Washington State
Department of Transportation

Safety Procedures and Guidelines Manual

M 75-01.32

December 2016

Human Resources Division
Safety and Health Services Office

Americans with Disabilities Act (ADA) Information

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Foreword

Providing employees a safe environment in which to work is the Washington State Department of Transportation's top priority. The department is committed to the safety of its employees. To ensure this commitment is met, the department provides training and guidance about working in a safe and safety conscious manner. It is the responsibility of every employee to provide for workplace safety.

Consistent with the Secretary's Executive Order E 1033, the *Safety Procedures and Guidelines Manual* M 75-01 is written with this commitment to safety in mind. This publication provides guidance to all employment levels outlining responsibilities and procedures to follow to ensure workplace safety. Ongoing training will inform employees about safety concerns and programs. Regular updates to this manual will occur to emphasize the department's commitment.

Following and observing the procedures and responsibilities in this manual will reduce the number of workplace injuries and unsafe conditions. Everyone is responsible to:

- Report unsafe conditions,
- Prevent and report all accidents,
- Use personal protective clothing and equipment, and
- Develop a pre-activity safety plan.

/s/ Chris Christopher	/s/ Kathy Dawley
Robert "Chris" Christopher, P.E. Director of Maintenance Operations	Kathy Dawley Safety and Health Administrator

Washington State Department of Transportation

Secretary's Executive Order

Number: E 1033.01

/s/ Paula J. Hammond
Secretary of Transportation

Date: June 2, 2008

Employee Safety

I. Introduction

At the Washington State Department of Transportation (WSDOT) safety is our highest priority.

This Secretary's Executive Order focuses on improving safety performance and embracing a safety-first culture. It sets the expectations for all employees to achieve our workplace safety goals.

II. Supersession and Changes

This Secretary's Executive Order 1033.01 supersedes *WSDOT Employee Safety* Secretary's Executive Order 1033.00 dated July 1, 2006. This revision is the result of language changes and continued endorsement by Executive Management.

III. Secretary's Executive Order

Workplace injuries are preventable. Employees are responsible for workplace safety. All employees are directed to:

- Include workplace safety and health objectives in designing, planning, training for and carrying out all work activities.
- Create a workplace where employees take responsibility for safety and health.
- Involve employees in reaching our goal of zero workplace injuries.
- Help co-workers meet the expectation of working injury-free every day.
- Report workplace injuries, accidents, and illnesses.
- Ensure data from workplace injuries, accidents, and illness is used to remedy unsafe conditions.

IV. Expectations for Performance

The Secretary of Transportation will establish safety performance goals for the department.

V. Immediate Actions

Working safely is a critical job expectation. Non-performance in this area will be treated as grounds for corrective personnel action.

The following basic safety provisions will be followed in every work activity:

- Participation in work group safety plans which includes the Ferries *Safety Management System*.
- Identification of hazards and safety concerns prior to performing task.
- Implementation of corrective actions for identified hazards prior to performing task.
- Wearing appropriate personal protective equipment when other preferred control measures are infeasible.
- Prompt reporting of all incidents.

WSDOT employees must follow the policies and procedures in the *Safety Procedures and Guidelines Manual* M 75-01, except WSDOT Ferries employees.

Ferries employees must follow the policies and procedures in the Ferries *Safety Management System.*

VI. WSDOT Assistant Secretary of Administrative Operations

The Assistant Secretary of Administrative Operations is responsible for annual review and updates to this document. All executives are responsible for informing the Assistant Secretary of Administrative Operations of changes needed for the maintenance of this document.

VII. Information to Carry Out This Order

For information about employee safety and policies on employee safety, contact the Headquarters Safety Office at (360) 705-7747.

Employee Safety
Secretary's Executive Order E 1033.01
June 2, 2008

VIII. Directional Document References

- *Human Resources Desk Manual* M 3007
- *Maintenance Manual* M 51-01
- *Risk Management Manual* M 72-01
- *Safety Management System* Ferries
- *Safety Procedures and Guidelines Manual* M 75-01
- *Work Zone Traffic Control Guidelines* M 54-44

Americans with Disabilities Act (ADA) Information

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Chapter 1 Accident Prevention Program

1.1 Purpose

To establish an Accident Prevention Program for the Washington State Department of Transportation (WSDOT) operations and facilities as required by Washington Administrative Code (WAC) 296-800-140 and where applicable Title 30 Code of Federal Regulations (CFR) Mine Safety and Health Act (MSHA).

1.2 Scope and Applicability

This program has been developed for employee protection using the referenced WAC chapters and Title 30 CFR MSHA as guidance. This program excludes Washington State Ferries which utilizes the Safety Management System (SMS).

1.3 References

- WAC 296-14 *Industrial insurance*
- WAC 296-24 *General safety and health standards*
- WAC 296-27 *Recordkeeping and reporting*
- WAC 296-62 *General occupational health standards*
- WAC 296-155 *Safety standards for construction work*
- WAC 296-800 *Safety and health core rules*
- Title 30 CFR MSHA

1.4 Definitions

Work Activity Safety Planning Approach – Is an approach that may include safety awareness, risk assessment, and planning. Needs to be both proactive and ongoing in the dynamic work environment and changing conditions often encountered by WSDOT employees.

Pre-Activity Safety Plan (PASP) (also known as Activity Hazard Analysis or Job Hazard Analysis) – A written review of the activity to be performed, including environmental conditions, tools and/or equipment to be used, the associated hazards and their method of control. PASPs for most activities are available on the Safety website or may be developed for a specific activity or worksite.

Priority of Hazard Control (also known as hierarchy of hazard control) – See Appendix 1-A. A systematic order of hazard control with preference to the most effective at eliminating hazards.

Most Effective to Least Effective Hazard Controls

- Elimination or Substitution
- Engineering Controls
- Training and Administrative Controls
- Personal Protective Equipment

Recordable Injury – Any injury consistent with the definition of OSHA-recordable accident in Chapter 6.

Safety Organization – Headquarters Safety and Health Services Office and staff, Region Safety Office and staff.

Supervisor, Lead Person – Position title, may also include any person in a position of authority or who oversees the work of others.

1.5 Organizational Responsibilities

1.5-1 Executive Management

Executive management shall be accountable for the following safety program activities:

- Visibly demonstrate and communicate their commitment to safety as a top priority of the department.
- Abide by safety policies/procedures.
- Establish expectations for employees to conduct Work Activity Safety Planning before work begins, during the actual work as conditions change, shifting to other work, and when emergent work is encountered.
- Review, approve, and communicate the safety and health policies and procedures as a foundation for the overall WSDOT Safety Program.
- Establish annual agency injury/accident reduction goals.
- Use data to monitor the performance of the overall safety program and report program performance to WSDOT and stakeholders.
- Prioritize and advocate for the needed resources to meet the department's injury reduction goals and to support the safety program.
- Set direction that employee safety is a performance expectation of all positions and safety performance will be evaluated for all personnel.
- Recognize agency safety achievements.
- Use all appropriate personal protective equipment.

1.5-2 Senior Management

Senior management shall be accountable for the following safety program activities:

- Develop and implement injury and accident reduction and prevention plans for their respective organizations consistent with the department's goals and evaluate them annually.
- Visibly demonstrate and communicate their commitment to safety as a top priority of the department.
- Abide by safety policies and procedures.
- Ensure employees conduct Work Activity Safety Planning before work begins, during the actual work as conditions change, shifting to other work, and when emergent work is encountered.
- Provide the needed resources to meet injury and accident reduction goals and support the safety program.
- Ensure there is a safety training plan for their area of responsibility.

- Ensure that accident review procedures maximize the "lessons learned" opportunity and that resulting prevention plans are communicated within the organization.
- Actively review data with mid-level managers and provide clear performance expectations.
- Recognize the organization's safety achievements.
- Incorporate safety performance expectations into all position descriptions and include safety performance in the evaluation of all personnel.
- Use all appropriate personal protective equipment.
- Coach and mentor co-workers in safety performance.

1.5-3 Mid-Level Management

Mid-level management shall be accountable for the following safety program activities:

- Develop, implement, and monitor injury and accident reduction and prevention plans for their respective organizations consistent with the department's goals and evaluate them annually with their supervisors.
- Visibly demonstrate and communicate their commitment to safety as a top priority of the department.
- Abide by safety policies and procedures.
- Ensure employees conduct Work Activity Safety Planning before work begins, during the actual work as conditions change, shifting to other work, and when emergent work is encountered.
- Determine PASP, Tailgate, or Safety Briefing needs based on injury and accident data and associated risk assessments.
- Ensure that the Accident Review Process is conducted promptly and completely in accordance with Chapter 6.
- Actively participate in accident review procedures to ensure that "lessons learned" are communicated and implemented within their organization.
- Recognize employee safety achievements.
- Incorporate safety performance expectations into all position descriptions and include safety performance in the evaluation of all personnel.
- Conduct periodic inspections of field and facility operations to ensure consistency with safety program policies and procedures.
- Address safety non-performance consistent with all other job performance expectations in accordance with current Human Resources policy.
- Use all appropriate personal protective equipment.
- Coach and mentor co-workers in safety performance.
- Conduct site visits to demonstrate the department's safety commitment and concern for employee safety.
- Incorporate safety performance expectations into every position description and communicate those expectations to each employee.

Ensure employees have the education, experience, and training necessary to perform work or effectively administer other employees who are contracted to perform work safely.

1.5-4 Supervisors

Supervisors shall be accountable for the following safety program activities:

- Develop, implement, and monitor injury and accident reduction and prevention plans for their respective staff consistent with the department's goals and evaluate the plans annually with employees and supervisors.
- Visibly demonstrate and communicate their commitment to safety as a top priority of the department.
- Abide by safety policies and procedures.
- Ensure that all work is planned and implemented with safety as an integral part of the process.
- Ensure employees conduct Work Activity Safety Planning before work begins, during the actual work as conditions change, shifting to other work, and when emergent work is encountered.
- Actively participate in accident review procedures to ensure that "lessons learned" are communicated and implemented within their organization.
- Make safety a priority agenda item for all operational meetings and communications.
- Participate in the development and implementation of PASP, Tailgate, or afety Briefings.
- Ensure that all employees are provided with and trained in the use and maintenance of all appropriate personal protective equipment (PPE).
- Ensure employee participation in each of the following as appropriate:
  - PASP, Tailgate, or Safety Briefings.
  - Safety meetings.
  - Appropriate safety training.
  - Safety inspections of work activities, facilities, equipment, and vehicles.
  - Reporting any unsafe conditions to their supervisor immediately.
- Take immediate action when necessary to address any imminent hazard and inform supervisors of any additional safety issues.
- Report accidents or injuries to the mid-level manager of the injured employee as soon as practical.
- Ensure employees have the education, experience, and training necessary to perform work or effectively administer other employees who are contracted to perform work safely.
- Recognize employee safety achievements.
- Monitor field and facility operations to ensure consistency with safety program policies and procedures.
- Incorporate safety performance expectations into all position descriptions and include safety performance in the evaluation of all personnel.
- Use all appropriate personal protective equipment.
- Coach and mentor co-workers in safety performance.
- Meet with the appointing authority regarding accident in compliance with Chapter 6.

1.5-5 Employees

Employees shall be accountable for the following safety program activities:

- Visibly demonstrate and communicate their commitment to safety.
- Conduct Work Activity Safety Planning before work begins, during the actual work as conditions change, shifting to other work, and when emergent work is encountered.
- Abide by safety policies and procedures.
- Attend and participate in safety meetings, trainings, and the development and implementation of PASP, Tailgate, or Safety Briefings.
- Ensure that all work is planned and implemented with safety as an integral part of the process.
- Inform work site supervisors/co-workers or contractor foreman of any safety hazards in the workplace and immediately address those safety hazards if possible.
- Stop specific work activities if unanticipated hazardous or unsafe conditions are encountered and secure the scene. Report those conditions to their supervisor and TMC, if appropriate.
- Report any injury and accident or near miss to their supervisor immediately.
- Perform safety inspections of work activities, facilities, equipment, and vehicles.
- Use all appropriate personal protective equipment.
- Coach and mentor co-workers in safety performance. Recognize employee safety achievements.

1.5-6 Safety Organization

Region Safety Office staff shall be accountable for the following safety program activities:

- Encourage and promote safety program improvement.
- Provide guidance/technical assistance to all levels of the department for identifying, evaluating, and correcting hazards (i.e., injury/accident prevention activities).
- Communicate and support WSDOT Safety Program policies and procedures.
- Identify and communicate requirements for compliance with applicable and statutorily required safety standards.
- Prepare data and reports of WSDOT injuries/accidents and “lessons learned” for use by all levels within the department.
- Ensure that lessons learned are communicated within the department and actively participate with the accident review process.
- Assist with the development of safety and health goals.
- Assist in the development of Work Activity Safety Planning.
- Assist in developing or securing required training and other educational tools/ materials to support a safe and healthful workplace.
- Assist in the development, implementation, and monitoring of safety orientation training.
- Attend organizational safety meetings as available.

- Conduct routine office and field visits to support their organizational safety plan.
- Provide guidance/technical assistance to the senior and mid-level managers in the development and implementation of their organizations safety and training plans.
- Notify the mid-level manager of safety issues as soon as practical.

1.6 Work Activity Safety Planning

Safety awareness, risk assessment, and planning needs to be both proactive and ongoing in the dynamic work environment and changing conditions often encountered by WSDOT employees. As such, it is expected that Work Activity Safety Planning will be conducted before work begins, during the actual work as conditions change, shifting to other work, and when emergent work is encountered. The key elements of this planning effort need to include awareness, risk assessment, and communication.

Given that WSDOT will be utilizing a proactive and ongoing planning effort in regard to Work Activity Safety Planning, different tools will be utilized that best fit the work activities and situations encountered.

PASPs are the preferred method for pre-planned work activities as a group or as an individual documentation is required.

1.6-1 Unscheduled Work Activities

When unscheduled work activities occur, conduct a safety briefing to address awareness, risk assessment, and communication before transitioning to the new activity. If practical, this briefing can include an in-person conversation, phone call, or radio call with co-worker and/or supervisor to discuss the change in work activities. Formal documentation may not be practical.

To this end, Work Activity Safety Plans may include, but not be limited to the following tools:

- Safety Stand Down
- Safety Meetings
- Pre-Activity Safety Plan
- Tailgate Meeting Checklist
- Safety Briefing

1.7 Employee Insurance Coverage for Work Injuries/Illnesses

Injured employees will be provided Department of Labor and Industries (L&I) Industrial Insurance coverage for occupational injuries and illnesses.

Employees injured on the job will be covered for all approved medical, hospital, and related services essential to their treatment and recovery. The injured employee may receive a percentage of wage replacement payments if they are temporarily unable to work as a result of an occupational injury or illness.

Note: Volunteers are also under this industrial insurance program (medical only).

More information on L&I and the Return to Work Program can be found on the Human Resources website in the employees section.

L&I has approved the employee's workers' compensation application under Revised Code of Washington (RCW) Chapter 51.32, or for maritime employees, the WSDOT Enterprise Risk Management Division has approved maintenance and cure benefits under USC Sec. 688 et seq.

1.7-1 Assaults by Motorists on Department Employees

RCW 47.04.250 *Assaults by motorists on department employees* defines "assault" as an act by a motorist that results in physical injury to a WSDOT employee while engaged in highway construction or maintenance activities along the roadway or right of way or in the loading and unloading of passenger vehicles in service of the vessel as a maritime employee or engaged in those work activities as a Washington State Ferries terminal employee covered under Chapter 51.32 RCW.

This law provides a supplementary program to reimburse employees of WSDOT for some of their costs attributable to their being the victims of assaults by motorists.

In general, to be eligible for assault benefits, the WSDOT Secretary shall find the following conditions occurred:

- A motorist assaulted a WSDOT employee engaged in highway maintenance/ construction operations along a roadway right of way (fence line to fence line) which resulted in injury and lost work days.
- The assault was not attributable, to any extent, to the employee's negligence, misconduct, or failure to comply with any rules or conditions of employment.
- L&I has approved the employee's workers' compensation application under Chapter 51.32 RCW, or for maritime employees, the WSDOT Enterprise Risk Management Division has approved maintenance and cure benefits under USC Sec. 688 et seq.

1.8 Emergencies – Fire and Natural Disasters

Many WSDOT facilities have evacuation alarm stations throughout the facility that can be activated any time there is an emergency requiring evacuation. Each facility should have written emergency instructions for emergencies such as fire, severe weather, earthquakes, or bomb threats. In those facilities without an evacuation alarm, voice communication is used to spread an alarm.

Not all WSDOT facilities have a sprinkler system installed. However, all WSDOT facilities have portable fire extinguishers available. In the event of a fire, sound the alarm and exit the building. If you are trained to do so, attempt to put out the fire with the appropriate extinguishers.

Emergency assistance may be reached by calling 911. In some facilities, dialing 9-911 is required.

