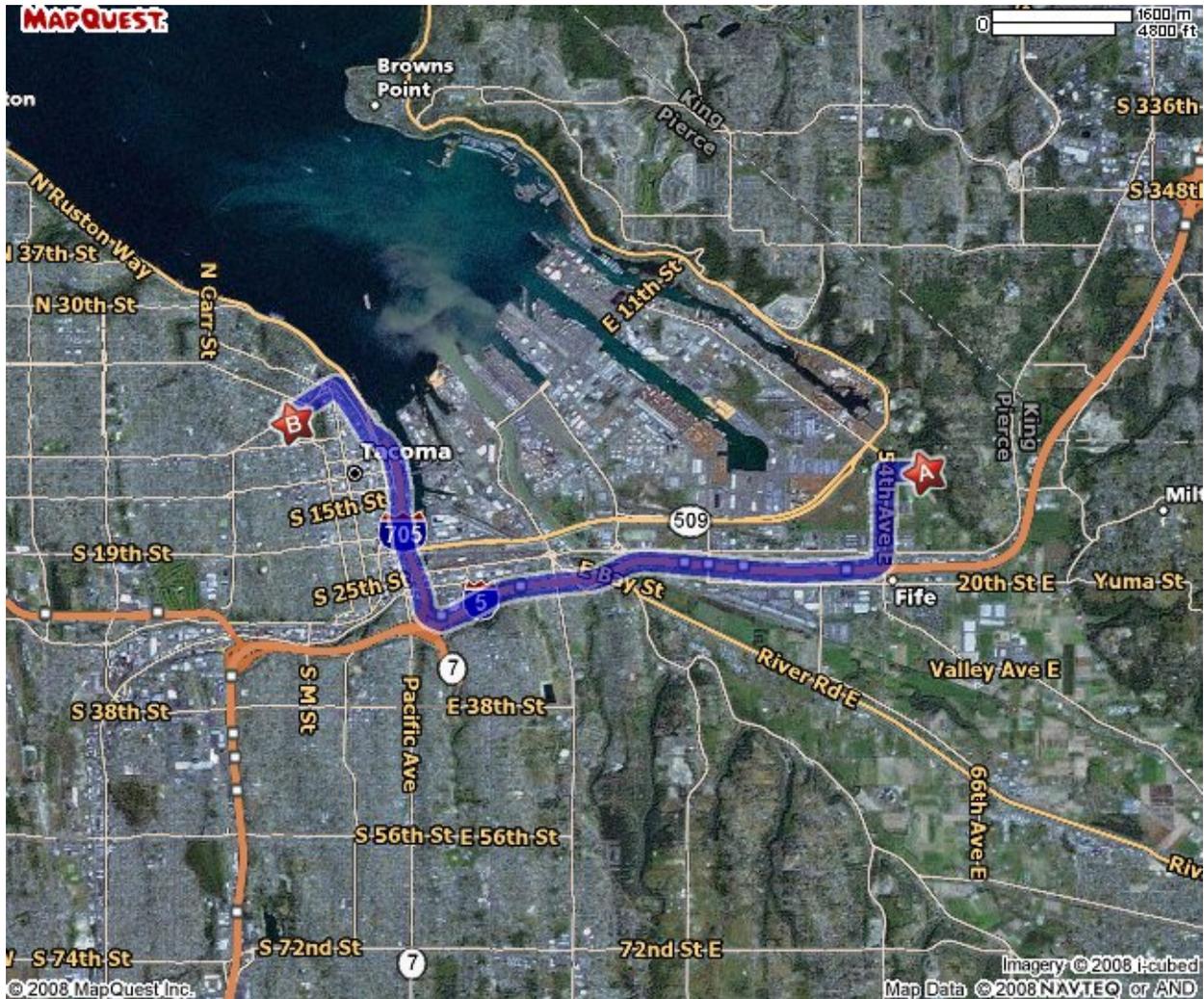
Start out going south on Marine View Drive//WA-509 toward East 11th Street. Continue to follow WA-509 South. Merge onto I-705 North toward Schuster Parkway/Ruston. Take the Stadium Way exit. Turn right onto Stadium Way. Turn left onto Division Avenue. Continue on Division for four blocks. Turn left on South J Street. The Emergency Department entrance is located to the right on South J Street.

**Mowitch Mitigation Site
(in vicinity of 1610 Marine View Drive)**



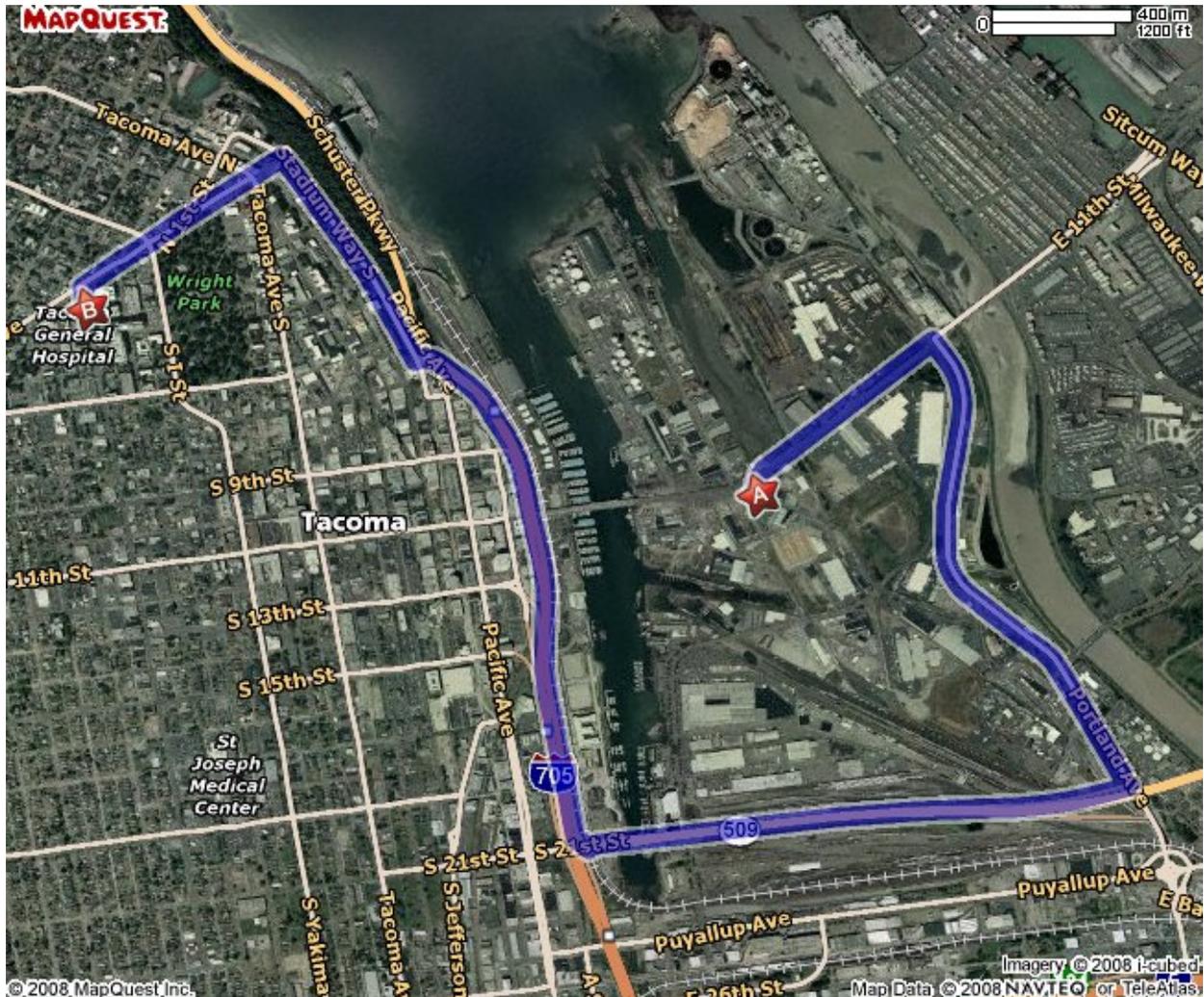
Start out going south on Marine View Drive/WA-509 toward Taylor Way East. Continue to follow WA-509 South. Merge onto I-705 North toward Schuster Pkwy/Ruston. Take the Stadium Way exit. Turn right onto Stadium Way. Turn left onto Division Avenue. Continue on Division for four blocks. Turn left on South J Street. The Emergency Department entrance is located to the right on South J Street.

**Jordan/Lower Hylebos Marsh Mitigation Site
(adjacent to 5904 4th Street East, Fife)**



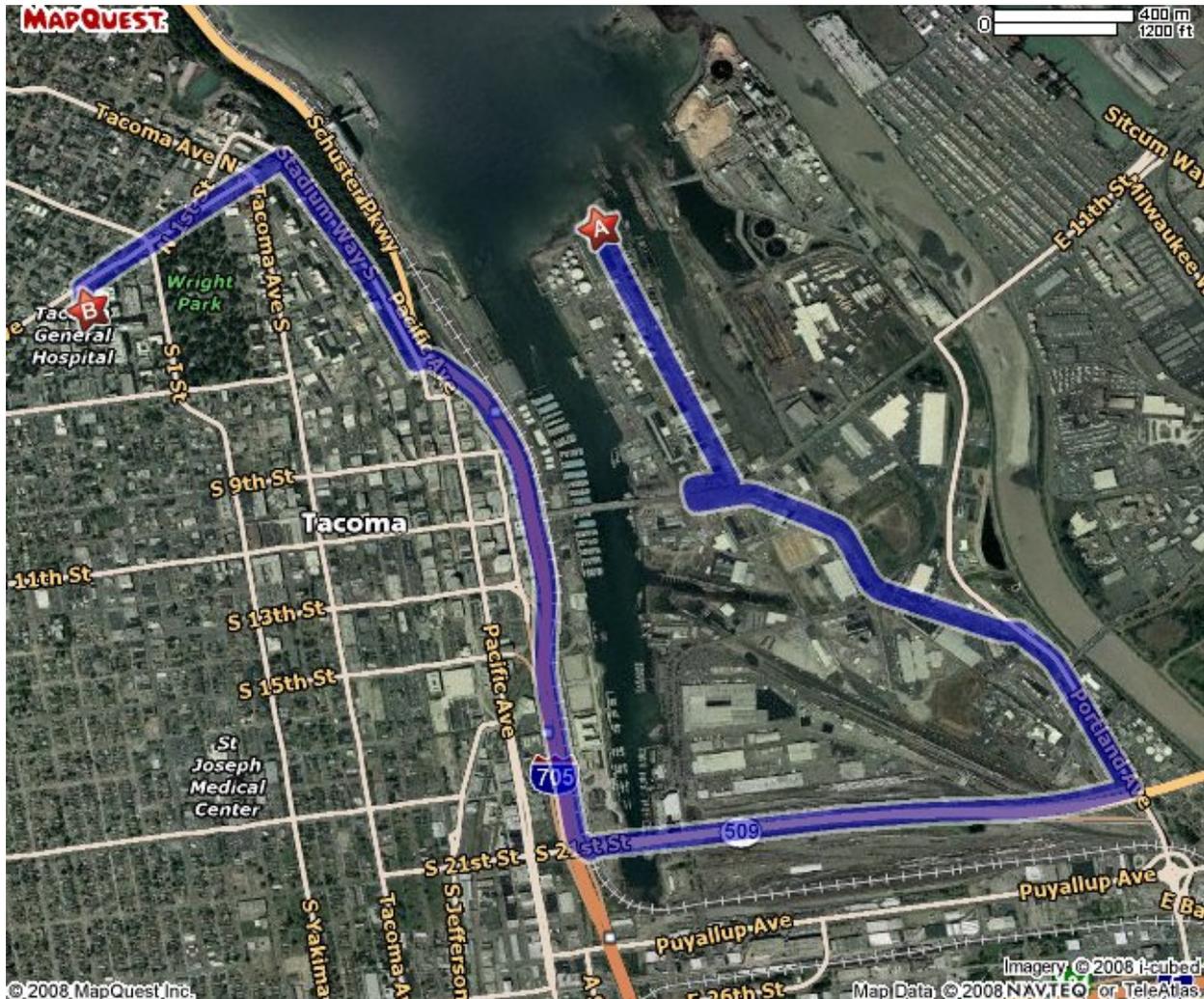
Start out going west on 4th Street East toward 58th Avenue East. Turn left onto 54th Avenue East. Merge onto I-5 South toward Tacoma. Merge onto I-705 North via Exit 133 toward City Center. Take the Stadium Way exit on the left. Turn right onto Stadium Way. Turn left onto Division Avenue. Continue on Division for four blocks. Turn left on South J Street. The Emergency Department entrance is located to the right on South J Street.

**Middle Waterway Sites
(in vicinity of 600 East 11th Street)**



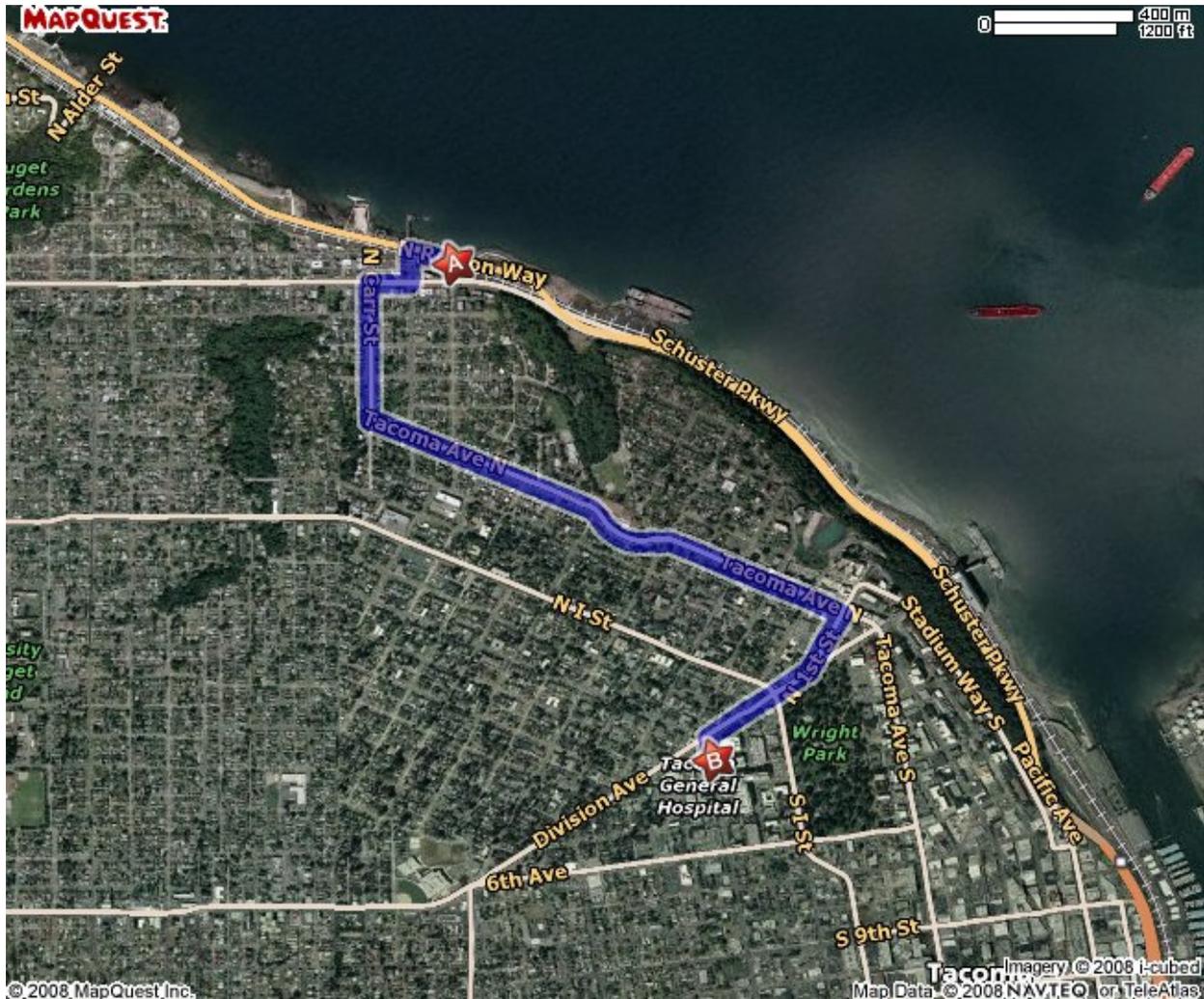
Start out going northeast on East 11th Street toward Portland Avenue. Turn right onto Portland Avenue. Turn right to merge onto WA-509 toward City Center. Turn right to merge onto I-705 North toward Schuster Parkway/Ruston. Take the Stadium Way exit. Turn right onto Stadium Way. Turn left onto Division Avenue. Continue on Division for four blocks. Turn left on South J Street. The Emergency Department entrance is located to the right on South J Street.

Olympic View/OVRA Triangle
(in vicinity of 200 East F Street)



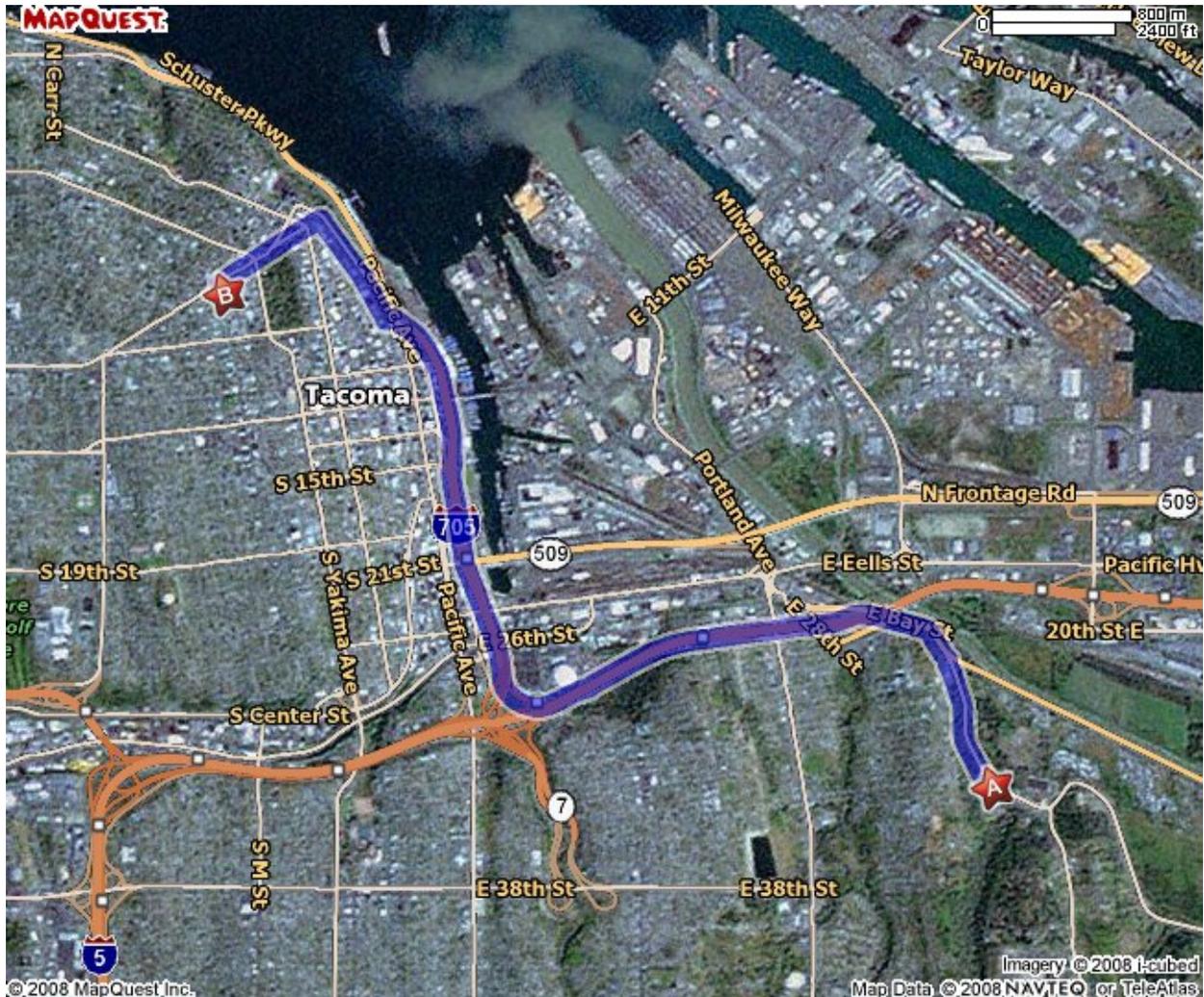
Start out going southeast on East F Street toward East 3rd Street. Turn right onto East 11th Street. Turn left onto East E Street. Turn left onto East 11th Street. Stay straight to go onto St Paul Avenue. Turn slight right onto Portland Avenue. Merge onto WA-509 South toward City Center. Merge onto I-705 North toward Schuster Pkwy/Ruston. Take the Stadium Way exit. Turn right onto Stadium Way. Turn left onto Division Avenue. Continue on Division for four blocks. Turn left on South J Street. The Emergency Department entrance is located to the right on South J Street.

**Tahoma Salt Marsh
(adjacent to 1741 North Schuster Parkway)**



Start out going northwest on North Ruston Way toward North McCarver Street. Turn left onto North McCarver Street. Turn right onto North 30th Street. Turn left onto North Carr Street. Turn left onto Tacoma Avenue North. Turn right onto North 1st Street. Turn slight right onto Division Avenue. Continue on Division for four blocks. Turn left on South J Street. The Emergency Department entrance is located to the right on South J Street.

Swan Creek
(in vicinity of 2717 Pioneer Way East)



Start out going north on Pioneer Way East towards East Browning Street. Turn slight left onto Pioneer Way East/WA-167. Continue to follow WA-167 South. Merge onto I-5 South via the ramp on the left toward Portland/Olympia. Merge onto I-705 North via Exit 133 toward City Center. Take the Stadium Way exit. Turn right onto Stadium Way. Turn left onto Division Avenue. Continue on Division for four blocks. Turn left on South J Street. The Emergency Department entrance is located to the right on South J Street.

Figure 2
Health and Safety Report

Job No. _____

Date _____

S M T W Th F S

Arrival Time: _____

Departure Time: _____

Job _____

Location _____

Client _____

Field Representative _____ Project Manager _____

Field H&S Manager _____ Project H&S Manager _____

Names of Personnel On Site _____

Site Activities _____

Potential Hazards _____

Hazard Control Used _____

Protective Measures Taken _____

Comments or Observations _____

APPENDIX A

City of Tacoma Accident Prevention and Safety Plan

Safety Manual

How to Use This Manual

This manual is a collection of guidelines and procedures covering both general and personal safety. It is intended to provide guidance on a number of safety-related issues and to provide safe operating procedures for specific types of activities. Employees should refer to their departmental standard operating procedures for other specifics. A safe work environment depends on sound policies, good judgment and the experience of workers pulling together to provide for a safe work environment.

Washington State Department of Labor & Industries has written specific standards for electrical workers, telecommunications, fire and other specific types of workers. These specific standards will usually supersede the more general requirements discussed in this safety manual. For copies of additional, pertinent regulations, contact your safety office.

Your safety office can assist in the development of procedures for specific operations. We have a number of resources, both in and outside the office that can be drawn upon to address specific concerns you may have.

Contact phone list:

Risk Manager, Debbie Dahlstrom 591-5443		
Roy Berreth 591-5745		
Rick Cole 502-8558	Milton Eng 591-5403	Darrell Gatchell 591-5445

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CITY OF TACOMA
ACCIDENT PREVENTION AND SAFETY PLAN

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OCCUPATIONAL HEALTH AND SAFETY PROGRAM STRUCTURE

Responsibilities

Supervisors

Ensure that all employees have ample opportunity to be familiar with all Department policies in relation to safety and occupational health.

- Provide leadership in safety through example.
- Provide for a safe and healthy work environment.
- Ensure that employees have the proper tools, equipment, and training to perform their jobs safely.
- Build and use an accountability system.
- Ensure that applicable safety rules and practices are observed.
- Schedule employees to attend safety meetings and safety training programs.

Employees

- Coordinate and cooperate with all other employees in an attempt to eliminate injuries and accidents.
- Know and follow safe work practices.
- Provide recommendations that can contribute to a safety work environment.
- Report unsafe situations or actions to supervision.
- Apply the principles of accident prevention in their daily work and use the appropriate safety devices and protective equipment as required.
- Properly care for all personal protective equipment.
- Promptly report any industrial injury or occupational illness to their supervisor, regardless of the degree of severity.

Risk Management

- Accountable to the City Manager and Director of Public Utilities through line authority.
- Oversees the entire Occupational Health and Safety Program, including:
 1. A written Accident Prevention Program in which each component is identified.
 2. Administration of personnel policies and procedures necessary for adequate operation of the program.

Safety Office(s)

- Is accountable to the Risk Manager.
- Assists with departmental compliance with Municipal, State, and Federal regulations governing safety and health in the workplace.
- Assists departments in providing for a safe work environment by:
 1. Providing area assessments and inspections
 2. Observing operations and staff
 3. Monitoring of systems and equipment
 4. Making recommendations for correction of problems, and
 5. Ensuring that the correction of problems is adequate and complete by:

- a Working with Safety Committees, employees, and public and private services to investigate concerns, evaluate findings, and recommend solutions to department management; leading or assisting in accident investigations as required; and participating in Vehicle Accident Review Boards.
 - b Arranges and/or oversees arrangement of safety training and services programs appropriate for departmental employees.
 - c Assists program coordinators in providing program-specific safety training.
 - d Assists Department Directors in identifying safety-training needs and in finding resources to provide training.
 - e Ensures that the Health and Safety Program policies and procedures are kept current.
 - f Ensures that Safety Committee members receive instruction in their responsibilities.
 - g Attends Safety Committee meetings and other safety meetings as a technical resource
- Represents the Safety Office at meetings within the City organization on matters involving health and safety.
 - Represents the City of Tacoma at meetings outside the City organization on matters involving health and safety.

City Safety Committees (See specific section)

Departmental Safety Coordinators and/or Representatives

Are accountable to Department Directors through line authority. Assist in:

1. Ensuring that working conditions are safe.
2. Correcting unsafe situations and work practices.
3. Ensuring that employees are trained in safety and accident prevention requirements, and that they are familiar with department policies and procedures.

SAFETY COMMITTEES & SAFETY MEETINGS

Responsibilities

Supervisors

- Ensure that the safety concerns from the Safety Committee, Safety Meeting, or Safety Office are addressed in a timely manner.
- Ensure that safety committee elections are held regularly or when there is a vacancy on the committee.
- Ensure that Safety Committees and/or Safety Meetings are scheduled and held as required.
- Ensure that committee members or meeting attendees are provided the opportunity to attend all scheduled safety meetings.
- Assign at least one management representative the task of attending safety committee meetings.

Employees

- Use your Safety Committee and/or Safety Meeting to communicate your safety and health issues.
- Know who your safety committee representative is and bring safety concerns to your supervisor or the committee representative.
- Attend safety meetings and/or safety committees as required.

Risk Management

- Attend safety meetings and safety committees as appropriate.
- Provide guidance and consultation.

Purpose

The City of Tacoma is required by WAC 296-800-130 to establish a method of communicating and evaluating safety and health issues brought up by the City and/or it's employees.

Definitions

Safety Committee: An organizational structure where members represent a group. This gives everyone a voice but keeps the meeting size to an effective number of participants. Typically, the safety committee is an effective safety management tool for a larger employer and safety meetings are more effective for a smaller employer.

Safety Meeting: Includes all employees and a management person to ensure that issues are addressed.

Safety Committee

The committee shall consist of employee-elected and employer-selected members.

The number of employee-elected members must equal or exceed the number of employer-selected members.

The term of employee-elected members must be a maximum of one year. (There is no limit to the number of terms a representative can serve.)

Each committee must have an elected chairperson.

The committee will decide how often, when, and where the committee will meet.

Meetings should be one hour or less, unless extended by a majority vote of the committee.

Note: The high voltage electrical code WAC 296-45 requires monthly safety meetings to be held at a reasonable time and place as selected by the employer. All employees are expected to attend with several exceptions.

The following topics must be covered at each safety committee meeting:

- Review safety and health inspection reports to help correct safety hazards.
- Evaluate accident investigations conducted since the last meeting to determine if the cause of the unsafe situation was identified and corrected.
- Evaluate the workplace accident and illness prevention program and discuss recommendations for improvement, if needed.

The committee must document attendance and write down the subjects discussed.

The minutes of the meeting must be on file for one year and available for review by L&I personnel.

Safety Meeting

Safety meetings are a useful tool for communicating with your work group. They may be used by committee members to communicate between committees and meeting attendees. They may also be incorporated into or called, all-hands meetings, crew meetings, or tail-gate meetings. The importance is the communication or evaluation of safety and health issues, not the title of the meeting.

Meetings should be held monthly and will have at least one management representative.

Meetings will review safety and health inspection reports to help correct safety hazards and evaluate accident investigations to determine if the cause(s) of the unsafe situation were identified and corrected.

Employees will evaluate workplace accident and illness prevention programs and discuss recommendations for improvement, if needed.

The subjects discussed and the attendance shall be documented and a copy provided to Risk Management.

Reference

WAC 296-800-130 Safety Committees and Safety Meetings

WAC 296-45 Electrical Workers

WAC 296-155-110 Construction Work

SAFETY ORIENTATION AND CHECKLIST

Orientation of new employees, rehires, part-time employees and those being transferred will begin the first day of employment in the new position. The orientation program will provide an introduction of department policies and procedures, and will include a thorough briefing on safety in the work environment. The orientation will include a tour of the facilities to acquaint the employee with the entire area.

The employee's immediate supervisor will thoroughly instruct him or her in job safety requirements. A suggested Safety Orientation checklist is provided for this purpose. The supervisor or their designated representative and the employee should complete and sign the checklist and ensure it is kept in the employee's file.

The employee's supervisor is responsible for ensuring and documenting the orientation of each employee



Safety Orientation Checklist



Employee's Name: _____

Position: _____ **Date Hired:** _____

Circle one: New Employee Transfer Rehire Part-time

1. Purpose of orientation
2. Total City of Tacoma Safety Program
 - a Explanation of the Department Occupational Health and Safety Program
 - b Function and membership of the appropriate Safety Committee
3. Reporting of incidents, accidents, near misses, and unsafe conditions to supervisor immediately
4. Completion of incident, accident, and near-miss reports
5. Potential hazards on the job
 - a Review of the Hazard Communication Standard and MSDS's for area
 - b Other hazards specific to the job: _____
6. How to use equipment safely (including lifting techniques)
 - c Care and use of personal protective equipment specific to the position
6. What to do in the event of an emergency
 - a Review of First Aid/Medical Emergency Policy and Procedure
 - b Review of Emergency and Evacuation Policy and Procedure
 - c Exit locations and evacuation routes
 - d Use of fire-fighting equipment
 - e Review of procedures specific to the position: _____
7. Personal work habits
 - a Substance abuse and smoking policies
 - b Housekeeping and safe work practices
8. Vehicle safety
 - a Parking
 - b Procedures for use of own car, vehicle or department vehicle for work activities
 - c Vehicle accident reporting procedure
 - d Vehicle Accident Review Board

I have instructed this employee in the areas checked and believe that he/she can perform their assigned duties safely.

Date: _____ Supervisor: _____

I have been given the information in the areas checked and believe that I can perform my assigned duties safely.

Date: _____ Employee: _____

Return completed checklist to:
Human Resources, 747 Market St. Room 1336, Tacoma

Safety Bulletin Board

Responsibilities

Supervisor

- Install and maintain a safety bulletin board in every fixed workplace (establishment) that has eight or more employees.
- Make sure the safety bulletin board is large enough to post information such as the following:
 1. Safety bulletins
 2. Safety newsletters
 3. Safety posters
 4. Accident statistics
 5. Other safety educational material
 6. Post the OSHA 300 provided by Risk Management annually.

Employee

- Know the location of the safety bulletin board in your workplace.
- Check the safety bulletin board regularly for current safety information.