When an alarm is sounded, all occupants of a building shall evacuate. Elevators in facilities should not be used for evacuation. Each office or section is responsible for assisting disabled individuals from a building. Once out of a building, one able person will stay with the disabled person until the emergency is over. Each facility should have a staging area located at least 100 feet away from the building used to account for the employees.

Do not re-enter buildings until the building has been cleared for re-entry by emergency officers.

Because of the wide variety of facility layouts, it is important that when an employee arrives at a new work location, they familiarize themselves with the procedures for that work site. Each supervisor will give new employees a complete job site safety orientation, which includes emergency instructions.

In the event that an employee or their family are involved in a disaster, the employee should notify their supervisor and take care of their family's needs, then report to work when available.

1.9 Safety Meetings

WSDOT is required to have either a designated safety committee composed of employer-selected and employee-elected members or conduct routine safety meetings. In most instances, safety meetings are used throughout the department and for many different organizations/offices (e.g., crew level safety meetings and office level safety meetings). At a minimum, crew/office level meetings will be conducted quarterly—monthly safety meetings are encouraged. Document meeting attendance and topics covered using DOT Form 750-007 EF, Supervisor's Report of Safety Meeting.

Safety meetings shall be tailored for the specifics of the work area or work activity. Regardless of the working environment or the work tasks and equipment used, at a minimum, the following items should be accomplished during the scheduled safety meetings:

- Review accident/incident reports for injuries occurring within the work group and use these reports to assist in the correction of identified unsafe conditions or practices.
- Receive and consider accident prevention and loss control suggestions and improvement ideas from supervisors, employees, and employee organizations and recommend appropriate actions for injury prevention.
- Solicit employee input regarding safety concerns and issues.
- Discuss recommendations for improvement.
- Discuss and implement controls to minimize or eliminate injuries/accidents.
- Demonstrate agency concern for reducing injury and property damage accidents.

1.10 Safety Bulletin Board

A safety bulletin board must be installed and maintained in every fixed establishment employing eight or more persons. The safety bulletin board should be sufficient in size to display and post:

- Safety bulletins, newsletters, posters, accident statistics, and other safety education material.
- Notice to Employees – If a Job Injury Occurs (F242-191-909).
- Job Safety and Health Protection (F416-081-909).
- Your Rights as a Non-Agricultural Worker (F700-074-909).
- Emergency telephone numbers.
- OSHA 300 Log Summary of Injuries and Illnesses (posted every February).
- Labor and Industries Citations and Notices of Appeal.

The safety bulletin board should display only safety and health related information.

1.11 Safety Training

Training is a powerful influence and motivation in safety, just as it is in many other areas. Training is one of the most important elements of an effective accident prevention program. An effective training program allows employees to learn their jobs properly, brings new ideas into the workplace, reinforces existing ideas and best practices, and puts the safety and health program into action.

1.12 Safety Recognition Program

A Safety Recognition Program is an essential part of WSDOT's accident prevention program. It reinforces the agency's commitment to safety by recognizing individuals and organization units for their safety performance. It is also a means by which all employees can show appreciation to each other for their individual and team efforts, commitments, and accomplishments.

Specific criteria and nature for each award are established and re-evaluated periodically to ensure that they are meaningful to the recipients, individually or as a team, and that the program helps motivate WSDOT employees to work safely.

1.13 Appendices

Appendix 1-A Priority of Hazard Controls

Appendix 1-A Priority of Hazard Controls

Controlling exposures to occupational hazards is the fundamental method of protecting workers. Traditionally, a priority of controls has been used as a means of determining how to implement feasible and effective controls.

Most Effective to Least Effective Hazard Controls

Elimination or Substitution

Elimination and substitution, while most effective at reducing hazards, also tend to be the most difficult to implement in an existing process. If the process is still at the design or development stage, elimination and substitution of hazards may be inexpensive and simple to implement. For an existing process, major changes in equipment and procedures may be required to eliminate or substitute for a hazard.

- Substitute safe materials for hazardous ones.
- Remove employee from hazard.
- Automate material handling.
- Use mechanical advantage.
- Reduce energy, speed, voltage, sound level, and force.
- Change process to eliminate hazard noise.
- Perform tasks at ground level.

Engineering Controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The initial cost of engineering controls can be higher than the cost of administrative controls or personal protective equipment, but over the longer term, operating costs are frequently lower, and in some instances, can provide a cost savings in other areas of the process.

- Ventilation systems
- Automatic shut offs
- Fail safe devices
- Back up cameras
- Mirrors
- Machine guarding
- Sound enclosures
- Circuit breakers
- Platforms and guard railing
- Lift tables, conveyors

Training and Administrative Controls

Administrative controls and personal protective equipment are frequently used with existing processes where hazards are not particularly well controlled. Administrative controls and personal protective equipment programs may be relatively inexpensive to establish but, over the long term, can be very costly to sustain. These methods for protecting workers have also proven to be less effective than other measures, requiring significant effort by the affected workers.

- Safe job procedures
- Rotation of workers
- Safety equipment inspections
- Worker training
- Lockout
- Computer warnings
- Odors added hazardous materials
- Backup alarms
- Labels

Personal Protective Equipment

- Safety glasses
- Ear plugs
- Face shields
- Fall arrest equipment
- Gloves
- Seat belts
- Safety-toe footwear

Chapter 2 Vacant

Chapter 3 Vehicle Operation

3.1 Purpose

To establish Vehicle Operation guidance for the Washington State Department of Transportation (WSDOT) in accordance with state-level guidance by other agencies.

3.2 Scope and Applicability

This chapter has been developed for employee guidance on vehicle operation.

3.3 References

WAC 296-155-610 Motor Vehicles on Construction Sites

WAC 296-865-30005 Truck Operation

Use of State Provided Motor Vehicles M 53-50

Enterprise Wide Transportation Policy online at: http://des.wa.gov/SiteCollectionDocuments/About/rules/EnterpriseTransportationPolicy.pdf

Human Resources Desk Manual Chapter 19 Drug and Alcohol Free Workplace wwwi.wsdot.wa.gov/NR/rdonlyres/9C051461-599A-4BA0-8F6B-AD17190D1284/0/Chapter19.pdf

3.4 General Responsibilities

Are as assigned in Chapter 1 Safety and Procedures Manual as well as the items below specific to vehicle operation policy.

It is the responsibility of each manager, supervisor, and employee to ensure implementation of the department policy on vehicle operation. It is the responsibility of the department to provide and maintain equipment that is adequate and is safe in design and construction.

3.4-1 Executive, Senior, and Mid-Level Management

- Provide or replace vehicles as required to perform work in compliance with this policy.
- Perform periodic audits of employee use and training related to vehicle operation.
- Ensure that adequate funds are available and budgeted for the purchase of vehicles in their areas.
- Obtain and coordinate the required training for the affected employees.
- Ensure compliance with vehicle operation policies.

3.4-2 Supervisors

- Communicate the compliance expectations to employees and address noncompliance.
- Communicate the appropriate needs to managers and/or employees.
- Ensure that employees are properly trained in vehicle operation and care before using the vehicle.
- Ensure employees meet the minimum requirements of this policy prior to authorizing vehicle use.
- Provide appropriate vehicle operation training to employees.
- Ensure post-accident drug and alcohol policy requirements are met per *Human Resource Desk Manual* Chapter 19.

3.4-3 Employees

- Comply with all applicable vehicle operation policies.
- Refuse to operate any vehicle that they are not legally permitted or unqualified to operate.
- Notify supervisor if driver's license or any required endorsements have been compromised, or suspended.
- Submit to post-accident drug and alcohol testing per the requirement of the *Human Resource Desk Manual* Chapter 19.

3.4-4 Safety Organization

- Provide prompt assistance to managers, supervisors, or others as applicable on any matter concerning this safety procedure.
- Assist in developing or securing required training.

3.5 Motor Vehicle Operation

Each employee authorized to operate an agency-provided motor vehicle has the responsibility to be familiar with, and adhere to, Washington State traffic laws, the rules and instructions outlined in the *Use of State Provided Motor Vehicles* M 53-50, accident reporting procedures outlined in the *Safety Procedures and Guidelines Manual* M 75-01 and the rules outlined in *Enterprise Wide Transportation Policy* online at: http://des.wa.gov/SiteCollectionDocuments/About/rules/EnterpriseTransportationPolicy.pdf

3.5-1 Rolling Equipment Operation

When operating any rolling equipment such as cars, trucks, tractors, and excavators, it will be in accordance with manufacturer's operating instructions, Washington State motor vehicle laws and WAC 296-155, Part M.

3.5-2 Policy Statement

It is the policy of WSDOT to provide employees who may be a risk for vehicle backing incidents with safety information before work begins. The following guide provides minimum guidelines, incident reviews, and communications to carry out this policy.

Backing can be done safely but caution must be exercised. The most important precaution is for drivers to be aware of the potential for backing accidents and for all drivers to follow the Vehicle Backing Policy.

3.5-3 Vehicle Backing Policy

According to the National Safety Council, one out of four vehicles accidents can be blamed on poor backing techniques. Typically less than one percent of employee driving time is spent in vehicle backing operations, while approximately 25 percent of all incidents involving government vehicles or equipment are backing related. The number of backing accidents across the agency continues to be an issue of concern. Several recent fatality backing accident on DOT projects in particular have drawn our attention to this issue.

The vehicle driver/operator has the final responsibility for safe backing. If the operator is uncomfortable or unsure if the vehicle can be backed safely, he/she should seek assistance.

Pre-Activity Safety Plans or tailgate safety talks/briefings should include safe backing procedures and practices.

Backing motor vehicles with an obstructed view to the rear on construction sites is governed by WAC 296-155-610. Restrictions include audible backing alarms, camera and/or observer. Regarding dump trucks, if employees are physically present in the backing zone, or it is reasonable to expect employees may enter the backing zone, an observer is required unless the unit is equipped with a video camera. Back-up alarms are to remain operational all on vehicles equipped with them. When a backing accident occurs, the employee will notify the supervisor as soon as possible, but no later than the end of the current work shift. The organizational manager will notify the appropriate appointing authority of the accident within three (3) business days of the accident and discuss what needs to happen to prevent future occurrences.

The items below are common sense safety rules, which fit most situations. In situations where they don't completely meet the safety and operational needs, they will need to be supplemented by good planning and judgment.

- Employees are encouraged to back-in state vehicles at office parking stalls. "Back in-not out" has been shown to be the safest guidance. People are much more cautious of (and attentive to) hazards if they back into a parking spot upon their arrival. It is understood that there may be time when this would not be prudent; such as, reduced clearances, space limitation, etc.
- Park defensively! Think in advance. Carefully survey parking opportunities when you arrive at a location. Whenever possible, a vehicle being parked should be positioned to move forward and avoid backing altogether.

- Always conduct a pre-trip inspection on your vehicle. Mirrors never give you the whole picture while backing. Get to know the vehicle's blind spots. In a medium sized truck, blind spots can extend up to 16 feet in front and 160 feet behind a vehicle. The larger the vehicle, or load, the larger the blind spot. Blind spots hide poles, vehicles, or people.
- When vision to the rear is partially or completely obscured, the operator should:
  - Utilize a spotter to guide the operator in backing the vehicle; or,
  - If a spotter is not available, a pre-backing walk around inspection should be completed to identify potential hazards
- No driver will back a motor vehicle at any time without checking clearances completely around the vehicle immediately before backing. In no case will an operator back a vehicle before ensuring the areas behind and beside the vehicle are clear of obstructions and people. Always back slowly.
- On equipment larger than a passenger sedan, the operator shall sound their horn twice in warning before backing. Large vehicles and equipment should be equipped with audible backing alarms. If the equipment lacks a working backing alarm the operator should intermittently sound their horn while backing. If vision to the rear and/or side vision is reduced by inclement weather or darkness, the operator will either use a spotter or conduct a complete walk around inspection before backing.
- When returning to your vehicle/equipment and backing is required, conduct a walk-around first. Traffic cones may be utilized as a reminder to conduct the walk-around if deemed appropriate.

3.5-4 Motor Vehicle Accidents

Motor vehicle incidents must be reported promptly per Chapter 6. Refer to Chapter 19 Drug/Alcohol-Free Workplace of the *Human Resource Desk Manual* M 3009 to determine if incident requires post-accident drug and alcohol testing.

Chapter 4 Control of Hazardous Energy (Lockout/Tagout)

4.1 Purpose

To provide guidance for the establishment of methods isolating machines or equipment from energy sources to permit routine maintenance and servicing of those machines and equipment by Washington State Department of Transportation (WSDOT) employees.

4.2 Scope and Applicability

This chapter has been developed for control of hazardous energy (lockout/tagout [LOTO]) using the referenced Washington Administrative Code (WAC) chapters as guidance.

This safety procedure affects employees who service, maintain, and operate stationery equipment and machines. Uncontrolled energy is a hazard to operators and other employees in the area of the machinery, equipment, or processes. Those who service and maintain machinery or equipment are especially vulnerable because the machinery or equipment might become energized while being serviced or stored energy might be unexpectedly released.

4.3 References

- WAC 296-803 *Control of hazardous energy (lockout/tagout)* http://apps.leg.wa.gov/WAC/default.aspx?cite=296-803

4.4 Definitions

Affected Employee – An employee whose who's required to operate, use, or be in the area where a machine or equipment could be locked or tagged out for service or maintenance.

Authorized Employee – An employee who locks out or tags out a machine or piece of equipment in order to perform servicing or maintenance on that machine or piece of equipment. An affected employee becomes the authorized employee when that employee's duties require him or her to perform the service or maintenance covered under this policy.

Energized – Connected to an energy source or containing residual or stored energy.

Energy-isolating Device – A mechanical device that physically prevents transmitting or releasing energy. This includes, but is not limited to: manually operated electrical circuit breakers, disconnect switches, manually operated switches that disconnect the conductors of a circuit from all ungrounded supply conductors if no pole of the switch can be operated independently, line valves, blocks, or similar devices used to block or isolate energy.

Energy Source – Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy including gravity.

Lockout – Placing a lockout device on an energy-isolating device using an established procedure to make sure the machine or equipment cannot be operated until the lockout device is removed.

Lockout Device – A device that utilizes a positive means, such as a key or combination type lock, to hold an energy-isolating device in a "safe" or off position to prevent the energizing of a machine or piece of equipment.

Safety Organization – Headquarters Safety and Health Services Office staff, or Region Safety Office staff.

Service and Maintenance – Activities such as constructing, installing, setting-up, adjusting, inspecting, modifying, maintaining, and servicing machines or equipment. It also includes lubricating, cleaning, unjamming, and making tool changes.

Tagout – Placing a tagout device on an energy-isolating device using an established procedure to indicate that the energy-isolating device and the machine or equipment being controlled may not be operated until the tagout device is removed.

Tagout Device – A prominent warning device, such as a tag and a means attachment. It can be securely fastened to an energy-isolating device and the machine or equipment being controlled may not be operated until the tagout device is removed.

See WAC 296-803 for additional definitions.

4.5 General Responsibilities

In addition to the responsibilities outlined in Chapter 1 of the *Safety Procedures and Guidelines Manual* M 75-01, there are responsibilities specific to lockout/tagout as detailed below.

It is the policy of WSDOT to provide a place of employment free from recognized hazards that cause or are likely to cause death or serious physical harm to employees or to the public. Therefore, all energized machines and equipment must be locked out and/or tagged out before any maintenance or servicing is performed. These measures will be implemented to minimize those hazards to ensure the safety of WSDOT employees.

4.5-1 Executive, Senior, and Mid-Level Management

- Ensure that site managers, supervisors, and other site personnel have the required experience to perform assessments and identify all LOTO applications at sites under their control.
- Provide or replace LOTO equipment as required to perform work in compliance with this policy.
- Perform periodic audits of employee training related to LOTO.
- Complete a survey of machinery and equipment within their area to determine which machinery and equipment should be included in the Lockout/Tagout Equipment Inventory Program.
- Identify all affected and authorized employees.
- Ensure annual compliance with this safety procedure through their inspection processes.
- Ensure all affected employees/Supervisors have completed the necessary training.

4.5-2 Supervisors

- Ensure that all precautions required by this safety procedure be observed.
- Ensure that this safety procedure is implemented in their areas.
- Ensure that an adequate supply of locks, tags, and other safety equipment is available and is utilized in accordance with this safety procedure.
- Attend LOTO training when equipment is introduced into the work environment, assignments changed or work habits identify need.
- Ensure affected and authorized employees have received the training required in this safety procedure; and, records are maintained.
- Maintain in their office, energy source survey forms, and record of tagout system justification forms as required by this chapter.

4.5-3 Authorized Employees

- Follow WSDOT's lockout/tagout procedures before any maintenance or servicing activities are begun.
- Attend LOTO training when equipment is introduced into the work environment, assignments changed or work habits identify need.
- Ensure that all precautions required by this safety procedure are observed.
- Report to their supervisors any changes in the machinery or equipment that would require a change in the lockout/tagout procedure.
- Notify affected employees before beginning a lockout/tagout procedure on a piece of equipment or machinery.
- Report to their supervisors any changes in the machinery or equipment that would require a change in the lockout/tagout procedure.