Risk Management

- Keep the link for the required posters current.
- Assist in obtaining copies of required posters.
- Annually send out the OSHA 300 for posting.
- Send citations received to the supervisor for posting.

Purpose

A safety bulletin board is used to communicate information aimed at increasing employee awareness of safety and health issues and to communicate management safety messages, policies, and reporting procedures.

Procedures

The following considerations should be addressed to maximize the safety bulletin board effectiveness:

- Place it in a location where there is greatest employee exposure (lunchroom, break room).
- Posting should be attractively arranged.
- Required Posters, Safety Committee minutes, OSHA 300, and other information, which becomes outdated or worn, should be changed periodically.
- A specific safety bulletin board or portion of an existing board should be designated and that spot reserved exclusively for safety material.
- The Safety Committee or Management will maintain the safety bulletin board as recommended above.

Required Posting The following are the list and links to the currently required posters.

- Notice to Employees, Self Insured, [F207-037-000](#)
- Job Safety and Health Protection, [P416-081-909](#)
- Your Rights as a Non-Agricultural Worker, [F700-074-909](#)
- Citation and Notice (as appropriate)
- OSHA 300 Summary (posted February 1 and remain posted until April 30 for the preceding year)
- WA Minimum Wage (recommended) [F700-102-909](#)

[L&I Posters, required and recommended.](#) This will take you to the L&I posters web page.

The following are other posters and links to the posters that must be displayed for employees:

- US Dept of Labor, Employment Standards Administration, [Your Rights under the Family and Medical Leave Act of 1993 \(FMLA\)](#)
- US Dept of Labor, Uniformed Services Employment and Reemployment Rights Act, [Your Rights Under USERRA](#)
- US Dept of Labor, Employment Standards Administration, [Equal Opportunity Employment is the Law](#)

NOTICE TO EMPLOYEES

Your employer is self-insured. You are entitled to all of the benefits required by the State of Washington's industrial insurance laws. These benefits include medical treatment and partial wage replacement if your work-related injury or illness requires you to miss work. Compliance with these laws is regulated by the Department of Labor and Industries.

To report an injury...

If you should become injured on the job or develop an occupational disease, immediately report your injury or condition to the person designated below:

Name: _____

Phone: _____

Employers are required by law to post this notice (Revised Code of Washington 51.14.100).

F207-037-000 [08/2002]

Also available in Spanish. Request F207-037-999.

Self-Insurance Section
Department of Labor and Industries
PO Box 44890
Olympia, WA 98504-4890

Job Safety and Health Protection

The Washington Industrial Safety and Health Act (WISHA) — Chapter 49.17 Revised Code of Washington — provides job safety and health protection for Washington employees. The Department of Labor and Industries administers the law and adopts job safety and health regulations. All employers and employees are required to comply with these regulations. Department representatives conduct workplace inspections and investigations to ensure compliance with safety and health regulations.

This poster describes some important parts of the law.

Employers are required to:

Provide job sites that are free from recognized hazards that may cause death or serious harm to employees.

Comply with occupational safety and health regulations administered under WISHA.

Post this and other notices to keep employees informed of their protection and obligations under WISHA.

Notify the Department of Labor and Industries within eight (8) hours of any fatality or probable fatality or catastrophe — an injury or illness that results in two or more workers being hospitalized. The employer must report the following information in person or by telephone to the nearest department office or use the Occupational Safety and Health Administration toll-free central number 1-800-321-6742:

- Name of employer.
- Location and time of the incident.
- Number of fatalities or hospitalized employees.
- Contact person and his/her phone number.
- A brief description of the incident.

Allow an employee representative to attend all meetings between the Department of Labor and Industries and the employer concerning an appeal of a citation by the employer.

Allow an employee representative to accompany the department representative and the employer during an inspection or investigation of the workplace. Employers cannot withhold wages or benefits or discriminate against the employee for time spent participating in the inspection, investigation, or opening and closing conferences.

Provide personal protective equipment when required by a WISHA regulation.

Citations:

If, upon inspection the department believes a WISHA regulation has been violated, a citation alleging such violation will be issued to the employer. Citations will specify a time period allowed for correcting the violation.

The WISHA citation must be prominently displayed at or near the place of the alleged violation for a minimum of three days. It cannot be taken down until the violation is corrected.

Penalties:

Penalties of up to \$70,000 may be assessed for each willful or repeated violation of a WISHA regulation, and a minimum penalty of \$5,000 shall be assessed for each willful violation. Employers may be fined up to \$7,000 for each serious or non-serious violation. Penalties up to \$7,000 will be assessed for failure to post this or any other required notices.

Penalties of up to \$7,000 per day may be assessed for failure to correct a violation by the allowed time specified in the citation.

Criminal penalties are also provided for under WISHA. Any person who is convicted of giving advance notice of an inspection without the authority of the department may be fined up to \$1,000 and imprisoned for up to six months. A person convicted of knowingly making a false statement or report in regard to WISHA may be fined up to \$10,000 and imprisoned for up to six months.

An employer convicted of a willful or repeated violation that results in the death of an employee may be fined up to \$10,000 and imprisoned for up to six months. A second conviction doubles these penalties.

Appeals:

Employers may appeal the alleged citation, the proposed penalties or the time allowed to correct a violation to the department and to the Board of Industrial Insurance Appeals.

Promptly notify an employee who was or is being exposed to toxic materials or harmful physical agents at levels that exceed those allowed by WISHA regulations.

Employees are required to:

Comply with occupational safety and health regulations that apply to their own actions and conduct on the job.

Inspections and investigations:

Employer and employee representatives may accompany a department inspector to assist with an inspection or investigation. If an employee representative does not participate, the inspector will consult with a number of employees about safety and health conditions in the workplace.

Complaints:

Employees and employee representatives who believe that an unsafe or unhealthy condition exists in their workplace have the right to request an inspection by the Department of Labor and Industries. The names of those filing complaints will be kept confidential upon the request of the employee. Employees also have the right to bring unsafe or unhealthy conditions to the attention of the inspector during an investigation or inspection.

Employees may not be fired or discriminated against for filing safety and health complaints or for exercising any of their rights under WISHA.

Employees who believe they have been discriminated against may file a complaint with the department or with the U.S. Department of Labor, Occupational Safety and Health Administration, within 30 days of the alleged discrimination. Public employees may file discrimination complaints with the Department of Labor and Industries only.

The U.S. Department of Labor monitors the operation of the WISHA program to assure effective administration. Any person may make a written complaint regarding the administration of state regulations directly to the Occupational Safety and Health Administration, Region 10, 1111-3rd Avenue, Suite 715, Seattle, WA 98101-3212.

Employees may appeal the time allowed to correct a violation if they believe that time to be unreasonable.

Consultation services:

The department offers free consultations to help employers comply with safety and health regulations. Specialists can help correct hazardous conditions and develop safety and health programs. These specialists do not issue citations or assign penalties. The consultation is confidential unless the employer wishes to make it public.

Department employees are also available to conduct seminars and training on occupational safety and health for both employer and employee groups.

More information:

To request an inspection, consultation or additional information, call the safety and health toll-free information number:

1-800-423-7233
(4BE-SAFE)

or contact:

Department of Labor and Industries

WISHA Services Division

PO Box 44600

Olympia WA 98504-4600

This document is available in other formats to accommodate persons with disabilities. For assistance, call 1-800-547-8367. (TDD users, please call 360-902-5797.) Labor and Industries is an Equal Opportunity Employer.

PUBLICATION F416-081-909 [12/2004]

DEPARTMENT OF SAFETY & HEALTH INSPECTIONS (DOSH)

Compliance Inspections

When a WISHA compliance inspector from the Department of Safety and Health identifies him/herself on site, notify your immediate supervisor and contact your Safety Office. A representative will respond as soon as possible.

The Safety Office is the primary focal point for all interaction between the Department of Safety and Health and the City in matters of inspections, citations, appeals, and regulatory interpretation.

Determine the reason for the inspection and be cooperative. The following is an outline of what to expect during the course of the inspection and the subsequent procedures that may follow.

DOSH entry onto City property/facility

- Inspector introduction to City management
- Request for employer/employee representatives
- Request for Safety Office representative

DOSH Conducts Inspection

- Safety Office, Facility and Employee Representative
- City representatives note inspector's concerns/begin corrective action

DOSH Conducts Closing Conference

- Safety Office, Facility and Employees Representative
- City representatives note inspector's concerns and provide progress status on previously identified issues

DOSH Issues Citation & Notice

- Citation & Notice (C&N) date stamped and posted on-site by manager for 3 days or until items are corrected (with or without citations).

(Options)

<p style="text-align: center;">Acceptance of C & N</p> <ul style="list-style-type: none"> • C & N with no violations or where violations are accepted as written. • Agreement/assignment of compliance duties (deliverable/timetable) • Citation follow-up • Ensure expedient compliance • Ensure completion of DOSH's sign-off sheet when items are completed (copy to site manager/ Safety Office) • Pay penalty(ies) 	<p style="text-align: center;">Appeal C & N</p> <ul style="list-style-type: none"> • Work on non-appeal items or items indicating "good faith" • Appeal letter to DOSH Timely- within 15 days • Justification for appeal - isolated instance, comparable protection, extenuating circumstances • Involvement of Legal 	<p style="text-align: center;">Apply for Variance</p> <ul style="list-style-type: none"> • Work on non-appeal items or items indicating "good faith" • Appeal letter to DOSH • Timely- within 15 days • Justification for appeal - isolated instance, comparable protection, extenuating circumstances • Involvement of Legal
<p>After 15 working days, C & N becomes final. No Further appeals are possible.</p>	<p style="text-align: center;">Re-assumption Hearing</p> <ul style="list-style-type: none"> • Who goes (Safety Office lead, on-site management and employee rep) • What is the strategy? • Status of variance, if any? 	<p style="text-align: center;">Application for Variance</p> <ul style="list-style-type: none"> • Letter to DOSH stating what controls will be in place that provide better employee protection than what the code requires.
<p style="text-align: center;">DOSH Issues Corrective Notice of Re-determination Affirm/Modify/Vacate</p> <ul style="list-style-type: none"> • CNR date stamped and posted on-site by manager • Agreement/assignment of compliance duties (deliverable/timetable) • CNR follow-up • Ensure expedient compliance • Ensure completion of DOSH's sign-off sheet (copy to site manager/Safety Office) • Pay penalty(ies) 		

<p style="text-align: center;">Appeal to Board of Industrial Insurance Appeals</p> <ul style="list-style-type: none"> • Work on non-appeal items or items indicating "good faith" • Appeal letter to DOSH • Timely - within 15 working days • Justification for appeal - isolated instance, comparable protection, extenuating circumstances • Involvement of Legal

Board of Industrial Insurance Appeals Hearing

- Who goes (Safety Office lead, on-site management and employee rep)
- What is the strategy?
- Status of variance, if any?

Board of Industrial Insurance Appeals Issues Ruling Affirm/Modify/Vacate

- CNR date stamped and posted on-site by manager
- Agreement/Assignment of compliance duties (deliverable/timetable)
- CNR follow-up
- Ensure expedient compliance
- Ensure completion of DOSH's Sign-off Sheet (copy to site manager/Risk Management)
- Pay penalty(ies)

Appeal through the Court System

C & N - Citation and Notice

CNR - Citation and Notice of Re-determination

DOSH - Department of Safety and Health

CONTRACTORS OBSERVED DOING UNSAFE ACTS

Periodically, activities occur on City of Tacoma premises under the direction of City contracted vendors (e.g., construction, maintenance, janitorial work, investigative procedures, etc.). The City may have a degree of responsibility for contractor work site safety in some circumstances, and always has a responsibility to maintain safe working conditions for its own employees.

If any City employee notices an incident or practice of concern, she/he should report such to their supervisor, the contractor, or Project Engineer and document the observation.

Any risks to the health and safety of City employees working in or around these "contractor areas" must be clarified and, if necessary, mitigated by the general contractor or its representative. All City employees affected by such activities must be informed of the risks, and must take adequate precautionary measures. If you have any questions or concerns regarding contractor safety, contact your Safety Office.

HEALTH & SAFETY ACTION REQUEST

Responsibilities

Supervisor

- Ensure that blank Health & Safety Action Request forms are available for anyone who wants one.
- When a Health & Safety Action Request is received, investigate the hazard, and if an imminent danger exists, take preventative action immediately.
- Report back to the employee/initiator, the results of the investigation and your plan of action.
- Forward all requests to the appropriate safety office.

Employee

- Report any and all health and/or safety hazards or problems you are aware of, using the Health & Safety Action Request form.
- Forms may be submitted anonymously, but more information will enable a better investigation and more positive results.

Risk Management

- Track and follow-up on all action requests received.
- Investigate and report back to the initiator, any action requests submitted directly to the safety office.

Purpose

To establish a policy and procedure for employees to report obvious or potential safety hazards.

Policy

The Health & Safety Action Request is part of the City's accident prevention program. It is every employee's responsibility to report an obvious or potential safety or health hazard.

Definitions

An obvious or potential safety or health hazard:

Any unsafe condition, either in a facility or on equipment, or any unsafe act or practice by an employee(s) that could cause injury or illness.

Procedures

Any employee who feels that a safety hazard exists must fill out the top portion of the Safety Hazard Report Form, which can be obtained from their supervisor or the Safety Office.

The below form can be downloaded in [Adobe PDF format](#) or [Word Format](#).

CITY OF TACOMA
HEALTH AND SAFETY ACTION REQUEST

Action requested by (name): (Optional)	Department and phone #:
Supervisor of operation or area:	
Location of hazard:	
Description of hazard:	
Suggestions or possible solutions to the problem	
Initiator signature and date: (Optional)	
Date received by supervisor:	
Immediate action taken (if an imminent danger exists, immediate preventative action must be taken). In all cases, by the end of their next work shift, initiator must be advised of the action taken.	
Supervisor's signature and date:	
Remedial action expected completion date:	
Initiator acknowledgment (signature):	
Date received by Safety Office:	
Findings and recommendations:	
Date remedial action completed:	
Safety Office signature:	

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Responsibilities

Supervisors

- Ensure that a hazard assessment is performed. This means you look for and identify hazards or potential hazards in your workplace and determine if personal protective equipment is necessary on the job.
- Verify that a hazard assessment for personal protective equipment has been done at your workplace and complete a written certification (paper or electronic format) that includes the:
 1. Name and location of the workplace
 2. Name of person certifying the hazard assessment
 3. Date of hazard assessment
- Select appropriate personal protective equipment for your employees
- Provide personal protective equipment wherever hazards exist from:
 1. Processes or the environment
 2. Chemical or Radiological hazards
 3. Mechanical irritants

Note: personal protective equipment will be provided at no cost to the employee with the exception of some clothing, foot protection and prescription eyewear. Department policies and union agreements vary regarding reimbursement of some of these items.

- Train your employees to use the Personal Protective Equipment including
 1. When and what is necessary and how to use it.
 2. How to put on, take off, adjust and wear.
 3. Limitations
 4. Proper care, maintenance, useful life and disposal
- Make sure your employee can demonstrate an ability to use the personal protective equipment properly. If the employee cannot demonstrate this ability then they must be retrained.
- Document your training.
- Require the use of personal protective equipment on the job.

Employees

- Use appropriate personal protective equipment.
- Keep personal protective equipment in safe and good condition.

Risk Management

- Provide recordkeeping for training
- Provide consultation and guidance.

Purpose

To provide the requirements for the use of personal protective equipment when performing certain hazardous tasks or when working in a potentially unsafe environment and to make sure City of Tacoma employees have, use and care for the appropriate personal protective equipment.

Policy

Personal protective equipment shall be provided, used, and maintained in a sanitary and reliable condition. Conditions requiring the use of personal protective equipment include, but are not limited to: hazards produced by processes or the environment; chemical hazards; radiological hazards or mechanical hazards that could cause injury or impairment to the function of any body part through absorption, inhalation, or physical contact.

Definition

Personal protective equipment is an item or items used to protect the eyes, face, body, arms, hands, legs, and feet such as goggles, helmets, gloves and disposable coveralls.

Hazard Assessment

The completed hazard assessment is used to select the required personal protective equipment to protect employees from observed hazards for each type of work. Personal protective devices shall be used in conjunction with administrative and engineering controls. Reviewing accident, injury and near-miss records will help you to identify any problem areas. This information is available to you from the Safety Office if you do not have it.

A hazard assessment checklist can be found at the end of this section.

If, after completing the hazard assessment, the supervisor or employee is not sure of what personal protective equipment is required, available, or acceptable, please contact your Safety Office to request assistance.

Selection Guidelines

The supervisor, after collecting the data gathered in the Hazard Assessment should review and determine the type of risk, level of risk, and seriousness of potential injury from each of the hazards found in the area. The possibility of exposure to several hazards simultaneously should be considered. After reviewing the data, select the personal protective equipment required.

- Become familiar with the potential hazards and the type of protective equipment that is available, and what it can do.
- Compare the hazards (impact velocities, masses, projectile shape, radiation intensities, etc.) with the capabilities of the available protective equipment.
- Select the protective equipment that provides a level of protection greater than the minimum required. Fit the user with the personal protective equipment and give instructions on the care and use of the personal protective equipment.
- Careful consideration must be given to comfort and fit. Personal protective equipment that fits poorly may not provide the necessary protection.

Reassessment of Hazards

It is the responsibility of the supervisor to reassess the workplace as necessary, by identifying and evaluating new equipment and processes, reviewing accident records, and reevaluating the suitability of previously selected personal protective equipment. The Risk Management office is available for consultation when there are questions on the suitability, availability, compatibility, use and care of the equipment.

Training

- After the hazard assessment and equipment selection, the supervisor or their representative will train each employee required to use personal protective equipment. If the supervisor has reason to believe that any affected employee who has already been trained does not have the understanding and skill required,
- Changes in the workplace render previous training obsolete, and/or changes in the types of personal protective equipment to be used render previous training obsolete.

Selection Guidelines for Eye and Face Protection

Each affected employee shall:

- Use appropriate eye or face protection when exposed to eye or face hazards from flying particles, molten metal, chemicals, acids or caustics, chemical gases or vapors, or potentially injurious light radiation.
- Use eye protection that provides side protection when there is a hazard from flying objects. Detachable side protectors (e.g. clip-on or slide-on side shields) are acceptable.
- Wear protective lenses while engaged in operations that involve eye hazards that incorporate prescription lens in its design, or wear eye protection that can be worn over the prescription lenses without disturbing the proper position of the prescription lenses or the protective lenses.
- Use equipment with filter lenses that have a shade number appropriate for the work being performed for protection from injurious light radiation.
- Note: Eye and face protection must be ANSI approved.

Selection Guidelines for Head Protection

Type I, Class E helmets are recommended for all City of Tacoma Employees when helmets must be worn. Where falling or flying object hazards are present, helmets must be worn. Some examples include: working below other workers who are using tools and materials which could fall, working around or under conveyor belts which are carrying parts or materials, working below machinery or processes which might cause material or objects to fall, and working on exposed energized conductors.

All head protection is designed to provide protection from impact and penetration hazards caused by falling objects. Impact types are: Type I which are intended to reduce the force of impact resulting from a blow only to the top of the head and, Type II which is designed to reduce impact which may be received off center or to the top of the head. Head protection is also available which provides protection from electric shock and burn. When selecting head protection, knowledge of potential electrical hazards is important. Class G

helmets, in addition to impact and penetration resistance; provide electrical protection from low-voltage conductors (they are proof tested to 2,2000 volts). Class E helmets, in addition to impact and penetration resistance; provide electrical protection from high voltage conductors (they are proof tested to 20,000 volts). Class C helmets provide impact and penetration resistance and offer no electrical protection.

Make sure employees working around machinery or in locations that present a hair-catching or fire hazard wear caps or head coverings that completely cover their hair.

Some examples of occupations for which head protection should be routinely considered are: carpenters, electricians, line & wire electricians, mechanics, plumbers and pipe fitters, welders, laborers, freight handlers, and timber cutting.

Selection Guidelines for Foot Protection

Safety shoes and boots which meet the ANSI standard provide both impact and compression protection. Where necessary, safety shoes can be obtained which provide puncture protection. In some work situations, metatarsal protection should be provided. In other special situations electrical non-conductive or insulating safety shoes would be appropriate. Safety shoes or boots with impact protection would be required for carrying or handling materials such as packages, objects, parts or heavy tools, which could be dropped, and for other activities where objects might fall onto the feet. Safety shoes or boots with puncture protection would be required where sharp objects such as nails, wire, tacks, screws, large staples, scrap metal etc., could be stepped on by employees causing a foot injury.

Some occupations for which foot protection should be routinely considered are: shipping and receiving clerks, stock clerks, carpenters, electricians, machinists, mechanics, plumbers and pipe fitters, press operators, welders, laborers, freight handlers, gardeners, groundskeepers, and timber cutting.

Selection Guidelines for Hand Protection

Gloves are often relied upon to prevent cuts, abrasions, burns, and skin contact with chemicals that are capable of causing local or systemic effects from exposure. Commonly available glove materials provide only limited protection against many chemicals.

It is important to know the performance characteristics of gloves relative to the specific hazard anticipated; e.g., chemical hazards, electrical potential, cut hazards, flame hazards, etc.

- The work should be reviewed to determine the degree of dexterity required, the duration, frequency, and degree of exposure of the hazard, and the physical stresses that will be applied.
- The toxic properties of the chemical(s) must be considered. For mixtures and formulated products, a glove should be selected on the basis of the individual chemical components and breakthrough time.
- Generally, any "chemical-resistant" glove can be used for dry powders.

Protection from drowning:

Employees must wear personal flotation devices (PFD's) when a danger of drowning exists. The following are appropriate or allowable U.S. Coast Guard approved PFD's.

Type of PFD	General Description
Type I	Off-shore life jacket – effective for all waters or where rescue may be delayed.
Type II	Near-shore buoyant vest – intended for calm, inland water or where there is a good chance of quick rescue.
Type III	Flotation aid – good for calm, inland water, or where there is a good chance of rescue.
Type IV	Flotation aids such as boardsailing vests, deck suits, work vests and inflatable PFD's marked for commercial use.

Cleaning and Maintenance

It is important that all personal protective equipment be kept clean and properly maintained. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision.

Personal protective equipment should be inspected, cleaned, and maintained at regular intervals so that it provides the required level of protection.

References

WAC 296-800-160 Personal Protective Equipment
WAC 296-155 Construction Work
WAC 296-45 Electrical Workers
WAC 296-305 Fire Fighters
WAC 296-62 General Occupational Health Standards
WAC 296-54 Logging Operations
WAC 296-304 Ship Repairing, Ship Building and Shipbreaking
WAC 296-32 Telecommunication

A sample Hazard Assessment Checklist is available in [Adobe PDF format](#) and [Word format](#).

Sample Hazard Assessment Checklist **Use with WAC 296-800-160 Personal Protective Equipment (PPE)**

This checklist can help you do a hazard assessment to see if employees need to use personal protective equipment (PPE). You can make copies or develop a form that is appropriate to your workplace. Some work activities are more hazardous than others. This list can help identify those activities that may create hazards for your employees.

Hazard Assessment Certification Form

Date: _____ Location: _____
Assessment Conducted By: _____

Specific Tasks Performed at this Location: _____

Hazard Assessment and Selection of Personal Protective Equipment

I. Overhead Hazards -

Hazards to consider include:

- Suspended loads that could fall
- Overhead beams or loads that could be hit against
- Energized wires or equipment that could be hit against
- Employees work at elevated site who could drop objects on others below
- Sharp objects or corners at head level

Hazards Identified: _____

Head Protection

Hard Hat: **Yes** **No**

If yes, type:

- o **Type A** (impact and penetration resistance, plus low-voltage electrical insulation)
- o **Type B** (impact and penetration resistance, plus high-voltage electrical insulation)
- o **Type C** (impact and penetration resistance)

II. Eye and Face Hazards - Hazards to consider include:

- Chemical splashes
- Dust
- Smoke and fumes
- Welding operations
- Lasers/optical radiation
- Bioaerosols
- Projectiles

Hazards Identified: _____

Eye Protection

Safety glasses or goggles	Yes	No
Face shield	Yes	No

III. Hand Hazards - Hazards to consider include:

- Chemicals
- Sharp edges, splinters, etc.
- Temperature extremes
- Biological agents
- Exposed electrical wires
- Sharp tools, machine parts, etc.
- Material handling

Hazards Identified: _____

Ha

Hand Protection

Gloves	Yes	No
o Chemical resistant		
o Temperature resistant		
o Abrasion resistant		
o Other (Explain)		

IV. Foot Hazards -

Hazards to consider include:

- Heavy materials handled by employees
- Sharp edges or points (puncture risk)
- Exposed electrical wires
- Unusually slippery conditions
- Wet conditions
- Construction/demolition

Hazards Identified: _____

Foot Protection

Safety shoes

Yes

No

Types:

- o Toe protection
- o Metatarsal protection
- o Puncture resistant
- o Electrical insulation
- o Other (Explain)

V. Other Identified Safety and/or Health Hazards:

Hazard	Recommended Protection
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

I certify that the above inspection was performed to the best of my knowledge and ability, based on the hazards present on _____.

(Signature)

CHEMICAL HAZARD COMMUNICATION

(Right to Know)

Responsibilities

Supervisor

- Make sure that hazardous chemical inventories are performed on a regular basis.
- Collect material safety data sheets from vendors or the internet and provide a hard copy to the Risk Management office.
- Make sure that all containers are properly labeled through the training of employees and periodic walkthroughs of the workplace.
- Upon hiring or when a new hazardous product is brought into the workplace, train employees about chemical hazards specific to the products used.
- Prior to assignment to a non-routine task involving hazardous materials, inform employees of the potential hazards of the work and provide material safety data sheets if possible.
- Train employees about hazardous substances that are contained in unlabeled pipes.
- Provide material safety data sheets to other employer's employees if they may be exposed to hazardous chemicals when working on City of Tacoma property. This should be completed during pre-construction meetings prior to contractors working on site.
- Provide translated material safety data sheets to employees who do not speak English.
- Maintain hard copies or ensure accurate database.

Employee

- If a material safety data sheet is needed contact your supervisor.
- Read material safety data sheets prior to using a hazardous chemical.
- Use appropriate personal protective equipment according to the product label, material safety data sheet and supervisors hazard assessment.

Risk Management

- Provide guidance and consultation as needed.
- Update computer database as MSDS's are provided by departments

Policy

The City of Tacoma informs and trains our employees about the hazards of chemicals they may be exposed to during normal working conditions or in foreseeable emergencies. This is accomplished through:

- Inventorying hazardous chemicals in the workplace
- Preparing this written chemical hazard communication program
- Informing our employees about this rule and program
- Providing Material Safety Data Sheets to employees
- Ensuring that all containers are labeled and readable

Exemptions to this rule:

- Hazardous waste
- Tobacco products
- Wood or wood products that are not chemically treated
- Food or alcoholic beverages
- Retail or prescription drugs
- Cosmetics
- Ionizing and non-ionizing radiation
- Biological hazards
- Routine consumer and retail products that pose the same hazard to general public
- Manufactured items that remain intact

Material Safety Data Sheets

- Can be found on the City of Tacoma intranet
- Many departments also keep hard copies readily available
- Keep these records for 30 years after the product use has been discontinued.

Labeling of Containers

All containers holding hazardous chemicals must be labeled when transferred from one container to another. The container:

- Must be labeled with the identity of the hazardous chemical or common name.
- Must contain appropriate hazard warnings.
- May be labeled using alternative labeling methods such as signs, placards and operating procedures if it is a stationary process.
- The container does not have to be labeled if used and controlled by the same employee who performed the transfer within the same shift and the container is left empty at the end of the shift.

Training

Provide employees with effective information on hazardous chemicals in their work area at the time of their initial job assignment and whenever new chemicals are introduced.

Using Hazardous Chemicals in Laboratories

1. Make sure the labels on incoming containers are in place and readable.
2. Maintain MSDS as in the general workplace.
3. Provide effective information and training about the hazardous chemical.

Material Safety Data Sheets as Exposure Records

The City of Tacoma will preserve material safety data sheets and other information used as exposure records. The records will be kept for a minimum of 30 years following exposure.

Hazardous Non-routine Tasks

Periodically, employees are required to perform hazardous non-routine tasks. Non-routine tasks could include the cleanup of an illegal camp within the City limits. During such cleanup, you may encounter non-routine situations such as the discovery of clandestine drug lab waste. Prior to being assigned work that may involve handling such materials, the

employees supervisor is responsible to see that they are given information about the hazardous chemicals they may encounter during these activities.

Clandestine drug labs may use a variety of corrosive, reactive, and flammable materials. Only previously identified and qualified employees are allowed to handle clandestine drug lab waste. These employees are trained in the use of personal protective equipment and emergency procedures.

Employees who discover suspect hazardous chemicals in the course of their duties should not handle them. They should contact their supervisor to evaluate the situation and contact the proper authorities.

Reference

WAC 296-800-170 Employer Chemical Hazard Communication

EMERGENCY EVACUATION OF CITY BUILDINGS

Purpose

To establish policy and procedure for the evacuation of City buildings in the event of an emergency.

References

WAC 296-24-567

Policy

State law requires that a program be developed to train employees in the proper actions to take in the event of emergencies, including the routes of exiting from areas during emergencies.

The City of Tacoma will hold training sessions and will conduct periodic, evacuation drills at all its occupied facilities.

At the time of such drills, it is mandatory that all employees (except those required for public safety purposes) and the public evacuate the buildings, returning only at the end of the drill.

Definitions

An emergency for the purposes of this policy is defined as a life-threatening situation or condition; for example, fire, bomb threat, gas or chemical leak, toxic fumes, natural gas leaks, or similar hazardous condition.

Program

Prepare written instructions for your area.

Employee Emergency Plans and Fire Prevention Plans

- Emergency Action Plan
 1. Scope and Application. This subdivision applies to all emergency action plans required by WISHA standards. The emergency action plan shall be in writing and shall cover those designated actions employers and employees must take to ensure employee safety from fire and other emergencies.
 2. Elements. The following elements, at a minimum, shall be included in the plan:
 - a. Emergency escape procedures and emergency escape route assignments.
 - b. Procedures to be followed by employees who remain to operate critical plant operations before they evacuate.
 - c. A procedure to account for all employees after emergency evacuation has been completed.
 - d. Rescue and medical duties for those employees who are to perform them.
 - e. The preferred means of reporting fires and other emergencies.
 - f. Names or regular job titles of persons or departments who can be contacted for further information or explanation of duties under the plan.

3. Alarm Systems.
 - a. The employer shall establish an employee alarm system that complies with WAC 296-24-631.
 - b. If the employee alarm system is used for alerting fire brigade members, or for other purposes, a distinctive signal for each purpose shall be used.
4. Evacuation. The employer shall establish in the emergency action plan the types of evacuation to be used in emergency circumstances.
5. Training.
 - a. Before implementing the emergency action plan, the employer shall designate and train a sufficient number of persons to assist in the safe and orderly emergency evacuation of employees.
 - b. The employer shall review the plan with each employee covered by the plan at the following times:
 - i Initially when the plan is developed,
 - ii Whenever the employee's responsibilities or designated actions under the plan change, and
 - iii Whenever the plan is changed.
 - c. The employer shall review with each employee upon initial assignment those parts of the plan that the employee must know to protect the employee in the event of an emergency. The written plan shall be kept at the workplace and made available for employee review.
- Fire Prevention Plan
 1. Scope and Application. This subsection applies to all fire prevention plans required by a particular WISHA standard. The fire prevention plan shall be in writing.
 2. Elements. The following elements, at a minimum, shall be included in the fire prevention plan:
 - a. A list of the major workplace fire hazards and their proper handling and storage procedures, potential ignition sources (such as welding, smoking and others) and their control procedures, and the type of fire protection equipment or systems that can control a fire involving them;
 - b. Names or regular job titles of those personnel responsible for maintenance of equipment and systems installed to prevent or control ignitions or fires; and
 - c. Names or regular job titles of those personnel responsible for control of fuel source hazards.
 3. Housekeeping. The employer shall control accumulations of flammable and combustible waste materials and residues so that they do not contribute to a fire emergency. The housekeeping procedures shall be included in the written fire prevention plan.
 4. Training.
 - a. The employer shall apprise employees of the fire hazards of the materials and processes to which they are exposed.

- b. The employer shall review with each employee upon initial assignment those parts of the fire prevention plan the employee must know to protect the employee in the event of an emergency. The written plan shall be kept in the workplace and made available for employee review.
- 5. Maintenance. The employer shall regularly and properly maintain, according to established procedures, equipment and systems installed on heat producing equipment to prevent accidental ignition of combustible materials. The maintenance procedures shall be included in the written fire prevention plan.

ERGONOMICS

Occupational ergonomics is the science that examines the interaction between people and their workplaces. Ergonomics provides information on the capabilities and limitations of the worker, which can be used in the design and selection of equipment, tools, and furniture; the design of workstations and facilities; and the design of the job and work practices.

The benefits of a well-designed workplace are reduced fatigue, less discomfort, fewer accidents, and fewer health problems. Other benefits include improvements in productivity and quality as well as reduction of absenteeism, employee turnover, and training costs.

Cumulative trauma disorders (CTD's) are often called injuries, although regulations refer to them as illnesses. These sorts of "injuries" result from the accumulation of the effects of multiple stresses over time. Therefore, they are not sudden trauma, which is an injury. Many sprains and strains can also be a result of cumulative trauma. Cumulative trauma disorders cause a great amount of pain and can be very costly if the disease is not treated soon enough. Rehabilitation can take months, and the condition can sometimes end in permanent disability. Costs arise from medical and wage replacement expenses, as well as from lost productivity.

Some of the diseases associated with CTD's include tendonitis, tenosynovitis, trigger finger, De Quervains disease, carpal tunnel syndrome, vibration white finger disease, epicondylitis, bursitis, herniated discs, strained muscles, and sprained ligaments.

The primary ergonomic risk factors that need to be considered are:

- Mechanical stress: the result of an external object putting pressure on the palms of the hands, the forearm, or the elbow.
- Force: both dynamic (repetitive) force and static force (force exerted to hold the body in the same position).
- Vibration: such as from a chipping hammer or jackhammer.
- Frequency: very repetitive movements that stress tendons with the wrist, elbow and shoulder being the most susceptible.
- Position: non-neutral positions become a problem when they are held in a static position too long, repeated too frequently, at the extreme range of motion, or under force.

The prevention of CTD's begins with the identification of the ergonomic problems, or risk factors, in the workplace. An evaluation of the job will reveal what risk factors exist owing to extreme positions, repetitive exertions, static loading, high forces, and mechanical stresses. Once the ergonomic problems have been identified, the causes in the workplace may be determined. Solutions can be developed only after the problems are understood and the causes are known.

Supervisors must be aware of their employees' risks and act to eliminate or reduce the exposure. Employees need to be aware of their own body position, mechanical stresses, and forces in their daily work. Always use mechanical means for lifting whenever possible. The City has and will continue to provide regular training opportunities for all employees in body mechanics and other aspects of ergonomic control.

Periodic review of risks with both supervisor and employee involvement through a Job Safety Analysis or similar means, can help to identify and eliminate or control ergonomic

problems. Engineering controls such as using adjustable equipment (chairs, desks, work tables), and administrative controls such as using job rotation, or procedural changes often are quite effective.

Training in conducting a Job Safety Analysis and other additional resources are available through your Safety Office.

FIRE EXTINGUISHERS

Fire extinguishers shall be properly located at all times. The location must be marked. Employees shall not move or remove fire extinguishers except to use them. Fire extinguishers shall be used only for fighting fires or training.

Fire extinguishers must not be blocked or hidden behind material or machines (three-foot clearance).

Except for portable extinguishers carried to a specific job, all fire extinguishers shall be mounted with appropriate mounts.

Employees shall be familiar with both the location and the operation of all fire-protective equipment and systems near their work area.

The majority of fire extinguishers in use are the multi-purpose, dry-chemical type marked "A - B - C", and can be used on any type of fire. Avoid breathing large quantities of the dry chemical.

A competent person shall visually inspect fire extinguishers monthly to ensure that they are not obstructed and that they are in working condition. Discrepancies shall be reported promptly to the supervisor. Fire extinguishers will receive a thorough servicing and inspection at least annually.

Employees shall not enter confined spaces after using CO₂ extinguishers until the area has been thoroughly ventilated and tested with an atmospheric monitor.

After an extinguisher is used, the person who used it shall exchange it for a full one and return it to its original location.

Employees who are expected to use portable fire extinguishers shall be trained on the general principles and the hazards of their use. Training shall be conducted upon initial assignment and annually thereafter.

HEARING LOSS PREVENTION

Responsibilities

Supervisors

- Control and reduce employee noise exposures, using feasible engineering or administrative controls, whenever exposure equals or exceeds 90 dBA TWA.
- Provide, supervise and enforce the correct use of hearing protectors.
- Ensure that employees that are required to have a baseline and annual audiograms receive such exams.
- Coordinate with testing provider as required.
- Make sure employees use hearing protection correctly.
- Make sure exposed employees receive training about noise and hearing protection.
- Make sure warning signs are posted for areas where noise levels equal or exceed 115 dBA.
- Determine appropriate types of hearing protectors.
- Ensure at least 2 types of hearing protection are provided for employees to choose from. i.e. muffs, self molding, inserts

Employee

- Wear hearing protection as required.
- Keep hearing protection in good, clean condition.
- Attend hearing training and hearing testing on a yearly basis.

Risk Management

- Conduct employee noise exposure monitoring to determine the employee's actual exposure when reasonable information indicates that any employee exposure may equal or exceed 85 dBA TWA.
- Evaluate hearing protectors and determine appropriate types of hearing protectors.
- Ensure that employees receive appropriate notification in the case of a standard threshold shift.
- Provide recordkeeping.
- Document standard threshold shifts on OSHA Log 300.

Purpose

To prevent employee hearing loss by minimizing employees noise exposure AND make sure employees exposed to noise are protected. These are accomplished by:

- Measuring and computing the employee noise exposure from all equipment and machinery in the workplace, as well as any other noise sources in the work area.
- Protecting employees from noise exposure by using feasible noise controls.
- Making sure employees use hearing protection, if the noise cannot feasibly be controlled.
- Training employees about hearing loss prevention.
- Evaluating your hearing loss prevention efforts by tracking employee hearing or periodically reviewing controls and protection
- Making appropriate corrections to the program.

Policy

If a City employee has a noise exposure level of 85 dBA or higher for an eight-hour time weighted average (TWA) then the City must have a hearing loss prevention program.

If a City employee has a noise exposure level of 90 dBA or higher for an eight-hour TWA, then the City must reduce noise exposures in the workplace.

Any work area with an extreme noise level exposure (above 115 dBA for more than one second) must require the use of hearing protection and warning signs must be posted. Impact or impulse noise of 140 dBA or greater for less than a second requires hearing protection.

- Provide an appropriate selection of hearing protectors at no cost to the employee.
- Make sure all hearing protection is sufficient to reduce the employee's equivalent 8-hour noise exposure to 85 dBA or less.
- Provide training to affected employees which must include:
 - The effects of noise on hearing
 - Noise controls used in the workplace.
 - The purpose of hearing protectors: The advantages, disadvantages, and attenuation of various types.
 - Instructions about selecting, fitting, using and caring for hearing protectors.
 - Provide employee training on noise and the use of protection when responding to a standard threshold shift.
 - The purpose and procedures for program evaluation including audiometric testing and hearing protection auditing.
 - Identify & correct deficiencies in the hearing loss prevention program.
 - Use audiometric testing to identify hearing loss which may indicate program deficiencies.
 - Take appropriate actions when deficiencies are found in the program.
 - Evaluate employee noise exposure measurements, noise controls, selection of hearing protection available and refit as necessary.

Hearing Loss Prevention Program

The City must prevent employee hearing loss by providing engineering controls and when not feasible, providing personal protective equipment for protection from noise exposures.

The most critical consideration in selecting and dispensing hearing protection is the ability of the wearer to achieve a comfortable noise-blocking seal which can be consistently maintained during all noise exposures. Additional important issues include:

- Hearing protector's noise reduction
- Wearer's daily equivalent noise exposure
- Variations in noise level
- User preference
- Communication needs
- Hearing ability
- Compatibility with other safety equipment

- Wearer's physical limitations
- Climate and other working conditions
- Replacement, care and use requirements

To insert ear plugs properly the ear should be pulled outward and upward with the opposite hand to enlarge and straighten the ear canal, and insert the plug with clean hands.

Audiometric Testing

The City must conduct audiometric testing of employees exposed to noise to make sure that their hearing protection is effective. The City must:

- Provide audiometric testing at no cost to employees.
- Establish a baseline audiogram for each exposed employee.
- Conduct annual audiograms.
- Review audiograms that indicate a standard threshold shift.
- Keep the baseline audiogram without revision, unless annual audiograms indicate a persistent threshold shift or a significant improvement in hearing.
- Make sure a record is kept of audiometric tests.
- Make sure audiometric testing equipment meets the requirements.
- Provide testing for temporary employees who work in jobs with noise exposure greater than 85 dBA.

Implementation Methods

- **Noise Monitoring:** When reasonable information (provided by supervisors, employees, site walk-through or previous noise monitoring) indicates that any employee's exposure may equal or exceed an 8-hour time-weighted-average of 85 dBA for five days or more annually, the Safety Office will obtain individual or representative exposure measurements for all employees who may be exposed at or above that level. All such employees will be required to wear hearing protection and have audiograms.
- Monitoring will be done to define boundaries for placement of high noise warning signs above 115 dBA.
- **Method of Noise Monitoring:** Dosimeters and/or sound level meters that meet requirements, and are calibrated according to instructions, will be used. Monitoring results of all continuous, intermittent, and impulse sound levels will be integrated in the exposure computation. Monitoring will be repeated whenever a change in production, process, equipment or controls increases noise exposure to the extent that employees are exposed, at or above 85 dBA, or when hearing protectors being used are rendered inadequate.
- **Employee Observation of Noise Monitoring, and Notification of Noise Measurements:** Employees or their representatives may observe noise monitoring. Employees' will be informed of the results of the site monitoring if they are exposed at or above an 8-hour time-weighted average of 85 dBA.
- **Noise Controls Administrative and Engineering:** Whenever employee noise exposures equal or exceed an 8-hour time-weighted average of 90 dBA, feasible administrative or engineering controls shall be utilized.

- The adequacy of hearing protectors will be re-evaluated whenever employee noise exposure increases to the extent that hearing protectors provided may no longer provide adequate reduction of exposure.
- Hearing Testing—Baseline and Annual Audiograms: Employees will be given baseline audiograms within one year of the employee's first exposure to noise at or above a TWA of 85 dBA. Employees will thereafter be given annual audiograms, which are compared to the baseline audiograms.
- Hearing Testing—Follow-Up With Employees: Employees will be notified by the testing contractor of test results. The City will follow-up with employees who have standard threshold shifts.

Record Keeping

Record keeping shall follow requirements of the Hearing Conservation Standard. Noise exposure records shall be retained for two years. Audiometric test records shall be retained for the duration of the affected employee's employment.

Definitions

Audiogram - A chart, graph, or table resulting from an audiometric test showing an individual's hearing threshold levels as a function of frequency.

Baseline Audiogram – The audiogram against which future audiograms are compared. The baseline audiogram is collected when an employee is first assigned to work with noise exposure. The baseline audiogram may be revised if persistent standard threshold shift (STS) of improvement is found.

Decibel (dB) - Unit of measurement of sound level. A-weighting (dBA), is adjusting for the sensitivity of the human ear.

Permanent threshold shift – A hearing level change that has become persistent and isn't expected to improve.

Standard threshold shift (STS) – A hearing level change, relative to the baseline audiogram, of an average of 10 dBA or more at 200, 3000, and 4000 Hz in either ear.

Temporary threshold shift – A hearing level change that improves. A temporary threshold shift may occur with exposure to noise and hearing will return to normal within a few days. Temporary threshold shifts can be indicators of exposures that lead to permanent hearing loss.

TWA – Equivalent eight-hour time-weighted average sound level – That sound level, which if constant over an eight-hour period, would result in the same noise dose measured in an environment where the noise level varies.

Reference

WAC 296-817, Hearing Loss Prevention (Noise)

OCCUPATIONAL EXPOSURE TO BLOODBORNE PATHOGENS

Responsibilities

Supervisor

- Conduct an in-depth hazard assessment and determine whether they should be in the program.
- Develop procedures to deal with materials that may expose employees to potentially infectious materials.
- Develop procedures including the use of warning labels with the orange or orange/red biohazard symbol.
- Ensure that employees with an occupational exposure attend training annually.
- Ensure hepatitis B immunization is offered to those employees who have been determined to be in the blood borne pathogen program.
- Use all feasible controls to eliminate or minimize occupation exposure.
- Ensure that possibly exposed employees visit a physician.
- Complete a Supervisors Report of Injury form for all possible exposures.
- Make sure employees clean affected areas immediately after any possible exposure.
- Provide waiver if employee declines immunization.

Employee

- Provide input on developing methods to decrease or eliminate possible exposures to sharps and other potentially infectious materials.
- If determined to have an occupational exposure, attend training annually.
- Receive Hepatitis B immunization or sign waiver for immunization.
- Use feasible controls, including appropriate equipment and safe medical devices to eliminate or minimize occupational exposure.
- Handle contaminated sharps properly and safely.
- Minimize splashing, spraying, splattering and generation of body fluid droplets.
- Label containers and items appropriately.
- Clean exposed areas immediately after any possible exposure.
- Make sure the worksite (i.e. contaminated laundry) is maintained in a clean and sanitary condition.
- Handle regulated waste properly and safely.
- Report immediately to supervisor any possible exposures.
- Provide documentation of previous exposure.

Risk Management

- Provide guidance on conducting a hazard assessment.
- Develop and implement a written exposure control plan.

- Review the exposure control plan annually or when tasks or procedures change.
- Provide Bloodborne pathogen training as needed.
- Maintain records of training, vaccinations and occupational exposures.
- Will obtain a copy of the health care professional's written opinion regarding exposure and treatment and will provide a copy of this opinion to the supervisor and employee within 15 days of receiving the opinion.
- Provide consultation and guidance.

Purpose

To protect City of Tacoma employees who may be occupationally exposed to blood or other potentially infectious materials that may contain bloodborne pathogens. Examples of bloodborne pathogens include human immunodeficiency virus (HIV) and hepatitis B virus (HBV).

Definitions

Exposure incident means a specific eye, mouth, other mucous membrane, non-intact skin or parenteral contact with blood or other potentially infectious materials (OPIM) that results from the performance of an employee's duties. Examples of non-intact skin include skin with dermatitis, hangnails, cuts, abrasions, chafing, or acne.

Occupational Exposure means reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

Policy

Those employees' classifications that are considered to have an occupational exposure are listed at the end of this document. The City has taken a broad approach in determining who must be in the program

The City has developed and implemented a written exposure control plan. This policy serves as that plan. Other departments such as Fire and Police have expanded this plan. The plan must determine employee exposure and provide a procedure for evaluating exposure incidents.

Departments are directed to develop procedures to deal with reusable equipment or other articles that employees may be exposed to containing potentially infectious materials. Contaminated sharps may not be disposed of in the trash.

When supervisors conduct the hazard assessment and develop methods to decrease or eliminate possible exposure to sharps, employee input must be solicited. This would best be accomplished through the appropriate safety committee.

This exposure control plan must be reviewed and updated annually or when tasks or procedures change.

Training

All employees with occupational exposure must be trained at least annually and before being assigned tasks where occupational exposure might occur. Training must include:

- An accessible copy and explanation of this plan
- An explanation of the epidemiology and symptoms of bloodborne diseases
- Transmission of bloodborne pathogens
- Recognition of tasks and other activities that could involve exposure to blood and other potentially infectious materials
- The use and limitations of prevention or exposure reduction methods
- Personal protective equipment
- Discussion of Hepatitis B vaccine
- Actions to take and procedures to follow in case of an exposure
- Information about post-exposure evaluation and follow-up procedures
- Signs and labeling
- Time for interactive questions and answers

Training records must be kept for a minimum of three years.

Hepatitis B Vaccinations

The City of Tacoma must make Hepatitis B immunizations available to employees who have been determined to have an occupational exposure to potentially infected material. Those employee who do not wish to have the immunization, must sign a waiver (see attached). This waiver is also available on the intranet in Safety Forms and by clicking on Hepatitis Authorization/Waiver Form.

Controlling Employee Exposure

It is the City's responsibility to use feasible controls to eliminate or minimize occupational exposure to blood or other potentially infectious materials. This means:

Personal Protective Equipment

The City provides and makes sure appropriate personal protective equipment is used when work practices and controls won't fully protect your employees from the risk of exposure to blood or other potentially infectious materials.

The supervisor must:

- Provide and make sure that personal protective equipment is used when there is occupational exposure.
- Personal protective equipment may include: gloves, masks, eye protection and face shields.
- Ensure that employees maintain their personal protective equipment in good,

clean working order.

Post-Exposure Requirements

If an employee believes that they have been exposed to a potentially infectious material, the employee will, as soon as possible, use appropriate disinfectant procedures. All exchanges of blood or bodily fluids must be reported using the Supervisors Report of Injury form. The supervisor will determine if the employee has been exposed. This assessment is confidential. The Risk Management office can help with this assessment if needed.

If the employee has a needle stick or cut or mucous membrane (splash to eye, nasal mucous, or mouth) exposure to bodily fluids or a cutaneous exposure to blood when the employee's skin is chapped, abraded, or otherwise not intact, the employee shall be tested for HIV and HBV infectious, after the consent of the employee is obtained.

A form has been provided on the intranet and at the end of this written program to help the supervisor make the determination of exposure.

If it has been determined that an employee has had an occupational exposure:

- The employee will be provided with a Workers Compensation claim form and be advised of his/her right to file a claim.
- All further medical evaluation must take place through a medical practitioner. This may include arranging to test the source individual's blood for HBV or HIV and providing the test results to the employee.
- The medical practitioner will collect and test a blood sample of the exposed employee if consent is given.
- The supervisor will provide adequate information to the health care professional to allow for an adequate evaluation. This would include: a copy of the City's exposure control plan, description of job duties, routes and circumstances of exposure, results of blood testing and medical records including vaccination status.

In the absence of documentation of vaccination, the employee will be referred to his/her physician for follow-up treatment and counseling. If an employee becomes positive for Hepatitis B, contact with the public or others to whom there is a risk of spreading the infection will be restricted until it is determined safe for the employee to return to his or her regular duties. In the event that AIDS exposure is suspected, state and federal law will be followed to ensure that pretest, HIV testing and post testing counseling is done, permission is obtained from parties involved for testing, and confidentiality of all parties involved will be maintained.

The Risk Management office will obtain a copy of the health care professional's written opinion and provide a copy of this opinion to the supervisor and employee within 15 days of receiving the opinion. This is done so only if the health care provider does not

provide the employee a copy of the opinion directly. This opinion must be limited to the following:

- Acknowledgement that the employee has been informed of the results
- Acknowledgement that the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which need further evaluation.

Record Keeping

The Risk Management office must maintain an accurate medical record for each employee with occupational exposure for the duration of employment plus 30 years. This information will be kept confidential.

Covered Classifications

- All Commissioned Police Department Personnel
- All Commissioned Fire Department Personnel
- All Mechanics and Apprentices Assigned to Fleet
- EMS Education Specialist
- Maintenance Carpenters
- Maintenance Painters
- Road-use Compliance Officers
- Refuse Utility Maintenance and Operations Employees
- Sewer Utility Maintenance, transmission, and Operations Employees
- Dome Janitorial Staff
- Hydro Utility Workers
- Line and Wire Electricians
- Click! Technicians
- Inspectors in Building and Land Use
- Streets and Grounds Personnel except office staff

References

WAC 296-823-100 Occupational Exposure to Bloodborne Pathogens

City of Tacoma

Hepatitis B Authorization/Waiver Form

Employee Name: _____

Social Security #: _____ Date: _____

Department: _____

Washington State law provides that you have both the right and the obligation to make decisions about your health care. Completion of this form acknowledges your receipt of information needed to make an informed decision regarding treatment of the Hepatitis B virus and its risks, and verifies your personal decision on protection against the virus.

Hepatitis B Virus

Hepatitis B virus is a viral infection with a major effect on the liver.

Hepatitis B virus infection is transmitted through close personal contact with an infected individual. There may be six weeks to six months between exposure and onset of symptoms.

Who Should Get Hepatitis B Vaccine?

The vaccine is recommended for persons with occupational risk. Public safety workers who are exposed to blood or blood products, or who may get accidental needle sticks, should be vaccinated.

1st dose: at elected date; 2nd dose: 1 month later; 3rd dose: 6 months after 1st dose.

Possible Side Effects from the Vaccine

The most common side effect is soreness at the site of injection. Illnesses, such as neurology reactions, have been reported after vaccine is given, but Hepatitis B vaccine is not believed to be the cause of these illnesses.

Special Precautions

Children, pregnant women, nursing mothers, and persons with severe heart or lung problems should not receive the vaccine unless they receive prior approval from their doctor.

If you have a severe reaction, or one lasting more than 48 hours, see a doctor. If you have any questions, contact the Safety Office.



One of the following must be initialed:

I choose to receive the Hepatitis B vaccine as offered by the City of Tacoma to help protect me from infection by the Hepatitis B virus. To my knowledge, I am not pregnant. I agree to provide the City evidence of receiving the three shot series of vaccinations.

Date of vaccination:

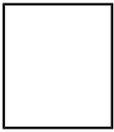
#1 _____

#2 _____

#3 _____



I choose not to receive the Hepatitis B vaccine as offered by the City of Tacoma that would help protect me from infection by the Hepatitis B virus. I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself; however, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.



I have previously received the Hepatitis B Vaccination series and have supplied the City of Tacoma documentation establishing when and where I received the vaccination.

City of Tacoma Employee

Signature Date

FIRST AID

(Including Emergency Washing Stations)

Responsibilities

Supervisors

- Ensure first aid/CPR certifications are kept up to date by employees who are required to have the certification for their job.
- Make sure all plumbed emergency washing facilities are inspected once a year to make sure they function correctly.
- Make sure plumbed emergency eyewashes and hand-held drench hoses are activated weekly to check the proper functioning of the valves, hardware, and availability of water.
- Make sure personal eyewash equipment delivers only clean water or other medically approved eye flushing solutions.

Employees

- Keep first aid/CPR certifications up to date if required for your job.
- Use personal protective equipment when providing first aid.
- Do not provide first aid that extends beyond the training you have received.

Risk Management

- Ensure that training is provided on a regular basis that meets the need of all departments.
- Provide recordkeeping of attendees.
- Provide guidance and consultation.

Purpose

To ensure that first-aid trained personnel are available to provide quick and effective first aid in the absence of emergency first aid.

Policy

All foremen, supervisors and at least one crew member working in physically dispersed operations shall have a valid first aid certificate. A crew shall mean a group of two or more employees working at a work site separate and remote from the main office or fixed workplace.

Program

All supervisors, leads and foremen will receive and maintain a valid first aid certification.

First Aid certification is valid for two years after the date it is issued. Some job classifications such emergency medical technician will require advanced certification. Employees who are not required to maintain certification may still receive training through the City. Classes are held regularly during business hours, and employees may register for class with their supervisor(s) permission.

First aid supplies should be readily available and maintained appropriate to the occupational setting and response time of the emergency medical service responder. Kits must be able to be moved to the location of the injured person.

EMERGENCY PROCEDURES AND FIRST AID

Follow these procedures when employees are injured and require immediate care.

- Call 911, or otherwise summon help.
- Identify yourself: give your name, location and a brief description of the accident.
- Survey the scene and protect yourself.
- Render aid.
- Send someone to meet and guide emergency response personnel.
- Notify your supervisor as soon as possible.

The objectives of first aid are:

1. To get help on the way and arrange for proper transportation of the victim to medical assistance when required.
2. To prevent further injury.
3. To check conditions known to be life-threatening in a manner that will not complicate the injury or subject the victim to unnecessary discomfort.
4. To protect injuries from infection and complications.
5. To make the victim as comfortable as possible.

Note: First aid kits should contain an inventory list and be restocked routinely. It is best to assign this duty to someone to ensure that it is done on a routine basis.

Immediate Care

Priorities:

In all first aid emergencies, the first priorities are:

- A** A for Airway. Is the airway open?
- B** B for Breathing. Is the victim breathing?
- C** C for Circulation or pulse. Is there a pulse?

Emergency Washing Facilities

The City must provide an emergency shower:

- When there is potential for major portions of an employee(s) body to contact corrosives, strong irritants, or toxic chemicals.
- That delivers water to cascade over the user(s) entire body at a minimum rate of 20 gallons per minute for fifteen minutes or more.

The City must provide emergency eyewash:

- When there is potential for an employee(s) eyes to be exposed to corrosives, strong irritants, or toxic chemicals.
- That irrigates and flushes both eyes simultaneously while the user holds their eyes open.
- With an on-off valve that activates in one second or less and remains on without user assistance until intentionally turned off.
- That delivers at least 0.4 gallons of water pre minute for 15 minutes or more.

- Self-contained eyewash equipment:
 - Make sure all self-contained eyewash equipment and personal eyewash units are inspected and maintained according to manufacturer instruction. Inspection to check proper operation must be done once a year.

Sealed personal eyewashes must be replaced after the manufacturer's expiration date.
Note: Supplemental flushing equipment can't be used in place of required emergency showers or eyewashes.

Emergency Washing Facilities:

- Must be located so that it takes no more than ten seconds to reach.
- Are kept free of obstacles blocking their use.
- Function correctly.
- Provide the quality and quantity of water that is satisfactory for emergency washing purposes.
- If non-potable water is used, it must be labeled as such.

References

WAC 296-800-150 First Aid

WAC 296-155-120 First-aid Training and Certification

Automated External Defibrillators (AED)

Responsibilities

Supervisor

- Ensure that automated external defibrillators are maintained according to manufacturer's recommendations.
- Determine which employees must be certified in the use of AED's and ensure they maintain their certification.
- Contact the Risk Management office within 24 hours of an AED being used and provide completed AED Use Report.
- Notify the Tacoma Fire Department (or the local emergency medical services organization with jurisdiction) of the existence and location of the AED.

Employee

- Maintain a current first aid/CPR training card if required to do so.
- Provide help only appropriate to your level of training.
- Understand and comply with this policy.
- Report AED use promptly to supervisor and complete AED Use Report within 24 hours of AED use.

Risk Management

- Administer the AED program and policies.
 1. Ensure that AED's are authorized by the medical director
 2. Maintain AED Use Reports?
- Provide training as needed.
- Maintain training records provided by departments.
- Evaluate the AED program periodically to ensure that all of the provisions are being implemented.
- Communicate with medical director on issues and post evaluation events.
- Participate in and coordinate the post incident review as appropriate.

PURPOSE:

The AED is used to treat victims who experience sudden cardiac arrest (SCA). It is only to be applied to victims who are unconscious, not breathing and showing no signs of circulation, such as normal breathing, coughing and movement.

There is no requirement to have an AED in the workplace. This guideline is not intended to imply a recommendation that AED's be purchased, but to provide a structure for Departments or Divisions who wish to provide them in the workplace. Your Department or Division may have additional requirements. The use of AED's is regulated by chapter 70.54.310 of the RCW.

TRAINED AED USERS:

All employees who have successfully completed first aid/CPR training from the Tacoma Fire Department or other authorized provider within the last two years and hold a current completion card.

VOLUNTEER RESPONDER RESPONSIBILITIES:

Anyone, at their discretion, can provide voluntary assistance to victims of medical emergencies. The extent to which these individuals respond shall be appropriate to their training and experience. Volunteer responders are encouraged to contribute to emergency response only to the extent that they are comfortable.

EQUIPMENT:

The AED unit should be used only on individuals 8 years of age or older (unless infant pads are available), who display **ALL** symptoms of cardiac arrest. The AED will be used only after the following symptoms are confirmed:

- Victim is unconscious
- Victim is not breathing
- Victim has no pulse and / or shows no signs of circulation such as normal breathing, coughing or movement.

MONTHLY INSPECTIONS:

All AED's should be inspected at least monthly and records shall be retained according to the schedule established. These checks shall be conducted as recommended by the manufacturer.

City of Tacoma Program Guidelines

- Before you purchase an AED, you must have medical approval from the Tacoma Fire Department Medical Director. You must provide proof of medical approval with your AED purchase order. Contact the Risk Management office for referral information. (Exception: The Phillips AED's do not require medical authorization prior to approval but may also be authorized directly after purchase.)
- Employees who may use an AED to revive a victim must receive instruction in defibrillator use and cardiopulmonary resuscitation from the Tacoma Fire Department or other pre-approved provider. Contact the Tacoma Fire Department's CPR hotline at (253) 594-7979 or the Risk Management office to schedule training.
- You must notify the Tacoma Fire Department (or the local emergency medical services organization with jurisdiction) of the existence and location of the AED. Contact Tacoma Fire Headquarters at (253)591-5737.
- The defibrillator must be maintained, used, and tested according to the manufacturer's recommendations. If you have an AED in the workplace, you will want to know it will work when needed. The product location card must be returned to the vendor.
- The defibrillator user or other person shall call 911 as soon as possible prior to, during, or after the emergency use of a defibrillator and shall ensure that appropriate follow-up data is made available as requested by emergency medical service or other the health care providers. Following the use of the emergency response equipment, all equipment shall be cleaned and / or decontaminated as required. If contamination includes body fluids, the equipment shall be disinfected according to procedure.
- If the decision is made to put an AED in the workplace, locations should be well thought out. Consider where the largest numbers of people spend their time,

where your trained employees are, and avoid high traffic areas where the AED could be damaged.

- Consideration should be given to the security options available from the manufacturer, to protect City property.
- The battery should be recycled. Contact the City's Solid Waste Utility if you have questions.
- Maintenance supply purchases (batteries and electrode pads) can be coordinated through the Tacoma Fire Department for discount purchases or the Risk Management office.

MEDICAL RESPONSE DOCUMENTATION:

Following each use of an AED unit, a review shall be conducted to learn from the experience. The program administrator shall coordinate and document the post event review. A summary of the event shall be kept in the Risk Management office.

The AED Use Report shall be sent to the Risk Management Office within 24 hours of a medical event:

External Post Event Documentation:

A copy of the AED use form shall be presented to the medical director and the EMS county AED program coordinator by the Risk Management office within 72 hours of the emergency.

AUTOMATED EXTERNAL DEFIBRILATOR (AED) USE REPORT

Date (AED was used) _____ **AED Serial Number** _____

WHERE was AED Used? _____ Time: _____

WHAT Happened? _____

Who was the AED used on?

Name _____

Date of Birth _____

Address _____

Who was the City Employee who used the AED?:

Name(s) _____

Phone Number(s) _____

Which Fire Department Responded?

Where was patient transported to? _____

Witnesses: Name	Address	Phone #
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_____	_____	_____
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_____	_____	_____
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Send Completed Form to the Risk Management Office Fax # 594-7869

Emergency Service Providers for City of Tacoma Departments

Within the City of Tacoma City Limits or where the Tacoma Fire Department responds, contact: Tacoma fire Headquarters at 253-591-5737

Taidnapam (two fire departments can respond)

Glenoma Fire Department
Bob Matchett, Fire Chief
PO Box 218
Glenoma, WA 98336
PH: 360-498-5337

Randle Fire Department
Jeff Jaques, Chief
PO Box 127
Randle, WA 98377
PH: 360-497-7745

Mossyrock

Mossyrock Fire Department
Matt Hadaller, Chief
P.O. Box 127
Mossyrock, WA 98564
PH: 360-983-3456

Mayfield

Salkum Fire Department
Phil McDaniel, Chief
P.O. Box 8
Salkum, WA 98582
PH: 360-985-2828

Cushman #1

Mason County Fire Protection District #18
P.O. Box 794
Hoodsport, WA 98548

Cushman #2

Mason County Fire Protection District #1
P. O. Box 354
Hoodsport, WA 98548
(360) 877-5186

Pierce County Fire District 23

PO Box 842
Elbe, WA 98330-0842
360-569-2752 (Garry Olson)

Eatonville Area

Fire Protection District #15
5403 340th St. E.
Eatonville WA 98328
(24 hour number) 253-847-4333, (Larry Spohn)

(Border between District 15 and District 23 is LaGrande Dam. District 15 responds to the office area and District 23 responds to the upper project area.)