4.5-4 Affected Employees

- Attend LOTO training when new employees or equipment are introduced into the work environment, assignments changed, or work habits identify need.
- Follow all precautions required by this safety procedure.
- Report to their supervisors any changes in the machinery or equipment that would require a change in the lockout/tagout procedure.

4.5-5 Safety Organizations

- Provide prompt assistance to managers/unit heads, supervisors, or others as necessary on any matter concerning this safety procedure.
- Assist in developing or securing required training.
- Monitor the lockout/tagout program and any changes in the machinery and equipment that may require modification of the program.
- Provide consultative and audit assistance to ensure effective implementation of this safety procedure.

4.6 Policy

Before any authorized employee performs any servicing or maintenance on a machine or equipment where the unexpected energizing, start up, or release of stored energy could occur and cause injury, the machine or equipment shall be isolated from the energy source and rendered inoperative.

If an energy-isolating device is not capable of being locked out, the authorized employee shall utilize a tagout system.

If an energy-isolating device is capable of being locked out, the authorized employee shall utilize lockout unless the authorized employee can demonstrate that the utilization of a tagout system will provide full employee protection.

When a tagout device is used on an energy-isolating device, which is capable of being locked out, the tagout device shall be attached at the same location that the lockout device would have been attached, and the employer shall demonstrate that the tagout program will provide a level of safety equivalent to that obtained by using a lockout program.

In demonstrating that a level of safety is achieved in the tagout device which is equivalent to the level of safety obtained by using a lockout program, the authorized employee must be in full compliance with all tagout-related provisions of WAC 296-803 together with such additional elements as are necessary to provide the equivalent safety available from the use of a lockout device. Additional means to be considered as part of the demonstration of full employee protection includes the implementation of safety measures such as the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle to reduce the likelihood of inadvertent operation.

4.6-1 Periodic Inspection

The supervisor shall conduct a periodic inspection of the energy control procedure for machinery and equipment that his authorized employee services at least annually to ensure that the procedure and the requirements of this chapter and WAC 296-803 are being followed.

The periodic inspection is conducted to correct any deviations or inadequacies identified. Where lockout is used for energy control, the periodic inspection shall include a review, between the supervisor and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected.

Where tagout is used for energy control, the periodic inspection shall include a review, between the supervisor, each authorized and affected employee, of that employee's responsibilities under the energy control procedure being inspected, and certify that the periodic inspections have been performed. The certification shall identify the machine or equipment on which the energy control procedure was being utilized, the date of the inspection, the employees included in the inspection, and the person performing the inspection.

4.7 Training

4.7-1 General Training Requirements

General training requirements for the lockout/tagout program shall consist of:

- Basic LOTO training.
- Training on the limitations of tags.
- Authorized and affected employee retraining.
- Documentation of LOTO training.

4.7-2 Basic Lockout/Tagout Training

Basic LOTO training (Course Code WSDOT SAFE LOCKOUT TAGOUT) shall communicate awareness of the procedures and skills that employees are required to possess. This training will be the responsibility of the supervisor. This training shall ensure that:

- Each authorized employee receives training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.
- Each affected employee shall be instructed in the purpose and application of the energy control procedure.
- All other employees shall be instructed when work operations are in an area where energy control procedures are used.

4.7-2.1 Training on the Limitations of Tags

Training on the limitations of tags must be provided to authorized and affected employees. This training will be the responsibility of the supervisor. Tagout systems are not completely foolproof. Instructions should include, among others, the following examples of tag limitations:

- Tags are essentially warning devices affixed to energy isolating devices and do not provide the physical restraint on those devices that is provided by a lock.
- When a tag is attached to an energy isolating means, it is not to be removed without authorization by the person indicated on the tag and it is never to be bypassed, ignored, or otherwise defeated.
- In order to be effective, tags must be legible and understandable by all authorized and affected employees, and all other employees whose work operations are or may be in the area.
- Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.
- Tags may evoke a false sense of security and their meaning needs to be understood as parts of the overall energy control program.
- Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

4.7-2.2 Authorized Employee Training

Authorized employees are those who use lockout/tagout devices. This training will be the responsibility of the supervisor.

Training requirements for authorized employees will include the following:

- Purpose of the standard and hazards controlled.
- When the standard applies.
- Definitions of terms used.
- Equipment used for lockout/tagout:
  - Standardized appearance.
  - Personal identification procedures.
- Procedures, including:
  - Preparation for shutdown.
  - Shutdown, isolation, blocking, and securing.
  - Placement, removal, and transfer of devices.
  - Release of stored energy.
  - Testing to verify effectiveness of energy control.
- Release from lockout/tagout:
  - Procedural requirements.
  - Release if employee who applied device is no longer at facility.
- Special procedures and rules for tagout systems.
- Special procedures for changes of shifts and personnel changes.
- Special procedures and practices for group lockout/tagout:
  - Procedure.
  - Authority for lockout/tagout in group situations.
- Inspection program.
- Communication and reporting of problems.

Appendix 4-A presents WSDOT's lockout/tagout procedure for authorized employees. Appendix 4-B provides the Lockout/Tagout Equipment and Energy Source Survey Form. Appendix 4-C provides the Tagout System Justification Form.

4.7-3 Affected Employee Training

Affected employees are those who operate equipment locked or tagged, or employees who work in the area where the devices are in use. This training will be the responsibility of the supervisor. Affected employee training may cover:

- Introduction to procedures outlined above for authorized employees.
- Prohibition against energizing any machine or piece of equipment that is locked or tagged out.

4.7-4 Authorized and Affected Employee Retraining

Authorized and affected employee retraining is required when:

- There is a change in their job assignments, a change in machines, equipment, or processes that presents a new hazard, or when there is a change in the energy control procedure.
- A supervisor has reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures.

This retraining shall establish employee proficiency and introduce new or revised control, methods and procedures, as necessary.

4.8 Personal Protective Equipment (PPE)

Determination of PPE to be worn is made after a hazard analysis of the work task as outlined in the PPE chapter. See Chapter 5 Personal Protective Equipment for additional details.

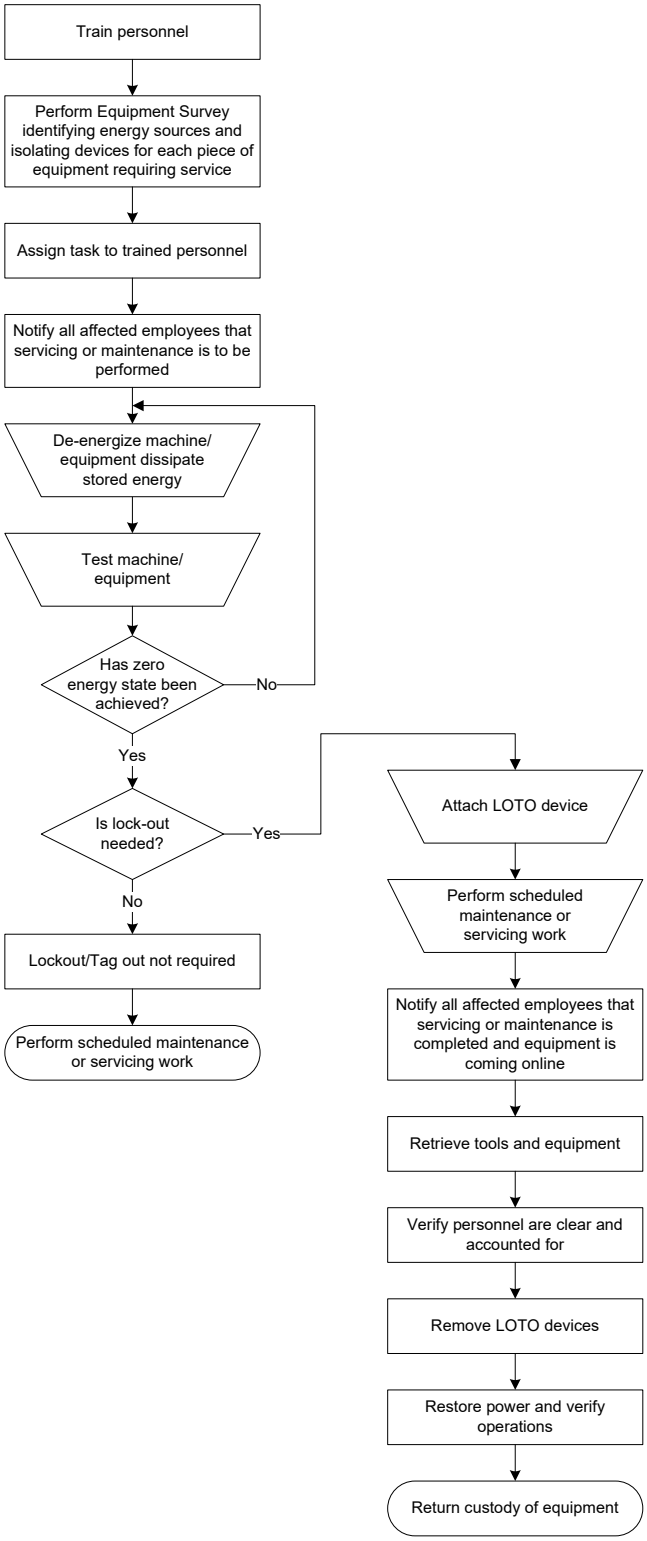
4.9 Recordkeeping

Documentation of lockout/tagout training must be accomplished and updated when such training has taken place.

Employee training shall be documented in LMS. In addition to LMS training recordkeeping requirements, supervisors shall maintain in their office, records of lockout/tagout training, energy source survey forms, and record of tagout system justification forms as required by this chapter. This training will include electrical, hydraulic, chemical, thermal, and any other energy sources that have the ability to release without warning.

Documentation may be stored on a computer as long as it is available to safety and health personnel from the Department of Labor and Industries.

4.10 Lockout/Tagout Flow Chart



4.11 Appendices

Appendix 4-A	Lockout/Tagout Procedure
Appendix 4-B	Lockout/Tagout Equipment and Energy Source Survey Form
Appendix 4-C	Tagout System Justification Form

Recommended Sequence of Lockout

1. Notify all affected employees that servicing or maintenance is required on a machine or equipment and that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.
2. The authorized employee shall refer to the procedure to identify the type and magnitude of the energy that the machine or equipment utilizes, understand the hazards of the energy, and know the methods to control the energy.
3. If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open switch, close valve, etc.).
4. Deactivate the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s).
5. Lock out the energy isolating device(s) with assigned individual lock(s).
6. Stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.
7. Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate.

   Caution: Return operating control(s) to neutral or "off" position after verifying the isolation of the equipment.
8. The machine or equipment is now locked out.

Recommended Sequence of Restoring Equipment to Service

1. When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken.
2. Check the machine or equipment and the immediate area around the machine or equipment to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
3. Check the work area to ensure that all employees have been safely positioned or removed from the area.
4. Verify that the controls are in neutral.
5. Remove the lockout devices and reenergize the machine or equipment.

   Note: The removal of some forms of blocking may require re-energizing of the machine before safe removal.
6. Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

Procedure Involving More Than One Person

In the preceding steps, if more than one individual is required to lockout or tagout equipment, each shall place his or her own personal lockout device or tagout device on the energy isolating device(s).

When an energy-isolating device cannot accept multiple locks or tags, a multiple lockout or tagout device (hasp) may be used.

If lockout is used, a single lock may be used to lockout the machine or equipment with the key being placed in a lockout box or cabinet, which allows the use of multiple locks to secure it. Each employee will then use his or her own lock to secure the box or cabinet. As each person no longer needs to maintain his or her lockout protection that person will remove his or her lock from the box or cabinet.

Appendix 4-B

Lockout/Tagout Equipment and Energy Source Survey Form

Types of Hazardous Energy at This Facility:			
Facility Name:			
	Yes	No	General Description and Location
Electrical:			
Pneumatic:			
Hydraulic:			
Stored:			

Electrical Equipment			
Equipment Name	**Service Panel Disconnect**	**Identification Number**	**Lockout/Tagout Device Needed**

Comments:

Pneumatic Equipment			
Equipment Name	**Service Panel Disconnect**	**Identification Number**	**Lockout/Tagout Device Needed**
Hydraulic Equipment			
Equipment Name	**Service Panel Disconnect**	**Identification Number**	**Lockout/Tagout Device Needed**

Comments:

Stored Energy Equipment			
Type of Equipment	**Isolation Point**	**Auxiliary Device Needed**	**Lockout/Tagout Device Needed**

Comments:

Appendix 4-C Tagout System Justification Form

Location: _____

Full Employee Protection: If you cannot indicate a "yes" answer to all of the following items, do not use the tagout system.

Yes	No		Yes	No	
☐	☐	Tagout system provides full employee protection	☐	☐	Tagout system provides equivalent safety to the lockout program.
☐	☐	Tagout devices placed at the same location where the lockout device would have been placed	☐	☐	Employees fully comply with all tagout-related provisions.

Additional Safety Measures: Check measure(s) used to provide equivalent employee protection.

- ☐ Isolating circuit element removal
- ☐ Control switches blocked
- ☐ Extra disconnecting device opened
- ☐ Removal of valve handles
- ☐ Other _____

Tagout Devices: The tagout device must satisfy each of the following criterion:

- ☐ Singularly identified
- ☐ Only devices used for controlling energy
- ☐ Not used for other purposes
- ☐ Durable/Substantial
- ☐ Withstand environment
- ☐ Non-reusable
- ☐ Attachable by hand
- ☐ Self-locking
- ☐ Indicates employee identity
- ☐ Exposure does not cause deterioration
- ☐ Does not deteriorate in corrosive environment
- ☐ Standardized
- ☐ Color
- ☐ Shape and Size
- ☐ Print and Format
- ☐ Minimum unlocking strength of no less than 50 pounds.
- ☐ Equivalent to a one-piece, all environment-tolerant, nylon cable tie

Warning: The tagout device must:

- ☐ Warn against hazardous conditions
- ☐ Include Do Not Start, Open, Close, Energize, Operate, etc.

Tag Limitations: Employees should be trained to know that:

- ☐ Tags are warning devices
- ☐ Tags do not provide physical restraint
- ☐ Tags must never be removed without authorization
- ☐ Tags may evoke false sense of security
- ☐ Tags are part of the overall security
- ☐ Tags must be securely attached
- ☐ Tags must never be bypassed, ignored, or defeated

Employee Training on Lockout/Tagout:

Dates: Location:

Description:

Reason(s) For Using Tagout System:

How Equivalent Employee Protection Provided:

Other Comments:

Conducted by:	Date:	Authorized By:	Date:

Chapter 5 Personal Protective Equipment

5.1 Purpose

To provide guidance for Washington State Department of Transportation (WSDOT) employees in minimizing exposure to work hazards.

5.2 Scope and Applicability

The use of personal protective equipment (PPE) to reduce injuries is an important component of WSDOT's safety program. PPE includes all clothing and accessories designed to create a barrier against workplace hazards. PPE should be considered a means of minimizing the hazards after engineering controls, administrative controls, and safe work practices have been implemented.

This chapter has been developed for Personal Protective Equipment (PPE) using the referenced Washington Administrative Code (WAC) chapters as guidance and apply to all employees exposed to hazards that require the use of PPE.

5.3 Reference

- WAC 296-800-160 *Personal protective equipment (PPE)*
- WAC 296-155 *Part C Personal protective and life saving equipment*
- WAC 296-155 *Part E Signaling and flaggers*
- WAC 296-45 *Electrical workers*

5.4 General Responsibilities

Are as assigned in Chapter 1 as well as the items below specific to personal protective equipment policy.

It is the responsibility of each manager, supervisor, and employee to ensure implementation of the department policy on PPE. It is the responsibility of the department to provide and maintain equipment that is adequate and is safe in design and construction.

5.4-1 Executive, Senior, and Mid-Level Management

- Ensure that site managers, supervisors, and other site personnel have the required experience to perform assessments and identify all PPE required at sites under their control.
- Provide or replace PPE as required to perform work in compliance with this policy.
- Perform periodic audits of employee use and training related to PPE.
- Ensure that adequate funds are available and budgeted for the purchase of PPE in their areas.
- Identify the employees affected by this policy.
- Obtain and coordinate the required training for the affected employees.
- Ensure compliance with PPE policies.

5.4-2 Supervisors

- Assess the hazards and implement best control method according to the Priority of Hazard Control (Appendix 5-A).
- Communicate the compliance expectations to employees and address noncompliance.
- Communicate the appropriate needs to managers and/or employees.
- Ensure that employees are properly trained in PPE use, care, and maintenance before using PPE and that they are worn properly.
- Ensure that no employee is allowed in a work environment without the PPE consistent with the hazard recognized.
- Provide appropriate PPE and related training to employees.

5.4-3 Employees

- Comply with all applicable PPE policies.
- Identify and report any hazards which may require PPE.
- Keep all assigned PPE readily available, in good working order, wear them when appropriate, and have them replaced when they become worn or unsafe.