Eatonville Fire Department

360-832-6931
(Not really our jurisdiction but may respond)

Wynoochee River Project

Gray's Harbor Fire Protection District #2
(360) 532-6050

Enumclaw Water Office

Enumclaw Fire
1330 Wells St.
Enumclaw, WA 98022

McMillin Reservoir

Central Pierce Fire & Rescue Station
17520 22nd Ave.
Tacoma, WA 98445-4444

Headworks Control Station

King County Fire District #47
P.O. Box 206
Palmer, WA 98051-0206

HEAT STRESS PREVENTION

Responsibilities

Supervisors

- Evaluate if heat could be a problem on a particular day based on temperature and humidity levels, and then implement adequate controls, methods, and procedures to reduce the risk of Heat Related Illness (HRI).
- Ensure that employees are properly trained and understand the requirements and significance of heat stress prevention procedures.
- Provide information to workers on signs of heat stress.
- Provide means of preventing heat stress and other heat related health hazards.
- Provide and encourage workers to drink adequate amounts of safe drinking water.
- Determine appropriate work/rest cycles

Employees

- Attend training on the effects of heat stress, health conditions that may increase risk, establishing provisions for a work/rest routine so that exposure time to high temperatures and/or the work rate is decreased.
- Drink adequate amounts of safe drinking water.
- Be able to recognize heat-related illness symptoms and take steps to prevent heat-induced illness.

Risk Management

- Serve as consultant for supervisors and employees as requested.
- Provide training as requested.
- Provide guidance and consultation.

Purpose

The purpose of this program is to provide guidance for protecting employees from hazards of high heat conditions and to provide information on engineering, administrative and PPE controls. Workers who work in a hot environment face additional and generally avoidable hazards to their safety and health.

Definitions:

“Heat Related Illness” (HRI) means a serious medical condition resulting from the body’s inability to cope with a particular heat load, and includes heat cramps, heat exhaustion, heat syncope and heat stroke.

“Heat Stress Index” (HSI) is the correlation of temperature to humidity and is issued by the National Oceanic and Atmospheric Administration (NOAA) to predict risk. It has been determined that an HSI of 100 or higher warrants implementation of precautionary measures. Rather than refer to this index every day, supervisors will be aware that anytime the ambient temperature exceeds 80 degrees F, they will implement appropriate precautionary measures to ensure protection of employees to heat related illness or stress.

“Environmental risk factors for heat illness” means working conditions that create the possibility that heat illness could occur, including air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air

movement, workload severity and duration, protective clothing and personal protective equipment worn by employees.

“Personal risk factors for heat illness” means factors such as an individual’s age, degree of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, and use of prescription medications that affect the body’s water retention or other physiological responses to heat.

“Shade” means blockage of direct sunlight. Trees, umbrellas and other structures or devices may be used to provide shade. Some shade producing areas are not adequate to cool the body; for instance, a car sitting in the sun does not provide acceptable shade to a person inside it, unless the car is running with air conditioning.

How the Body Handles Heat

The human body maintains a fairly constant internal temperature, even though it is being exposed to varying environmental temperatures. To keep internal body temperatures within safe limits, the body must get rid of its excess heat, primarily through varying the rate and amount of blood circulation through the skin and the release of fluid onto the skin by the sweat glands. The blood circulates closer to the surface of the skin, and the excess heat is lost to the cooler environment.

If heat loss from increased blood circulation through the skin is not adequate, the brain continues to sense overheating and signals the sweat glands in the skin to shed large quantities of sweat onto the skin surface. Evaporation of sweat cools the skin, eliminating large quantities of heat from the body.

Safety Problems

Certain safety problems are common to hot environments. Heat tends to promote accidents due to the slipperiness of sweaty palms, dizziness, or the fogging of safety glasses. Wherever there exists molten metal, hot asphalt, hot surfaces, steam, etc., the possibility of burns from accidental contact also exists.

Aside from these obvious dangers, the frequency of accidents, in general, appears to be higher in hot environments than in more moderate environmental conditions. One reason is that working in a hot environment lowers the mental alertness and physical performance of an individual. Increased body temperature and physical discomfort may cause workers to overlook safety procedures or to divert attention from hazardous tasks.

Health Problems

Excessive exposure to a hot work environment can bring about a variety of heat-induced disorders.

Heat Stroke

Heat stroke is the most serious of health problems associated with working in hot environments. It occurs when the body's temperature regulatory system fails and sweating becomes inadequate. The body's only effective means of removing excess heat is compromised with little warning to the victim that a crisis stage has been reached.

A heat stroke victim's skin is hot, usually dry, red or spotted. Body temperature is usually 105°F or higher, and the victim is mentally confused, delirious, perhaps in convulsions, or unconscious. Unless the victim receives quick and appropriate treatment, death can occur.

Treatment: Any person with signs or symptoms of heat stroke requires immediate hospitalization. However, first aid should be immediately administered. This includes removing the victim to a cool area, thoroughly soaking the clothing with water, and vigorously fanning the body to increase cooling. Further treatment at a medical facility should be directed to the continuation of the cooling process and the monitoring of complications which often accompany the heat stroke. Early recognition and treatment of heat stroke are the only means of preventing permanent brain damage or death.

Heat Exhaustion

Heat exhaustion includes several clinical disorders having symptoms which may resemble the early symptoms of heat stroke. Heat exhaustion is caused by the loss of large amounts of fluid by sweating, sometimes with excessive loss of salt.

A worker suffering from heat exhaustion still sweats but experiences extreme weakness or fatigue, giddiness, nausea, or headache. In more serious cases, the victim may vomit or lose consciousness. The skin is clammy and moist, the complexion is pale or flushed, and the body temperature is normal or only slightly elevated.

Treatment: In most cases, treatment involves having the victim rest in a cool place and if the person is conscious, providing small amounts of cool water to drink. Victims with mild cases of heat exhaustion usually recover spontaneously with this treatment. Those with severe cases may require extended care for several days. There are no known permanent effects.

NOTE: Pesticide poisoning has similar symptoms as heat exhaustion.

CAUTION Persons with heart problems or those on a low sodium diet who work in hot environments should consult a physician about what to do under these conditions.

Heat Cramps

Heat cramps are painful spasms of the muscles that occur among those who sweat profusely in heat, drink large quantities of water, but do not adequately replace the body's salt loss. The drinking of large quantities of water tends to dilute the body's fluids, while the body continues to lose salt. Shortly thereafter, the low salt level in the muscles causes painful cramps. The affected muscles may be part of the arms, legs, or abdomen, but tired muscles (those used in performing the work) are usually the ones most susceptible to cramps. Cramps may occur during or after work hours and may be relieved by taking salted liquids by mouth.

Treatment includes moving a person to a cooler place, stretching muscles for cramps, and giving cool water or electrolyte-containing fluid to drink.

CAUTION: Persons with heart problems or those on a low sodium diet who work in hot environments should consult a physician about what to do under these conditions.

Fainting

A worker who is not accustomed to hot environments and who stands erect and immobile in the heat may faint. With enlarged blood vessels in the skin and in the lower part of the body due to the body's attempts to control internal temperature, blood may pool there rather than return to the heart to be pumped to the brain. Upon lying down, the worker should soon recover. By moving around, and thereby preventing blood from pooling, the patient can prevent further fainting.

Heat Rash

Heat Rash, also known as prickly heat, is likely to occur in hot, humid environments where sweat is not easily removed from the surface of the skin by evaporation and the skin remains wet most of the time. The sweat ducts become plugged, and a skin rash soon appears.

Transient Heat Fatigue

Transient heat fatigue refers to the temporary state of discomfort and mental or psychological strain arising from prolonged heat exposure. The severity of transient heat fatigue will be lessened by a period of gradual adjustment to the hot environment (heat acclimatization).

Preparing for the Heat

One of the best ways to reduce heat stress on workers is to minimize heat in the workplace. However, there are some work environments where heat production is difficult to control, such as when furnaces or sources of steam or water are present in the work area or when the workplace itself is outdoors and exposed to varying warm weather conditions.

Humans are, to a large extent, capable of adjusting to the heat. Gradual exposure to heat gives the body time to become accustomed to higher environmental temperatures.

Lessening Stressful Conditions

Many industries have attempted to reduce the hazards of heat stress by introducing engineering controls, training workers in the recognition and prevention of heat stress, and implementing work-rest cycles. Heat stress depends, in part, on the amount of heat the worker's body produces while a job is being performed.

Number and Duration of Exposures

Rather than be exposed to heat for extended periods of time during the course of a job, workers should, wherever possible, be permitted to distribute the workload evenly over the day and incorporate work-rest cycles. Work-rest cycles give the body an opportunity to get rid of excess heat, slow down the production of internal body heat, and provide greater blood flow to the skin.

Workers employed outdoors are especially subject to weather changes. A hot spell or a rise in humidity can create overly stressful conditions. The following practices can help to reduce heat stress:

- Postponement of nonessential tasks
- Permit only those workers acclimatized to heat to perform the more strenuous tasks
- Provide additional workers to perform the tasks keeping in mind that all workers should have the physical capacity to perform the task and that they should be accustomed to the heat.

Thermal Conditions in the Workplace

A variety of engineering controls can be introduced to minimize exposure to heat. For instance, improving the insulation on a furnace wall can reduce its surface temperature

and the temperature of the area around it. In general, the simplest and least expensive methods of reducing heat and humidity can be accomplished by:

- Opening windows in hot work areas
- Using fans
- Using other methods of creating airflow such as exhaust ventilation or air blowers.

Rest Areas

Providing cool rest areas in hot work environments considerably reduces the stress of working in those environments. A rest area with a temperature near 76 degrees F appears to be adequate and may even feel chilly to a hot, sweating worker, until acclimated to the cooler environment. The rest area should be as close to the workplace as possible. Individual work periods should not be lengthened in favor of prolonged rest periods. Shorter but frequent work-rest cycles are the greatest benefit to the worker.

Drinking Water

In the course of a day's work in the heat, a worker may produce as much as 2 to 3 gallons of sweat. Because so many heat disorders involve excessive dehydration of the body, it is essential that water intake during the workday be about equal to the amount of sweat produced. Most workers exposed to hot conditions drink fewer fluids than needed because of an insufficient thirst drive. A worker, therefore, should not depend on thirst to signal when and how much to drink. Instead, the worker should drink 5 to 7 ounces of fluids every 15 to 20 minutes to replenish the necessary fluids in the body.

Heat acclimatized workers lose much less salt in their sweat than do workers who are not adjusted to the heat. The average American diet contains sufficient salt for acclimatized workers even when sweat production is high.

CAUTION Persons with heart problems or those on a low sodium diet who work in hot environments should consult a physician about what to do under these conditions.

Protective Clothing

Clothing inhibits the transfer of heat between the body and the surrounding environment. Therefore, in hot jobs where the air temperature is lower than skin temperature, wearing clothing reduces the body's ability to lose heat into the air.

When air temperature is higher than skin temperature, clothing helps to prevent the transfer of heat from the air to the body. However, this advantage may be nullified if the clothes interfere with the evaporation of sweat.

In dry climates, adequate evaporation of sweat is seldom a problem. In a dry work environment with very high air temperatures, protective clothing could be an advantage to the worker. The proper type of clothing depends on the specific circumstance. Certain work in hot environments may require insulated gloves, insulated suits, reflective clothing, or infrared reflecting face shields.

Employee Awareness

The key to preventing excessive heat stress is educating everyone on the hazards of working in heat and the benefits of implementing proper controls and work practices. The supervisor should establish a program designed to acclimatize workers who must be exposed to hot environments and provide necessary work-rest cycles and water to minimize heat stress.

Training:

Employee training: Training in the following topics will be provided to all employees who are subject to working in high heat environments:

- Environmental and personal risk factors for heat illness
- Procedures for identifying, evaluating, and controlling exposures to the environmental and personal risk factors for heat illness
- The importance of frequent consumption of water
- The importance of acclimatization
- The different types of heat illness and the common signs and symptoms of heat illness
- The importance of immediately reporting to the employer or designee symptoms or signs of heat illness
- Procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary
- How to provide clear and precise directions to the work site

Supervisor training: Prior to assignment to supervision of employees working in the heat, training on the following topics will occur:

- The information provided for employee training
- Procedures the supervisor will follow to implement controls
- Procedures the supervisor will follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures

Special Considerations

During unusually hot weather conditions lasting longer than 2 days, the number of heat illnesses usually increases. This is due to several factors, such as progressive body fluid deficit, loss of appetite (and possible salt deficit), buildup of heat in living and work areas, and breakdown of air-conditioning equipment. Therefore, it is advisable to make a special effort to adhere rigorously to the above preventive measures during these extended hot spells and to avoid any unnecessary or unusual stressful activity. Sufficient sleep and good nutrition are important for maintaining a high level of heat tolerance. Workers who may be at a greater risk of heat illnesses are; the obese, the chronically ill and older individuals.

EXCAVATION, TRENCHING AND SHORING

Responsibilities

Supervisor

- Ensure that a competent person is on site during excavation.
- Determine who will be the competent person on the job.
- Ensure that employees are trained and understand the hazards of working in a trench.
- Ensure that employees follow all requirements including adequate exits, sloping, surface encumbrances, installation and removal of support, inspections, air monitoring, etc

Competent Person

- Must be able to identify existing or predictable hazards in the surroundings that are unsanitary, hazardous, or dangerous to employees.
- Has authorization or authority by the nature of their position to take prompt corrective measures to eliminate any hazards.
- Must be knowledgeable in excavation and trenching.

Employee

- Conducts work in a safe manner.
- Is knowledgeable about trenching and excavation work and the rules of safety.
- Attends training as directed.

Risk Management

- Provide training as requested.
- Provide guidance and consultation.
- Provide documentation for training.

One Call Call Before You Dig 1-800-424-5555

Purpose

To protect City employees who enter excavations and trenches and establish a policy for shoring, shielding and sloping excavations and trenches.

Policy

It is the policy of the City of Tacoma to shore or slope all excavations or trenches over four (4) feet in depth or less when conditions warrant. All sloping and shoring will comply with WAC chapter 296-155-650 and any revisions.

City employees shall not enter excavation or trenches dug by contractors and/or others that are not adequately sloped or shored.

Note: Protection for Trenches Less Than Four Feet

Trenches less than four feet in depth shall be effectively protected when there are indications that hazardous ground movement is possible.

Training

Employees engaged in excavations and trenching will receive training in the potential hazards, appropriate safeguards, and other requirements. **Retraining shall be conducted as needed.**

Competent Person

At all times there will be a competent person on the job site while employees are working. A competent person is one who can identify existing or predictable hazards that are unsanitary, hazardous, or dangerous to employees, and who also has authorization or authority by the nature of their position to take prompt corrective measures to eliminate them. The person shall be knowledgeable in the requirement to identify classifications of soil and rock deposits and perform visual and manual analysis to identify these soil classifications.

Procedures

Protection systems for use in excavating more than 20 feet in depth shall be designed by a registered professional engineer.

Trench and Excavation Protection

Except in solid rock, the sides of trenches and excavations, including embankments, four feet or more in depth shall be shored, shielded, sheeted, braced, sloped, or supported by a means of sufficient strength to protect employees.

Storage of Excavated Material

In excavations that employees are required to enter, excavated or other material (spoils) shall be stored and retained at least two feet away from the edge of the excavation or trench.

Excavation and Trench Exits

When employees are required to be in excavations or trenches four feet deep or more, an adequate means of exit, such as a ladder or steps, will be provided and located within 25 feet. An earth ramp is acceptable, providing all the following requirements are met:

- The stability of the earth is adequate for good footing,
- The total travel distance does not exceed 25 feet, and
- Adequate shoring or equivalent protection is provided for the entire escape route.

When Sloping Does Not Extend to the Bottom of the Trench

Shoring shall be required to support the vertical part of the trench. The shoring shall extend above the bottom of the slope a minimum of 18 inches to prevent material from sliding or rolling into the trench.

Surface Encumbrances

Trees, boulders, utility poles and other surface encumbrances which create a hazard to employees involved in excavation or trenching work shall be removed or made safe before excavation or trenching is begun or continued.

Installation and Removal of Support

- Members of support systems must be securely connected to prevent sliding, falling, kickouts, or other predictable failure.
- Installation shall begin at the top; removal shall begin at the bottom of the excavation. Members shall be released slowly, noting any indication of possible failure of the remaining members or possible cave-in.
- Backfilling shall progress together with the removal of support systems from excavations.
- All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side
- Excavation of material to a level no greater than 2 feet below the bottom of a support system is permitted if the system is stable and no loss of soil from below the support system is indicated.

Inspections (see Inspection Checklist at end of document)

- Daily inspections of excavations, adjacent areas and protective systems shall be made by a competent person for a situation that would result in cave-ins, failure of protective systems, or other hazardous conditions.
- An inspection shall be conducted by the competent person before the start of work and as needed throughout the shift.
- Inspections shall be made after every rainstorm or other hazard-increasing occurrence.
- When the competent person finds evidence of a situation that could result in a possible cave-in, failure of protective systems or other hazardous conditions, exposed employees shall be removed from the area until the necessary precautions have been taken.

Hazardous Atmospheres

Where oxygen deficiencies or hazardous atmospheres may exist (i.e. excavations in landfills, open sewer lines, etc). Air monitoring shall be conducted throughout the duration of any employee entry to a space deeper than four feet. If a hazardous atmosphere is detected, confined space rules may apply.

Underground Utilities

Before opening an excavation or trench, underground utilities such as sewer, telephone, fuel, electric, water line, or other installations shall be located. The appropriate utility company shall be notified and requested to identify the exact location of the underground installation. A one call system is often available for underground utilities. The one call phone # is 1-800-424-5555.

- Proper supports and precautions shall be provided for existing utility installations.
- When electric lines are of the direct burial type, a qualified person shall make positive identification of the cable.
- Mechanical excavating equipment shall maintain a two-foot clearance from the direct burial cable.

Water Main Safeguards

When existing loop water mains are running laterally within two feet of the excavation or trench wall, the valve the greatest distance from the work site that practically can be closed, shall be closed.

- The exact location of the open valve and the valve key shall be given to the workers before they enter the excavation or trenches.
- The open valve location shall be marked and clear access to the valve maintained.

Protection from Hazards Associated with Water Accumulation

Employees shall not work in excavations when water is accumulating unless adequate precautions have been taken to protect employees against the hazards of water accumulation. Precautions necessary to protect employees adequately vary with each situation, but could include special support, shield systems to protect from cave-ins, or water removal to control the water level.

Surface Water Control

Diversion ditches, dikes, adequate drainage, or other suitable means will be used next to the excavation or trench to prevent surface water from entering.

Ramps and Runways

Ramps or runways used for vehicles shall be of a width of not less than four feet wider than the vehicle used, and shall be provided with:

- Timber guards no less than eight inches placed parallel to and secured to the sides of the runway or ramp, or
- Beams or earthen ramps, or
- Other equivalent protection.

Walkway and Bridge Requirements

Where employees or equipment cross over excavation or trenches, walkways or bridges with standard guardrails shall be provided.

Top Person

No person shall be allowed to work in a trench over four feet in depth unless there is a top person in constant attendance. The top person shall be in addition to the equipment operator when the person in the trench is not in constant view of the equipment operator.

Signal Person

Signal person shall be used to direct equipment when backfilling when the operator does not have a clear view of the excavation.

Stop Logs

When mobile equipment is used or allowed next to excavations or trenches, stop logs, or barricades shall be installed. Such devices shall not be required for equipment doing the actual excavating or backfilling operation.

Sloping Systems

Soil and Rock Deposits

Soil and rock deposits shall be classified according to WAC 296-155-664, Appendix A. Different types of soils have varying degrees of cohesiveness and stability. Classifying soil stability is an important part of excavating the site. In general, soil is divided into four classes, from most stable to least stable:

- Stable rock - solid mineral matter.
- Type A - cohesive soils such as clay, silty clay and hard pan.
- Type B - granular soils, silt, sandy loam, unstable rock, any unstable or fissured type A soil.
- Type C - gravel, loamy soil, previously disturbed, submerged soil, and any soil that is part of a layered, steeply sloped system.

Soil classification and stability evaluation may be done only by a competent person.

Maximum Allowable Slope

The maximum allowable slope for soil or rock deposit shall be:

- Stable rocks - may have cuts as vertical or 90°
- Type A soils - may have slopes as $\frac{3}{4}$:1
- Type B soils - may have slopes as great as 1:1
- Type C soils - may have slopes as great as 1 $\frac{1}{2}$:1

Reference

WAC 296-155, Part N Excavation, Trenching and Shoring

Excavation Inspection

Date _____ Inspector _____

Time _____ Job Number _____

*Inspections of excavations that employees will be performing work in must be conducted daily, as new conditions are encountered, and after every rainstorm until excavation is backfilled.

Barricades

- Barricades in place so as to prevent entry into excavation

Walkways

- Adequate walkways in place with handrails should employees need to cross excavation

Shoring

- Installed per equipment's design
- No more than 2' of space from bottom of support to bottom of excavation
- Employees have safe entry and egress from support system
- Support members secured together to prevent slipping or falling out of place
- Install from top-down and remove from bottom-up

Sloping & Benching

- All slopes free of loose debris
- Spoils a minimum of two feet from edge of excavation

Slope Classification --Visual Tests

Observation	Type A	Type B	Type C
Soil being excavated is primarily:	Fine grained material	Angular gravel with a lot of fines (similar to crushed rock)	Coarse grained sand or gravel
Soil as it is excavated:	Remains in clumps	Remains mostly in clumps	Breaks up easily
Excavation and adjacent area:	Has no evidence of being previously disturbed	Contains utilities or other evidence of previous disturbance	Contains utilities or other evidence of previous disturbance
Excavation slopes and base:	Contain no seeping or standing water	Soil may be moist but is not freely seeping from slopes or in base	Has evidence of seeping water from surface or water table

Findings _____

--Manual Tests

***One of the following tests must be performed**

1. **If material being excavated is moist:** Mold a sample into a ball approximately the size of a golf ball. Then on a flat surface roll out the sample into a thin thread about 1/8 in diameter. If the thread is flexible and doesn't easily break it is cohesive and can be classified as Type A or B in conjunction with visual tests. If material isn't cohesive and breaks apart easily it is classified as Type C.
2. **If material being excavated is dry:** Take a sample being excavated and attempt to break it up. If it breaks easily into individual grains it is Type C. If the soil breaks into more clumps, then those clumps break again and the smallest clumps are difficult to break up it is Type B. If your original sample breaks into clumps, then it is very difficult to break it up again it may be classified as Type A.

Other manual tests are allowable under WAC 296-166, and if utilized must be documented.

Findings _____

Signature of Competent Person: _____ Date: _____

TRENCHING/EXCAVATION DAILY INSPECTION CHECKLIST

COMPETENT PERSON: _____ DATE: _____

USE ONE OR MORE OF THE FOLLOWING: a "check mark" to indicate yes, comment codes listed below, or fill in blank with applicable information or description.

COMMENT CODES

SOIL TYPE:	ROCK, STABLE ROCK, "A" "B" "C"
HYDROSTATIC CONDITIONS:	(M) MOIST (D) DRY (R) RAINSTORM (SA) SATURATED (PS) PARTIAL SATURATION

JOB SITE DESCRIPTION

Location: _____ Area Congested: _____

Right-Of-Way And Clearance Ok: _____

Trench/Excavation Depth: _____ Length: _____

Location Of Underground Utilities Verified: _____ Date: _____

Location Of Underground Utilities Marked: _____ Date: _____

Crossing Trench/Excavation: Power Lines: _____ Road/Alley: _____

Parallel To Trench Lines: Power Lines: _____ Road/Alley: _____ Building(s): _____

Excavation: Pole Bracing: _____ Overhead Lines: _____ Structural Bracing: _____

Open Date/Time: _____ Job #: _____

Registered Professional Engineer: _____ Reason: _____

TRENCH/EXCAVATION INSPECTION COMMENTS

Soil Type: _____ Times Inspected: _____

Describe Any Changing Conditions, Plans, Or Shoring Equipment Damage In Space Below:

EMPLOYEE & PUBLIC SAFETY INSPECTIONS

Ladders: _____ Ramp For Employees: _____ Ramp For Equipment: _____

Emergency Equipment: _____ Air Quality Testing: _____ Water Removal: _____

Lighted Barricades: _____ Barricade Tape: _____ Cones: _____ Fencing: _____

Flaggers: _____ Weekend Protection: _____ Steel Plating: _____

Spoil Pile/Other Material Effectively Removed: _____

PROTECTION SYSTEM SELECTED

Hydraulic Shores (Size): _____ Sheeting Thickness: _____ No.: _____

Horizontal Walers (Size): _____ Timber Shores: _____

Slope: ½:1 _____ ¾:1 _____ 1:1 _____ 1 ½:1 _____

Benching: _____ Unsupported Wall Height: _____

SOIL CONDITION -SOIL TYPE

NOTE: If one manual & visual test for each is not done, soil must be classified as Type "C".

MANUAL TESTS :

COHESIVE SOILS - RECORD RESULTS: _____

GRANULAR SOILS - RECORD RESULTS: _____

VISUAL TESTS:

FISSURES -TRENCH SIDE (CRACKS OR SPALLS): _____

FISSURES -TOP OF TRENCH (CRACKS OR OPENINGS): _____

SOIL LAYERS SLOPE INTO TRENCH 4:1 OR STEEPER: _____

ROCK LAYER ABOVE SOIL LAYER: _____

SEEPAGE INTO TRENCH FROM SIDES ____, SURFACE ____, BOTTOM ____

VIBRATION SOURCES THAT MAY EFFECT TRENCH STABILITY. _____

PRIOR OR EXISTING EXCAVATION CROSSING TRENCH: ____ PARALLEL ____

ADDITIONAL COMMENTS/NOTES: _____

CONFINED SPACE ENTRY

Responsibilities

Supervisors of employees who enter confined spaces and/or permit required confined spaces must:

- Ensure a site-specific confined space entry permit is written when entering a permit required confined space.
- Ensure that identification and labeling of confined spaces is completed (see example on page 8).
- Ensure that materials and equipment needed for confined space entry are stocked and maintained;
- Ensure that all employees who enter, attend or supervise confined space entry are trained;
- Ensure that safety techniques of atmospheric evaluation, entry and permit completion are carried out properly.

Authorized Entrants - Employee(s) authorized to enter a permit space to perform work must:

- Know the hazards that may be faced during entry, including information on the modes, signs, symptoms, and consequences of exposure.
- Properly use equipment, particularly personal protective equipment.
- Communicate with the attendant regularly to allow the attendant to monitor status and order evacuation if problems arise.
- Alert the attendant whenever any warning sign or symptoms of exposure to a dangerous situation, or a prohibited condition, is detected.
- Exit from the space when ordered by the attendant, when experiencing signs and/or symptoms of exposure, when a prohibited condition exists, or when an alarm sounds.

Attendant - The individual stationed outside the permit required space(s) or enclosed space who monitors the authorized entrants must:

- Have knowledge of the hazards and potential hazards associated with the specific permit space, including mode of exposure, signs, symptoms, and consequences of exposure.
- Remain outside the permit space until termination of the entry operation or until relieved by another qualified attendant.
- Maintain an accurate count of authorized entrants within the permit space.
- Maintain communication with the authorized entrant(s) to monitor his/her status and to alert the entrant of any need to evacuate the space.
- Monitor activities inside and outside the space to determine if it is safe for entrants to remain in the space, or order evacuation if the attendant:
 - Detects a prohibited condition.
 - Detects behavioral effects in the authorized entrant(s) that may be a result of exposure to atmospheric hazards.
 - Detects a condition outside the space that could endanger the authorized entrant(s).
- Cannot effectively and safely perform all their required duties.
- Perform no other duties that interfere with primary attendant duties.

Entry Supervisor - The appointed "entry supervisor" must:

- Have knowledge of the hazards and potential hazards associated with the specific permit space, including mode of exposure, signs, symptoms, and consequences of exposure which may be encountered during entry.
- Verify that the entry permit is properly completed, that all tests specified on the permit have been conducted, and that all procedures and equipment specified on the permit are in place before endorsing the permit and allowing entry to begin.
- Terminate the entry and cancel the permit when the entry operation has been completed, or when a prohibited condition arises in or near the space.
- Verify that rescue services are available and that the means for summoning them are operational.
- Stop unauthorized individuals who enter, or who attempt to enter, the permit space during entry operations.
- Ensure that the entry operations remain consistent with the terms of the entry permit and that acceptable entry conditions are maintained.
- Need not be a supervisor by job classification.

NOTE: Entry supervisors also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this section for each role he or she fills. Also, the duties of the entry supervisor may be passed from one individual to another during the course of an entry operation.

Risk Management

- Provide training as needed.
- Provide record keeping for training and entry permits.
- Provide guidance and consultation.

Purpose

To provide safe work practices for City of Tacoma employees when working in and around confined spaces. The procedures outlined are intended to reduce or eliminate accidents and injuries in sewers, manholes, wet wells, pump stations, utility vaults, and other confined spaces. Recognition of the hazards associated with confined spaces is key to the successful elimination or control of these hazards. The following procedures are mandatory and are required practices to be utilized by City of Tacoma employees.

Management is responsible for implementing procedures, providing training and ensuring planning for entry into confined spaces which present a hazard to employees due to the potential for atmospheric toxicity, flammability, oxygen deficiency or acute mechanical, electrical, corrosive or temperature hazards.

Management will make available and enforce this procedure which includes planning, general precautions, procedures, evaluation of hazards, ventilation requirements, personal protection, hazard isolation and employee responsibilities. For each project or job, individuals who are competent in the evaluation of hazards and safety requirements shall be specifically assigned.

These written procedures and the confined space entry program will be reviewed and updated as needed by the Safety Office. The results will be made available to supervisors and affected employees.

Policy Statement

It is the policy of the City of Tacoma to require all employees assigned to work in and around confined spaces to be adequately trained and protected from the hazards that might be encountered. All employees and supervisors working in or near confined spaces shall follow the procedures set forth by their departments and the following guidelines.

Non-Permit Confined Space vs Permit Required Confined Space

The majority of the confined space regulation addresses permit required confined spaces which contain specific identified hazards. A permit-required confined space may be re-classified as a non-permit confined space for as long as the hazards remain eliminated. You must make sure the following conditions are met:

- The confined space doesn't contain an actual or potential hazardous atmosphere.
- The confined space doesn't contain hazards capable of causing death or serious physical harm. This includes any recognized health or safety hazards including engulfment in solid or liquid material, electrical shock or moving parts.
- If you must enter to remove hazards, the space must be treated as a permit-required confined space until hazards have been eliminated.
- If a hazard arises during entry, all entrants must evacuate and the space must be re-evaluated.

You must document the following:

1. Date
2. Location of space
3. Signature of the person making the determination
4. Make the certification available to each entrant, or their authorized representative.

For examples of permits, copies of the Tacoma Power and Tacoma Public Works Confined Space Permits can be found at the end of this section. An alternative form can be used with Risk Management approval.

Program Highlights

Ventilation:

There has never been a fatality from atmospheric hazards when ventilation is used in a permit required confined space. All permit required confined spaces will be ventilated unless documented on the permit.

Rescue Services:

The CSE (confined space entry) supervisor is required to ensure that emergency rescue services are available before entry into any PRCS (permit required confined space) is allowed. Normally, rescue services are provided by an attendant and mechanical retrieval equipment attached to the harness of the entrant. In the event that the standard retrieval equipment cannot be used, and no suitable, safe, alternative is available, the entry supervisor will contact Tacoma Fire Dispatch (591-5733) and give location, estimated time of entry, and contact number at site. Confirm that TFD's confined space rescue team is available to respond. Without mechanical means of rescue in use, or the rescue team on stand-by, no entry can take place.

Departments can develop their own, on-site, emergency rescue teams. City of Tacoma facilities located outside of Pierce County must develop their own on-site, emergency

rescue team unless they have worked out a rescue agreement with a local emergency response team. Team members will receive at least the same level of training required of entrants. They must be provided with and trained in the use of Personal Protective Equipment and rescue equipment. They must be trained to perform rescue functions. They must complete an onsite training drill prior to initial assignment and at least annually thereafter.