5.4-4 Safety Organization

Region Safety Offices shall be responsible for the following PPE Program activities:

- Provide prompt assistance to managers, supervisors, or others as applicable on any matter concerning this safety procedure.
- Assist in developing or securing required training.
- Provide assistance in performing hazard assessments.
- Conduct hazard assessments and secure training for other designated employees to perform hazard assessments.
- Work with Purchasing and Supply Officers to ensure that all newly purchased PPE comply with current regulations and meet work place needs; and provide consultative and audit assistance to ensure effective implementation of this safety procedure.

5.5 Policy

5.5-1 General

It is the policy of the department to provide a place of employment free from recognized hazards that cause or are likely to cause death or serious physical harm to employees. PPE shall be specified, appropriate to the hazard, and used after engineering practices, administrative practices, or other safe work practices have been considered to control the hazard(s). Please refer to Priority of Hazard Control Appendix 5-A. Proper training regarding PPE will also be conducted prior to its use. These measures will be implemented to minimize those hazards to ensure the safety of employees.

5.5-2 Hazard Assessment and Control

A PPE hazard assessment will be performed in the workplace as part of the Pre-Activity Safety Plan (PASP) to identify all hazards that would necessitate control, which may include the use of PPE. Some items to consider are:

- Environment condition
- Tools and equipment
- Associated hazards and their method of control
- Processes or equipment that could cause crushing hazards to the feet
- Specific controls shall be assigned to each identified hazard according to the Priority of Hazard Control (Appendix 5-A).

  Note: PPE alone should not be relied on to provide protection for our employees. PPE should be used after all other reasonable means of reducing hazards have been carried out. Identifying hazards in your workplace should be built into your regular routines. You should take active steps to get rid of all identified hazards. For example, you can:

  - Consider other ways to get hazardous jobs done.
  - Reduce hazardous materials or processes
  - Apply engineering controls to reduce or eliminate hazards

5.5-3 Head Protection

Hard hats protect employees from head injuries caused by falling or flying objects, bump hazards in close or confined spaces, and electrical shocks or burns. The hard hat should be easily adjustable so employees will wear the hat properly.

Department hard hats shall meet the specifications contained in American National Standards (ANSI Z89.1- 1997 –2003-2009), or later revisions.

Department hard hats are designated either as Class G (general) or Class E (electrical) hard hats. Class G hard hats provide protection against impact of falling objects and to lessen the risk of being exposed to low-voltage electrical conductors. Helmets are tested at 2200 volts of electrical charge in order to be certified.

Class E hard hats are also intended to decrease the impact of falling objects, but these helmets reduce the risk of coming into contact with high-voltages electrical conductors. They are tested at 20,000 volts of electrical charge in order to receive certification.

All department hard hats should be disposed of whenever the helmet has received impact or shows signs of deterioration.

All department employees are required to wear a hard hat in accordance with this section and with WAC 296-155-205, WAC 296-155-305, and WAC 296 800-160.

All employees shall wear a hard hat on any construction site whenever there is a potential exposure to danger of flying or falling objects to persons working or occupying the area. Examples include:

- Asphalt plant, crushers, blasting areas, and asphalt-grinding operations.
- Construction of bridges, structures, retaining walls, etc.

- Overhead work such as in a trench, rock-fall areas, installing signs, installing poles, work under bridges, electrical conductors, etc.
- In the proximity of equipment operating arms, booms, buckets, etc.
- In the proximity of operating cranes, pile drivers, drilling.
- Working as a flagger.
- Brush cutting work, dangerous tree work, and other logging operations.
- Any designated hard hat area.

The hard hat should be high-visibility and marked with at least 12 square inches of retro-reflective tape applied to provide 360 degrees of visibility at night.

Supervisors have the authority to require employees to wear hard hats for safety considerations.

Employees must have their hard hat on site and readily available when work conditions require their use, per WAC 296-155-205(2).

Other acceptable head wear:

- Employees performing work activities, which do not require use of a hard hat may wear other types of head wear. This head wear must not impair visibility or otherwise create a safety hazard.
- The regions may develop criteria or limitations on types of acceptable alternate head wear, or messages which may or may not be displayed on them.

5.5-4 Eye and Face Protection

All department employees must use appropriate eye and face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation.

There are three basic types of eye and face protection used at WSDOT which meet the American National Standards Institute (ANSI) Z87.1, (Z87+) and/or CSA Z94.3.

They are:

- Safety glasses
- Goggles
- Face shields

Eye and face protection devices should protect against the intended hazard and be:

- Fitted properly
- Durable
- Capable of being disinfected
- Easy to clean
- In good repair

The eye and face protection required will depend upon the potential hazards.

As an addition to PPE, special eye wear for welders and wearers of full-face mask respirators may be provided by the department on a case-by-case basis as determined by the safety manager, manager, supervisor and employee.

5.5-4.1 Allowance Payable to Designated Permanent Employees for Prescription Safety Glasses

A permanent department employee that wears prescription glasses and is exposed to eye hazards may elect to purchase and wear prescription safety glasses during the course of regular duties. The employee is eligible for a reimbursement allowance of up to $75 per biennium to help offset the purchase cost of prescription safety glasses.

5.5-4.1.1 Procedure

Employee Provides Receipt – Employees must provide their supervisor with proof of purchase (receipt) of prescription safety glasses that meets the specified standards to request reimbursement (i.e., must have ANSI Z87.1, (Z87+) and/or CSA Z94.3 standards.

Supervisor Reviews and Approves Reimbursement – The supervisor ensures that any employee requesting reimbursement must wear approved prescription safety glasses while engaged in their regular duties and when, in the opinion of the Appointing Authority or designee, performing other duties that require prescription safety glasses. Supervisors may grant exceptions for those times when the employee is not performing fieldwork, such as meetings or training sessions.

The supervisor makes a copy of the receipt and indicates they have verified the PPE meets the required standard for reimbursement on the Invoice Voucher, DOT Form 134-139 (see Appendix 5-C for an example of recommended text for verification). The receipt is then attached to the Invoice Voucher and submitted to the person with delegated authority to authorize/approve payments from their organization's budget for processing.

Disputes – Any disputes concerning the wearing of prescription safety glasses, eligibility for the allowance, safety glasses quality, or exceptions to this procedure are to be referred to the Appointing Authority or designee.

5.5-5 Ear Protection

Exposure to high noise levels can cause hearing loss or impairment. There is no cure for noise-induced hearing loss, so the prevention of excessive noise exposure is required to avoid hearing damage.

Types of ear protection devices used in the department include:

- Ear plugs
- Ear muffs

There are a variety of earplugs available from WSDOT. For information on the department's Hearing Conservation Program, see Chapter 9.

5.5-6 Hand and Arm Protection

Hand and arm injuries are a significant component of workplace injuries. Hands and fingers are used to accomplish nearly all workplace activities and must be protected from injury. The types of hand and arm protective wear used in the department include:

- Cut-resistant
- High and low temperature
- Splinter and abrasion resistant
- Electrical protection
- Repetitive motion and vibration
- Chemical resistant
- Impervious barrier/Bloodborne Pathogens

The required hand and arm protective wear will be appropriate to the hazard of the activity being performed.

Appendix 5-B presents details on the types of hand and arm protective wear used in department operations. Also, see WAC 296-45-25505 for further details on electrical protection gloves and protective equipment.

5.5-7 Foot Protection

Foot protection requirements are outlined in WAC 296-155-212. In addition, safety-toe requirements are outlined in WAC 296-800-16060.

Protective footwear must comply with any of the following consensus standards established by the Occupational Safety and Health Act (OSHA)

- American Society for Testing Materials (ASTM)
- Canadian Standards Association CAN/CSA

Employees are to use approved footwear protection, whose job duties present a risk of foot injury.

5.5-7.1 Definitions

5.5-7.1.1 Approved Safety Footwear

Approved safety footwear, is a boot made up of leather or equally firm material, with the sole and heel designed and constructed for slip resistance, and extend above the ankle for over the ankle support. Over the ankle rubber or water resistant boots are acceptable when working in water or wet conditions.

Footwear that has deteriorated to the point where it does not provide adequate protection is not approved.

5.5-7.1.2 Approved Safety-Toe Footwear

In addition to meeting the definition of a boot in Section 5.5-7.1.1, safety-toe boots have a built in steel or composite protection for the toe areas. A safety-toe boot must have a label attached indicating it meets the specifications of ASTM F2413, CSA.

Approved safety-toe footwear is approved safety footwear that also is a boot that extends above the ankle, has a defined heel, slip resistant sole, a puncture resistant shank, and built in steel or composite protection for the toe areas.

Approved safety-toe footwear is used for work activities that present exposure to foot injury from heavy objects or equipment.

Approved safety-toe footwear must have a label attached indicating it meets the specifications of ASTM F2413, CSA.

5.5-7.2 Electrical Hazard

There is an additional requirement for foot protection for employees exposed to hazards of accidental contact with live electrical circuits, electronically energized conductors, parts, or apparatus. These employees must wear footwear constructed with electrical hazard protective soles and heels, indicated on the footwear label with the code EH.

5.5-7.3 Footwear Rules

Managers and Supervisors Responsible for Compliance – Managers and supervisors are responsible for ensuring employees are aware of, and follow the requirements of this chapter. Employees at Washington State Ferries (WSF) shall be covered by the existing WSF Safety Management System relative to foot protection.

All Employees are required to wear safety-toe footwear where there is danger of foot injury from falling objects, rolling objects, piercing/cutting injuries, or electrical hazards or as determined by PPE hazard assessment as outlined in Section 5.5-2 Hazard Assessment Control.

Visiting Work Sites With Foot Hazards – Employees will wear the footwear PPE required for the work areas they are visiting.

5.5-7.3.1 Allowance Payable to Designated Employees for Safety Toe Footwear

When foot protection described in the WAC and in this policy is required and the safety-toe footwear meets the requirements of this policy, the wearer is eligible for a reimbursement allowance of up to $200 per biennium, to help offset the purchase or repair cost of approved safety-toe footwear.

5.5-7.3.2 Procedure

Employees must provide their supervisor with proof of purchase (receipt) of safety-toe footwear that meets the specified standards to request reimbursement (i.e., must have ASTM F2413, CSA.

Employees must provide their supervisor with a receipt for rebuilt safety-toe footwear and proof that footwear meets the ASTM 2413, CSA. (i.e., written documentation or a new stamp in the rebuilt footwear) to request reimbursement.

The supervisor makes a copy of the receipt and indicates they have verified the PPE meets the required standard for reimbursement on the Invoice Voucher, DOT Form 134-139 (see Appendix 5-C for an example of recommended text for verification). The receipt is then attached to the Invoice Voucher and submitted to the person with delegated authority to authorize/approve payments from their organization's budget for processing.

5.5-7.3.3 Disputes

Any disputes concerning the wearing of safety footwear or safety-toe footwear, eligibility for the allowance, footwear quality, or exceptions to this procedure are to be referred to the Appointing Authority or designee.

5.5-8 High-Visibility Clothing

High-visibility clothing is required on all WSDOT construction and maintenance operations. The high-visibility clothing will provide increased protection to workers and motorists by providing greater worker visibility at a distance, particularly during high-risk nighttime operations. All high visibility clothing must meet the ANSI/ISEA 107-2004 (or later revision) standards and must be worn as outermost garment.

Care should be taken to ensure high-visibility garments are in contrast with traffic devices and equipment. The Appointing Authority and/or Region Safety Manager shall have final approval authority over the "High-Visibility" T-shirt itself and its use by WSDOT employees in their region.

Workers on foot in a highway right of way (fence line to fence line, landscaped areas) and other areas exposed to vehicular traffic must wear the following:

- **Daytime Operations** – Flaggers shall wear an ANSI Class 2 or 3 high-visibility vest or jacket. A white or yellow hard hat marked with at least 12 square inches of retro reflective material applied to provide 360 degrees of visibility must also be worn.

  Non-flagger WSDOT workers shall wear either an ANSI Class 2 or 3 high visibility garment.
- **Nighttime, Inclement Weather, and Limited Visibility Operations** – During nighttime and other low-visibility conditions, flaggers shall wear an ANSI Class 3 ensemble consisting of an ANSI Class 2 or 3 upper garment and an ANSI Class E lower garment. A white or yellow hard hat marked with at least 12 square inches of retro-reflective material applied to provide 360 degrees of visibility must also be worn.

  During nighttime operations, non-flagger WSDOT workers shall wear either an ANSI Class 2 or 3 garment with either white coveralls or ANSI Class E garment. When rain gear is worn, it shall be ANSI Class 3 or have a required high-visibility garment worn as outermost layer.
- **Garment Maintenance** – Retro-reflective vests, hard hats, white coveralls, rain gear, and other high visibility apparel shall be maintained in a neat, clean, and presentable condition. High-visibility garments must be replaced periodically because of increased fading of the high-visibility colors. High-visibility garments shall be periodically compared to the High-Visibility Check Station to determine if the reflectivity has been compromised. The supervisor or Region Safety Manager has final authority for replacement of high visibility garments.

5.5-9 Body Protection

Protective clothing is used to protect the body from potential exposures associated with work.

Personal protective vests, aprons, coats, pants, coveralls, and suits are available and shall be worn consistent with the workplace hazard. Protective clothing shall include, but not be limited to: cooling vests and suits, foul weather gear, knife and saw cutting protection, high-visibility apparel, flotation vests, and welding and high heat protective clothing.

The department will require the use of protective clothing for those employees who are exposed to body hazards. Examples include: employees in laboratories, welders, employees in special processing areas or employees exposed to other body hazards.

5.5-10 Respiratory Protection

All employees wearing respirators must be medically approved, trained, and successfully fit tested annually.

When engineering controls are not feasible, appropriate respiratory protection must be used.

No employee shall wear a respirator until he or she has completed the respiratory training. Respirator training is arranged through the Region and Headquarters Safety Offices.

Refer to the Respiratory Protection Program Chapter 8 for further details.

5.5-11 Fall Protection

When employees are exposed to a hazard of falling from a location of four feet or more in height, supervisors shall ensure that fall prevention, restraint, or positioning device systems are provided and installed. Fall arrest systems may be utilized at elevations of ten feet or greater. Fall prevention training is required for employees working at heights, including training in the use of fall protection equipment.

Refer to the Fall Protection Chapter 11 for further details.

5.5-12 PPE Use and Maintenance

All PPE must be kept clean and in reliable condition. Maintenance and cleaning of PPE shall be in accordance with PPE manufacturer's recommendations. PPE that is damaged or deemed to be unsafe must be replaced.

5.6 Training

Training must be provided in the use of all PPE. Affected employees will be trained in:

- Hazard awareness
- When PPE is necessary
- How to don, remove, adjust, and wear PPE
- Limitations of PPE
- Proper care, storage, maintenance and removal from service of PPE

Refresher training will be given when changes in work place conditions, type of PPE or work habits show need. All employees must be trained before the specific PPE is put into use. No employee shall be at risk at any time without knowledge of the proper PPE to reduce the risk. Additionally, supervisors will be trained in conducting hazard assessments to ensure the appropriate PPE is matched to the hazard.

5.7 Record keeping

Records on PPE training will be maintained in the Learning Management System (LMS), Region databases, safety meeting reports, etc.

Written documentation is required to show that each employee using PPE has received and understood the required training. This documentation must include:

- Name of each employee
- Date(s) of training
- Subject of the training

Documentation may be stored on a computer as long as it is available to safety and health personnel from the Department of Labor and Industries.

5.8 Appendices

Appendix 5-A	Priority of Hazard Control
Appendix 5-B	Hand and Arm Protective Wear
Appendix 5-C	Invoice Voucher
Appendix 5-D	Job Classes in Risk Class 5307

Appendix 5-A Priority of Hazard Control

From Most Effective to Least Effective

Elimination or Substitution

- Substitute safe materials for hazardous ones
- Remove employee from hazard
- Automate material handling
- Use mechanical advantage
- Reduce energy; speed, voltage, sound level, force
- Change process to eliminate hazard noise
- Perform tasks at ground level

Engineering Controls

- Ventilation systems
- Automatic shut offs
- Failsafe devices
- Back up cameras
- Mirrors
- Machine guarding
- Sound enclosures
- Circuit breakers
- Platforms and guard railing
- Lift tables, conveyors

Training and Administrative Controls

- Safe job procedures
- Rotation of workers
- Equipment inspections
- Worker training
- Lockout
- Computer warnings
- Odors added to hazardous odorless gaseous materials such as natural gas
- Backup alarms
- Labels signs

Personal Protective Equipment

- Glasses
- Ear plugs
- Face shields
- Fall arrest equipment
- Gloves
- Seat belts
- Steel-toed safety footwear
- Respirators
- High visibility clothing
- Hard hats

Cut-Resistant – This type of glove is used where protection against cuts is required. Plastic dots can be adhered to the metal mesh to facilitate gripping. Another type of cut-resistant glove combines stainless steel with cut-resistant fiber wrapped with nylon fibers for enhanced flexibility and surface softness. These materials resist knives, glass, sheet metal, sharp edges, and other cutting surfaces. They are cut-resistant but not cut-proof or puncture proof. These materials must not be subjected to high-speed knives or serrated blades.