Training:

No employee will be allowed to enter a permit required confined space, or perform any associated entry duties without appropriate training.

Permit System:

No entry will be allowed into a permit required confined space without a confined space entry permit, completed and posted at the entrance. All entry permits will be canceled at the end of job and kept for a period of at least one year from the date issued.

Equipment Requirements:

All necessary safety equipment, as described on the entry permit (including mechanical retrieval devices, tag lines, full chest harness, and ventilation equipment), must be inspected and available on site prior to entry.

Contractor Activity:

When any contractor performs work on City property that requires entry into a permit required confined space, a City representative will advise the contractor that they must use a compliant permit entry system, advise them of the hazards associated with the space, any procedures or precautions that we have implemented in the area for the protection of our employees, coordinate activities when City employees will be working in or near the same space, and debrief the contractor at the conclusion of operations.

Program Review:

Supervisors will perform an annual review of the confined space entry program. Safety office personnel will be available for assistance. Deficiencies will be identified, and corrective actions will be developed to address all areas of concern.

Definitions

Atmospheric Testing: The process used to identify and evaluate the atmospheric hazards that may confront entrants of a permit space. Testing enables entry supervisors to devise and implement adequate control measures for the protection of employees, and to determine if acceptable entry conditions are present prior to and during entry.

Attendant: means an individual stationed outside one or more permit spaces to monitor the entrants.

Confined Space: A space that is all of the following

- Is large enough and arranged so an employee can fully enter the space and work, and
- Has limited or restricted means for entry or exit (some examples are tanks, vessels, excavations, storage bins, hoppers, vaults, pits and diked areas), and
- Is not designed for continuous employee occupancy.

Contaminants: Any organic or inorganic substance, dust, fume, mist, vapor or gas, whose presence in the air may be harmful to human beings.

Enclosed Space: A working space, such as a manhole, vault, tunnel, or shaft, that has a limited means of egress or entry, that is designed for periodic employee entry under normal operating conditions, and that under normal conditions does not contain a hazardous atmosphere, but that may contain a hazardous atmosphere under abnormal conditions. Enclosed spaces are regulated under the high voltage electrical standard known as WAC 296-45.

Engulfment: The surrounding capture of a person by a liquid or finely divided (flowable) solid substance that can be inhaled to cause death by filling or plugging the respiratory system, or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

Entry: The action by which a person passes through an opening into a permit-required confined space. Entry includes performing work activities in that space, and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

Entry Permit: The written document that is provided to allow and control entry into a permit-required confined space.

Entry Supervisor: The person responsible for determining if acceptable entry conditions are present at a permit-required confined space where entry is planned and who authorizes entry and oversees entry operations, and who can terminate entry as required by the regulations. An entry supervisor also may serve as an attendant or as an authorized entrant as long as that person is trained and equipped for each role they fill. The duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

Flammable Atmospheres: Are atmospheres in excess of 10% of the lower explosive limit (LEL). These are usually toxic as well as flammable.

Hazardous Atmosphere: An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

- Flammable gas, vapor, or mist in excess of 10 percent of its lower explosive limit (LEL).
- Airborne combustible dust at a concentration that meets or exceeds its LEL. This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet or less.
- Atmospheric oxygen concentration below 19.5% or above 23.5%.
- Any other atmospheric condition that is immediately dangerous to life or health.

Hot Work Permit: The written authorization to perform operations (for example, riveting, welding, cutting, burning, and heating) capable of providing a source of ignition.

Non-permit confined space

A confined space that does **not** contain actual hazards or potential hazards capable of causing death or serious physical harm.

Permit Required Confined Space: Is a confined space (see above) that has one or more of the following characteristics:

- Contains or has a potential to contain a hazardous atmosphere;

- Contains or has a known potential for engulfment of an entrant;
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls, or a floor which slopes downward and tapers to a smaller cross-section; or
- Contains any other recognized serious safety or health hazard.

Program

Each work site will be evaluated to determine the types of confined spaces that are present.

Examples of the types of confined spaces at the City of Tacoma include utility vaults, sewers, manholes, wet wells, digesters, water cooling towers, boilers and fuel storage tanks.

Supervisors will evaluate all identified confined spaces to determine the actual or potential safety and health hazards in each space. Any questions concerning these hazards can be addressed to the Safety Office. Each department, creating a list of the confined spaces and associated hazards in their workplace, will document this evaluation. These spaces shall be evaluated to determine if they are permit-required confined spaces and if they have the potential to be converted to non-permit confined spaces.

Identifying Permit-Required Confined Space Hazards

Once a space has been identified as being a permit required confined space, the hazards that may be present within space must be identified. The first three hazards listed below are determined using a portable air monitor.

- Toxic atmospheres.
- Oxygen-deficient atmospheres (less than 19.5% by volume).
- Flammable atmospheres (greater than 10% of the LEL).
- Mechanical and physical hazards.

Every permit-required confined space must be evaluated for the four types of hazards. The three types of atmospheric hazards are often the most difficult to identify since they are normally invisible. About two-thirds of all deaths and injuries in confined spaces result from atmospheric hazards.

Unless identified with an alternative procedure, such as a posted map, or site specific training, all permit-required confined spaces within City of Tacoma work sites should be labeled. i.e. manholes. The label containing the words listed below, or similar language, should be posted at the entrance to all permit-required confined spaces:

DANGER
PERMIT-REQUIRED CONFINED SPACE
DO NOT ENTER

Procedure for Entry into Confined Spaces

Evaluation of Air in Confined Space

Atmospheric evaluation must be made by trained and competent personnel.

Atmospheric test results must be recorded on the permit immediately prior to entry, after starting any hot work, and at intervals during any work that may cause conditions to change. Air monitoring equipment will be in use at all times when in a confined space.

Atmospheric conditions inside a confined space will be tested with a calibrated, direct-reading instrument for the following conditions, and in this order:

- A. Oxygen
- B. Flammable gases and vapors
- C. Potential toxic air contaminants

NOTE: All atmospheric tests should be taken at the top, middle and bottom of all confined spaces.

NOTE: All testing equipment should be calibrated according to the manufacturer's instructions. Also, all manufacturers' operating instructions must be followed.

Preliminary Preparation

- Determine the physical and chemical characteristics of substances in the permit-required confined space and evaluate any potential hazards.
- Survey surrounding area and evaluate any potential hazards.
- Post or barricade areas to prevent unauthorized entry.
- Ensure control of ignition sources.
- Have all equipment and tools required available at site. Inspect all equipment to be used (such as pumps, blowers (ventilation fans) and lines, personal protective devices, gas detector, etc.)
- Instruct personnel in attendance if they are unfamiliar with any special procedures.
- Lockout/Tagout

Removal of Hazardous Chemicals and/or Physical Hazards

- Reactive or unstable materials, such as explosives must be handled with extra care.
- Avoid creating air or water pollution and fire hazards.

Methods of Chemical Contaminant Removal

- Vent or relieve for all pressurized hazards.
- Empty or drain. For all liquid or solid products, including removal of materials from any internal piping, traps or standpipes.
- Wash or flush. Use hot water, solvents, caustic solution or neutralizing agents as appropriate to the hazard. The MSDS for the chemical should be consulted prior to the chemical use. The compatibility of that chemical with the contents of the confined space must be checked.
- Purge
- Displace with water, then purge. Provide proper ventilation.
- Displace with air; then purge and ventilate using blower or fan.
- Displace with inert gas; use N₂ or CO₂. Contact Safety prior to inerting.
- Remove residual liquids or solids; some may be trapped under heavy scale or rust. If heated, they may release flammable or toxic vapors. Use proper safety equipment and remove residual by steam cleaning or chemical cleaning according to hazard present.

Ventilation:

- Oxygen shall never be used for ventilating.
- Keep supplied air inlet well away from discharge outlet. Inlet hose should be at ¼ the height of the space.

- NEVER VENTILATE LESS THAN 5 MINUTES PRIOR TO ENTRY. There should be a minimum of 5 air changes prior to entry.
- Fans and Equipment: Must conform to NFPA requirements. No ignition sources shall be allowed.

Lockout:

Determine if there are any other hazards or potential hazards (such as stored energy) that must be controlled through lockout.

Requirements for Entry into Permit-Required Confined Spaces

- Personal Protective Equipment shall be used as required.
- An attendant must be outside and in constant contact with the worker(s) entering space. The attendant must have the authority to control the permit space. Personnel authorized to be the standby person for an entry shall have no duties that might interfere with their contact with the entrants inside the space. The standby person must order the authorized entrants to exit the permit space immediately when:
 1. The attendant observes a condition that is not allowed by the entry permit.
 2. The attendant detects behavioral effects of a hazard exposure.
 3. The attendant detects a situation outside the space that could endanger entrants.
 4. The attendant detects an uncontrolled hazard within the confined space.
- Fire extinguishing equipment must be readily available when necessary.
- Ventilation must be maintained at all times when employees are in permit- required confined spaces.
- Emergency lighting must be available as required. Explosion-proof lighting is required if potential for flammable or combustible vapors or liquids are present.
- Workers entering a permit space must wear a full-body harness with rescue lines attached to a fixed object or mechanical retrieval device unless this would create a greater hazard.
- All work must be stopped if:
 1. Ventilation fails.
 2. Any indication of ill effects is noticed, such as dizziness, irritation, or excessive odors.

PRECAUTIONS FOR WORK IN Permit-Required CONFINED SPACES

Hot work: (Work involving heat and ignition sources, such as welding, burning, cutting, soldering, etc.)

A hot work permit is required before entry. Because a hazard is being introduced through the hot work, the confined space must become a permit required confined space. Beware of the following hazardous conditions:

- Flammable atmosphere - combustible materials present from painting, cementing, coating, etc
- Toxic atmosphere - gases, vapors or fumes which may be generated by hot work.

Use of toxic or flammable materials in permit-required confined spaces: (Paints, coatings, cements, solvents, etc.)

- Minimize quantity of material taken into space.
- Use local exhaust and/or respiratory protection for gases, vapors, fumes, dusts and mists created by the work.

- Ventilate continuously during the work.
- Evaluate the atmosphere continuously during the entry.
- Use only approved tools and lighting.

General

Air-supplying respiratory protection shall be required in cases of oxygen atmospheres of less than 19.5% or immediately dangerous to life or health (IDLH) atmospheres. In a confined space, when using air supplying respirators, contact the safety office. Respiratory protection shall be required in the presence of airborne contaminant concentrations above the permissible exposure limit (PEL) as defined in WAC 296-842.

Protective clothing and gloves shall be worn when entering a manhole, wet well or sewer. In spaces that do or could contain corrosive chemicals that are toxic through contact, special equipment to prevent skin or eye contact shall be worn.

All workers shall wear a hard hat when possible.

The Occupational Safety and Health Standards and National Electrical Code require special lighting equipment for work in manholes. The City of Tacoma shall provide the proper equipment, and no other equipment shall be used. All portable lights and tools shall be "explosion proof" when working in flammable atmospheres.

Supervisors shall ensure that adequate procedures are implemented to prevent foreign objects, tools, rocks, dirt, water, etc., from entering a manhole. Wear a hard hat when appropriate.

If you are not sure – don't go in. If you smell anything different or feel different - get out NOW!

References

- Washington State, Department of Labor and Industries WAC 296-809-100 Confined Spaces.
- Washington State, Department of Labor and Industries WAC 296-842 Respiratory Protection.
- Washington State, Department of Labor and Industries WAC 296-803-100 (The Control of Hazardous Energy) Lockout/Tagout.
- Washington State, Department of Labor and Industries WAC 296-155-24501 Fall Restraint and Fall Arrest.
- Washington State, Department of Labor and Industries Safety Standards for Electrical Workers WAC 296-45-205
- Washington State, Department of Labor and Industries Safety Standards for Telecommunications Workers WAC 296-32-340
- Washington State, Department of Labor and Industries Safety Standards for Firefighters WAC 296-305-0500.

If the below form is needed it can be downloaded in [Adobe PDF format](#) or [Word Format](#).

Permit-Required CONFINED SPACE ENTRY PERMIT

In Case Of Emergency Dial 911

EXAMPLE

Public Works Confined Space Entry Permit

CONFINED SPACE ENTRY PERMIT/HAZARDOUS AREA						
Reason for entry						
Job Location/Address						
Person in Charge			Date			
AUTHORIZED ENTRANT(S)			Start Time			
			Stop Time			
			PERMIT EXPIRES			
			Date Time			
			STANDBY PERSON(S)			
REQUIREMENTS		YES	NO		YES	NO
Lockout/Tagout				Lighting		
Purge/Ventilate				Personnel Safety Equipment		
Secure Area & Monitor				Respirator/SCBA		
Life Line & Harness				Fire Extinguisher		
Tripod & Retrieval Device.				Communications Devices		
Isolate Mech. & Phys. Hazards				Pre-Entry Training Conducted		
Make Sure Monitoring Equipment is Working and Calibrated					Unit #	
AGENT TESTED FOR	Limits	Results	Time	Results	Time	Results
Oxygen	(19.5-23.5%)					
Combustible Gas (LEL)	10% MAX					
Carbon Monoxide (CO)	35 PPM					
Hydrogen Sulfide (H2S)	10 PPM					
Other						

TRAFFIC CONTROL/FLAGGING

Responsibilities

Supervisor

- Ensure that flaggers attend training to maintain certification.
- Ensure availability of appropriate clothing and other equipment such as radios or lighting.
- Ensure that labor and industries requirements are followed.
- Familiar with temporary traffic control practices.

Flagger

- Flaggers are responsible for the safety of themselves, fellow workers, motorists, and pedestrians. The flagger's job is to move traffic safely and quickly, while allowing workers to do their jobs. Flaggers may also be expected to assist with the establishment of a traffic control set up including the traffic control zone elements such as advance warning sign placement, channelizing devices, and taper designs.
- Flaggers must be trained and certified, in good physical condition, mentally alert and professional.
- The flagger card and picture ID must be in the Flaggers possession at all times while flagging.
- Personnel that have not completed a flagger training course may be assigned duties as flaggers only during emergencies. Emergency assignments are temporary and last only until a certified flagger can be put into the position. An emergency means an unforeseen occurrence endangering life, limb, or property.

Risk Management

- Provide flagger certification training as needed.
- Provide record keeping for flagger training.
- Provide guidance and consultation.

Purpose

To establish policy and procedures for flagging in work zones.

Policy

Proper work area protection shall be planned to ensure the safety and protection of employees, the public, and equipment.

Work area protection includes informative signs and traffic control devices placed in relation to the location of the workers and the equipment. Only those signs, standards, barricades, flags and cones that conform to state or local codes shall be used. Traffic control devices are to be used with proper planning, design, installation, inspection, maintenance and common sense. The work area must be properly identified with warning devices that convey the message to the traveling public well in advance of their arrival at the work area.

Procedure

Supervisors will determine which of their employees require flagging certification and will arrange for the employees to attend the 6-8 hour initial training. Recertification is required

every three years. Only current, certified flaggers will be used for flagging except when there is an emergency situation.

When to use Flaggers

Flaggers are to be used only when other reasonable traffic control methods will not adequately control traffic in the work zone. If signs, signals, and barricades do not provide necessary protection from traffic at work zones and construction sites on or adjacent to a highway or street, then you must use flaggers or other appropriate traffic controls.

Signaling

Flagger signaling must be with sign paddles approved by WSDOT and conform to guidelines and recommendation of the MUTCD.

During the hours of darkness, sign paddles must be retro reflective or illuminated in the same manner as signs

Adequate warning of approaching vehicles

Employers must position work zone flaggers so they are not exposed to traffic or equipment approaching them from behind. Flaggers should be positioned on the shoulder, facing the centerline, observing on-coming traffic and work zone equipment. A flagger must only stand in the lane being used by moving road users after the road users have stopped.

High-visibility garments

For daytime work, flaggers must at least wear, as an outer garment; a high visibility safety garment designed according to Class 2 specifications in ANSI/ISEA 107-199 and a high visibility hard hat that is white, yellow, yellow-green, orange or red in color.

Definition: Hours of darkness means one-half hour before sunset to one-half hour after sunrise.

While flagging at night, a flagger must at least wear, as an outer garment, a high visibility safety garment designed according to Class 2 specifications in ANSI/ISEA 107-1999 over white coveralls or other coveralls or trousers that have retro reflective banding on the legs designed according to ANSI/ISEA 107-199 standards, and a high-visibility hard hat that is marked with at least 12 square inches of retro reflective material applied to provide 360 degrees of visibility.

When snow or fog limit visibility, pants, coveralls, or rain gear in a highly visible color (cannot wear white) with retroreflective banding on the legs and a highly visible hard hat must be worn.

Flaggers Station

Ideally, flagging stations should be 200-300 feet ahead of the work space. Even in less-than-ideal conditions, the distance between the flagging station and the work space should never be less than 50 feet away if at all possible.

Flagger stations should be located far enough in advance of the work space so that the approaching road users will have sufficient distance to stop.

The Stopping Sight Distance as a Function of the Speed table below, may be used for determining the location of a flagger station.

Stopping Sight Distance as a Function of Speed Table

Speed* (mph)	Distance (ft.)**
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645

Proper advance warning signs, including the FLAGGER AHEAD sign, should precede the flagging station. The flagger ahead sign or symbol must be within 1500 feet of the flagger station and the flagger station must be visible from the sign.

Guidelines

Develop an emergency escape plan.

Expect the unexpected. Stay alert.

Make yourself visible to traffic.

Visibility Guidelines

- Stand in a conspicuous place on the shoulder of the road. Never step into the traffic lane.
- Stand where there is a sharp color contrast between you, the background, and the equipment. If possible, never stand in the shade.
- Never flag from inside a vehicle. Do not lean, sit, or lie on a vehicle. Park your own vehicle at least 100 feet from the flagging station.
- Keep your workstation uncluttered. Place your lunch, jacket, or other personal items well out of the way so they will not distract drivers or block your escape route.
- Stand alone. Discourage other workers, motorists, or pedestrians from gathering around you.
- Stand in a manner and location that traffic and the work area can be observed, toes to the center line.

Face traffic when giving signals. Do not stand with your back to traffic.

Give positive, direct signals that leave no doubt of their meaning.

Establish signals to warn the crew of danger.

Flaggers are not assigned other duties while engaged in flagging activities.

Flaggers stations shall be illuminated during the hours of darkness.

Develop an emergency escape plan

Expect the unexpected. Stay alert.

Identify potential problems.

Flagger Orientation

The employer, responsible contractor or project owner must conduct an orientation that familiarizes the flagger with the job site. This requirement applies each time the flagger is assigned to a new project or when job site conditions change significantly.

The orientation must include but is not limited to:

- The flagger's role and location on the job site.
- Motor vehicle and equipment in operation at the site.
- Job site traffic patterns.
- Communications and signals to be used between flagger and equipment operators.
- On-foot escape route.
- Other hazards specific to the job site.

Traffic Control Plan

If flaggers are used on a job that will last more than one day, then the employer must keep on site, a current site specific traffic control plan.

The plan must include but is not limited to the following items when they are appropriate:

- Sign use and placement
- Application and removal of pavement markings
- Construction
- Scheduling
- Methods and devices for delineation and channelization
- Placement and maintenance of devices
- Placement of flaggers
- Roadway lighting
- Traffic regulations
- Surveillance and inspection

Advance Warning Signs

- Three signs on roads with posted speeds below 45 mph and four signs roads of 45 mph or greater
- Warning signs must reflect the condition of the work zone. When not in use, the signs must be taken down or covered.
- Sign spacing will be in accordance with the Advanced Warning Sign Spacing table in WAC 296-155-305

References

WAC 296-155-305 Part E, Signaling and Flaggers

WSDOT, M54-44, Work Zone Traffic Control Guidelines

ESC, Traffic Control Flagger Certification Handbook

US DOT, Manual on Uniform Traffic Control Devices (MUTCD), as adopted by WSDOT

LOCKOUT/TAGOUT

(Control of Hazardous Energy)

Responsibilities

Supervisors

- Ensure that employees are properly trained and understand the requirements and significance of lockout procedures.
- Review the program each year to ensure compliance with this program.
- Ensure that affected employees whose work operations are or may be in the area shall be instructed in the purpose and use of the lockout procedure.
- Will assign and provide individual locks to employee as needed.

Employees

- All employees whose duties require the use of lockout will receive training in the requirements and significance of lockout procedures.
- Follow all required procedures as required.
- Will use assigned individual locks as required.

Risk Management

- Serve as consultant for supervisors and employees as requested.
- Provide training as requested.
- Provide guidance and consultation.

Purpose

This program establishes the minimum requirements for the lockout of energy isolating devices in the service and maintenance of machines and equipment, including piping systems. The following procedures must be followed if employees could be injured by the unexpected energization or start up of the machine or equipment or energy sources or the release of stored energy sources which include mechanical, hydraulic, pneumatic, chemical, thermal, or other energy, including gravity.

Exemptions

The lockout/tagout program does not include installations for generating, transmitting, and distributing electrical power (including related communication and metering equipment) that are controlled exclusively by electric utilities.

Other exemptions:

- Construction activities covered by chapter 296-155 WAC, Safety Standards for Construction Work.
- Hot tap operations of pressurized pipelines used to transmit and distribute substances such as gas, steam, water, or petroleum products if the employer can demonstrate that all of the following apply:
 - Continuity of service is essential
 - Shutdown of the system is impractical.
 - Proven effective employee protection is provided by following documented procedures and using special equipment.
- Service and maintenance of fire alarm and extinguishing systems and their components if:
 - Other employees depend on these systems for fire safety and

- Employees working on fire extinguishing systems are protected from the unexpected release of hazardous energy by appropriate alternative measures.
- Work on electric equipment receiving power only through a cord and plug If:
 - Unplugging the equipment eliminates the possibility of unexpected energization, unexpected start up, or the release of stored energy and
 - The plug is kept under the exclusive control of the employee doing the service or maintenance.
- Exposure to electrical hazards from electrical work on, near or with conductors or equipment that is covered by chapter 296-24 Part L, Electrical.
- Service and maintenance during normal production operations, if an employee isn't require to:
 - Remove or bypass a guard or other safety device or
 - Place a body part into the point of operation or any other hazardous area created by machine operation.
- Minor tool changes, adjustments, and other minor service during normal production operations if:
 - They are routine, repetitive, and integral to the use of the equipment for production and
 - The work is done using measures which provide effective protection from hazards.

Written Energy Control Program

This written energy control program protects employees that service or maintain a machine or equipment from injury. The following are minimum requirements to be included in the program.

- Energy control procedures
- Employee training
- Periodic reviews

A sample Lockout Procedure can be found at the end of this document and downloaded as a pdf and word document from the intranet.

Energy Control Procedures

Energy control procedures must clearly and specifically outline the scope, purpose, authorization, rules and techniques to control hazardous energy. Each supervisor must make sure that these procedures are followed.

Energy control procedures must specifically identify at least the following:

- When the procedure must be used.
- What the specific procedural steps are for.
- How to test the machine or equipment to verify effectiveness.
- Note: Similar machines and equipment may be covered by a single written procedure if they use the same type and magnitude of energy, have similar controls and are identified by type and location.

Make sure new or modified machines and equipment can accept lockout devices.

A lockout system must be used if an energy-isolating device can be locked out. If this is not possible, a tagout system must be used.

Energy Control Devices

The City of Tacoma must provide appropriate means to control energy such as: locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, blind flanges or cribbing.

Lockout/tagout devices must meet all of the following criteria:

- Create no additional hazards.
- Have a distinctive design or appearance.
- Are the only devices used for controlling energy.
- Are not used for any other purpose.
- Are durable enough to withstand the environment they're used in for the maximum time they're expected to be used.
- Are standardized within the facility by color, shape or size.
- Identify the person applying the device.
- Are strong enough so that removing them by other than the normal unlocking method requires excessive force or unusual techniques.

All tags must:

- Use the same print and format.
- Be constructed and printed so they won't deteriorate allowing the message to be legible when exposed to weather, used in damp locations or used in corrosive environments.
- Contain a warning about not energizing the machine or equipment.

Tag attachments must:

- Not be reusable.
- Be self-locking.
- Not be attached by hand.
- Not be released with a force of less than 50 pounds.
- Be similar in design and basic characteristics to a one-piece, all-environment-tolerant, nylon cable tie.

Applying Lockout/tagout Devices

Before a machine or equipment is turned off, make sure the employee knows:

- Type and magnitude of the energy.
- Hazards of the energy to be controlled.
- Method or means to control energy.

Turn off or shut down the machine or equipment using established procedures.

Completely isolate the machine or equipment from its energy sources using the appropriate energy-isolating devices after the machine or equipment has been turned off.

Notify affected employees that the machine or equipment is being locked or tagged out before the devices are applied.

When applying lockout devices:

- Make sure a lockout/tagout device is applied for each energy-isolating device and only by the authorized employee doing the service or maintenance.

- Make sure lockout devices hold the energy-isolating device in a safe or off position.

When applying tagout devices:

- Make sure it is put on an energy-isolating device so it clearly shows that moving the energy-isolating device from the safe or off positions is prohibited.
- Make sure the tag is fastened to the device at the same point a lock would have been attached.
- Locate the tag as close as safely possible to the energy-isolating device.
- Position the tag so it is immediately obvious to anyone.

Stored and residual energy must be relieved, disconnected, restrained, or otherwise rendered safe after the lockout or tagout devices have been put in place. Throughout the procedure, continue to verify energy has not re-accumulated.

Verify that the machine or equipment is safe before starting work.

When removing lockout/tagout devices and reenergizing:

- Inspect the work area to make sure nonessential items have been removed.
- Verify the machine or equipment is in operating condition and ready to energize.
- Ensure that employees in the area are in safe positions.

Only the authorized employee who applied the lockout/tagout device may remove it with the following exceptions:

- The written program has documented, specific procedures and training for this situation.
- Specific procedures used are safe and include:
 - o Verifying the employee who applied the device is not at the facility.
 - o All reasonable efforts have been made to contact and inform the authorized employee that the device is being removed.
 - o The authorized employee is informed, before resuming work at the facility that the device has been removed.

All affected employees must be notified when lockout/tagout devices have been removed.

Follow normal energy control procedures if it is necessary to temporarily energize a machine, equipment, or component for testing or positioning.

During shift changes, make sure there is continuous lockout/tagout protection and provide for the orderly transfer of device protection.

Employees who are working in a group must be provided the same level of protection as that provided by an individual device. Make sure each authorized employee puts a personal device on the group lockout device, lockbox or comparable mechanism before beginning work and does not remove it until they have finished their work. Assign one primary authorized employee who has overall responsibility, attaches their device before work begins and is the last to remove their device when the work is complete.

If more than one group works on a machine or equipment, assign one authorized employee as group coordinator who will coordinate the work and maintain continuous lockout.

When outside employers are servicing or maintaining City of Tacoma equipment and lockout/tagout is required:

- Inform them of our lockout/tagout procedures.
- Make sure the outside employers inform you of their procedures.
- Confirm that all employees understand and will follow restrictions of each others energy control program.

Employee Training

Provide and document training to employees. Include in the training the purpose and function of the program and ensure that they have the knowledge and skills to carry out their responsibilities. Train each employee specific to this City of Tacoma program.

Ensure that employees know that they must never remove a device or attempt to restart or reenergize a machine or equipment that's locked or tagged out.

Periodic Review

Supervisors must perform at least annually, a periodic review to make sure employees know and can apply the energy control procedures and to correct any deviations or inadequacies.

Sequence of Lockout or Tagout System Procedure

- Notify all affected employees that a lockout system is going to be utilized and the reason for the lockout. The authorized employee applying the lockout must know the types of energy that the machine or equipment utilizes and the associated hazards.
- If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open toggle switch, etc.).
- Operate the disconnect switch, valve, or other energy-isolating device(s) so that the equipment is isolated from its energy source(s). Stored energy (such as that in springs; elevated machined members; rotating flywheels; hydraulic systems; and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as repositioning, blocking, bleeding down, etc.
- Lockout and tag the energy-isolating devices using assigned individual lock(s).
- Tryout the system. As a check, ensure that no personnel are exposed. Operate the push button or other normal operating controls to make certain the equipment will not operate. **Caution: Return operating control(s) to "neutral" or "off" position after the test.**
- The equipment is now locked out.

Restoring Machines or Equipment to Normal Production Operation

- After the servicing and/or maintenance are complete and equipment is ready for normal production operations check the area around the machine or equipment to ensure that no one is exposed.
- After all tools have been removed from the machine or equipment, guards have been reinstalled and employees are in the clear, remove all lockout devices. Operate the energy-isolating devices to restore energy to the machine or equipment. Operate the equipment to ensure it operates correctly.

Reference

WAC 296-803-100

WAC 296-45-175

The following is a sample Lockout Procedure developed by the Washington State Department of Labor and Industries. It can also be found on the intranet under Safety and forms.

Sample Lockout Procedure

The following sample lockout procedure contains the minimum information necessary to help you develop an energy control procedure that meets the requirements of Lockout/Tagout (Control of Hazardous Energy), Chapter 296-803 WAC.

For complex energy control systems, you may need to develop, document, and use more comprehensive procedures.

You can use this fill-in-the-blank template, or develop your own form.

Note: If you develop your own form, remember to include the necessary information from this template.

Sample Lockout Procedure

Use with Lockout/Tagout (Control of Hazardous Energy), Chapter 296-803 WAC
Fill-in-the-Blank Template

SCOPE:

This lockout procedure is for:

Insert either of the following above:

- City of Tacoma if using a single procedure (one machine or type of machine)
- or**
- Specific machine or equipment that this procedure applies to, if you use multiple procedures. For additional information, see *Establish a written control program*, WAC 296-803-20005, in this chapter.

PURPOSE:

This procedure contains the minimum requirements to protect employees from injury caused by the unexpected energization, start up, or release of stored energy during service or maintenance.

Use this procedure to make sure the machine or equipment is stopped and isolated from all potentially hazardous energy sources, and locked out before any employee begins work.

AUTHORIZATION:

The following persons are authorized to lock out the machine or equipment using this procedure:

List above the names of authorized employees you want to use this procedure.

MEETING THE REQUIREMENTS OF THIS PROGRAM:

- Authorized employees will perform lockout as described in this procedure.
- No employee will attempt to start, energize or use any machine or equipment that is locked out.
- All employees need to follow the restrictions and limitations that result from this procedure.
- Failure to follow this procedure will result in the following action:

List above the actions that will be taken if employees violate the procedure.

INTENDED USE:

This procedure will be used for the following service or maintenance actions:

List above the service and maintenance activities that require use of the procedure.

SPECIFIC PROCEDURAL STEPS:

Step 1: The authorized employee will identify the type and magnitude of the energy that the machine or equipment uses, understand the hazards of the energy, and know the methods to control the energy as follows before using this procedure:

List above the type and magnitude of the energy, its hazards, and the methods to control the energy. For additional information, see Meet these requirements when applying lockout or tagout devices, WAC 296-803-50010, in this chapter.

Step 2: Notify all of the following affected employees that the machine or equipment will be shut down and locked out for service or maintenance:

List above the names or job titles of affected employees and how to notify them. For additional information, see Meet these requirements when applying lockout or tagout devices, WAC 296-803-50010, in this chapter.

Step 3: Shut down the machine or equipment by the normal stopping procedure (such as depressing a stop button, opening switches, or closing valves).

List above the types and locations of machine or equipment operating controls. For additional information, see Meet these requirements when applying lockout or tagout devices, WAC 296-803-50010, in this chapter.

Step 4: Completely isolate the machine or equipment from its energy sources by using the appropriate energy-isolating devices.

List above types and locations of energy isolating devices. For additional information, see Meet these requirements when applying lockout or tagout devices, WAC 296-803-50010, in this chapter.

Step 5: Lock out the energy isolating devices with assigned individual locks.

List above any additional procedural requirements, such as putting on a tag with amplifying information, necessary for the authorized employee to know. For additional information, see Meet these requirements when applying lockout or tagout devices, WAC 296-803-50010, in this chapter.