High and Low Temperatures – Gloves, mittens, and arm and sleeve protectors are available in a wide variety of materials. Leather is a common welder's glove material. Heavy-duty terry cloth gloves can provide heat protection of up to 350°F. For extreme high and low temperature protection, specially processed silica fiber cloth (non-asbestos) can withstand temperatures of from -100°F to 1100°F. Do not use asbestos gloves.

Splinters, Cuts, Abrasion, and General Use – Lightweight pigskin, goatskin, or calfskin leather gloves enable dexterity and grip while offering some resistance to cuts and abrasions. Other materials which offer similar protection include laminated nitrile coating on stretch fabric, vinyl, rubber coated, or impregnated fabrics.

Electrical Protection – Rubber devices that protect against electrical shock must meet the ANSI J6 series standards. Rubber insulating gloves must meet ANSI J6.6. These gloves are available to meet different voltage exposures. Lightweight low voltage gloves are for use on voltages of under 1000V. Gloves for use on high voltage are of thicker material for the dielectric strength. As the voltage rating increases, so does the glove weight. Leather glove protectors are available to protect rubber gloves against punctures and abrasion. Employees who use this type of equipment must be qualified (see 29 CFR 1910.331 [a]). Rubber gloves must be visually inspected and an "air" test must be performed before they are used.

Repetitive Motion and Vibration – Protective gear is available to minimize repetitive hand and wrist motions. One glove has openings for the fingers but offers palm protection. These anti-vibration gloves may be worn under regular work gloves.

Chemicals – Glove materials used to protect against chemicals include natural rubber, neoprene, polyvinyl chloride, polyvinyl alcohol, and nitrile. Chemical degradation guides are available to determine the general suitability of various glove materials to exposures of specific chemicals. Many operational variables may affect the performance of chemical protection gloves, including chemical combinations and concentrations, temperature, and exposure time. Safety and loss control will assist managers and supervisors in determining the suitability of the glove material for the job.

Washington State Department of Transportation

Invoice Voucher

MINORITY BUSINESSES MARK BOX(ES) IF APPROPRIATE	
M	%
W	%
E	

VENDOR OR CLAIMANT (WARRANT TO BE PAYABLE TO)	VENDOR NO.	VENDOR'S CERTIFICATE. I hereby certify under penalty of perjury that the items and totals listed herein are proper charges for materials, merchandise or services furnished to the State of Washington, and that all goods furnished and / or services rendered have been provided without discrimation on the grounds of race, creed, color, natural origin, sex or age. BY (SIGNATURE IN INK)
FEDERAL I.D. NO. OR SOCIAL SECURITY NO. (FOR REPORTING PERSONAL SVCS. CONTRACT PAYMENT TO IRS)		TITLE DATE

INSTRUCTIONS TO VENDOR OR CLAIMANT: Show complete detail for each item below.

DATE	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT

AGREEMENTS	INVOICE				
AUTHORIZATION	DESCRIPTION	DATE	GROSS TOTAL	DISCOUNT	NET TOTAL

ACCOUNTING CLASSIFICATION

JOB NUMBER	WORK OP	ACCOUNT OBJ	ACCOUNT SUB OBJ	ORG. NUMBER	CONTROL SECTION EQUIPMENT NUMBER ORDER NUMBER	FEDERAL NON-PARTICIPATING	NET AMOUNT
					TOTAL →		

SIGNATURE OF APPROVING AUTHORITY	DATE	RECEIVING VERIFICATION (SIGNATURE)	DATE RECEIVED
CHECKED AND APPROVED FOR PROCESSING BY	DATE	WARRANT NUMBER	VOUCHER NUMBER

DOT Form 134-139 EF
Revised 11/09

Appendix 5-D Vacant

Chapter 6 Accident Reporting and Review

6.1 Purpose

To provide guidance for Washington State Department of Transportation (WSDOT) employees in the reporting, investigating, and reviewing of all employee occupational injuries and illnesses, motor vehicle/vessel accidents, and property/equipment damage accidents.

6.2 Scope and Applicability

These procedures are not intended to address disciplinary action nor are they intended to determine eligibility regarding department employee recognition programs. Employee fault and any subsequent actions or determinations resulting from an accident are separate from this accident reporting and review process and come under the jurisdiction of Executive Management, Appointing Authorities, and applicable Human Resources policy and contractual obligations.

This chapter has been developed for accident reporting and review using the referenced Washington Administrative Code (WAC) chapter as guidance and apply to all department employees.

6.3 References

WSDOT accident reporting and review is administered in accordance with the following references:

- WAC 296-27 *Recordkeeping and reporting*
  http://apps.leg.wa.gov/wac/default.aspx?dispo=true&cite=296-27
- Health Insurance Portability and Accountability Act (HIPAA)
  www.hhs.gov/ocr/hipaa

6.4 Definitions

Accident Investigator – The supervisor or person in charge of the involved employee who performs the accident investigation. Depending on the seriousness and complexity of the accident, safety staff at the region, Ferries Division or Headquarters Safety and Health Services may assist in or conduct the accident investigation. In the case of a fatality or multiple injuries, the Department of Labor and Industries will conduct an additional parallel investigation.

Accident Reviewer – The next-level manager or other manager to whom the accident investigator is a direct report. The reviewer is typically in the same organization as the involved employee and the investigator. May also be specifically appointed by the Region Administrator.

Injury or Illness – An abnormal condition or disorder. Injuries include cases such as, but not limited to, a cut, fracture, sprain, or amputation. Illnesses include both acute and chronic illnesses, such as, but not limited to, a skin disease, respiratory disorder, or poisoning, and typically treated by a Licensed Health Care Professional (LHCP).

Injury, Minor – An injury that is not OSHA recordable as defined by WAC 296-27-01101 and did not result in care by an (LHCP).

Near-Miss/Close Call – An event that, under slightly different circumstances, could have resulted in personal harm or property damage.

OSHA Recordable Accident – (***Note:*** ALL accidents are reportable. OSHA recordable accidents are a subset of reportable accidents.) All work-related deaths and illnesses which result in loss of consciousness, or occupational injuries resulting in restriction of work or motion, transfer to another job, lost workdays, or medical treatment beyond first-aid.

Note: The record-keeping and reporting requirements of this chapter are separate and distinct from the record-keeping and reporting requirements under Title 51 RCW (the Industrial Insurance Act).

Preventative Action Plan (PAP) – A written preventative plan of action prepared by the investigator/supervisor outlining the steps to be taken to correct a deficiency in the system, including standard operating procedures, training, or equipment for accident prevention purposes. The PAP includes the plan objective, the action steps to be taken, who is responsible to take the steps, and the proposed or actual completion date. The accident reviewer should sign the plan. The PAP must include systemic issues that may have contributed to the accident and the proposed changes to prevent recurrence. Examples of these are:

- Modifications or additions to training
- Use of different tools and/or equipment
- Allowing more time to complete the assignment
- Modifications to the Pre-Activity Safety Plan
- Clearer direction
- Actions and support by others

Reportable Accident – All work-related accidents that result in deaths, injuries, illnesses; incidents or near-misses (see definition above for OSHA Recordable Accident); accidents involving state/third party motor vehicle/ vessel, property and equipment. All Transportation Equipment Fund (TEF) vehicles and equipment damage will be reported. For other property or non- inventoried equipment, only accidents resulting in damages estimated at $300 or greater will be reported. All reportable accidents will be documented using Accident/Incident Report DOT Form 750-100 EF.

Safety Organization – Headquarters Safety and Health Office staff, Region Safety Office staff.

Serious Accidents or Injuries – An event that results in employee being struck in a work zone, admitted to medical facility, fatality, or has likelihood of becoming a high profile incident.

6.5 General Responsibilities

As assigned in Chapter 1 as well as the items below specific to accident reporting and review policy.

6.5-1 Executive, Senior, and Mid-Level Management

- Notify other appropriate managers of accident information.
- Inform supervisors of their responsibility to report and investigate accidents in accordance with this chapter.
- Appoint another supervisor to investigate the accident if the immediate supervisor is not available.
- Review the Employee's and Supervisor's Sections of the Accident/Incident Report DOT Form 750-100 EF for completeness in accordance with Section 6.2 of this chapter.
- Interview the employee and supervisor about the report as necessary.
- Ensure that preventive actions are taken to prevent similar accidents.

Preventive action must consider systemic issues that may have contributed to the accident.

- Complete the Reviewer's Section on DOT Form 750-100 EF.
- Forward the completed report to the Region Safety Office and Equipment Superintendent if equipment damage is involved including the final PAP within 10 working days after receiving the Accident/Incident Report from the supervisor.
- Manager will ensure that the supervisor of injured employee receives appropriate support as needed, i.e., job site coverage, and document completion.
- Review of accidents reported and subsequent review to ensure the proper procedures are followed.
- Appointing Authority is to meet with immediate supervisor of involved employee within three days of reportable accident.
- Determine if Preventative Action Plan (PAP) is appropriate; if appropriate controls were utilized; and if lessons learned should be communicated to others in the department.

6.5-2 Immediate Supervisor of Employee

- Ensure that the injured employee is transported to a medical facility.
- Accompany or meet the injured employee at a medical facility.
- Notify the next-level manager.
- Investigate accidents, as described in Section 6.1, and complete the Investigator's Section of the accident report, including the Preventive Action Plan (PAP); forward the form to the next level manager within three workdays.
- Immediately notify the Region Safety Office of a work-related accident resulting in:
  - A death
  - A probable death
  - One or more employees being admitted to a hospital

- Secure scene of accident resulting in death, probable death, or hospitalization for purposes of investigation.

Other occupational injury accidents will be reported within 24 hours after the accident. Incidents are to be reported to the Region Safety Office.

- Notify the Region Safety Office of reportable accidents involving state/ third party motor vehicle/vessel, property, and equipment as soon as practical after the accident or during the next workday.
- Advise the involved employee on how to report the accident. If the employee is unavailable to complete the Employee's Section of the Accident/Incident Report, the immediate supervisor is responsible for obtaining the information from the involved employee and/or other witnesses and entering the information onto the form.
- Ensure Employee's and Supervisor's Sections of the Accident/Incident Report DOT Form 750-100 EF, have been filled out completely and copy of Pre-Activity Safety Plan (PASP) is attached.
- Ensure that injured employee obtains required documents from medical provider. See Section 5.3.
- Take immediate short-term action steps to safeguard department staff and assets;
- Meet with their Appointing Authority within three workdays of the injury accident.

6.5-3 Employee

- Immediately seek first-aid or medical care in the event of an injury.
- Immediately notify the Traffic Management Center (TMC) according to region policy concerning reportable accidents (typically involving state/third party motor vehicle/vessel, property, and equipment).
- Notify your immediate supervisor of all reportable accidents and near misses.
- Complete the Employee Section of the Accident/Incident Report DOT Form 750-100 EF, according to the following timetables and forward it to their supervisors.
  - Injury Accidents – Within 24 hours of the accident or the next scheduled workday.
  - Near Misses or Close Calls – Within 24 hours of the incident. Only blocks 1-18 of the Accident/Incident Report DOT Form 750-100 EF, are required to be completed.
  - Injuries Including Minor Injuries – Within 24 hours of the incident. Blocks 1-26 are required to be completed in the Accident/Incident Report DOT Form 750-100 EF.
- Notify the immediate supervisor of reportable accidents involving state/third party motor vehicle/vessel, property, and equipment as soon as practical after the accident or during the next workday. Blocks 1-26 and 69-157 of the Accident/ Incident Report DOT Form 750-100 EF, are required to be completed.

- Secure from medical provider on initial visit for work related injury or illness;
  - WSDOT Activity Prescription Form (DOT Form 750-031 EF) or Insurer Activity Prescription Form (APF) (L&I form number F242-385-000).
  - Labor and Industries Claim Number.
- Provide accident prevention information about the accident to the Investigator.
- Notify your immediate supervisor of non-occupational injury.

6.5-4 Safety Organization

6.5-4.1 Region Safety Office

- Assist in developing or securing training of supervisors on conducting accident investigations.
- Assist in developing or securing training for supervisors and employees on the accident reporting process.
- Contact the nearest office of the Department of Labor and Industries in person or by phone at 1-800-4BE-SAFE within eight hours of a work-related incident or accident resulting in:
  - A death
  - A probable death
  - One or more employees being admitted to a hospital
- Notify management and the Headquarters Safety and Health Services Office of an accident as follows:
  - Serious injuries requiring hospitalization: within 24 hours
  - Fatalities: immediately
  - Incidents that could have potential public relations impact: within 24 hours
- Assist supervisors in conducting, or personally conduct accident investigations as necessary.
- Receive and review the completed accident report for accuracy and completeness and forward the reports involving vehicles to Headquarters Safety and Health Services Office.
- Enter accident data into the statewide or Ferries database, as appropriate.
- Maintain region accident records.
- Review, store, and analyze region accident information for trends and causal factors.
- Prepare periodic region reports for managers.
- Disseminate region accident trend data and charts to executives.
- Communicate lessons learned.

6.5-4.2 Headquarters Safety and Health Services Office

- Assist accident investigators, as necessary.
- Notify Executive Management and Communications Office of serious worker accidents.
- Analyze statewide accident information.
- Maintain the accident reporting and review system forms and database.
- Prepare periodic statewide reports for managers.
- Disseminate statewide accident trend data and charts to executives.

6.6 Policy

- Work with the regions and Ferries Division to identify, develop, and execute actions for long-term accident prevention strategies with department-wide impact.
- Forward accident reports involving vehicles to OFM Risk Management.

6.6-1 Investigating Accidents

Any equipment involved in an accident resulting in a fatality or hospitalization shall not be moved other than to prevent further incidents and injuries.

The Accident Investigator will receive the Employee Section of the Accident/ Incident Report from the involved employee and gather additional information about the accident, assist in determining what their organization will do to prevent a similar occurrence, and fill out the Supervisor's Section of the Accident/Incident Report.

The accident investigation is conducted to:

- Determine the pertinent facts surrounding the accident.
- Determine the contributing factors to the accident.
- Develop controls to minimize or eliminate the cause.
- Define trends.
- Demonstrate agency concern for reducing injury and property damage accidents.

The Investigator shall interview the involved employee and other witnesses to clarify, get additional information, and to develop an accident diagram for vehicle accidents, as appropriate.

If initial investigation suggests immediate short-term actions need to be taken to safeguard personnel or assets, they should be implemented.

The Accident Investigator:

- Determines the primary and contributing factors to the accident.
- Identifies the dates and steps in the PAP that are to be completed.

6.6-2 Accident Review

The Accident Reviewer ensures that the Employee and Supervisor Sections of the Accident/Incident Report are complete and that a thorough analysis of the accident was conducted as to the primary and contributing factors that led to the accident. If a PAP is needed, the Reviewer will ensure that PAP is reviewed, approved, and implemented. The Reviewer is also to report completion of the PAP to the Region or Ferries Division Safety Office. The appropriate Region or Ferries Division Safety Manager will provide a copy of the completed report to the involved employee and Accident Reviewer upon request.

6.6-3 Training

Accident reviewers, supervisors, and employees shall be trained on their roles and responsibilities related to the accident reporting and review process.

Because accident investigation is critical to determining root cause/s of the accident, those responsible for conducting accident investigations, primarily supervisors, shall be trained on conducting accident investigations. Accident reviewers, because they are responsible for the appropriateness of the accident investigation and the preventive action plans, also need to be trained on the process and the principles of accident prevention and hazard control to effectively perform quality control.

6.6-4 Recordkeeping

The official Safety and Health Files of department employees are maintained in Region Safety Offices. The official Safety and Health Files of Ferries Division employees are maintained in the Ferries Division Safety Office.

The Safety and Health Files contain accident and incident records, Labor and Industries claim information, and medical surveillance records. Recordkeeping must comply with the privacy requirements of the Health Information Portability and Accountability Act (HIPAA).

6-7 Appendices

Appendix 6-A	Accident/Incident Report
Appendix 6-B	Activity Prescription Form

To download a current copy of DOT Form 750-100, go to the Forms Management Web site: wwwi.wsdot.wa.gov/fasc/adminservices/forms/formfiles/WSDOT_forms

Washington State Department of Transportation

Accident / Incident Report

To Be Completed By Employee or Employee's Supervisor

[1] Employee Name (Last, First, MI) | [2] Phone Number | [3] Region

[4] Org Code | [5] Job Title | [6] Work Hours | [7] Work Days

[8] Date and Time of Incident | [9] Date of Report | [10] Date and Time Reported to Supervisor

[11] Supervisor's Name | [12] Phone Number

[13] Type of Workplace Incident (Check all that apply)

- ☐ State-Owned Property/Equipment
- ☐ Involving State Vehicle
- ☐ Involving POV on Official Business
- ☐ Involving Marine Vessel
- ☐ Non-State-Owned Property/Equipment
- ☐ Near Miss - Close Call (Complete Questions 1 thru 18)
- ☐ Injury, Minor (Not involving Licensed Healthcare Professional, complete 1 thru 26)
- ☐ Injury (Involving Licensed Healthcare Professional)
- ☐ Illness
- ☐ Fatality

[14] Describe in Detail the Incident and Work Activity (Attach additional documentation, if necessary)

[15] List any Witnesses and Phone Numbers

[16] Specific Location of Incident (e.g., SR / Milepost / Address, Vessel, etc.)