Step 6: Dispel or restrain stored and residual energy, such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, using methods such as grounding, repositioning, blocking, or bleeding down.

List above the types of stored and residual energy and the methods to dispel or restrain them. For additional information, see Protect employees from the hazards of stored and residual energy, WAC 296-803-50025, in this chapter.

List above any actions necessary to prevent stored energy from reaccumulating to a hazardous level. For additional information, see Protect employees from the hazards of stored and residual energy, WAC 296-803-50025, in this chapter.

Step 7: Make sure the equipment is disconnected from the energy sources, and stored and residual energy has been made safe. Check that no employees are exposed, and then verify the isolation of the equipment by doing the following:

List above the method of verifying machine or equipment isolation, such as operating the push button or other normal operating controls or by testing to make certain the equipment will not operate. For additional information, see Verify that the machine or equipment is safe before starting work, WAC 296-803-50030 in this chapter.

CAUTION: Return the operating controls to the safe, neutral, or off position, after verifying the equipment is isolated from its energy source.

THE MACHINE OR EQUIPMENT IS NOW LOCKED OUT:

Restore the machine or equipment to service after the service or maintenance is completed and the machine or equipment is ready to return to its normal operating condition by following these steps:

Step 1: Check the machine or equipment and the immediate area around it to make sure all nonessential items have been removed and that the machine or equipment is in operating condition and ready to energize.

Step 2: Make sure all employees are safely positioned for starting or energizing the machine or equipment.

Step 3: Verify that the controls are in neutral.

Step 4: Remove the lockout devices and reenergize the machine or equipment.

Note: You may need to re-energize the machine before you can safely remove some forms of energy blocking.

Step 5: Notify affected employees that the service or maintenance is completed and the machine or equipment is ready to use.

For additional information, see Meet these requirements when removing lockout or tagout devices and energizing the machine or equipment, WAC 296-803-50035, in this chapter.

LEAD AWARENESS

Responsibilities

Supervisors

- Working with Risk Management, ensure that no employee is over exposed to lead.
- Ensure that employees receive safety training prior to being assigned to work with lead containing products.
- Notify Risk Management prior to any activity involving lead containing products.

Employee

- Attend lead awareness training in the use of lead containing products.
- Follow all safety procedures.
- Use all personal protective equipment as required.
- Ensure that building and equipment surfaces are not contaminated.
- Be very careful not to carry lead-containing dust on clothes, tools, or other items, outside the work area.

Risk Management

- Provide lead exposure monitoring guidance as requested by supervisors.
- Provide guidance and consultation.
- Receive laboratory and medical monitoring data from contract lab and healthcare facility and disseminate to appropriate persons.

Purpose:

The City of Tacoma is responsible for and concerned about potential lead exposure by employees. This program requires all employees who work on materials containing lead to be aware of the lead content and to follow safe handling techniques.

Lead is a cumulative and persistent toxic substance with health effects that may result from low levels of exposure over prolonged periods of time. Lead exposure may occur by breathing lead containing dust, mist or fumes during some industrial processes, or it may be swallowed as a particulate or dissolved in water. It is the intent of this program that no exposure, or in the case of lead soldering, minimal exposure to lead contaminants occur.

Labor and Industries requires all employers to ensure that no employee is exposed to lead at concentrations greater than fifty micrograms per cubic meter of air calculated as an 8-hour time-weighted average (TWA). Sanding of lead-containing paint and the use of lead-based solder are the two industrial processes performed most frequently that might result in lead exposure. Each section that potentially exposes an employee to lead must measure for lead exposure during routine use to establish exposure levels. Prior to sanding on paint, which may contain lead, the paint must be analyzed for lead.

If lead is present, all work must proceed in a way that protects the worker and complies with WAC 296-857. The requirements in this WAC are quite extensive. Specific training, exposure assessments, employee personal protective equipment and engineering and work practice controls are just a few of the areas which must be addressed when exposure

to lead is possible. Specific procedures to follow are discussed below.

All supervisors of units who perform construction or maintenance work, during which workers may be exposed to lead, are responsible for ensuring compliance with WAC 296-857. The types of work processes which may result in lead exposure include: thermal stripping or sanding of old paint, welding of old, painted metal, machining and grinding lead alloys, radiator manufacturing and repair, lead soldering and ceramic glaze mixing, heat gun applications, cleaning surfaces using power tools, spray-painting, sweeping or shoveling LCM (lead containing materials) and rivet busting.

Lead containing materials (LCM) are materials that contain lead in any amount. The following materials are either known or suspect of being LCM.

- All paints
- Lead pipes
- Lead solder and soldered joints in plumbing lines and radiators
- Stained glass windows
- Lead shielding for x-rays: including lead sheeting & lead windows
- Lead-acid batteries
- Cable coverings
- Some glazes for pottery
- Terne metal used on roofs & other architectural components
- Some brick mortars

When an employee performs any of the activities listed below, contact the Safety Office or your supervisor before beginning work:

- Any activity performed on pure lead metal.
- Any activity performed on lead containing materials that workers think may produce visible amounts of dust.
- If workers are concerned about lead exposures to themselves or others.

General Precautions for All Activities on Lead Containing Material

Care must be taken on all activities performed on lead containing material. If your project does not require the special procedures listed at the end of this document, efforts still must be made to make sure that employees or building occupants are not accidentally exposed to lead. In general, this means good housekeeping and personal hygiene, including:

- Make sure that building and equipment surfaces are not contaminated. For example, place a plastic drop cloth under the work area and on top of any surfaces to make cleanup of lead-containing dust easier. Also, wetting the surface before an activity or drilling holes in a wall, for example, will reduce the amount of dust generated.
- Clean the area thoroughly after completion of activity. Do not "dry sweep" LCM; the material should be wet when sweeping. An alternative to "wet sweeping" or mopping is to use a high-efficiency particulate air (HEPA) vacuum. Note: HEPA vacuums and traditional shop vacuums look similar, but a shop vacuum does not capture the very small particles that a HEPA vacuum does and may actually increase exposures to lead. Be sure to use a HEPA vacuum!
- Be very careful not to carry lead-containing dust on clothes, tools, or other items, outside of the work area. This can expose building occupants to lead. If you suspect

that clothing will be contaminated with dust from LCM, disposable coveralls can be worn to prevent dust from being carried from the job site. Alternatively, lead-containing dust can be removed using a HEPA vacuum. Vacuuming of clothing requires a minimum of two people to vacuum areas that cannot be reached alone. Note: Be careful not to carry dust from home. This is particularly important if you have infants or young children at home because they are more susceptible than adults to the toxic effects of lead.

- Do not eat, drink, or smoke at the job site. Before taking a break or quitting for the day, wash your hands, face, and any other skin surfaces that are exposed. This helps prevent the ingestion of lead (from contamination of food, drink, or tobacco products), and helps prevent the spread of lead contamination. Again, this is of particular concern if the worker has infants or young children at home.
- If waste is generated from the activity, dispose of it properly. Contact the Safety Office if you are unsure of how to dispose of the waste.

Lead Awareness Training

All employees who perform any work processes which may result in lead exposure must receive lead awareness training annually. All employees required to wear respirators for protection from lead exposures must receive respiratory protection training, receive medical clearance and be fit-tested before a respirator is issued. The Safety Office can provide training sessions targeted toward these activities.

Medical Surveillance

Based on the negative exposure assessment, employees who perform any of the work processes on lead containing material may need to be in a medical surveillance program. This program may include initial blood testing to determine "baseline" blood lead levels (BLL's) and zinc protoporphyrin (ZPP) levels, and periodic blood monitoring. Supervisors should work with the Risk Management Office if they believe that medical surveillance is required.

SPECIAL PROCEDURES FOR WORKING WITH LEAD-CONTAINING MATERIALS

Sample suspect material for lead.

Collection of the sample must be performed by someone specially trained in lead sampling (certified hazardous materials or asbestos supervisor training would qualify an individual for sample collection). Prepare a work plan outlining how employees and building occupants will be protected while the task is completed. The information provided in the work plan should include:

1. Description of the job.
2. Materials affected that contain lead.
3. Specific activities that will disturb lead-containing materials.
4. Names of the employees who will perform the job.
5. Verification that employees have received lead-awareness training within the last year.
6. Verification that employees have received respiratory protection training and fit testing within the last year if they will be using respirators.
7. Precautions for protecting employees and building occupants.
8. A list of personal protective equipment that will be used.
9. Supervisors must verify that the employees have the correct equipment for the job

they are doing.

10. Directions for proper collection, segregation and disposal of debris or other project-associated materials that are suspected to be hazardous waste.

Negative Exposure Assessment

According to Labor and Industries regulations, a negative exposure assessment must be conducted to determine the level of lead exposure to workers during various work processes. The exposure will help determine the type of personal protective equipment needed and whether biological monitoring is needed when working on equipment coated with lead based paint or products containing lead solder or other lead containing products. This assessment is conducted by taking personnel exposure samples during the actual work process. Monitoring may be limited to a representative number of employees who are reasonably expected to have the highest exposure levels. All appropriate personal protective equipment is worn until the assessment determines exposure levels. The exposure assessment is comprised of a low volume sampling pump being worn by the worker connected to a specialized sampling cassette. The cassette is then sent to the laboratory for analysis. Several exposure assessments will need to take place in order to ensure an accurate negative exposure assessment.

Use of a Request for Laboratory Analytical Services form including chain of custody is required. All tasks performed during the assessment must be described on this form. In addition, the air flow rate prior to and after the pump is activated is recorded. This data will allow the laboratory to determine the worker exposure level including an Action Level and Time Weighted Average. Signatures at the bottom of the form must be filled out each time the sample cassette changes hands. This is important because it ensures that cassette tampering does not take place.

Attached is a copy of a Negative Exposure Documentation Form. This form must be filled out following each negative exposure evaluation. The purpose of the form is to document lead exposure during various types of work procedures. The results of each negative exposure assessment will be grouped by tasks and will be used to determine what personal protection equipment must be worn by employees when performing certain tasks in the future. The negative exposure assessment will also determine whether employees must be placed in a biological medical monitoring program. Labor and Industries WAC 296-857 provides the following table to determine the use of personal protective equipment and inclusion in a medical monitoring program based on exposure levels. The Action Level is 30 micrograms/cubic meter. The Time Weighted Average is 50 micrograms/cubic meter.

Determining Personal Protective Equipment Use and Inclusion in Medical Monitoring Program.

If:	Then continue to follow the Basic Rules and additional protective measures in:
Employees have presumed or confirmed exposure above the 8-hour time weighted average.	Exposure and Medical Monitoring <u>and</u> Exposure Control Areas
Employees have presumed or confirmed exposure: ⇒ Below the time weighted average, <u>and</u> ⇒ Above the action level	Exposure and Medical Monitoring
Employees have presumed or confirmed exposure: ⇒ Below the action level, <u>and</u> ⇒ Eye and skin irritation from exposure to lead compounds can occur	Use appropriate personal protective equipment
Employees have presumed or confirmed exposure: ⇒ Below the action level, <u>and</u> ⇒ Eye and skin irritation from exposure to lead compounds can not occur	No additional protective measures apply if exposures remain stable

Note: Exposure Control Areas are used to contain lead in the air and to keep lead from leaving the work site. An example would be a plastic enclosed room with a negative air machine to contain all lead within the room. If exposure exceeds the PEL, warning signs must be posted.

Sampling Protocol

All samples will be documented using the contract labs chain of custody sheet. Air Samples

- Set pump on a flow rate of 3 liters/minute using a rotometer for calibration
- Run pump for entire work shift or as long as possible
- Measure flow rate at end of assessment using the rotometer
- Fill out laboratory chain of custody sheet and send sample cassette and blank cassette to lab
- Fill out negative exposure assessment form.

Paint or Solid Samples

- Collect approximately 1 gram of material using a clean, suitable tool.
- Place sample in Petri dish, baggie or other suitable collection device.
- Fill out laboratory chain of custody sheet and send sample to lab.

Medical Exposure Monitoring

If an employee exceeds the action level or 8 hour time weighted average (TWA or PEL) the employee will then be entered into a medical monitoring program. This means that the employee will be sent to the City’s health contractor for lead analysis and other appropriate medical monitoring. If airborne levels are above the action level but below the permissible exposure level, blood lead levels must be checked every 6 months. Monitoring may be discontinued if 2 consecutive measurements, taken at least 7 days apart, are at or below the action level.

Employees do not have to undergo medical surveillance if they do not want to do so and are willing to sign a waiver form.

If an employee has difficulty breathing while wearing a respirator or has concerns about procreating a child, medical examination or consultation must be available. Full medical surveillance must be available for employees who are or may be exposed to lead in excess of the action level for more than 30 days a year and whose blood lead level exceeds 40 ug/dl. Blood level concentrations of 40 ug/dl or greater increases the monitoring frequency to sampling blood every 2 months. Blood level concentrations (from 2 tests) of 50 ug/dl or greater initiate a removal of that employee from the work conditions until their blood lead level drops and a physician releases them. The City must work with the medical provider if chelating agents are being used to ensure that:

- The employee is notified in writing that chelation is necessary, before chelation begins.
- A licensed health care professional performs chelation in a clinical setting.
- Chelation is administered with thorough and appropriate medical monitoring.

Risk Management will provide written notification of the laboratory results to the exposed employee within 5 business days. The supervisor will also receive a copy of the notification. The notification will be sent in an envelope marked confidential if the exposure level exceeds the action level or time weighted average. In addition, Risk Management will work with the supervisor and provide to the exposed employee within 15 working days the corrective actions being taken and a schedule for completion. Any reason why exposures can't be lowered to below the time weighted average will also be provided. Note: L&I regulations are exempt from HIPPA requirements however the Risk Management Office and the Supervisor will keep exposure levels and medical monitoring results confidential.

Engineering and Work Practice Controls

1. A plan must be created to control exposure to lead to below the PEL.
2. Ventilation must be considered.
3. Improving equipment must be considered.
4. Job rotation may be feasible.
5. The plan must be reviewed every 6 months.

Waste Containment

Lead containing waste must be contained at all times. This will often be as easy as performing work on a plastic tarp that is large enough to contain all lead waste. As mentioned, a room may need to be built to completely contain all lead contaminants. This is not anticipated unless employees are performing sand blasting or equally invasive procedures. A HEPA vacuum reserved for lead and asbestos use only may be used to clean up lead particles. Cleaning of the vacuum must be performed in such a way to ensure no employee exposure or environmental contamination.

Waste Handling and Recycling Procedures:

Lead – Chips, Scrapings, Stripping Material, Rags, Tarps

1. Materials should be tested to determine lead content.
2. Deposit all lead contaminated materials in container and affix Hazardous Material Ticket to container. Attempt to limit contents of container to less than 220 lbs. as that is the limit we are allowed to transport without the use of a licensed hazardous waste transporter.
3. Notify office of container, contents, and location. Do not move container from area.

4. Office or Sam will notify Environmental compliance Department for instructions for shipment and/or testing.

Definitions:

Action level is an exposure to lead of 30 micrograms per cubic meter of air.

Permissible Exposure Level (PEL) or 8 Hour Time Weighted Average (TWA) is the highest rate of lead exposure allowed by law (50 micrograms per cubic meter of air).

Airborne lead particulate (OSHA):

Action Level	30 ug/m ³
Permissible Exposure Limit (PEL)	50 ug/m ³

Blood Lead Levels:

CDC Level of Concern	10 ug/dL (for children)
OSHA Allowable Blood Lead Level	40 ug/dL
OSHA Medical Removal Level	50 ug/dL

Reference

WAC 296-62-7521

WAC 296-857

NEGATIVE EXPOSURE DOCUMENTATION

LEAD ASBESTOS OTHER _____

Date(s) _____ Location _____

Item / Material (being worked on) _____

Type of Work _____

Duration of Work _____

Exemptions _____

Employee _____ Employee # _____

Employee Position Title _____

<p>Personal Protective Equipment Used:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Half Mask Respirator <input type="checkbox"/> Powered Air Purifying Respirator <input type="checkbox"/> Full Face Respirator <input type="checkbox"/> Supplied Air Respirator <input type="checkbox"/> Booties, disposable <input type="checkbox"/> Coveralls, disposable <input type="checkbox"/> Coveralls, washable <input type="checkbox"/> Gloves, disposable <input type="checkbox"/> Gloves, washable <input type="checkbox"/> Hood, disposable <input type="checkbox"/> Sleeves, disposable <input type="checkbox"/> Welding hood <input type="checkbox"/> Goggles 	<p>Containment:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Signs <input type="checkbox"/> Plastic Drop Cloths <input type="checkbox"/> Wetting Agent to control dust (Simple Green for most jobs or Lead Free for aluminum) <input type="checkbox"/> Vacuum with clean HEPA filter <input type="checkbox"/> Enclosures (Asbestos) <input type="checkbox"/> Glovebags (Asbestos) <p>Disposal:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Container with HAZMAT label "Lead Waste" <input type="checkbox"/> Asbestos Containing Building Material (ACBM)
---	--

<p>Air Sample Monitoring # _____</p> <p><input type="checkbox"/> Air Monitor Flow Checked</p> <p>Sample Results: _____</p>	<p>Environment</p> <p>Outside:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Calm <input type="checkbox"/> Windy <input type="checkbox"/> Raining <input type="checkbox"/> Cloudy <input type="checkbox"/> Sunny 	<p>Temperature: _____ (Outside or Inside)</p> <p>Inside</p> <ul style="list-style-type: none"> <input type="checkbox"/> Positive pressure enclosed space <input type="checkbox"/> Ventilated <input type="checkbox"/> Non-Ventilated <input type="checkbox"/> Cross-breeze
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Send completed copy to Risk Management.

Fall Protection

Responsibilities

Supervisor

- Ensure that all employees assigned to work that exposes them to a fall hazard are properly trained.
- Ensure that a written plan has been developed specific to the job site.
- Work with the employee to eliminate fall hazards if possible.
- Ensure availability and use of proper fall protection equipment.

Employee

- Attend fall protection training as required.
- Use proper fall protection equipment.
- If you have concerns about the safety of fall protection equipment or do not thoroughly understand how to use it, contact your supervisor prior to use.

Risk Management

- Provide training as requested.
- Provide assistance in choosing fall protection equipment.
- Provide recordkeeping.
- Provide guidance and consultation.

Purpose

This section outlines the policies and procedures City of Tacoma employees will use when faced with potential exposure to fall hazards.

The City of Tacoma requires employees that are assigned work where there is a fall potential to be protected from the fall hazard. We are also required to train employees in the proper use, maintenance, and care of personal fall protection equipment.

Protection for Floor Openings WAC 296-24-75003 and Guardrails, Handrails and Covers WAC 296-155- 505

- 1) Every stairway floor opening shall be guarded by a standard railing Every ladderway, floor opening or platform shall be guarded.
- 2) Every hatchway and chute floor opening shall be guarded.
- 3) Every skylight opening and hold shall be guarded.
- 4) Every pit and trapdoor floor opening, infrequently used, shall be guarded.
- 5) Every manhole floor opening has to be guarded.
- 6) Every temporary floor opening shall have standard railings.
- 7) Every floor hole into which persons can accidentally walk shall be guarded.

FALL PROTECTION		
FALL RESTRAINT Restrained from falling		FALL ARREST Stopped after the fall
↓		↓
Guardrails		Full-body Harness
↓		↓
Full body Harness		Safety Nets
↓		↓
Warning Line System		Catch Platforms
↓		
Warning Line System and Safety Monitor		

Guardrails

- Top rails must be smooth, strong enough to withstand a force of at least 200 pounds and between 39 and 45 inches high.
- Must have an intermediate rail installed approximately halfway between the top rail and floor.
- Rails must not extend beyond the end posts.
- Toe boards must be 4 inches high, securely fastened and made of substantial mater.

Ladders WAC 296-155-480

(S) Where the total length of a climb equals or exceeds 24 feet, fixed ladders shall be equipped with one of the following:

- (I) Ladder safety devices; or
- (II) Self-retracting lifelines, and rest platforms at intervals not to exceed 150 feet; or
- (III) A cage or well, and multiple ladder sections, each ladder section not to exceed 50 feet in length. Ladder sections shall be offset from adjacent sections, and landing platforms shall be provided at maximum intervals of 50 feet.

Scaffolds WAC 296-874-200

The city must provide fall protection for employees on scaffolds more than 10 feet above a lower level from falling to the lower level by providing either a personal fall arrest system or guardrails.

Aerial lifts WAC 296-155-490

Ladder Trucks and Tower Trucks: A full body harness shall be worn and a lanyard attached according to the manufacturers recommendations when working from ladder trucks or tower trucks.

Extensible and Articulating Boom Platforms: A full body harness shall be worn and a lanyard attached to the boom or basket when working from an aerial lift.

Guarding of Low Pitched Roof Perimeters WAC 296-155-24515

(1) General provisions. During the performance of work on low pitched roofs with a potential fall hazard greater than 10 feet, the employer shall ensure that employees engaged in such work be protected from falling from all unprotected sides and edges of the roof as follows:

(a) By the use of a fall restraint or fall arrest systems, as defined in [WAC 296-155-24510](#); or

(b) By the use of a warning line system erected and maintained as provided in subsection (3) of this section and supplemented for employees working between the warning line and the roof edge by the use of a safety monitor system as described in [WAC 296-155-24521](#).

(c) Mechanical equipment shall be used or stored only in areas where employees are protected by a warning line system, or fall restraint, or fall arrest systems as described in [WAC 296-155-24510](#). Mechanical equipment may not be used or stored where the only protection is provided by the use of a safety monitor.

Electrical Work WAC 296-45-25510

Fall arrest equipment, work positioning equipment, or travel restricting equipment shall be used by employees working at elevated locations more than 4 feet (1.2 m) above the ground on poles, towers, or similar structures if other fall protection has not been provided. Fall protection equipment is not required to be used by a qualified employee climbing or changing location on poles, towers, or similar structures, unless conditions, such as, but not limited to ice, high winds, the design of the structure (for example, no provision for holding on with hands), or the presence of contaminants on the structure (ex. Smoke), could cause the employee to lose his or her grip or footing.

Note 1: This subsection applies to structures that support overhead electric power generation, transmission, and distribution lines and equipment. It does not apply to portions of buildings, such as loading docks, to electric equipment, such as transformers and capacitors, nor to aerial lifts.

Note 2: Employees undergoing training are not considered "qualified employees" for the purposes of this provision. Unqualified employees (including trainees) are required to use fall protection any time they are more than 4 feet (1.2m) above the ground.

Definitions

Full-Body harness means straps which may be secured about the employee in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders with means for attaching it to other components of a personal fall arrest system.

Fall Protection Work Plan means a written planning document, which identifies areas on the job site that have the potential to expose employees to a fall hazard of ten (10) feet or

more. The plan describes the methods of fall protection that are utilized to protect workers, and includes the procedures governing the installation and use of the fall protection methods selected by the employer at the work site.

Lanyard means a flexible line of rope, wire rope, or strap, which generally has a connector at each end for connecting the body harness to a deceleration device, lifeline, or anchorage.

Low-Slope roof means a roof having a slope less than or equal to 4 in 12 (vertical to horizontal).

Opening means a gap or void 30 inches (76 cm) or more high and 18 inches (48 cm) or more wide, in a wall or partition, through which employees can fall to a lower level.

Personal fall arrest system means a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, full-body harness and may include a lanyard(s), deceleration device, lifeline, or suitable combinations of these.

Personal fall restraint system means a system used to prevent an employee from falling. It consists of anchorages, connectors, and body belt/harness. It may include lanyards, lifelines and rope grabs designed for that purpose.

Roof means the exterior surface on the top of a building. This does not include floors or form work, which, because a building has not been completed, temporarily become the surface of a building.

Work area means that portion of a walking/working surface where job duties are being performed.

Walking/working surface means any surface, whether vertical or horizontal, on which an employee walks or works, including, but not limited to: floors, roofs, ramps, bridges, runways, form work and concrete reinforcing steel; but not including ladders, vehicles, or trailers on which employees must be located in order to perform their job duties.

Procedures

Every employee that is assigned to work that exposes them to a fall hazard greater than ten feet in height shall be trained by a competent person on the specific equipment that will be used at that site. A written plan must be developed and available on the job site for inspection by the Department of Labor and Industries. Employees will be trained on the Fall Protection Plan, and the plan shall include the following:

1. Identify all fall hazards in the work area.
2. Describe the method of fall arrest or fall restraint to be provided.
3. Describe the correct procedures for the assembly, maintenance, inspection and disassembly of the fall protection system to be used.
4. Describe the correct procedures for the handling, storage, and securing of tools and materials.
5. Describe the method of providing overhead protection for workers who may be in, or pass through the area below the work site.
6. Describe the method for prompt, safe removal of injured workers. A critical aspect of the Fall Protection Work Plan is a site-specific rescue plan that defines procedures for removing sick or injured employees who work at elevations ten feet or greater. The rescue plan will address, but not necessarily be limited to, the following:
7. Emergency telephone numbers for medical and rescue assistance.

8. Site address and specific directions for getting to the site.
9. Location of first aid kit.
10. Special equipment needed for rescue, such as cranes or ladders, etc.

Employees working in fall hazard areas regulated by this plan shall be knowledgeable of all the above requirements.

To ensure the safety of employees and compliance with the WISHA regulations, City of Tacoma Fall Protection Work Plan found on the intranet under Risk Management forms is recommended. A person competent in the use of fall protection equipment procedures shall complete and sign the work plan. Copies of completed work plans should be sent to the Safety Office for review.

Whenever possible, fall hazards will be eliminated by building guardrails or covering floor openings.

Fall Protection Equipment and Selection

Only authorized employees that have received fall protection training will use lifelines, body harnesses, and lanyards.

Note: A Class III full-body harness is the only personal fall protection device approved by this policy for occupational fall protection. Departments with unique requirements such as emergency response and rescue may have different requirements and may develop their own written procedures. Safety belts will not be allowed without prior authorization from the Safety Office.

Fall Arrest and Restraint Equipment and Components

Full-body harness

Carabiners

Lanyards

Locking snap hooks

Deceleration devices (retractable lifeline, rip stitch lanyard, shock-absorbing lanyard)

Restraint lines

Equipment Maintenance and Inspection

All fall protection equipment shall be well organized and stored in areas which will ensure that it remains clean, dry and away from any contact with chemicals. In addition, equipment made from synthetic and natural fiber materials, such as harnesses and lanyards, should be kept away from prolonged exposures to direct sunlight (i.e., inside vehicles). Employees shall not use equipment that is unsafe or damaged. Employees are responsible to inspect and ensure that their fall protection equipment is in safe operating condition prior to donning and placing the equipment into use. Defects to inspect for include: cuts, tears, abrasions, mold, or undue stretching, damage due to deterioration; contact with fire, acids, or other corrosives; distorted hooks or faulty hook springs; loose or damaged mountings; non-functioning parts; or wearing or internal deterioration in the ropes. In addition, equipment that has actually been subjected to impact loading (such as a fall of worker) shall be immediately removed from service, and shall not be used again for employee safeguarding.

Clean the harness with a mild soap or detergent and water solution. Hardware should be wiped off with a clean, dry cloth. The harness should be hung up to air dry.

Inspection Procedures

Harnesses

- Beginning at one end, holding the body side of the belt or harness toward you, grasp the belt with your hands six to eight inches apart. Bend the belt in an inverted "U". The resulting surface tension makes damaged fibers or cuts easier to see.
- Follow this procedure the entire length of the belt or harness. Watch for frayed edges, broken fibers, pulled stitches, cuts or chemical damage.
- Special attention should be given to the attachment of buckles and D-rings to webbing. Note any unusual wear, frayed or cut fibers, or distortion of the buckles or D-rings.
- Inspect for frayed or broken strands. Broken webbing strands generally appear as tufts on the webbing surface. Any broken, cut or burned stitches will readily be seen.
- Rivets should be tight and immovable with fingers. Body side rivet base and outside rivet burr should be flat against the material. Bent rivets will fail under stress. Especially note the condition of D-ring rivets and D-ring metal wear pads (if any). Discolored, pitted or cracked rivets indicate chemical corrosion.
- The tongue, or billet of the belts, receives heavy wear from repeated buckling and unbuckling. Inspect for loose, distorted or broken grommets.
- Tongue Buckle - Buckle tongues should be free of distortion. The outer bars and center bars must be straight. Pay special attention to corners and attachment points of the center bar.
- Friction Buckle - Inspect buckle frame and sliding bar for cracks, distortion, or sharp edges.
- Sliding Bar Buckle - Inspect buckle frame and sliding bar for cracks, distortion or sharp edges. Sliding bar should move freely. Knurled edge will slip if worn smooth. Pay special attention to corners and ends of sliding bar.

Lanyards

When inspecting lanyards, begin at one end and work to the opposite end. Slowly rotate the lanyard so that the entire circumference is checked. Spliced ends require particular attention. Hardware should be examined in addition to the procedures detailed below; i.e., snaps, D-rings, and thimbles.

- Steel - While rotating the steel lanyard, watch for cuts, frayed areas, or unusual wearing patterns on the wire. Broken strands will separate from the body of the lanyards.
- Webbing - While bending webbing over a pipe or mandrel, observe each side of the webbed lanyard. This will reveal any cuts or breaks. Swelling, discoloration, cracks or charring are obvious signs of chemical damage. Observe closely for any breaks in stitching.

Rope - Rotation of the rope lanyard while inspecting from end to end will bring to light any fuzzy, worn, broken or cut fibers. Weakened areas from extreme loads will appear as a noticeable change in the original diameter, and should be removed from service immediately.

Reference

WAC 296-155-245 Fall Restraint and Fall Arrest
WAC 296-24-75003 Protection for Floor Openings
WAC 296-155- 505 Guardrails, Handrails and Covers

WAC 296-45-25510 Electrical Work
WAC 296-874-200 Scaffolds
WAC 296-155-490 Aerial Lifts
WAC 296-155-480 Ladders

[Fall Protection Work Plan Requirements](#)

If you need the below form, it can be downloaded in both [Adobe PDF Format](#) or [Word Format](#) from the intranet on Risk Management Forms.

City Of Tacoma Fall Protection Work Plan

Section 1. Specific Job Information Date

Employee Name(s) _____

Job Location/Address(s) _____

Type of Operation _____

Section 2. Describe Fall Hazards in the Work Area

Examples: elevator shaft, scaffolding, boom lift, ladders, leading edge, stairwells, floor holes, window openings, perimeter edge, roof edge.

Section 3. Describe Method of Fall Restraint or Fall Arrest Provided

Examples: Harness with lanyard, shock absorber and permanent anchorage, harness with rope grab and improvised anchor, Safety monitor system with six foot control zone.

Section 4. Describe Handling Procedures

Procedures for assembly, disassembly, maintenance and inspection of the system and the safe handling of materials.

Section 5. Describe Overhead Protection

Examples: barricades, toe boards, hard hats.

Section 6. Emergency procedures

Procedures to be followed in the event of an emergency.

Signed: _____

Affected employees must be instructed in all elements of this plan
This document must be available on the job site for inspection.

RESPIRATORY PROTECTION PROGRAM

Responsibilities

Program Administrator

The Program Administrator is responsible for overseeing the respiratory protection program and evaluating the effectiveness of the program.

The Program Administrator for the City of Tacoma is the Safety Program Supervisor located at the Tacoma Municipal building. This administrator and his/her representatives will work in coordination with other departments.

Supervisors

Supervisors are responsible for ensuring that the respiratory protection program is implemented in their particular areas. In addition to being knowledgeable about the program requirements for their own protection, supervisors must also ensure that the program is understood and followed by the employees under their charge. Duties of the supervisor include:

- Ensuring that employees under their supervision have received appropriate annual training, fit testing, and required medical evaluations.
- Ensuring that health care professionals have received required employee information regarding job duties, type and weight of proposed respirator, length of time required to wear respirator, expected physical work load (light, moderate, or heavy), potential temperature and humidity extremes, and any additional protective clothing required.
- Ensuring the availability of appropriate respirators and accessories.
- Being aware of tasks requiring the use of respiratory protection.
- Enforcing the proper use of respiratory protection when necessary.
- Ensuring that respirators are properly cleaned, maintained, and stored.
- Ensuring that respirators fit well and do not cause discomfort.
- Continually monitoring work areas and operations to identify respiratory hazards.
- Coordinating with the Program Administrator on how to address respiratory hazards or other concerns regarding the program.
- Ensure that voluntary use of a respirator does not create job safety or health hazards.
- Regularly ask employees who use respirators if they fit well, affect job performance, are appropriate for the use.