[17] Did Incident Occur Within a Workzone? ☐ Yes ☐ No

[18] Work Operation Code

[19] Type of Injury | [20] Specific Part of Body Injured

[21] Source of Injury | [22] Cause of Injury

[23] Medical Treatment (Check all that apply)

- ☐ On-site First Aid Only
- ☐ Treated at Clinic
- ☐ Treated at Emergency Room
- ☐ Treated via Outpatient Care
- ☐ Hospitalized
- ☐ Other
- ☐ None

L&I Claim # _____

[24] Report Completed By (Printed Name and Signature) | [25] Date | [26] Phone Number

If this incident involved any vehicles or equipment complete questions 69 through 157 (pages 4 and 5) of this form.

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To Be Completed By Employee's Supervisor

[27] Investigator's Name (Last, First, MI)	[28] Title	[29] Phone Number

[30] Date Investigation Began	[31] Date Investigation Completed	[32] Supervisor's Org Code

[33] Has the Employee Returned to Work?

☐ No - Anticipated Return Date _____

☐ Yes - Date Returned to Work _____

☐ Full Duty ☐ Restricted Duty - Anticipated Return to Full Duty _____

[34] Investigation Summary (Describe in detail - Who, What, Where, When?)
(Attach additional documentation, if necessary)

[35] Prior to Starting Work Was a Safety Briefing Conducted? (Check all that apply and attach)

☐ Pre Activity Safety Plan (PASP) ☐ Tailgate Talk ☐ Safety Briefing

[36] List the Personal Protective Equipment (PPE) in Use at the Time of the Incident. If NO PPE was in Use, Explain Why.
(Attach additional documentation, if necessary)

[37] Preventative Action Plan (PAP) - Include planned date of completion, and what operational and/or administrative changes to be made to prevent similar incidents. Outline the steps to be taken to correct a deficiency in standard operating procedures, training, or equipment for accident prevention purposes. See Chapter 6 of the Safety Manual.
(Attach additional documentation, if necessary)

[38] Is There any Equipment or Vehicle Damage?

☐ Yes ☐ No If Yes, Ensure that Questions 59 through 157 (pages 4 and 5) of this form are Completed.

[39] Investigated By (Printed Name and Signature)	[40] Date

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Incident Reviewer

[41] Date Report Reviewed	[42] Reviewer's Name (Last, First)	[43] Reviewer's Org Code
[44] Title		[45] Phone Number

[46] Reviewer Comments (e.g., preventative actions taken, compliance with safety standards, cause, etc.)
(Attach additional documentation, if necessary)

[47] Reviewer Signature [48] Date

Region Safety Manager

[49] Employee Risk Classification Code (Check One)

☐ 4902-ID Clerical/Administrative Office Personnel ☐ 5307-ID Employees – N.O.C.
☐ 5300-ID Administrative Field Personnel

[50] OSHA Recordable
☐ Yes ☐ No ☐ Not Sure

[52] Are all applicable sections of this report complete? ☐ Yes ☐ No

C5 Case Number _____

[51] If "Yes", Recordability Criteria (Check All that Apply)

☐ Death – § 1904.7(b)(2)
☐ Days away from work – § 1904.7(b)(3)
☐ Restricted work or transfer to another job – § 1904.7(b)(4)
☐ Medical treatment beyond first aid – § 1904.7(b)(5)
☐ Loss of consciousness – § 1904.7(b)(6)
☐ A significant injury or illness – § 1904.7(b)(7)
☐ Chiropractic
☐ Other

[53] Safety Manager (Printed Name and Signature) [54] Safety Manager Phone [55] Date

Equipment Technician

[56] Type of Vehicle and/or equipment involved (Check all that apply)

☐ State Owned ☐ POV on State Business ☐ Other (Describe) _____

[57] Vehicle/Equipment Make	[58] Body Type	[59] Model	[60] Year	[61] License Number

[62] Equipment Number (If State Owned)	[63] Estimated Cost of Repairs	[64] Charge Codes

[65] Repairs Chargeable To ☐ Maintenance ☐ Engineering ☐ Other _____

[66] Equipment Technician Notes – Include estimated repair costs, replacement equipment costs, and any mechanical factors that may be pertinent to the incident. (Attach additional documentation, if necessary)

[67] Equipment Technician (Printed Name and Signature) [68] Date

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If this incident involved any vehicles or equipment complete questions 69 through 157 (pages 4 and 5) of this form.

To Be Completed By Employee or Employee's Supervisor

Conditions

[69] Type of Road Surface	[70] Road Condition	[71] Weather Condition

[72] Warning Equipment in Use When the Incident Occurred (Check all that apply)
☐ Rotating Flashers ☐ Arrow Board ☐ TMA ☐ Other (Describe)

[73] Was Vehicle and/or Equipment Damage Caused by other Non-WSDOT Party? ☐ Yes ☐ No

Vehicle / Equipment No. 1

[74] Type of Vehicle and/or equipment involved (Check all that apply)
☐ State Owned ☐ POV on State Business ☐ Other (Describe)

[75] Vehicle/Equipment Make	[76] Body Type	[77] Model	[78] Year	[79] License Number

[80] Equipment Number (If State Owned)	[81] Estimated Cost of Repairs

[82] Operator's License No.	[83] Was vehicle being used on Official State Business? ☐ Yes ☐ No	[84] Have you had a previous accident while driving on state business? ☐ Yes ☐ No

[85] If Privately Owned, Name and Address of Owner

Other Vehicles / Equipment

[86] Owner Car No. 2	[87] Phone	[106] Owner Car No. 3	[107] Phone
[88] Address [89] City [90] Zip Code		[108] Address [109] City [110] Zip Code	
[91] Driver	[92] Phone	[111] Driver	[112] Phone
[93] Address [94] City [95] Zip Code		[113] Address [114] City [115] Zip Code	
[96] Driver's License No.	[97] Vehicle License No.	[116] Driver's License No.	[117] Vehicle License No.
[98] Vehicle Make [99] Year	[100] Body Type	[118] Vehicle Make [119] Year	[120] Body Type
[101] Name of Passengers		[121] Name of Passengers	
[102] Repair Cost	[103] Describe Damage	[122] Repair Cost	[123] Describe Damage
[104] Insurance Company	[105] Policy No.	[124] Insurance Company	[125] Policy No.

Other Property

[126] What was Damaged?

[127] Name and Address of Owner [128] City [129] Zip Code [130] Phone

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To Be Completed By Employee or Employee's Supervisor

Injured Parties

[131] Name and Address	[132] Extent of Injury	[133] Age	[134] Veh 1	[135] Veh 2	[136] Veh 3	[137] Peds
			☐	☐	☐	☐
			☐	☐	☐	☐
			☐	☐	☐	☐
			☐	☐	☐	☐

Witnesses

[138] Witness Name	[139] Address	[140] City	[141] Zip Code	[142] Phone

Officer

[143] Did Police Investigate? ☐ Yes ☐ No

[144] If Yes, Division (Sheriff, WSP, City)

[145] Was Citation Issued? ☐ Yes ☐ No

[146] If Yes, Issued To ☐ You ☐ Veh2 ☐ Veh3

[147] Have you filed a Motor Vehicle Collision Report (MVCR) as Required by Law? ☐ Yes ☐ No

[148] Type of Incident
☐ Front to Rear ☐ Head-On ☐ Sideswipe ☐ Bike - Car ☐ Hit Object
☐ Broadside ☐ Rollover ☐ Parked Car ☐ Pedestrian ☐ Other _____

Incident Information

	[149] No. 1, Your Vehicle	[150] No. 2, Other Party (Name)	[151] No. 3, Other Party (Name)
a. At what distance was danger first noticed?			
b. What warning signals were given?			
c. Obstruction to vision (weather and other)?			
d. Lights On? Wipers On? Windows Fogged?			

Equipment Incident Diagram and Damage

[152]
☐ Straight Road ☐ Hillcrest ☐ One Lane
☐ Curve - R or L ☐ Uphill ☐ One and One-Half Lane
☐ Level ☐ Downhill ☐ Two Lane or Four Lane

Show on diagram position of each car, vehicle or injured person, indicating by arrow direction of each.

Sidewalk

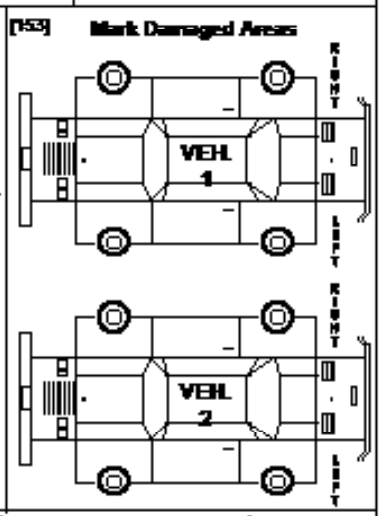
Street Center

Sidewalk

IMPORTANT
If sheet or view was obstructed in any way, indicate where and how; also indicate any sheet car or tracks and traffic signals or signs.

Indicate points of impact
N. E. S. W.

[153] Mark Damaged Areas



[154] Employee Signature	[155] Date	[156] Supervisor Signature	[157] Date

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Revised 05/2011

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Washington State Department of Transportation

WSDOT Activity Prescription (APF)

Medical Provider: WSDOT utilizes this form for both job related and non-job related conditions. Please complete thoroughly to inform WSDOT of employee's ability to work with or without restrictions.

Worker's Name	Visit Date:	Claim Number (if appropriate):
Health-Care Provider's Name (Printed)		Date of Injury

Released for Work (Check One)

☐ Worker is Released to the job of injury without restrictions on (date) _____ Skip to "Plans" section below.

☐ Worker may perform modified duty (altered duties or limited hours), if available, from date _____

to _____ for _____ hours/day

Will using any prescribed or non-prescribed drugs affect employee in performing safety-sensitive functions, or affect job performance? If yes, please attach a written explanation.

_____

Estimate physical capacities below.

☐ Worker not released to any work from (date) _____ to _____

☐ Prognosis poor for return to work at the job of injury at any date

☐ May need assistance returning to work

Doctor's Estimate of Physical Capacities

◯ **Temporary Restrictions** ◯ **Permanent/Indefinite Restrictions**

Worker Can (Related to work injury) Blank space = Not restricted	Never	Seldom 1-10% 0 - 1 hr	Occasional 11 - 33% 1 - 3 hrs	Frequent 34 - 66% 3 - 5 hrs	Constant 67-100%Not Restricted
Sit					
Stand / Walk					
Climb (ladder / stairs)					
Twist					
Bend / Stoop					
Squat / Kneel					
Crawl					
Reach Left, Right, Both					
Work above shoulder L,R,B					
Keyboard					
Wrist (flex/extension) L,R,B					
Grasp (forceful) L,R,B					
Fine manipulation L, R, B					
Operate foot Controls L,R,B					
Lifting / Pushing	Never	Seldom	Occasional	Frequent	Constant
Example	50 Lbs	20 Lbs	10 Lbs	0 lbs	0 lbs
Carry L, R, B	Lbs	Lbs	Lbs	Lbs	Lbs
Lift L, R, B	Lbs	Lbs	Lbs	Lbs	Lbs
Push / Pull	Lbs	Lbs	Lbs	Lbs	Lbs

Other Restrictions / Instructions

_____

Medically Approved Absence Dates

_____

For WSDOT Use Only

Supervisor

Can you accommodate restrictions noted on form?

☐ Yes until date

☐ No, indicate reason

_____

Supervisors Signature

For L&I claims, please send this form to HR Return to Work (fax: 360-705-6845 / MS: 47310). For non-claim related issues, please send to regional HR office. This form should not be retained in employee personnel file.

Plans

Worker progress ☐ As expected / better than expected. Circle one

☐ Slower than expected. For OJI address in chart notes

Current rehab ☐ PT ☐ OT ☐ Home exercise ☐ Rest

☐ Other _____

Surgery ◯ Indicated / planned ◯ Not Indicated

Comments (prognosis only)

_____

_____

☐ Next scheduled visit is _____

☐ None, Treatment concluded, Max. Medical Improvement (MMI)

Any permanent partial impairment? ◯ Yes ◯ No ◯ Possibly

Will you rate impairment? ◯ Yes, please attach ◯ No

If not, will you refer for a rating consultation? ◯ Yes ◯ No

☐ Care transferred to _____

☐ Study pending

☐ Consultation scheduled with _____

Physician's Signature	☐ Doctor ☐ ARNP ☐ PA-C	Phone Number	Date

If L & I claim please fax to 360-705-6845.

DOT Form 750-031
Revised 12/2015

WSDOT adheres to GINA (The Genetic Information Nondiscrimination Act of 2008).

Employee Release

I authorize my health care provider to complete and forward this medical questionnaire to the Washington State Department of Transportation.

Employee Signature _____ Date _____

Employee Print Name _____

The Genetic Information Nondiscrimination Act (GINA)

The Genetic Information Nondiscrimination Act of 2008 (GINA) prohibits employers and other entities covered by GINA Title II from requesting or requiring genetic information of an individual or family member of the individual. To comply with this law, we are asking that you not provide any genetic information when responding to this request for medical information. "Genetic information," as defined by GINA, includes an individual's family medical history, the results of an individual's or family member's genetic tests, the fact that an individual or an individual's family member sought or received genetic services, and genetic information of a fetus carried by an individual or an individual's family member or an embryo lawfully held by an individual or family member receiving assistive reproductive services. 29 CFR § 1635.8(b)(1)(i)(B).

DOT Form 750-031 EF
Revised 11/2012

Chapter 7 Bloodborne Pathogen Exposure Control Plan

7.1 Purpose

To provide guidance for the establishment of a Bloodborne Pathogen

Exposure Control Plan for the Washington State Department of Transportation (WSDOT) operations and facilities as required by Washington Administrative Code (WAC) 296-823. The objective of this safety procedure and guideline is to eliminate or minimize employee occupational exposure to blood or other potentially infectious materials and to fully comply with the referenced DOSH Bloodborne Pathogens Standard.

7.2 Scope and Applicability

This document affects all WSDOT employees that, as a result of performing their job duties, are "reasonably anticipated" to come into contact with bodily fluids or other bloodborne pathogens contaminated sources/materials.

7.3 References

- Federal OSHA CPL 2-2.69 – Enforcement Procedures for Occupational Exposure to Bloodborne Pathogens
- WAC 296-823-100 through 200, Occupational Exposure to bloodborne pathogens http://apps.leg.wa.gov/WAC/default.aspx?cite=296-823

7.4 Definitions

Blood – Blood means human blood, human blood components, and products made from human blood.

Bloodborne Pathogens – Pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to: Hepatitis B Virus (HBV) and Human Immune Deficiency Virus (HIV).

Bodily Fluids – Bodily fluids include, but are not limited to: blood, semen, vaginal fluids, saliva, vomit, amniotic fluid, or other body fluids that contain blood.

Contaminated – The presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

Contaminated Sharps – Any contaminated object that can penetrate the skin including, but not limited to: needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.

Decontamination – The use of chemical or physical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.

Disinfectant – An agent that disinfects by destroying, neutralizing, or inhibiting the growth of harmful microorganisms. The most common disinfectant is a solution of at least 10 percent chlorine bleach mixed with water.

Engineering Controls – Controls that isolate or remove the bloodborne pathogens hazard from the workplace. Examples of engineering controls are sharps disposal containers, self-sheathing needles, safer medical devices, such as sharps disposal containers and puncture resistant gloves.

Exposure Incident – A specific eye, mouth, other mucous membrane, non- intact skin, or parenteral contact with blood or other potentially infectious materials that resulted from the performance of an employee's duties.

Non-Intact Skin – Skin that show signs of dermatitis, hangnails, cuts, abrasions, chafing, or acne.

Parenteral – Piercing mucous membranes or the skin barrier through such events as needle sticks, human bites, cuts, and abrasions.

Personal Protective Equipment (PPE) – Equipment used to prevent the spread of infectious diseases. Examples include disposable gloves, face shields, protective garments, mouth-to-mouth resuscitation devices, etc. Normal work attire is not considered to be protective clothing.

Regulated Bio-Hazardous Waste – Liquid or semi-liquid blood or other potentially infectious materials, contaminated items that would release blood or other potentially infectious materials if compressed, items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling, contaminated needles, any other wastes containing blood or potentially infectious materials.

Safety Organization – Headquarters Safety and Health Services Office and staff, and Region Safety Offices and staff.

Universal Precautions – The concept of universal precautions is to treat all blood and body fluids as if they contain infectious bloodborne pathogens regardless of the source. This includes avoiding contact with any human blood products, use of PPE, and immunization for the HBV virus should an occupational exposure occur.

Work Practice Controls – Controls that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g., prohibiting recapping of needles by a two-handed technique).

7.5 General Responsibilities

Are as assigned in Chapter 1 as well as the items below specific to Bloodborne Pathogens Policy.

It is the responsibility of each employee to ensure implementation of WSDOT's safety procedure and guideline on bloodborne pathogens.

7.5-1 Executive, Senior, and Mid-Level Management

- Ensure that site managers, supervisors, and other site personnel have the required experience to perform assessments and identify all hazards at sites under their control.
- Provide resources necessary to comply with this policy.
- Assure that periodic audits of employee training are conducted.

7.5-2 Supervisors

- Ensure proper use of appropriate personal protective equipment.
- Ensure that all personnel working at risk have been properly trained in bloodborne pathogens (course code BBS) along with the use and limitations of the protection devices that they are utilizing.
- Assist in the development of site specific plans requirements under their responsibility.
- Replace equipment that is damaged.

7.5-3 Employees

- Identify hazards and take proper action to prevent infection through contact with bodily fluids or other potentially infectious materials.
- Notify their supervisors immediately when a bloodborne hazard condition is identified.
- Ensure that protection in use at the work site has been inspected daily prior to use for defects that would render it unusable.
- Coach and mentor co-workers in bloodborne pathogen control.
- Notify supervisors/competent person of defective equipment and unsafe conditions immediately.
- Ensure that all work at risk is performed in accordance with the Bloodborne pathogen exposure control plan Appendix 7-A.

7.5-4 Safety Organization

Region Safety Offices shall be responsible for the following bloodborne pathogen control activities:

- Assist in developing or securing required bloodborne pathogen training.
- Provide assistance in performing hazard assessments.
- Provide consultative and audit assistance to ensure effective implementation of this policy.

7.6 Policy

7.6-1 General

In WSDOT, a key objective is to provide a place of employment that is free from recognized hazards that cause or are likely to cause death and serious physical harm to employees or the public. Therefore, WSDOT will ensure that those employees who are exposed to bloodborne pathogens are provided with confidential, fair, and equal treatment.

When hazards exist that cannot be eliminated, then engineering practices, administrative practices, safe work practices, and proper training regarding bloodborne pathogens shall be implemented to minimize those hazards and ensure the safety of employees and the public.

7.6-2 Exposure Determination

In developing an exposure control plan, WSDOT has evaluated the work tasks associated with the functions of WSDOT to determine which tasks

could be reasonably anticipated to result in exposure to bloodborne pathogens. WSDOT uses the following categorical distinctions to determine the level of potential exposure:

7.6-2.1 Category I

Definition – Category I tasks are either:

- **Category Ia –** Work tasks that involve frequent exposure to blood, body fluids, or tissues. Normal work procedures or other job related tasks that involve an inherent potential for mucous membrane or skin contact with blood, body fluids or tissues, or a potential for spills or splashes of them.

  Examples of Category Ia tasks are those normally associated with frequent and repetitive handling and working directly with blood products such as those performed by physicians, nurses, emergency medical technicians (EMTs), handling of regulated waste, etc.

  Within WSDOT, crew members of Washington State Ferries who have duties as a first responder perform Category Ia tasks.
- **Category Ib –** Those work tasks that involve no exposure to blood, body fluids, or tissues, but exposure may be required as a condition of employment.

  Examples of Category Ib tasks are those normally associated with employees whose primary job function does not require them normally to be exposed to blood or body fluids but who are trained to respond to emergency situations or clean-up activities that may involve periodic exposure to blood or body fluids.

  Within WSDOT, personnel involved with maintenance of rest area sanitation facilities, litter pick-up, clean-up/repairs after a vehicle accident, garbage collection, maintenance of vessel sanitation facilities, bridge related work activities, and members of certain volunteer emergency response teams, e.g., Medical Emergency Response, Search and Rescue, and Damage Assessment teams, perform Category Ib tasks.

Category I personnel shall receive bloodborne pathogens training and will be offered Hepatitis B vaccinations. All Category I employees shall have a bloodborne pathogen control plan (Appendix 7-A) included as a component of their Pre-Activity Safety Plan (PASP). Members of the volunteer emergency response teams listed above shall receive bloodborne pathogens training and will be provided post-exposure evaluation and follow-up, including post- exposure prophylaxis, when medically indicated. (See Appendix 7-B)

If the employee declines the vaccination, he or she is required to signify this in writing using Appendix 7-C.

Please Note: Participation on emergency response teams is strictly voluntary, it is not a condition of employment. Participants on Medical Emergency Response Teams may choose not to render assistance in any situation.

7.6-2.2 Category II

Definition – Tasks that involve no exposure to blood, body fluids, or tissues, and Category I tasks are not a condition of employment. The normal work routine involves no exposure to blood, body fluids, or tissues (although situations can be imagined or hypothesized under which anyone, anywhere, might encounter potential exposure to body fluids).

Persons who perform these duties are not called upon as part of their employment to perform or assist in emergency medical care or first aid or to be potentially exposed in some other way.

Example – Category II tasks are those tasks associated with normal work routines where there are no direct work tasks or pre-planned emergency response actions reasonably anticipated for the employee. All Category II employees should follow universal precautions Appendix 7-D in the performance of their duties, avoiding contact with blood, body fluids, or physical items contaminated with blood or body fluids.

Category II personnel do not require bloodborne pathogens training or vaccinations.

7.6-3 Engineering and Work Practice Controls

Engineering and work practice controls are to be used to eliminate or minimize the risk of employee exposure. Engineering controls and/or work practice controls are reviewed by supervisors on a regular basis not to exceed one year and any time a work task changes where the potential for occupational exposure is present. Where potential occupational exposures remain after placing engineering and work practice controls in place, PPE shall also be used.

Hand-washing facilities that are readily accessible to employees are to be provided in WSDOT facilities. Hospital antiseptic hand cleaners are effective and can also be used where it is not feasible to provide hand-washing facilities such as on a work site, first aid kits will include an appropriate antiseptic hand cleanser or antiseptic towelettes. If an occupational exposure occurs where antiseptic hand cleansers or antiseptic towelettes are used, the employee should be transported to the nearest facility with hand washing facilities and the affected area thoroughly washed with soap and running water.

When gloves or other PPE are used and removed, employees are to wash their hands immediately after removal of the protective gear. All gloves, and disposable PPE should be safely discarded. Other non-disposable PPE (e.g., boots, face shield and clothing) should be cleaned and laundered accordingly.

Equipment that may become contaminated with blood or potentially infectious materials is to be visibly examined before use and decontaminated as necessary. For example, in operations where employees share hand-held equipment such as slings or bush axes where there is a possibility of blood or body fluid contamination of the equipment from open cuts, abrasions, or blisters, employees should inspect the equipment for visible signs of blood or body fluids.

Where practical, work gloves are to be used by employees working with common equipment where blood or body fluids could be present. Where blood or body fluids are detected, the equipment is to be thoroughly disinfected, even if work gloves are to be worn.

All Category I employees shall have a bloodborne pathogen control plan (Appendix 7-A) included as a component of PASP.

7.6-4 Housekeeping

Supervisors will ensure that equipment, working surfaces, and floors are cleaned and decontaminated after contact with blood or other potentially infectious materials.

All bins, pails, cans, and similar receptacles that have a reasonable likelihood for becoming contaminated with blood or other potentially infectious materials are to be inspected and decontaminated on a regularly scheduled basis and cleaned and decontaminated immediately upon visual observation of blood contamination. Examples of this are trashcans or bins in rest rooms. These receptacles are often used for blood-carrying products such as expended sharps (injection needles) and sanitary napkins.

Gross contamination must first be cleaned by using towels and soap and water solution.

Contaminated work surfaces must be cleaned with an appropriate disinfectant. A common and readily available disinfectant is a solution of at least 10 percent chlorine bleach mixed with water (see special note below). If used in accordance with the manufacturer's instruction, other acceptable disinfectants include Environmental Protection Agency (EPA) registered:

- Sterilants (List A)
- Tuberculocides (List B)
- HIV/HBV (List D)

Sterilants/High Level disinfectants cleared by the U.S. Food and Drug Administration are also acceptable.

Special Note on the Use of Bleach as a Disinfectant – The bleach solution must be mixed within 24 hours of use. You may not store bleach for longer periods for use as a disinfectant. The bleach should not be stored in glass. The required contact time for bleach to be effective is generally considered to be the time it takes to air dry.

7.6-5 Disposal of Contaminated Materials

All items that have been contaminated with blood or other potentially infectious materials are to be disposed of as a regulated waste. While it is not practical or economically feasible to place specially designed waste receptacles at all WSDOT facilities and work sites, this does not diminish the requirement for proper labeling, handling, and disposal of biohazardous materials. Sharps containers should be provided if there is past indication that hypodermic needles and syringes have been used or discarded in the facility. If there is waste material generated which contains or is contaminated with blood or body fluids, take the following steps:

- Do not handle contaminated items without proper PPE.
- Place all contaminated items in a sealable container being careful not to contaminate the outside of the container. If the contaminated item is sharp or likely to puncture the container, use a container that is sufficiently sturdy to prevent the puncture of the container walls.
- Label the container prominently to identify that the contents are blood and/or body fluids—a biological hazard.
- Place the container in a secure area with the label completely visible.
- Dispose of gloves and other protective equipment in the same container. Ensure that glove outer surfaces do not touch the skin as they are removed.
- Region "Stores" will maintain appropriate regulated waste containers with appropriate labeling and provide these containers for the disposal of contaminated articles. Contact your Region Safety Office if you need assistance in acquiring proper containers.

7.6-6 Safe Operating Procedures

The general safe operating procedures which address conditions where an employee may be required to perform unplanned Category I tasks, shall include necessary controls and PPE requirements to preclude exposure to bloodborne pathogens.

7.6-7 Pre-Exposure Vaccinations

Employees identified as having Category I work tasks will be provided the Hepatitis B vaccination at no cost. If the employee refuses the HBV vaccination, the employee must sign a Hepatitis B Vaccination Declination form (See Appendix 7-C). When completed, this form must be retained indefinitely in the employee's safety and health file. If an employee has received an HBV vaccination from a previous employer, evidence of that vaccination must be obtained by the employee and placed in the employee's safety and health file.

7.6-8 Post-Exposure Procedures

Any employee, regardless of their classification, who report work-related biological exposure will be provided a Hepatitis B and other vaccinations at no cost as determined by the attending physician as soon as possible after the exposure incident. If the employee refuses a vaccination, the employee must comply with the refusal procedure outlined in Section 6.7.

7.6-8.1 Medical Evaluation and Follow-up

Following a report of an exposure incident, the department shall make immediately available (1 to 2 hours is desirable) to the exposed employee a confidential medical evaluation and follow-up at no cost to the employee, including at least the following elements:

- Documentation of the route(s) of exposure, and the circumstances under which the exposure incident occurred.
- Identification and documentation of the source individual, unless it is infeasible to establish the identification of the source individual or prohibited by state or local law.
- Collection and testing of blood to detect the presence of HBV, HCV, and HIV.
- Post-exposure preventive treatment, when medically indicated, as recommended by the United States Public Health Service.
- Counseling.
- Evaluation of reported illnesses.

Make sure that a laboratory licensed by the state or Clinical Laboratory Improvement Amendments Act (CLIA) conducts all laboratory tests.

The Safety Office, with the assistance of the exposed employee and their supervisor, will provide the following information to the health care professional evaluating the employee after an exposure incident:

- A copy of WAC 296-823-160.
- A description of the job duties the exposed employee was performing when exposed.
- Documentation of the routes of exposure and circumstances under which exposure occurred.
- Results of the source persons blood testing, if available.
- All medical records that the department is responsible to maintain, including vaccination status, relevant to the appropriate treatment of the employee.

The exposed employee should get the medical evaluation. The exposed employee should fill out a Department of Labor and Industries (L&I) accident report at the time of the evaluation to initiate an L&I claim for the exposure. The L&I Claim will pay costs for the evaluation and blood testing.

A copy of the health care professional's written opinion will be provided to the employee within 15 days following the completion of the evaluation.

7.6-8.2 Post Exposure Source Person Blood Test

If an exposure incident has occurred, arrangements should be made through the Safety Office to test the source individual's blood for HBV and HIV as soon as feasible after getting their consent. If consent is not given, document that legally required consent can not be obtained. When the law doesn't require the source individual's consent, their blood, if available, must be tested and the results documented.

The local health authority should be contacted for assistance in determining consent rules and evaluating an employee's exposure.

The results of the source person's blood test will be provided to the exposed employee, if possible. The exposed employee must also be informed of applicable laws and regulations regarding disclosure of the identity and infection status of the source person.

Laws and regulations that currently apply are:

- Chapter 70.02 RCW *Medical records – health care information access and disclosure*
- Chapter 70.24 RCW *Control and treatment of sexually transmitted diseases*

These rules may be found at http://apps.leg.wa.gov/rcw and click on Title 70.

7.6-8.3 Post Exposure Exposed Employee Blood Test

WAC 296-823-16020 requires that following an exposure incident the exposed employee's blood should be collected and tested as soon as feasible after employee consent is obtained.

If the employee consents to the baseline blood collection, but doesn't give consent for HIV serologic testing at the time of the collection, the blood sample must be preserved for at least 90 days in case the employee changes their mind to have the sample tested.

7.6-8.4 Confidentiality

All employee medical records shall remain confidential. No information regarding employee medical information is to be disclosed or reported to any person outside the workplace except as required by law.

Employee medical and training records shall be provided upon request for examination and copying to the subject employee and to anyone having express and written consent of the employee.

Copies of medical records shall be given to the employee if the employee leaves WSDOT.

7.7 Training

All employees performing at risk tasks shall receive education about precautionary measures, epidemiology, modes of transmission, and prevention of HIV/HBV and other associated infectious agents.

Bloodborne Pathogens Training (Course Code BBS) will be provided at the time of initial assignment to tasks where occupational exposures are "reasonably anticipated" to occur and at least annually thereafter.

The training will contain the following elements:

- An accessible copy of WAC 296-823 and an explanation of its contents.
- A general explanation of the epidemiology and symptoms of bloodborne diseases.
- An explanation of how bloodborne pathogens are transmitted.
- An explanation of the department's exposure control plan and how employees can obtain as copy of the written plan.
- An explanation of how to recognize tasks and other activities that could involve exposure to blood or other infectious materials.
- An explanation of the use and limitations of methods that will prevent or reduce exposure.
- Information about PPE, including:
  - The types
  - Proper use and limitations
  - Selection
  - Location
  - Putting it on and taking it off
  - Handling
  - Decontamination
  - Disposal
- Information about Hepatitis B vaccine, including:
  - Information on its effectiveness
  - Safety
  - Method of administration
  - The benefits of being vaccinated
  - Offered at no cost to the employee for the vaccine
- Information about procedure if an exposure incident occurs, including
  - Method of reporting the incident
  - The medical evaluation and follow-up

7.8 Personal Protective Equipment

Determination of PPE to be worn is made after a hazard analysis of the work task as outlined in Chapter 5. See Chapter 5 for additional details.

7.9 Recordkeeping

The department shall maintain records at the Headquarters and Region Safety Office for each employee involved in a Category I task or for Category II employees who have been exposed to bloodborne pathogens. Records will be maintained for a minimum period of their employment duration plus 30 years. These records will consist of:

- Training records that indicate the dates of the training sessions, the content of the training sessions, trainer's name and qualifications.
- Inspection reports for the areas and/or tasks where biohazardous tasks are performed, identifying conditions noted and corrective actions taken.
- Incident investigation reports for each incident of mucous membrane or parenteral exposure to body fluids or tissue, an evaluation of these conditions, and a description of corrective measures taken to prevent a recurrence or similar exposure.

A medical record consisting of the following:

- Employee name and social security number.
- A copy of the employee's Hepatitis B vaccination records and medical records relative to the employee's ability to receive vaccination.
- A copy of all results of physical examinations, medical testing and follow-up procedures as they relate to the employee's ability to receive vaccination or to post exposure evaluation following an exposure incident.
- WSDOT's copy of the physician's written opinion.
- A copy of all information provided to the physician.

7.10 Appendices

Appendix 7-A	Bloodborne Pathogens Exposure Control Plan
Appendix 7-B	Health Care Professional's Written Opinion for Post-Exposure Evaluation
Appendix 7-C	Hepatitis B Vaccination Declination
Appendix 7-D	Universal Precautions
Appendix 7-E	Biohazard Symbol

Facility Name: _____
(insert facility/site/project name)

Date of Preparation: _____

A. Purpose

The Bloodborne Pathogens Exposure Control Plan is to reduce or eliminate occupational exposure to bloodborne pathogens.

B. Exposure Determination

Designated employees that may come into contact with human blood or other potentially infectious materials (OPIM):

1.

2.

3.

4.

C. Methods of Compliance

Universal Precautions will be utilized in the handling of all human blood and OPIM's. Please refer to WSDOT's Bloodborne Pathogens Exposure Control Plan, Chapter 7.