Employees

Each employee has the responsibility to wear his or her respirator when and where required and in the manner in which they were trained. Employees must also:

- Complete the WISHA required medical questionnaire in a timely manner and submit it to the City's medical contractor.
- Care for and maintain their respirators as instructed, and store them in a clean sanitary location.
- Conduct a seal check each time the respirator is worn to make sure the seal is adequate.

- Inform their supervisor if the respirator no longer fits well, and request a new one that fits properly.
- Inform the supervisor or the Program Administrator of any respiratory hazards that they feel are not adequately addressed in the workplace and of any other concerns that they have regarding the program.

Risk Management

- Document Training and physicals.
- Provide guidance and consultation.

Purpose

To protect City of Tacoma employees from exposure to respiratory hazards and to provide for a medical assessment, selection, training, maintenance and use of protective respiratory equipment.

Policy

The City of Tacoma has determined that a limited number of employees may be exposed to wood dust, lead, biologicals, particulates, vapors, fumes and asbestos fibers while performing their routine job duties. Engineering controls, such as ventilation and substitution of less toxic materials, must be used if possible however; engineering controls are not always feasible for some of our operations, or have not always controlled the identified hazards. In these situations, respirators and other protective equipment must be used. Respirators are also needed to protect employees' health during emergencies.

Scope and Application

This program applies to all employees who are required through mandatory use to wear respirators during normal work operations, and during some non-routine or emergency operations such as a spill of a hazardous substance or rescue. This program also includes voluntary use of respirators by employees. All employees engaged in certain processes or tasks such as asbestos removal, must be trained in respiratory protection.

Employees participating in the respiratory protection program do so at no cost to them. The expense associated with training, medical evaluations and respiratory protection equipment will be paid for by the City of Tacoma.

Mandatory use of a respirator includes those instances where an over-exposure may occur to the worker or when a supervisor determines that use of a respirator is mandatory when performing certain functions.

Voluntary use of a respirator includes those instances where an employee chooses to wear a respirator to protect themselves from particulates or odors however the potential exposure is not considered a health threat according to Labor and Industries regulations, Risk Management or the employee's supervisor. The Risk Management Office or the supervisor has the authority to refuse the voluntary use of respirators. If voluntary respirator use is permissible, the respirator user must be provided the following information:

Important Information about Voluntary Use of Respirators

Note: "You" and "your" mean the employee in the following information.

Note: Voluntary use refers to filtering face pieces (dust masks) only.

Respirators protect against airborne contaminants when properly selected and used. Labor and Industries recommends voluntary use of respirators when exposure to substances is below the permissible exposure limit (PEL), because respirators can provide you an additional level of comfort and protection.

If you choose to voluntarily use a respirator (whether it's provided by you or your employer) be aware that respirators can create hazards for you, the user. You can avoid these hazards if you know how to use your respirator properly and how to keep it clean. Take these steps:

- Read and follow all instructions provided by the manufacturer about use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
- Choose respirators certified for use to protect against the substance of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. If a respirator isn't certified by NIOSH, you have no guarantee that it meets minimum design and performance standards for workplace use.
- Keep track of your respirator so you don't mistakenly use someone else's.
- Do not wear your respirator into:
 - ✓ Atmospheres containing hazards that your respirator isn't designed to protect against
 - For example, a respirator designed to filter dust particles won't protect you against solvent vapor, smoke or oxygen deficiency.
 - ✓ Situations where respirator use is required.

Program Elements

Selection Procedures

The Program Administrator and the supervisor will select respirators to be used on site, based on the hazards to which workers are exposed, the conditions in which they will perform their work and in accordance with all OSHA standards. The supervisor will conduct a hazard assessment for each operation, process, or work area where airborne substances may be present in routine operations or during an emergency. The hazard evaluation will include:

1. Identification and development of a list of hazardous substances used in the workplace, by department, or work process that may require use of a respirator;
2. Review of work processes to determine where potential exposures to these hazardous substances may occur. This review shall be conducted by surveying the workplace, reviewing process records, and talking with employees and supervisor;
3. Exposure monitoring to quantify potential hazardous exposure levels. Monitoring may be performed by a third party.
4. Type of respirator and its components to be used for that particular exposure.

The results of the current hazard evaluation are the following:

Paint Spray Booth: The City of Tacoma has decided to take a conservative approach and require all employees to wear half-facepiece air purifying respirators when working inside any spray booth. Based on exposure data in published reports on the same type of spray booth operations, the Program Administrator have determined that the respirator will provide sufficient protection against solvent over exposures. A paint prefilter with an organic vapor cartridge should provide adequate protection.

Brake Work in Motor Pool: Fleet staff wet down brakes prior to working on brake systems.

Asbestos and Lead Abatement: As required in Labor and Industries regulations, employees performing asbestos and lead abatement work must wear a half-facepiece air purifying respirator with a HEPA filter at a minimum.

Wood and Metal Shops: In most cases, respirators are not needed in wood and metal shops. The employee and/or supervisor will determine, on a case-by-case basis, when sanding or product use may pose a respiratory hazard. Respirators are required when cleaning dust collectors.

Maintenance Work: In most cases, respirators are not used in maintenance work due to the use of very small quantities of material, toxicity and the use of engineering controls. Should a supervisor or employee believe it would be prudent to wear a respirator, this is allowable. If there is concern about the potential for an over exposure, the Program Administrator or an Industrial Hygiene Firm will conduct a hazard analysis to determine whether a respirator is required.

Sand Blaster: A half-facepiece respirator with HEPA filters must be worn when changing the filters or cleaning out sand blasters. The hazard posed by sand blasters is a very fine respirable particulate.

Emergency Response: Self contained breathing apparatus respirators are used for emergency response only, unless the Safety Office has authorized use for other purposes.

Updating the Hazard Assessment

The supervisor or program administrator must revise and update the hazard assessment as needed. If an employee feels that respiratory protection is needed during a particular activity, he/she is to contact his/her supervisor. The supervisor will evaluate the potential hazard, arranging for outside assistance as necessary. The supervisor will then communicate the results of that assessment back to the employees. If it is determined that respiratory protection is necessary, all other elements of this program will be in effect for those tasks and this program will be updated accordingly.

NIOSH Certification

All respirators must be certified by the National Institute for Occupational Safety and Health (NIOSH) and shall be used in accordance with the terms of that certification. Also, all filters, cartridges, and canisters must be labeled with the appropriate NIOSH approval label. The label must not be removed or defaced while it is in use.

Medical Evaluation

Employees will not be assigned work requiring a respirator until a health care professional has determined that they are medically able to do so. Any employee refusing the medical evaluation, fit test and training will not be allowed to work in an area requiring respirator use.

The supervisor will provide the medical questionnaire. Medical evaluation procedures are as follows:

- Supervisors will provide all affected employees a copy of the medical questionnaire. They will also give the employee an envelope with the medical contractors address on it.

- To the extent feasible, supervisors will assist employees who are unable to read the questionnaire (by providing help in reading the questionnaire). When this is not possible, the employee will be sent directly to the physician for medical evaluation.
- Follow-up medical exams will be granted to employees as required by the standard, and/or as deemed necessary by the health care professional.
- All employees will be granted the opportunity to speak with the health care professional about their medical evaluation, if they so request.
- The Program Administrator has provided the health care staff a copy of this program, the Respiratory Protection standard and a list of hazardous substances in the work area that may require respiratory protection.
- The supervisor must provide the health care contractor the following information regarding the affected employee: His or her work area or job title, proposed respirator type and weight, length of time required to wear respirator, expected physical work load (light, moderate, or heavy), potential temperature and humidity extremes, and any protective clothing required.
- An employee required for medical reasons to wear a positive pressure air-purifying respirator to perform your duties then a powered air-purifying respirator will be provided.

After an employee has received clearance and begun to wear his or her respirator, additional medical evaluations will be provided under the following circumstances:

1. An employee reports medical signs or symptoms related to his or her ability to use a respirator;
2. A PLHCP, supervisor, or the respirator program administrator informs you that an employee needs to be reevaluated;
3. Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee reevaluation; or
4. A change occurs in workplace conditions (for example, physical work effort, protective clothing, and temperature) that may result in a substantial increase in the physiological burden placed on an employee.

Fit-Testing

Fit testing will be conducted by the Risk Management office or their appointed/trained representatives. Fit testing will most often use either isoamyl acetate, irritant smoke or a quantitative machine and will follow procedures listed in WAC 296-842-220 required for those respirators.

General Use Procedures

- Employees will use their respirators under conditions specified by this program, and in accordance with the training they receive on the use of each particular model. In addition, the respirator shall not be used in a manner for which it is not certified by NIOSH or by its manufacturer.
- All employees shall conduct user seal checks each time that they wear their respirator.
- All employees are responsible for: keeping their respirator clean, changing filters or cartridges, replacing parts, or inspecting the respirator if it stops functioning as intended.

- Employees are not permitted to wear tight-fitting respirators if they have any condition, such as facial scars, facial hair, or missing dentures, that prevents them from achieving a good seal. Employees are not permitted to wear headphones, facial hair, jewelry, eyeglasses or other articles that may interfere with the facepiece-to-face seal.

Respirator Malfunction

For any malfunction of a respirator, e.g., breakthrough, facepiece leakage, or improperly working valve, the respirator wearer shall inform his or her supervisor that the respirator no longer functions as intended, and go to a safe area to maintain the respirator. The supervisor must ensure that the employee receives the needed parts to repair the respirator, or is provided with a new respirator prior to returning to the work area.

Employees must leave the work area before removing respirators or when the following occurs:

- Replace air-purifying filters, cartridges, or canisters
- Upon smelling, tasting or detecting vapor or gas leakage
- When detecting changes in breathing resistance
- To readjust respirators
- To wash faces and respirators
- If the employee becomes ill
- If the employee experiences sensations of dizziness, nausea, weakness, breathing difficulty, coughing, sneezing, vomiting, fever, or chills

Immediately Dangerous to Life and Health (IDLH) Procedures

Areas or work conditions that have been identified by the Program Administrator as presenting the potential for IDLH conditions will only be entered by emergency response personnel unless the atmosphere is made safe and evaluated by Risk Management.

Air Quality

For supplied-air respirators, only Grade D breathing air shall be used.

Cleaning, Maintenance, Inspection, Change Schedules and Storage

Cleaning

Respirators are to be regularly cleaned and disinfected by the wearer. Respirators issued for the exclusive use of an employee shall be cleaned as often as necessary, but at least at the end of each use. The following procedure is to be used when cleaning and disinfecting respirators:

- Disassemble respirator, removing any filters, canisters, or cartridges.
- Wash the facepiece and associated parts in warm water with a mild detergent.
- Rinse completely in clean warm water.
- Wipe the respirator with disinfectant wipes to kill germs.
- Air-dry in a clean area.
- Reassemble the respirator and replace any defective parts.
- Place in a clean, dry plastic bag or other airtight container.

Maintenance

Respirators are to be properly maintained at all times in order to ensure that they function properly and adequately protect the employee. Maintenance involves a thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use. No components will be replaced or repairs made beyond those recommended by the manufacturer. Repairs to regulators or alarms of atmosphere-supplying respirators will be conducted by a certified technician.

Respirator Inspections

Inspections must be conducted before each use and during cleaning. The following items must be inspected.

- Respirator function
- Tightness of connections
- Condition of facepiece, head straps, valves, connecting tubes, and cartridge, canisters or filters
- Pliability and deterioration of parts
- Maintenance of air or oxygen cylinders
- SCBA air cylinders are at 90 of recommended pressure level
- Proper functioning of SCBA regulators and low-pressure warning devices

Monthly inspections of emergency respirators must be documented.

Change Schedules

Employees wearing air purifying respirators (APRs) or powered air purifying respirators (PAPRs) with P100 filters for protection against wood dust and other particulates shall change the cartridges on their respirators when they first begin to experience difficulty breathing (i.e., resistance) while wearing their masks. Organic vapor cartridges shall be changed after 10 hours of use but always prior to a break-through.

Storage

Respirators must be stored in a clean, dry area, and in accordance with the manufacturer's recommendations. Each employee will clean and inspect their own air-purifying respirator in accordance with the provisions of this program and will store their respirator in an appropriate manner.

Defective Respirators

Respirators that are defective or have defective parts shall be taken out of service immediately. If, during an inspection, an employee discovers a defect in a respirator, he/she is to bring the defect to the attention of his/her supervisor. The supervisor will decide whether to:

- Temporarily take the respirator out of service until it can be repaired.
- Perform a simple fix on the spot such as replacing a head strap.
- Dispose of the respirator due to an irreparable problem or defect.

Training

The Program Administrator or their designee will provide or arrange for training to respirator users and their supervisors on the contents of the Respiratory Protection Program and their responsibilities under it, and on the WISHA Respiratory Protection standard. Workers will be trained prior to using a respirator in the work place. Supervisors

will also be trained prior to using a respirator in the work place or prior to supervising employees that must wear respirators.

The training course will cover the following topics:

- The Respiratory Protection Program
- The WISHA Respiratory Protection standard
- Respiratory hazards encountered within the employees job duties and their health effects
- Proper selection and use of respirators
- Limitations of respirators
- Respirator donning and user seal (fit) checks
- Fit testing
- Emergency use procedures
- Maintenance and storage
- Medical signs and symptoms limiting the effective use of respirators

Employees will be retrained at least annually and as needed. Employees must demonstrate their understanding of the topics covered in the training through hands-on exercises. Respirator training will be documented by Risk Management or authorized departments. Documentation will include the type, model, and size of respirator for which each employee has been trained and fit tested.

Program Evaluation

The program administrator will conduct periodic evaluations of the work place to ensure that the provisions of this program are being implemented. Evaluations will include regular consultations with employees who use respirators, site inspections, air monitoring and a review of records. The Program Administrator and supervisor will work together to correct deficiencies in the respirator program.

Documentation and Recordkeeping

Written copies of this program and the WISHA standard are kept in Risk Management and are available to all employees who wish to review them.

Also maintained in Risk Management are copies of employees training and fit test records. These records will be updated as new employees are trained, as existing employees receive refresher training, and as new fit tests are conducted.

The completed medical questionnaire and the health care professional's documented findings are confidential and will remain at the medical contractor's office. The Program Administrator will only retain the health care professional's written recommendation regarding each employee's ability to wear a respirator.

Reference

WAC 296-842 Respirators

ASBESTOS

Responsibilities

Supervisor

- Identify all asbestos containing materials prior to beginning a maintenance, renovation or demolition project.
- Ensure that a written Good Faith Survey with detailed asbestos information is provided to contractors and subcontractors before they bid or start on any work.
- Ensure that you have an adequate number of certified workers available to perform emergency or routine work as required.
- When technically feasible, visible warning labels should be attached to all asbestos containing materials.
- Implement appropriate protective measures, such as respirators, PPE and washing facilities, for employees performing activities with exposure to airborne asbestos.
- Ensure that all employees who will be assigned to wear a respirator have been medically evaluated all approved for respirator use.
- Ensure that employees are protected from asbestos exposure using feasible exposure controls and appropriate respirators.

Certified Employee

- Must be properly trained and certified to perform each specific type of asbestos work.
- Complete an approved asbestos training course.
- Pass an L&I approved examination.
- Make sure you don't perform any work involving asbestos exposure before you receive your certificate.
- Keep proof of accreditation available for inspection at all times at the location of asbestos work.
- Follow all L&I asbestos regulations when performing asbestos work.
- Use monitors prior, during and after asbestos work to ensure safe asbestos fiber levels unless a negative exposure assessment has occurred.
- Keep up to date on medical evaluations for respirator use.

Non-Certified Employees

- If there is a possibility of employees encountering asbestos during their normal work activities, they must be trained in where asbestos containing materials may be found, the danger of asbestos and what to do to avoid exposure.

Risk Management

- Conduct or arrange for a consultant to conduct Good Faith Surveys.
- Provide certification and renewal training classes.
- Document all training and certification expiration dates.
- Keep a contract up-to-date with a certified asbestos consultant, laboratory and contractor for routine and emergency services.
- Select a licensed healthcare professional who will conduct or supervise examinations and procedures.
- Establish and maintain complete and accurate medical records for each employee receiving a medical evaluation due to possible asbestos exposure.

In the event of an **unexpected asbestos release** the City must:

- Provide information to people in the vicinity of work to stabilize an unforeseen asbestos exposure situation resulting from a sudden, unexpected event or other critical safety condition that requires immediate handling of asbestos.
- Inform affected employees, their employee representative, and other people near the project area as soon as possible.
- Post a notice describing the emergency project in a clear and visible location by the work area.
- Report the situation to Labor and Industries within 3 working days after beginning the work, following the notification requirements.

Purpose

To ensure that asbestos fiber exposure is kept well below allowable limits and that employees and contractors work with asbestos containing materials in a safe manner.

Policy

This program applies to all activities that may disturb asbestos containing materials used to construct buildings, ships, or other facilities.

Identification of Asbestos-Containing Materials

All asbestos must be identified prior to beginning a maintenance, renovation or demolition project.

All materials must be assumed to be asbestos containing unless a documented inspection has occurred and laboratory results are available.

Make sure, before impacting asbestos containing materials that appropriate people are notified of the work being performed. This would include contractors and employees who work in the area.

Required Certification for Asbestos Workers

Only properly trained and certified people may handle asbestos-containing materials during construction, renovation, remodeling, maintenance, repair, or demolition that has a potential to release asbestos.

A certified asbestos supervisor must be in control of the work activity when certified asbestos work involves more than 3 square or linear feet of material.

Contractors must be certified asbestos contractors to bid on or perform certified asbestos work involving more than 3 square or linear feet of mater.

Notice of Asbestos Work

The department of Labor and Industries must be notified 10 days in advance of asbestos work involving 48 square feet of surface area or 10 linear feet of pipe insulation when the pipe is less than 3 feet in diameter.

Employee Protective Measures

Implement appropriate protective measures, such as respirators, PPE and washing facilities, for employees performing activities with exposure to airborne asbestos that could exceed the PEL, while conducting an exposure evaluation.

Conduct an exposure evaluation to accurately determine airborne concentrations of asbestos, before, during and after asbestos work.

Basic Rules of Asbestos Work

Provide written notification of exposure monitoring results to employees represented by your exposure evaluation, within 5 business days after the results become known to you. Establish and keep complete and accurate records for all exposure monitoring. City employees will use the Negative Exposure Documentation Form.

Training, Exposure, and Medical Monitoring

Provide training and, when appropriate, certification to employees who will be working with asbestos.

Train all employees who may potentially come into contact with asbestos while performing their job duties of the hazards of asbestos and what actions are required to keep them from disturbing the asbestos.

Training must be provided at least annually.

Exposure monitoring should be conducted whenever asbestos work is performed.

Employees who wear respirators need to be medically evaluated to make sure the respirator will not harm them, before they are assigned work in areas requiring respirators.

Make medical evaluations available to current employees who have been, are, or will be exposed to asbestos concentrations above the PEL or who perform certified asbestos work 30 or more days per year, counting any day with an hour or more of asbestos related work.

Exposure Control Area Requirements

Establish and implement a written exposure control plan for asbestos including:

- An implementation schedule
- Prohibited activities
- Controls for routine and specific operations
- Waste management

Use of employee rotation to control exposure is not allowed since asbestos is a known carcinogen.

Respirators or other personal protective equipment does not substitute for feasible exposure controls.

Make sure all control methods enclose, contain or isolate the processes or source of airborne asbestos dust, preventing it from entering the breathing zone of any employee.

Use feasible exposure controls to reduce exposures to or below the PEL, or as low as achievable.

Temporary or permanent exposure control areas must be established where airborne concentrations of asbestos are potentially above the permissible exposure limits by:

- Clearly identifying boundaries by marking the area or physically separating the area.
- Posting signs at access points to exposure control areas that are easy to read and include the L&I required warning as found in WAC 296-845-40030

Provide showering, changing and eating facilities for employees who work in exposure control areas.

Provide personal protective equipment as appropriate and ensure that it is used and maintained correctly.

Require that employees use respirators as required and adhere to the requirements of WAC 296-842 Respirators.

Labor and Industries provides Model Control Plans for Certified Asbestos Work. The plans cover 1) Negative pressure enclosure systems, 2) Isolation systems and 3) mini-enclosures. The use of these model control plans will eliminate paperwork and certifications of work plans.

Cement Asbestos Pipe

Previously collected exposure monitoring data show that exposure levels when working with cement asbestos pipe are well below the PEL as long as specific work methods are followed. These methods have been written in detail and are available from Risk Management.

Definitions

Asbestos-containing material means those building materials, building components or mechanical system components with more than 1% asbestos.

Permissible exposure level (PEL) is the average exposure over an eight-hour shift. The current PEL is 0.1 f/cc.

References

WAC 296-844 Asbestos (Facility Owner Rules and Certification)

WAC 296-845 Asbestos (Occupational Exposure)

WAC 296-842 Respirators

CHAINSAW USE AND OPERATION

Personal safety protection, including hard hats, eye and face protection, hearing protection and chaps, shall be used during all operation of chainsaws.

Care of Equipment

Operators shall inspect chainsaws daily to ensure that handles and guards are in place and that controls and other moving parts function properly. The chainsaw shall be fueled outdoors at least 50 feet from anyone smoking or from other potential sources of ignition. The chainsaw motor shall be cut off while the saw is being fueled. Reserve fuel shall be handled and stored in approved safety cans only.

Only chainsaws equipped with mufflers shall be used. All power saws shall be equipped with an automatic (dead-man type) control switch. Saws with faulty switches shall not be used.

Unless the carburetor is being adjusted, the saw shall be shut off before any adjustments or repairs are made to the saw, chain, or bar.

The chainsaw clutch shall be properly adjusted to prevent the chain from moving when the engine is at idle speed. Chainsaws with faulty clutches shall not be used.

Chainsaw operators shall follow the manufacturer's instructions on operation and maintenance.

Chainsaws shall be shut off when not being used.

Wedges shall be of soft metal, hardwood, or plastic. Wedges shall be driven with a hammer or other suitable tool. Double-bitted axes and pulaskies shall not be used for this purpose.

Hand-held files should be equipped with a handle.

Maintenance

- Maintain your chainsaw regularly.
- Keep the chain sharp and correctly tensioned.
- If in doubt, contact the manufacturer.
- Fit the bar cover when the chainsaw is not in use.

Be Protected

Wear protective equipment: chaps, ear muffs, safety glasses or face shields, hard hat, boots and close-fitting clothing.

Never use a chainsaw if you are tired, under the influence of alcohol or drugs, or if the weather conditions are not suitable (except under extreme conditions).

Using a Chainsaw

A competent person, properly experienced in this type of work, shall be placed in charge of operations involving chainsaws. The person in charge shall regularly inspect the work and shall be responsible for seeing the work is performed in a proper and safe manner. Work areas shall be assigned so that a tree cannot fall into an adjacent occupied work area. The

distance between work areas shall be at least twice the height of the trees being felled. A greater distance may be required on downhill slopes depending on the degree of the slope and on the type of trees or other considerations.

Any cutting operation shall be analyzed before starting to ensure the safest and best method to proceed with and to determine an escape route in case of an emergency.

Employees shall not approach a chainsaw operator within the reach of the saw while the saw is in operation.

Common sense and good judgment must govern the safety of workers in adverse weather conditions. If the wind is so strong that the fall cannot be controlled, then work shall not be performed. If fog or darkness dangerously impairs vision, work shall not be performed.

Employees shall not use the chainsaw to cut directly overhead or at a distance that would require the operator to relinquish a safe grip on the saw.

A flagger shall be assigned on roads where hazardous conditions are created from falling limbs or trees. Where there is no through traffic, such as on a dead-end road, warning signs or barricades shall be used.

All employees shall be in the clear as a limb or tree falls. Limbs and tree shall not be cut if the falling limb or tree can endanger any worker or strike any equipment or power line.

Where felled trees are likely to roll and endanger workers, cutting shall proceed from the bottom toward the top of the slope and shall be performed uphill from previously felled timber.

When working on steep or uneven ground, special attention to footing shall be given to ensure stable, safe positioning before starting to cut.

Training

- All chainsaw operators should be properly trained.
- Less experienced operators should be closely supervised.
- Some operations such as removing branches from standing trees, the removal of trees on wires, and cutting trees thicker than the bar guide length, should only be undertaken by qualified personnel.

Undercutting

Undercuts are required and shall be large enough to safely guide trees and eliminate the possibility of splitting. Trees with no perceptible lean should have undercuts to the depth of one-fourth of the diameter of the tree with a face opening equal to one-fifth the diameter of the tree.

Undercuts shall be completely removed.

Backcuts shall be as level as possible and shall be approximately two inches higher than the undercut. Leave sufficient holding wood to ensure the tree or limb will fall in the intended direction, using mechanical means when necessary.

CRANES AND HOISTS

Manufacturer's specifications and limitations on the operation of cranes and hoists shall be followed. If manufacturer's specifications are not available, limitations assigned to the equipment shall be based on the determinations of a qualified engineer, competent in this field, and the determinations will be documented and recorded. Attachments used with cranes shall not exceed the capacity, rating or scope recommended by the manufacturer.

Rated load capacities, recommended operating speeds, special hazard warnings and instructions shall be posted conspicuously on all equipment. Instructions or warnings shall be visible to the operator while at the control station. An illustration of the hand signals to be used shall be posted at the job site or at the operator's station of the equipment being used.

Only authorized persons who are trained and qualified to operate the equipment shall be permitted in the cab or on the equipment. Operators shall not leave their position at the controls of cranes, hoists or other lifting devices while the load is suspended, and shall exercise extreme caution when near energized lines or equipment.

Machinery and equipment shall be inspected before each use to make sure they are in safe operating condition. For the first lift of each day, the load shall be test-lifted and the brakes checked (load tested several inches and then tested). Any deficiencies shall be repaired or defective parts replaced before continuing use.

All slings and other fittings shall be of sufficient strength, proper type and safe for their intended use. Before each lift, sling and bindings shall be adjusted to ensure safety and stability.

A minimum distance of 30 inches clearance shall be maintained between the swing radius of the greatest extension of the crane superstructure or counterweights and a stationary object, including the crane itself, while the crane is in operation. When this clearance cannot be maintained, suitable barricades or safeguards shall be used to isolate the pinch point hazard area.

Signals to the equipment operator shall be given by a person designated to perform this task. The operator shall obey a "STOP" signal given by anyone. Standardized hand signals shall be used at all times.

No person shall be permitted to ride the hook, sling or load of any hoisting equipment unless designed by manufacturer for that intended use. No person shall be under a suspended load or inside the angle of a winch line. Employees should avoid standing near a cable, chain or rope under tension.

Winch lines, ropes or wire cables shall not be guided by hand when the employee is standing within reach of the drum or sheave.

Trucks on which booms are erected above traveling height shall be moved only under the direction of a designated employee who shall give undivided attention to the movement.

Side loading of booms shall be limited to freely suspended loads. Cranes shall not be used for dragging loads sideways.

No loads shall be lifted over the front area of truck-mounted cranes unless approved by the crane manufacturer.

Power Lines

When mobile hoists, cranes or similar lifting devices are used near energized lines or equipment, the lifting device shall be properly grounded or considered energized. When working near power lines, the following procedures and minimum clearances shall apply (except for qualified electrical personnel):

- Any time overhead electrical conductors are encountered near a work area, the appropriate supervisor shall ascertain the voltage and minimum clearance distance required and ensure minimum clearance distances are maintained, or arrangements shall be made to de-energize and ground or otherwise protect high voltage lines before work begins.
- For energized lines rated over 50kv, minimum clearances between the lines and any part of the equipment or load shall be 10 feet plus 0.4 inch for each 1kv over 50kv.
- For energized lines rated between 600 volts and 50kv, a minimum clearance between the lines and any part of the equipment or load shall be 10 feet.
- For lines rated 600 volts or less, work shall be performed to prevent contact by personnel, materials, tools, or equipment.
- If lines rated at more than 600 volts are de-energized and grounded at the point of work or isolated by other protective measures such as guarding or insulating barriers, then the minimum clearance distances may be reduced by half, but never less than 5 feet.
- If accidental contact with an energized power line should occur, the equipment making contact shall be removed from service until it is inspected and returned to service by Fleet Services.
- Standardized hand signals shall be used at all times.

WELDING AND CUTTING

Responsibilities

Supervisor

- Perform a hazard assessment.
- Ensure that only qualified persons perform welding and cutting.
- Ensure that personal protective equipment is provided and used as required.

Employee

- Wear personal protective equipment as required.
- Wash hands after welding and prior to eating or smoking.
- Must be knowledgeable about welding and the materials being used,

Risk Management

- Provide guidance and consultation.

Rules and instructions supplied by the manufacturer or affixed to the welding equipment shall be followed. Only qualified persons shall use welding equipment. Approved fire extinguishers shall be readily available in the work areas.

A torch shall not be lit with a match or from hot work.

Adequate ventilation shall exist or job-approved respirators shall be used while welding in confined spaces or while working on zinc, brass, bronze, stainless steel, and galvanized or lead-coated materials. Oxygen and fuel cylinders shall not be taken into confined spaces.

Approved eye protection, gloves and clothing shall be worn by the operator and any helpers during welding or cutting operations. Other employees shall not observe welding operations unless they use approved eye protection. Welding screens shall be used when feasible so that other persons are not exposed to the arc of the welding operation.

When welding equipment is not in use, the cylinder valves shall be closed and the pressure released or the power supply switch opened. When cylinders are transported by powered vehicles, they shall be secured in a vertical, upright position with the valve cap or valve protection device in place. At all times, the cylinders will be properly secured with chains or other approved device in an upright position.

Any vessel that may have contained a flammable or explosive substance shall be thoroughly purged by steam, filled with inert gas or water, or otherwise handled by special safety procedures authorized by supervision before an open flame is brought near it or before welding or soldering is done on it.

When electrode holders are left unattended, the electrodes shall be removed from the holders.

The electric welding machine shall be properly grounded before use.

When working in a confined space such as a utility vault or sewer manhole, all confined space entry requirements shall be met, including completion of a hot work permit.

This form can be downloaded to your computer, please click here for a [Word document](#) for [Adobe Acrobat Format](#) and is also found in this document..

PRECAUTIONS FOR WORK IN PERMIT REQUIRED CONFINED SPACES

Hot work: (work involving heat and ignition sources, such as welding, burning, cutting, soldering, etc.)

A hot work permit and a permit required confined space permit is required before entry. Beware of the following hazardous conditions:

- Flammable atmosphere – combustible materials present from painting, cementing, coating, etc.
- Toxic atmosphere – gases, vapors or fumes which may be generated by hot work.

Use of toxic or flammable materials in confined spaces: (Paints, coatings, cements, solvents, etc.)

- Minimize quantity of material taken into space.
- Use local exhaust and/or respiratory protection for gases, vapors, fumes, dusts and mists created by the work.
- Ventilate continuously during the work.
- Evaluate the atmosphere continuously during the entry.
- Use only approved tools and lighting in confined spaces.

General

Air-supplying respiratory protection shall be required in cases of oxygen atmospheres of less than 19.5%. Respiratory protection shall be required in the presence of airborne contaminant concentrations above the permissible exposure limit (PEL) as defined in WAC 296-62-075.

Protective clothing and gloves shall be worn when entering a manhole, wet well or sewer. In spaces, which do or could contain corrosive chemicals that are toxic through contact, special equipment to prevent skin or eye contact shall be worn.

References

WAC 296-155 Part H Welding and Cutting
WAC 296-808-100 Confined Spaces

Hexavalent Chromium Awareness

Responsibilities

Supervisors

- Working with Risk Management, ensure that no employee is over exposed to hexavalent chromium (Cr(VI)).
- Ensure that employees receive safety training prior to being assigned to work with products that may expose employees to hexavalent chromium.
- Notify Risk Management prior to any activity involving welding on products containing chromium.

Employee

- Attend hexavalent chromium awareness training prior to welding on chromium containing products.
- Follow all safety procedures.
- Use all personal protective equipment as required.
- Ensure that building and equipment surfaces are not contaminated.
- Be careful not to carry chromium-containing dust on clothes, tools, or other items, outside the work area.

Risk Management

- Provide hexavalent chromium exposure monitoring guidance as requested by supervisors.
- Provide guidance and consultation.
- Receive laboratory and medical monitoring data from contract lab and healthcare facility and disseminate to appropriate persons.
- Maintain medical monitoring records.
- Provide hexavalent chromium awareness training to affected employees.

Purpose:

The City of Tacoma is responsible for and concerned about potential hexavalent chromium exposure by employees. This program requires all employees who weld on materials containing chromium to be aware of the chromium content and to follow safe handling techniques.

The major health effects associated with exposure to hexavalent chromium include lung cancer, nasal septum ulcerations and perforations, skin ulcerations, and allergic and irritant contact dermatitis.

Industrial safety regulations require all employers to ensure that no employee is exposed to hexavalent chromium at concentrations greater than 5 micrograms per cubic meter of air calculated as an 8-hour time-weighted average (TWA). Welding on stainless steel, painting and pigment applications, electroplating and other surface coating processes containing chromium place employees at risk of exposure to hexavalent chromium. Each task that potentially exposes an employee to hexavalent chromium must be measured for hexavalent chromium exposure during routine use to establish exposure levels.

If chromium is present, all work must proceed in a way that protects the worker and complies with WAC 296-62-08003. The requirements in this regulation are quite extensive. Specific training, exposure assessments, employee personal protective equipment and

engineering and work practice controls are just a few of the areas which must be addressed when exposure to hexavalent chromium is possible.

All supervisors of units who perform construction or maintenance work, during which workers may be exposed to hexavalent chromium, are responsible for ensuring compliance with WAC 296-62-08003. The types of work processes which may result in hexavalent chromium exposure include:

- Stainless steel production and welding
- Chrome plating
- Heavy duty coatings
- Chromate pigments
- Leather tanning

When an employee performs any of the activities listed above that can expose an employee to hexavalent chromium, contact the Safety Office or your supervisor before beginning work.

Hexavalent Chromium Awareness Training

All employees who perform any work processes which may result in hexavalent chromium exposure must receive awareness training prior to being exposed to the hazard. All employees required to wear respirators for protection from hexavalent chromium exposure must receive respiratory protection training, receive medical clearance and be fit-tested before a respirator is issued. The Safety Office can provide training sessions targeted toward these activities.

Medical Surveillance

Based on the negative exposure assessment, employees who perform any of the work processes listed above involving hexavalent chromium may need to be in a medical surveillance program. Medical surveillance will be offered to employees with signs and symptoms of hexavalent chromium related health effects, exposures in emergencies, or exposures for 30 or more days above the permissible exposure level. Supervisors should work with the Risk Management Office if they believe that medical surveillance is required.

If an employee exceeds the action level or 8 hour permissible exposure level (PEL) for 30 days or more, the employee will then be entered into a medical surveillance program. Employees do not have to undergo medical surveillance if they do not want to do so and are willing to sign a waiver form.

Negative Exposure Assessment

According to State safety regulations, a negative exposure assessment may be conducted to determine the level of hexavalent chromium exposure to workers during various work processes. The exposure will help determine the type of personal protective equipment. This assessment is conducted by taking personnel exposure samples during the actual work process. Monitoring may be limited to a representative number of employees who are reasonably expected to have the highest exposure levels. All appropriate personal protective equipment is worn until the assessment determines exposure levels. The exposure assessment is comprised of a low volume sampling pump being worn by the worker connected to a specialized sampling cassette. The cassette is then sent to the laboratory for analysis. Several exposure assessments will need to take place in order to ensure an accurate negative exposure assessment.

Attached is a copy of a laboratory data sheet including chain of custody. All tasks performed during the assessment must be described on this form. In addition, the air flow rate prior to and after the pump is activated is recorded. This data will allow the laboratory to determine the worker exposure level. Signatures at the bottom of the form must be filled out each time the sample cassette changes hands. This is important because it ensures that cassette tampering does not take place.

The Negative Exposure Documentation form must also be completed. This form must be filled out following each negative exposure evaluation. The purpose of the form is to document hexavalent chromium exposure during work procedures. Double click on this link for the Negative Exposure Documentation form.

Note: Exposure Control Areas may be used to contain hexavalent chromium in the air and to keep hexavalent chromium from leaving the work site. An example would be a plastic enclosed room with a negative air machine to contain all hexavalent chromium within the room.

Sampling Protocol

All samples will be documented using the contract lab chain of custody sheet.

Air Samples

- Set pump on a flow rate of 3 liters/minute using a rotometer for calibration
- Run pump for entire work shift or as long as possible
- Measure flow rate at end of assessment using the rotometer
- Fill out laboratory chain of custody sheet and send sample cassette and blank cassette to lab
- Fill out negative exposure assessment form.

Risk Management will provide written notification of the laboratory results to the exposed employee within 5 business days. The supervisor will also receive a copy of the notification. The notification will be sent in an envelope marked confidential if the exposure level exceeds the action level or time weighted average. In addition, Risk Management will work with the supervisor and provide to the exposed employee within 15 working days the corrective actions being taken and a schedule for completion. Any reason why exposures can't be lowered to below the time weighted average will also be provided.

Engineering and Work Practice Controls

- A plan must be created to control exposure to hexavalent chromium to below the PEL.
- Ventilation must be considered.
- Improving equipment must be considered.

Definitions:

Action level is an exposure to hexavalent chromium of 2.5 micrograms per cubic meter of air.

Permissible Exposure Level (PEL) or 8 Hour Time Weighted Average (TWA) is the highest rate of hexavalent chromium exposure allowed by law (5 micrograms per cubic meter of air).

Allowable airborne hexavalent chromium levels:

Action Level	2.5 ug/m ³
Permissible Exposure Limit (PEL)	5.0 ug/m ³

Reference

WAC 296-62-08003

WAC 296-62-071

HAND TOOLS

Responsibilities

Supervisor

- Conduct a hazard assessment for hand tools.
- Ensure that all hand tools are in good working condition.
- Ensure that appropriate personal protective equipment is used.
- Ensure that the right tool is provided for the job.

Employee

- Inspect each tool prior to use to ensure good, working condition.
- Use personal protective equipment as required
- Use the correct tool for the job.

Risk Management

- Provide guidance and consultation.

Purpose

To ensure that City of Tacoma employees use tools that are in good working condition and are used for the intended purpose.

Procedures

If you use hand tools over and over every day, you can injure your hand, wrist, or arm. You can be injured if you hold on tight for a long time or keep twisting your wrist. Use the correct tool for the job. Use tools that need less force and are balanced.

Look at the handle:

- It should be comfortable in your hand – not too thick or too small or too short.
- It should not conduct electricity or heat.
- It should not hurt your hand when you hold it tight.
- If possible, use a non-slip handle.
- If possible, get a handle with a surface made of soft materials.
- If you need to use a lot of force on the job, the handle should be long enough for your whole hand.
- If you wear gloves when you use a tool, you may need a thicker handle.
- For some tools, the handle should have a spring return; this re-opens the tool for you after you use it.
- A bent angle or adjustable angle on some tools can help you keep your wrist straight on some jobs.

When using a hand tool:

- Keep the tool sharp and in good condition.
- Try not to use tools with your wrist bent.
- Try to rest your hands during the day. Lay down the tool or put it in a holster when you don't need it.

References

WAC 296-155-350 Hand Tools

VEHICLE OPERATIONS

Operators of fleet equipment are expected to operate as defensive drivers at all times. Defensive drivers are courteous toward other drivers and pedestrians, commit no driving errors and make allowances for others. Defensive drivers adjust their own driving to compensate for unusual weather, road and traffic conditions. Actions of others do not trick defensive drivers into accidents. By being alert, defensive drivers are able to prevent accidents. Defensive drivers know to slow down, stop or yield the right-of-way to avoid accidents.

Only those employees specifically authorized and who possess a valid license or permit for the equipment being used shall operate City of Tacoma vehicles or personally owned vehicles on City business. City vehicles shall be used by authorized personnel for official business only. Drivers shall know and obey all state and local motor vehicle laws.

Drivers shall drive at safe speeds no greater than permitted by law. Traffic, road and weather shall determine the safe speed within the legal limits.

Drivers shall be responsible for checking brakes, lights, reflectors, turn signals, windshield wipers and horns at the beginning of each shift and reporting any defects to Fleet Services.

The use of seat belts is mandatory, in vehicles so equipped, for drivers and passengers when vehicles are in operation.

A complete stop will be made entering or leaving any building, enclosure, alley or street when vision is obstructed. Then the driver shall continue with caution.

Rules For the Operation of City Vehicles

- City vehicles are subject to the same traffic rules and regulations as private vehicles. Employees operating or parking improperly will be responsible for paying traffic citations, parking tickets, towing charges and other associated fines.
- Drivers or operators of vehicles over 4,000 gross vehicle weight shall place wheel chocks on the downhill side of the rear wheels on both sides of the vehicle, and shall position the front wheels at the appropriate angle.
- The driver or operator is responsible for securing the vehicle when it is left unattended.
- Drivers should avoid backing whenever possible by positioning the vehicle to avoid backing. Never back more than necessary. Vehicles shall be backed into driveways or other limited spaces when arriving on the job rather than backing out into traffic when the job is finished.

When backing, a vehicle a driver **must**:

1. Know what is behind the vehicle.
2. Not depend entirely upon mirrors.
3. Use another person as a ground guide when applicable.
4. Not rely on audible reverse signals in congested areas.
5. Look before backing.
6. Report any malfunction of audible reverse signals.
7. Back slowly.

When backing construction vehicles, construction equipment, vans, or **any** vehicle with an obstructed view to the rear, another available employee **must** be stationed at the rear of the vehicle to assist the driver in backing the vehicle safely. Unassisted drivers should not assume there are no obstructions to the rear. Before backing, an inspection by the driver is the only method to determine that the way is clear. When possible, City vehicles shall be backed into parking spaces. Statistics prove that it is safer to drive forward out of a parking space than to back out of it.

Basic and Commercial Drivers License and Endorsements

Class "A" endorsement on a Commercial Drivers License (CDL) is needed if driving a vehicle with a manufacturer's weight rating over 26,000 pounds, or if the manufacturer's weight rating of the towed vehicle(s) is over 10,000 pounds.

Class "B" endorsement is needed if the manufacturer's weight rating of a single vehicle is over 26,000 pounds.

Class "C" endorsement is needed if you carry 16 or more persons, including the driver, or if the vehicle is placarded for hazardous materials.

All employees who need CDL endorsements will be required to take a road driving skills test. The City of Tacoma will not waive the CDL skills exam.

An employee, in a classification that requires a driver's license or required certification, who loses that license, may be subject to:

- Termination due to inability to perform a significant portion of the job.
- Demotion to another job for which the employee is qualified and that does not require a license or certification.
- A Leave of Absence for up to one year if there is a possibility of the employee regaining the required license and/or certification.

The manager or supervisor and the Human Resources Director shall consider the circumstances of each situation. The decision also will consider available staffing, length of suspension or revocation of license, and other available positions for possible transfer or demotion.

Vehicle Accident Reporting Procedures

Employee's responsibilities:

- STOP.
- Protect yourself and give First Aid as required.
- Notify Police - 911 (if there is an injury or an occupied vehicle is involved).
- Notify your supervisor.
- Protect the scene (cone off area, flag traffic).
- Make no admission of guilt, or take any blame for the accident.
- Complete the vehicle accident report booklet in your vehicle.
- By the end of the next work shift, take the following actions:
 - Complete the City Accident Report form.
 - Route copies as directed on the form.
 - Take the vehicle to fleet maintenance for required repair.
 - Complete the State Vehicle Collision Report if anyone was injured, or if there is property damage in the amount of \$500.00 or more.

Supervisor's responsibilities:

- If the employee has a CDL and received a citation at the scene, follow the procedures in the City's substance abuse policy.
- If the police were not notified, determine whether to call for a police investigation.
- Verify that an employee on-the-job injury report (OJI) is completed and properly routed, if required.
- Complete your department's investigation form and attach it to the employee's City Accident Report.
- Forward a copy of the City Accident Report to your department's Accident Review Board.
- Discuss with the employee the circumstances surrounding this accident and how future incidents of this type may be avoided.

FORKLIFTS AND OTHER POWERED INDUSTRIAL TRUCKS

Responsibilities

Supervisor

- Make sure only certified employees operate forklifts.
- Make sure the powered industrial truck meets the criteria set forth by the manufacturer.
- Make sure that stickers, stencils, marks or labels regarding safety and stability are in place and legible.
- Make sure powered industrial trucks are kept in safe condition and properly serviced.
- Make sure battery charging areas are designated and provided with a means to flush and neutralize spilled electrolyte, provide fire protection and ventilation that's adequate to disperse fumes from gassing batteries.

Employee

- Inspect powered industrial trucks before being put into service and after each shift.
- Keep powered industrial trucks clean and maintained according to the manufacturers instructions.
- Only authorized employees who are qualified and trained in their use shall operate forklifts.
- Operators must make sure loads are stable, safe and within the rated load capacity of the powered industrial truck.
- The operator shall always face in the direction of travel and shall operate the powered industrial truck at a safe speed for existing conditions.
- When changing batteries, make sure vent caps are functioning, open the battery or compartment covers to dissipate heat and pour acid into water, never pour water into acid.
- Use restraint devices, such as seatbelts or lap-bars, when they are provided.
- The operator must have passed a powered industrial truck performance evaluation within the last three years.

Risk Management

- Provide training as requested.
- Provide recordkeeping of all training and the instructor conducting the training.
- Act as consultant as requested by departments.
- Provide consultation and guidance.

Purpose

To ensure that employees working for the City of Tacoma and driving Powered Industrial Trucks do so safely and within the provided guidelines.

Policy

All City of Tacoma employees who operate powered industrial trucks will be fully trained and familiar with the piece of equipment they are operating. Powered Industrial Trucks shall be kept in safe operating condition at all times.

This program applies to powered industrial trucks that use electric motors or internal combustion engines. This includes, but is not limited to:

- Fork trucks,
- Forklifts
- Tractors
- Platform lift trucks (sometimes called order pickers)
- Motorized hand trucks
- Other specialized industrial trucks.

This program does not apply to compressed air-powered industrial trucks, nonflammable compressed gas-operating industrial trucks, vehicles covered by chapter 296-307 or vehicles intended primarily for earth moving or over-the-road hauling.

Operator Competence

Operator must successfully complete a training and evaluation program prior to operating a City of Tacoma powered industrial truck.

Training

Supervisors will identify all new employees who need to operate a forklift and make arrangements with City Instructors or contracted instructors to schedule the initial training, refresher training, or performance evaluation. These instructors have the necessary knowledge, training, and experience to train powered industrial truck operators.

Initial Training

During an operator's initial training, the instructor(s) combine(s) both classroom instruction and practical training.

Our classroom instruction includes a combination of the following formats: video tape, lecture, group discussion, PowerPoint, and overheads.

Our practical training includes hands on training and evaluation. All powered industrial truck operators are trained and tested on the equipment they will be driving before they begin their job.

Each type of powered industrial truck has a different "feel" to it, and that makes operating it slightly different from operating other industrial trucks. The work areas where these trucks are being used also present particular hazards. For these reasons, it is impractical to develop a single "generic" training program that fits all of our powered industrial trucks. Accordingly, during training, instructors cover the operational hazards of our powered industrial trucks, including:

- General hazards that apply to the operation of all or most powered industrial trucks;
- Hazards associated with the particular make and model of the truck;
- Hazards of the workplace in general; and
- Hazards of the particular workplace where the vehicle is operated.

Training Certification

After an employee has completed the training program, the instructor will determine whether the potential driver can safely perform the job. At this point, the trainee will take a hands on performance test or practical exercise through which the instructor(s) will decide

if the training has been adequate. All powered industrial truck trainees are tested on the class of equipment they will be driving.

Refresher Training

Refresher training is triggered by any of the following situations:

- If the operator is involved in an accident or a near-miss incident;
- If the operator has been observed driving the vehicle in an unsafe manner;
- When the operator is assigned to a different type of truck;
- If it has been determined during an evaluation that the operator needs additional training; or
- When there are changes in the workplace that could affect safe operation of the truck. This could include a different type of paving, reconfiguration of the storage racks, new construction leading to narrower aisles, restricted visibility, or other relevant topics.

Refresher training must consist of a combination of: (1) formalized instruction (lecture, discussion, written material, videotape, etc.), (2) practical training (demonstrations by the trainer or practical exercises by the trainee), and (3) evaluation of the operator's performance in the workplace. Initial and refresher training must consist of the same three things.

Performance Evaluation

Each certified powered industrial truck operator is evaluated at least once every 3 years to verify that the operator has retained and uses the knowledge and skills needed to drive safely. This evaluation is done by a Forklift Instructor. If the evaluation shows that the operator is lacking the appropriate skills and knowledge, the operator must be retrained.

Current Certified Truck Operators

If a new employee can prove having received training and certification prior to employment with the City in the same required elements of our training program, and is current, then they need not be retrained in those elements. A forklift instructor or the Safety staff will determine if prior training is compliant with City standards. Regardless of claimed previous experience, all new operators must at least undergo a hands on performance evaluation on the specific type of truck that the employee will be authorized to operate and for the type of work in which the truck will be operated.

Record Keeping

Records must be kept of all Powered Industrial Truck operators. Documentation will include, content and dates of operator training, a copy of the operator proficiency test, expiration date of certification, and the instructor conducting the training or evaluation.

Maintenance

Investing time and effort into the proper upkeep of our equipment results in day-to-day reliability. Keeping up with the manufacturer's recommended maintenance and lubrication schedules, and completing the proper records, will also increase our trucks' longevity and enhance its resale value. City operators should follow the manufacturer's operator instruction manual for daily or before use maintenance.

Periodic Inspection Procedures

Periodic inspections are in conjunction with the particular powered industrial truck's maintenance or service schedule. Maintenance schedules are normally expressed in days and operating or running hours. Most manufacturers' operator instruction manuals contain the recommended maintenance schedule. Inspections and maintenance or repair beyond the recommended service schedules are done by authorized workshops and/or service technicians.

Fuel Handling and Storage

PIT's shall not be fueled with the engine running.

Some of our powered industrial trucks operate with highly flammable and combustible fuels. The storage and handling of liquid fuels, including gasoline and diesel fuel is done in accordance with NFPA Flammable and Combustible Liquids Code (NFPA 30-1969). The storage and handling of liquefied petroleum gas fuel is done in accordance with NFPA Storage and Handling of Liquefied Petroleum Gases (NFPA 58-1969).

All employees who handle or use flammable fuels are instructed by a City Forklift Instructor in their safe handling and use and made aware of the specific requirements for what they are doing with the fuels.

Battery Charging and Changing

Charging can only be done in an area specifically designed for charging. Batteries present a hazard because they contain corrosive chemical solutions, either acid or alkali. During recharging, a worker may be exposed not only to the acid solution but also to hydrogen gas that is produced during the recharging process. Because of the hazards involved in battery charging and changing, only personnel, who have been trained in the appropriate procedures, understand the dangers involved, and know the appropriate precautions to take may be allowed to perform this work.

Smoking is prohibited in charging areas. Battery charging generates hydrogen gas that may present an explosion hazard. This precaution also applies to open flames, sparks, or electric arcs. An effective means of fire protection must be provided in the area.

Carbon Monoxide Awareness

Powered industrial trucks with internal combustion engines produce carbon monoxide (CO), an odorless, colorless, and deadly gas produced by the incomplete burning of any material that contains carbon. These materials include gasoline, natural gas, propane, coal, and wood. The most common source of CO is the internal combustion engine. Any PIT powered by fossil fuels generates CO.

If inhaled, CO restricts the ability of your blood system to carry oxygen to the body tissues that need it. Overexposure combined with less oxygen results in carbon monoxide poisoning. Mild poisoning can result in headaches, tightness in the chest, dizziness, drowsiness, inattention, fatigue, flushed face, or nausea. If you continue exposure lack of coordination, confusion, weakness, or loss of consciousness may result. A heart condition, smoking, taking drugs or alcohol, and pregnancy can aggravate CO poisoning. Severe poisoning can kill you within minutes, sometimes without warning symptoms. The more CO there is in the air and the longer the exposure, the greater the danger.

Inspections

Pre-Operational Inspection Procedures

The City requires operators to perform pre-operational equipment checks on powered industrial trucks prior to the beginning of each shift in which those trucks will be utilized to ensure the safe operating condition of the vehicle. The pre-operational check is performed by completing a daily truck inspection checklist.

See the attached [Forklift Inspection Checklist form](#).

If an item does not apply, we use the code N/A. We also require that operators fill out the comment section thoroughly and accurately if there are any operational or visual defects. That way our maintenance personnel can pinpoint and repair the problem before the truck becomes unsafe to operate.

Supervisors are responsible for retaining all daily truck inspection checklist forms for each vehicle for 6 months.

Operating Procedures

Powered industrial trucks can create certain hazards that only safe operation can prevent. Our operating procedures were developed to minimize these hazards.

Driving

Driving a powered industrial truck is fundamentally different than driving a car or other trucks. In fact, powered industrial trucks:

- Are usually steered by the rear wheels,
- Steer more easily loaded than empty,
- Are driven in reverse as often as forward,
- Are often steered with one hand, and
- Have a center of gravity toward the rear, shifting to the front as forks are raised.
- Unlike cars, some powered industrial trucks have a greater chance of tipping over when suddenly turned. Because of the design of powered industrial trucks, they have a very short rear wheel swing. This means that, at high speeds, sudden turns can tip them and could result in serious injury and damage. Speed can cause the center of gravity to shift dramatically. Similarly, speeding over rough surfaces can cause tipping.

No one shall be allowed to ride the PIT other than the operator, unless designed by the manufacturer for that purpose.

When a PIT is left unattended (operator is 15 feet away or the vehicle is not in view), the forks shall be fully lowered, controls neutralized, power shut off and brakes set. Wheels shall be chocked when the PIT is parked on an incline.

Equipment with internal combustion engines shall not be operated in enclosed areas.

Brakes and controls shall be tested before use. Equipment with faulty brakes or mechanical or electrical defects shall not be operated. Defective equipment shall be reported immediately.

Before moving the PIT, the operator shall make sure that no person or objects are in the path of the vehicle. Clearance in all directions, particularly overhead and the direction of travel, shall always be checked

Only attachments provided by or approved by the manufacturer may be used.

Attachments, such as forklift extensions, shall be properly secured and labeled with their

safe working load. Movable or replaceable lift bars on forklifts shall be held firmly in place by a proper securing pin. Improvised devices, such as a threaded bolt, shall not be permitted.

Load Lifting and Carrying

Powered industrial trucks can lift only so much. Each truck has its own load capacity, which is indicated on the rating plate. Powered industrial trucks also have three-point suspension that forms an imaginary triangle from the left front wheel to the right front wheel to the point between the two back wheels. The center of gravity for a powered industrial truck must lie somewhere within this triangle or else the truck will tip over. The load and its position on the forks, as well as traveling speed and slopes, all affect the center of gravity. Loads, themselves, have gravity with which to contend. Loads need special care so that they do not fall.

Loaded lift trucks shall be driven up or down inclines with the forks upgrade.

Loads shall not be suspended or swung over other persons. No one shall be allowed to stand or walk under elevated forks.

Elevated Work Platforms

Powered industrial trucks shall not be used as elevated work platforms unless a platform or structure specifically for hoisting personnel is used and the following requirements are met:

- The structure must be securely attached to the forks and shall have standard guardrails and toe boards installed on all sides.
- The hydraulic system shall be designed so that the lift mechanism will not drop faster than 135 feet per minute in the event of a failure in any part of the system. Powered industrial trucks used for elevating work platforms shall be identified for that purpose.
- A safety strap shall be installed or the control lever shall be locked to prevent the boom from tilting.
- An operator shall attend the lift equipment while workers are on the platform.
- The operator shall be in the normal operating position while raising or lowering the platform.
- The vehicle shall not travel while workers are on the platform.
- The area between workers on the platform and the mast shall be adequately guarded to prevent contact with chains or other shear points.

Personal Protective Equipment (PPE)

Supervisors must assess their workplace and determine what the hazards are which threaten operators.

All operators who are required to wear this equipment must be trained:

- When PPE is necessary;
- What PPE is necessary,
- How to properly put on, take off, adjust, and wear PPE;
- Limitations of the PPE; and
- Proper care, maintenance, useful life, and disposal of PPE.

When the powered industrial truck is equipped with an operator-protection device (such as seatbelt or lap-bar) or system, the device must be used and maintained.

Work Environment and Coworkers/Pedestrians

Because powered industrial trucks are typically used near pedestrians, we require both pedestrians and powered industrial truck operators to watch out for each other.

Aisles and passageways shall be kept clear to provide for the free and safe movement of material-handling equipment or employees.

All materials stored in tiers shall be stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, falling or collapsing.

Structural steel, poles, pipe, bar stock and other cylindrical materials shall be stacked and blocked, unless they are racked.

Reference

WAC 296-863 Forklifts and Other Powered Industrial Trucks

WORKERS COMPENSATION

Employee Rights and Responsibilities for on-the-job-injuries

General Information

The City is self-insured and claims are handled by Eberle Vivian, a third party administrator. This means the City pays the benefits.

- All workers in the state receive the same benefits, regardless of the type of program.
- The industrial insurance coverage is provided at no cost to you with the exception of the Supplemental Pension Fund, to which you may pay one half of the state's assessment rate.
- The City will administer your claim and cover the costs of benefits you are entitled.
- The City is prohibited from discriminating against you for filing a claim or expressing your intent to file a claim.

Program Elements

You have the obligation to immediately report your work-related injury or disease to your supervisor.

You must file within one year for an injury, or two years for an occupational disease for your claim to be covered.

To file a claim, you must:

1. Report your injury to your supervisor;
2. Complete a self-insured accident report (SIF-2);
3. Be treated by a physician for your injury or disease.

You have the right to be treated by a physician of your choice; however, you must remain under his/her care for a sufficient time to produce a curative result. The Workers Compensation Division must approve all transfer of care requests.

Your doctor must provide Eberle Vivian with medical progress reports. The Workers Compensation Division has the right to this information. You should also keep the Workers Compensation Division advised of your progress.

Eberle Vivian has the right to seek another medical opinion regarding your condition.

You may be entitled to rehabilitation as a result of your injury. Qualified injured workers will receive benefits as determined by law.

Medical Costs

The City will pay all related medical costs according to state fee schedule.

You are not to be charged for any authorized treatment. If you find it necessary to pay a bill, submit it to your employer for reimbursement.

Time Loss Compensation

Qualifications

You must:

- Be disabled and unable to work due to the injury or disease;
- Be under care of and treatment by an authorized physician; and
- Be certified as temporarily, totally disabled by this physician.

Amount

The rate of time loss compensation is determined by your marital status and number of dependents. The maximum available is 100% of the state's average wage.

Waiting Period

- No payment is made for the day of the injury.
- No payment is made for the first three calendar days following the date of injury unless your temporary disability continues for fourteen consecutive days or longer. An unsuccessful attempt to return to work during the fourteen-day period will not affect payment for the first three days.

Duration

You will continue to receive time loss benefits until one of the following occurs:

- Your doctor releases you for work.
- You return to work.
- You return to modified work that your doctor approves.
- You refuse to return to modified work that your doctor approves.
- You refuse or obstruct reasonable treatment.
- Your claim is rejected by an order from the Department of Labor and Industries, at which time your employer may ask you to repay any time loss benefits you have received.

Closure and Reopenings

Your claim will be closed when no further curative treatment is indicated.

Your claim may be reopened for further treatment:

- By your employer, if within 60 days of the date of the closing order further curative treatment is authorized by your doctor. (The Department of Labor and Industries will issue an order setting aside closure.)
- If, after 60 days from the date of the closing order, a completed reopening application is received by the Department of Labor and Industries. This must be filed within seven years of the closing order (ten years for eye claims).

Permanent Partial Disability Awards

All permanent partial disability awards are determined by the AMA Guidelines and issued by the Department of Labor and Industries.

Permanent Partial Disability is a percent of loss in function of a body part due to an industrial injury or disease. The percent is determined by a physician and given a monetary value by the Department of Labor and Industries as a form of compensation.

Permanent Total Disability is an industrially related condition, supported by medical and vocational opinion that prevents you from being able to perform gainful employment. Such a condition may qualify you for a lifetime pension.

Survivors' Benefits are pension benefits available for your dependents should you suffer an on-the-job fatality. In such a case, your dependents should apply for survivors' benefits.

Reconsiderations and Appeals

If at any time you have a reason to disagree with any order of determination on your claim, you may, within 60 days of the date of the order, in writing:

Protest to:	Or Appeal to:
Self-Insurance Section	Board of Industrial Insurance Appeals
PO Box 44892	2430 Chandler Ct. SW
Olympia, WA 98504-4892	PO Box 42401
	Olympia, WA 98504-2401

Any questions concerning these benefits should be directed to the following representative of your employer. If you have any questions on how your time loss has been calculated, contact: Eberle Vivian at 253 854-6323

RETURN-TO-WORK PROCEDURES FOR CITY EMPLOYEES

Purpose

To aid in reducing costs to the City's Self-Insured Workers Compensation Fund, and to facilitate injured worker's early return to the work environment.

An injured employee is considered a modified duty candidate when his/her attending doctor has notified the Workers Compensation Office that he/she can perform some work activities but is not capable of performing their regular job at full capacity.

The employee must be able to work a minimum of four (4) hours a day, and will be brought back at his/her regular salary provided the return, in this limited capacity, is within the worker's regular work section.

The P-100 Form will list the employee as full-time even if he/she cannot work an eight-hour shift or an 80-hour pay period to ensure continuity of retirement contributions. If the employee is not able to work a full shift or a full 80-hour pay period, he/she will be paid for the actual hours worked and supplemented by the Workers Compensation Fund.

Procedures and practices for placing an employee on modified duty work as a result of an industrial injury will be as follows:

- Upon receipt of information from the attending physician that the injured worker is capable of performing modified duty, the Workers Compensation office will contact the immediate supervisor to assist in determining modified work available within the limitations prescribed by the doctor. If possible, more than one listing should be made.
 1. If modified work is not available within the section of the injured worker, the Workers Compensation office will notify the division head. The division head and Workers Compensation office may attempt to find a section that can use the injured worker within the limitations prescribed. If union lines are crossed, the section supervisor of the process will inform both shop stewards. The primary goal is to keep the injured worker within his/her original work location to assist in the productivity of that section.
- After determining a job assignment for the injured worker is acceptable to the section supervisor where the job is located and the union:
 1. The injured worker will take the modified-duty job analysis to the attending physician. The physician must sign and date the job analysis on the approval line.
 2. The employee will return the job analysis to his supervisor who will then forward it to the Workers Compensation office.
 3. The employee may not deviate from the assigned tasks as outlined on the approved job analysis.
 4. The employee must receive a full release before returning to his regular duties.
- If the physician releases the employee to the job described, the injured worker will report to the job section on the day the physician releases him/her for work.

- The Workers Compensation office will stay in contact with the physician and supervisor to inform each party of how the worker is progressing, whether the work capacity can be increased and a possible release date for regular work.
- If the employee refuses to return to work despite the doctor's release, time loss compensation will be terminated at that date.
- If the employee is still limited in his/her physical activity due to the industrial injury after six months of modified duty, the employee and physician will be notified by the Workers Compensation office that he/she will be considered for demotion of position due to physical incapacities outlined under Personnel Rule 1.24.770. The Rule states:

"When an employee becomes physically incapacitated for the performance of the duties of his/her position he/she may upon request of the appointing authority or upon his/her own initiative and with the approval of the Human Resource Director, be given status and appointed to a position, the duties of which he/she is able to perform, in a class carrying a lower compensation, without regard to previous status in the lower class. Seniority, if not otherwise established in the lower class, shall commence on the effective date of the demotion."

If the attending physician does not release the employee for regular work at that time, the Workers Compensation office will contact that section's supervisor to initiate the above listed ruling.

- To assist in the implementation of this policy, job audits may be performed by Human Resources on positions in question to determine the probability of the injured worker successfully performing the duties of his/her job functions.