D. Engineering Controls

- Employees will wash their hands and any other exposed skin with soap and hot water immediately or as soon as possible after contact with blood or OPIM, for 15 seconds, in a manner causing friction on both inner and outer surfaces of the hands.
- Employees will be provided with antiseptic hand cleaner and paper towels when hand washing is not feasible. However, hand washing must still take place as soon as possible after exposure.
- Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses is prohibited in work areas where there is the potential for exposure to bloodborne pathogens.
- If professional medical attention is required, a local ambulance will be the first choice, a personal car will be the second. If a personal car is taken, impervious material should be used to prevent contamination of the vehicle.
- New employees or employee being transferred to other sections will receive training about any potential exposure from the Region Safety Manager.

E. Personal Protective Equipment

All personal protective equipment, such as gloves, contaminated materials handling tools or equipment, and biohazard bags used will be provided without cost to employees. Personal protective equipment will be chosen based on the anticipated exposure to blood or OPIM. The protective equipment will be considered appropriate only if it does not permit blood or OPIM to pass through or reach the employees' clothing, skin, eyes, mouth, or other mucous membranes under normal conditions of use.

F. Disposal of Contaminated Items and Communication of Hazard

1. Employees must:
   a. Use bleach to disinfect any blood or OPIM.
   b. Apply the bleach with single-use gloves and allow to sit for 15 minutes.
   c. Place any single-use gloves that have been contaminated in a biohazard bag and cover.
      - Contact your Region Safety Managers for the proper disposal of biohazard bags or other impervious containers.
      - Regulated waste should be placed in appropriate containers, label and disposed of in accordance with Chapter 296-823 WAC.
2. Employees will be warned of biohazard bags by labels attached to the disposal bags. Labels used will be orange-red and marked with the word BIOHAZARD or the biohazard symbol.

G. Housekeeping

Maintaining our work areas in a clean and sanitary condition is an important part of WSDOT's Bloodborne Pathogens Compliance Program. Employees must decontaminate working surfaces and equipment with an appropriate disinfectant after completing procedures involving blood or OPIM. All equipment, environmental surfaces and work surfaces shall be decontaminated immediately or as soon as feasible after contamination.

1. Employees must clean and disinfect when surfaces become contaminated and after any spill of blood or OPIM.
2. Employees will use a solution of one part bleach to ten parts water for cleaning and disinfecting.
3. Working surfaces and equipment will be cleaned, disinfected, and maintain.
4. Potentially contaminated broken glass will be picked up using mechanical means, such as dustpan and brush, tongs, etc.
5. Use universal precautions for handling of all soiled laundry.

6. Laundry contaminated with blood or OPIM will be handled as little as possible. Employees who handle contaminated laundry will utilize personal protective equipment to prevent contact with blood or OPIM from coming into contact skin or street clothes.
7. Contaminated clothing will remain on the premises or will be sent directly to a laundry facility for cleaning. Employees will be given the option of reimbursement for the cost of contaminated clothing and the clothing will be disposed.

H. Hepatitis B Vaccination and Post-Exposure Evaluation and Follow Up

1. WSDOT shall make available within 24 hours of possible exposure the Hepatitis B vaccine and vaccination series to all employees who have occupational exposure. Vaccination is not required if:

   Employee has previously received the completed Hepatitis B vaccination series.

   a. An antibody test has revealed that the employee is immune to Hepatitis B.
   b. There are medical reasons not to give the vaccine, usually determined by the employee's physician.

      An employee who refuses the vaccination is required to sign a Hepatitis B Vaccination Declination Form (Appendix 7-C which will be retained indefinitely in the employee's Safety and Health file located at the HQ Safety and Health Services Office.
2. An exposure incident means a specific eye, mouth, other mucous membrane, non-intact skin or parenteral contact with blood or 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. Any employee having an exposure incident shall contact the Region Safety Manager. All employees who have an exposure incident will be offered a confidential post-exposure evaluation and follow-up in accordance with the DOSH standard. This includes a visit to a physician selected by the employee where an L&I claim can be initiated. The health care professional's written opinion will be provided to the employee within 15 days of the evaluation.

I. Training

Training is provided at the time of initial assignment to tasks where occupational exposure may occur, and that it shall be repeated within 12 months of the previous training. Training shall be tailored to the education and language level of the employee, and offered during the normal work shift. The training will be interactive and cover the following:

1. A copy of the standard and an explanation of its contents.
2. A discussion of the epidemiology and symptoms of bloodborne diseases.
3. An explanation of the modes of transmission of bloodborne pathogens.
4. An explanation of the WSDOT Bloodborne Pathogen Exposure Control Plan (this program), and a method for obtaining a copy.
5. The recognition of tasks that may involve exposure.
6. An explanation of the use and limitations of methods to reduce exposure, for example engineering controls, work practices and personal protective equipment.
7. Information on the types, use, location, removal, handling, decontamination, and disposal of PPE.
8. Explanation of the basis of selections of PPE.
9. Information on the Hepatitis B vaccination, including efficacy, safety, method of administration, benefits, and that it will be offered free of charge.
10. Information on the appropriate actions to take and persons to contact in an emergency involving blood or OPIM.
11. Explanation of the procedures to follow if an exposure incident occurs, including the method or reporting and medical follow-up.
12. Information on the evaluation and follow-up required after an employee exposure incident.
13. An explanation of the signs, labels, and color-coding systems.

J. Exposure Reporting and Recordkeeping

1. Exposures, including first aid incident exposures that involve the presence of blood or OPIM must be reported to the supervisor and the Region Safety Manager before the end of the work shift. An Accident Form, 750-100 must be completed to include the names of all the first- aid providers who rendered assistance, the time and date of the first-aid incident and a description of the first-aid incident.
2. Medical records shall be maintained in accordance with DOSH Standards. These records shall be kept confidential, and must be maintained at the HQ Safety and Health Office for at least the duration of employment plus 30 years.

Appendix 7-B Opinion for Post-Exposure Evaluation

Appendix 7-C Hepatitis B Vaccination Declination

Infection Through Blood and Bodily Fluids

Universal precautions will be utilized to ensure WSDOT employees are safeguarded against the spread of infectious diseases through contact with human blood or other bodily fluids. Regardless of the "perceived" risk involved, all employees should protect themselves from potential infection.

- Any accident/incident involving the transfer of blood or bodily fluids should be reported by the supervisor before shift end.
- Personal protective equipment (PPE) will be provided for and used by all employees considered to be at risk of infection.
- Gloves should be worn for touching blood and bodily fluids, mucous membranes or non-intact skin of all persons, for handling items or surfaces soiled with blood or bodily fluids, and for rendering assistance to injured persons. Always wash hands and arms after helping a victim.
- For those employees trained to perform CPR, separate yourself from direct contact with the victim by using a face shield or mask or one-way resuscitating device.
- Needlestick injuries should be reported to the supervisor immediately.
- Any items located that are believed to be human waste products (i.e., blood, soiled clothing, needles, or items identified with the universal biohazard symbol) should be handled only by a properly trained employee.
- All known items soiled with blood or other bodily fluids (i.e., clothing) should be disposed of by a properly trained employee.
- All equipment and working surfaces shall be decontaminated with an appropriate disinfectant to eliminate the potential for infection.
- WSDOT will provide Hepatitis B vaccination series at no cost to supervisors and those employees considered to be at the greatest risk of infection.
- A post-exposure evaluation will be provided at no cost to the employee.

Appendix 7-E Biohazard Symbol

The following is a universal symbol identifying material or objects contaminated with human blood or bodily fluids. When this symbol is identified, follow all universal precautions in this safety policy and procedure to ensure infectious diseases are not transmitted.

Chapter 8 Respiratory Protection Program

8.1 Purpose

The purpose of the Respiratory Protection Program is to establish guidelines for use of respiratory protection by Washington State Department of Transportation (WSDOT) employees.

8.2 Scope and Applicability

This chapter of the *Safety Procedures and Guidelines Manual* M 75-01 affects any employee who uses respirators as part of his or her work at WSDOT.

8.3 References

The WSDOT Respiratory Protection Program is administered in accordance with:

- WAC 296-841, *Airborne contaminants*
  http://apps.leg.wa.gov/WAC/default.aspx?cite=296-841
- WAC 296-842, *Respirators*
  http://apps.leg.wa.gov/WAC/default.aspx?cite=296-842

Note: Washington State Ferries (WSF) Division is governed by additional regulations aside from WAC Standards. WSF shall maintain a separate Respiratory Protection Program in accordance with the above WAC Standards and other regulative agencies (e.g., United States Coast Guard).

8.4 Definitions

Air-purifying respirator (APR) – A respirator equipped with an air-purifying element such as a filter, cartridge, or canister, or having a filtering facepiece, for example, a dust mask. The element or filtering facepiece is designed to remove specific contaminants, such as particles, vapors, or gases from air that passes through it.

Canister or Cartridge – Part of an air-purifying respirator that consists of a container holding materials such as fiber, treated charcoal, or a combination of the two that removes contaminants from the air passing through the cartridge or canister.

Contaminant – A harmful, irritating, or nuisance airborne material.

Dust – Solid particles suspended in air. Dusts are generated by handling, drilling, crushing, grinding, rapid impact, detonation, or decrepitation of organic or inorganic materials such as rock, ore, metal, coal, wood, grain, etc.

Dust Mask – A name used to refer to filtering-facepiece respirators. See air purifying respirator.

Exposure – The contact an employee has with a toxic substance, harmful physical agent, or oxygen deficient condition. Exposure can occur through various routes of entry, such as inhalation, ingestion, skin contact, or skin absorption.

Exposure Limit – The maximum allowable concentration of a contaminant in the air to which an individual may be exposed. These may be time-weighted averages, excursion limits, ceiling limits, and short-term limits.

Filter – A component used in respirators to remove particulates or liquid aerosols from the inspired air.

Fit Test – Fit testing is an activity where the facepiece seal of a respirator is challenged, using an accepted protocol, to determine if the respirator provides an adequate seal.

High Efficiency Particulate Filter (HEPA) – A powered air purifying respirator (PAPR) filter that removes at least 99.97 percent of monodisperse particles with a mean particle diameter of 0.3 micrometer from contaminated air. Filters designated, in 42 CFR Part 84, as an "N100," "R100," or "P100" provide the same filter efficiency (99.97 percent) as HEPA filters.

Immediately Dangerous to Life and Health (IDLH) – An atmospheric condition that would cause an immediate threat to life, cause permanent or delayed adverse health effects or interfere with an employee's ability to escape.

Licensed Health Care Professional (LHCP) – An individual whose legally permitted scope of medical practice allows him or her to provide some or all of the health care services required for respirator users' medical evaluations.

Safety Data Sheet (SDS) – The document provided by chemical or industrial manufacturers that contains information on hazardous chemicals. A SDS includes: nature of the chemical, precautions to take in using the chemical, conditions of safe use, clean-up procedure during a spillage accident, and recommended disposal procedures. (Formerly referred to as Material Safety Data Sheets (MSDS).

Negative Pressure Respirator – Any tight-fitting respirator in which the air pressure inside the facepiece is less than the air pressure outside the respirator during inhalation.

NIOSH – The National Institute for Occupational Safety and Health. NIOSH is the federal agency that certifies respirators for occupational use.

Oxygen Deficient – An atmosphere with an oxygen content below 19.5 percent by volume.

Permissible Exposure Limit (PEL) – The amount of an airborne chemical toxic substance, or other harmful agent that must not be exceeded during any part of the workday.

An airborne chemical or toxic substance can have 3 PEL values:

- TWA8. This is an 8-hour, time weighted average limit.
- Short-term exposure limit (STEL). This is typically a 15-minute, time weighted average limit.
- Ceiling limit (C). This is an instantaneous limit.

Qualified Person – Safety and supervisory personnel who have training and experience in air monitoring, exposure assessment, and workplace evaluations under the direction of a Certified Industrial Hygienist (CIH).

Qualitative Fit Test – A test that determines the adequacy of respirator fit for an individual. The test relies on the employee's ability to detect a test substance. Test results are either "pass" or "fail."

Safety Data Sheet (SDS) – The document provided by chemical or industrial manufacturers that contains information on hazardous chemicals. A MSDS includes: nature of the chemical, precautions to take in using the chemical, conditions of safe use, clean-up procedure during a spillage accident, and recommended disposal procedures.

Seal Check – A pressure/vacuum test conducted by the wearer to determine if the respirator is properly sealed to the face.

8.5 General Responsibilities

It is the responsibility of employees at all levels to ensure implementation of WSDOT's Respiratory Protection Program. It is also the responsibility of each employee to immediately report any unsafe act or condition to his or her supervisor.

8.5-1 Organizational Responsibilities

Are as assigned in Chapter 1 as well as the items below specific to Respiratory Protection Program.

8.5-1.1 Executive, Senior, and Mid-Level Management

Ensure that adequate funds are available, budgeted for the purchase of respiratory protection equipment and related supplies.

8.5-1.2 Supervisors

- Ensure completion of respiratory protection training if supervising employees who use respirators
- Ensure employees have received required training, medical evaluation and fit testing prior to performing any work task requiring respiratory protection.
- Ensure that respirators are properly worn and maintained.
- Communicate appropriate needs to managers.
- Ensure that an adequate supply of respirators, cartridges, and replacement parts are available.

8.5-1.3 Qualified Persons

- Conduct air monitoring where there is suspicion of air contamination.
- Perform exposure assessments, workplace evaluations, and recommend exposure controls.

8.5-1.4 Respirator User

- Wear appropriate respirator when and where required, and according to the site conditions, recommendations provided by the program manager, supervisor, or Safety Office, and in accordance with respirator manufacturer requirements.
- Ensure to participate in, and apply, respiratory protection training as applicable.
- Address any and all concerns regarding respirator usage with their supervisor.

- Assist the supervisor in the development and maintenance of specific respirator usage plans.
- Care for, clean, and maintain their respirators as instructed and store them in a clean, sanitary location.
- Inform the supervisor if the respirator no longer fits (e.g. significant changes in weight, dental changes, facial surgery, scars, etc.) and request a new one that fits properly.
- Understand the work task hazard requiring respirator protection.

8.5-1.5 Safety Organization

8.5-1.5.1 Respirator Program Administrator

The Respiratory Protection Program Administrator is the WSDOT Industrial Hygiene Program Manager.

- Provide leadership and guidance to Region Respiratory Protection Program Managers.
- Develop Respiratory Protection Program policy statements, goals, and strategies.
- Identify Respiratory Protection Program needs regarding personnel, training, and equipment.
- Provide guidance, technical expertise, training, and support.
- Consult with and assist managers, supervisors, and respirator users.
- Recognize and interpret respiratory regulations.
- Perform, assist with, and coordinate airborne exposure monitoring.
- Assist with fit testing and training regarding the proper use and care of respirators.
- Review and evaluate air monitoring data for quality assurance.

8.5-1.5.2 Region Respiratory Protection Program Manager (Program Manager)

- Executes the development and implementation of the Respiratory Protection Program through region managers and supervisors of employees requiring the use of respirators to perform work tasks.
- Identify work areas, processes, or tasks that require workers to wear respirators, and evaluate hazards.
- Develop and maintain Pre-Activity Safety Plans regarding respirator requirements.
- Understand and apply regulative guidelines and laws regarding respiratory protection.
- Select and assist with respiratory protection options.
- Monitor respirator use to ensure that respirators are used in accordance with their certifications.
- Arrange for and/or conduct training.
- Monitor proper storage and maintenance of respiratory protection equipment.
- Conduct or arrange appropriate fit testing.
- Administer the region medical surveillance program.
- Maintain records required by the program and region.
- Evaluate the program.

8.5-1.5.3 Region Safety Office

- Assist in developing or securing the required training.
- Provide assistance to managers and supervisors on respirator fit testing, program review, and training.
- Maintain a quality assurance program for respiratory protection through field evaluations.
- Work with Purchasing and Region Stores to ensure that all newly purchased respirators and supplies comply with current safety regulations and this safety policy and procedure.
- Provide consultative and audit assistance to ensure effective implementation of this safety policy and procedure.

8.6 Training

- Employees shall be trained on the use and purpose of Safety Data Sheets for the chemicals that they could be exposed to will provide information on the health effects and hazards for those materials, or otherwise include information on respiratory hazards that require respirator use (e.g. silica, older bridge paint, etc.).
- Employees will be instructed on the use, capabilities, and limitations of their respirators. There is not one all-purpose respirator. The respirators on which the employee will be trained were selected by WSDOT for your work environment. The uses and limitations of the respirator on the NIOSH approval label and other information contained on/in each new respirator package will be covered.
- Employees will be trained on the proper donning, inspection, use, and removal of their respirators, and how improper fit, use, or maintenance can compromise the respirator effectiveness and reliability. A respirator must be put on and worn properly if it is to fit and offer effective protection. The employee will be instructed to always inspect the respirator prior to donning. Instruction will include how to inspect the respirator. Donning instructions are found on or in each new respirator package and will be fully explained and demonstrated to the wearer.
- Supervisors of employees who will be donning respirators shall be trained in the use of respirators.
- Once proper donning and adjustment procedures have been demonstrated, each employee will complete the same procedure as the trainer talks the employee through the directions.
- While wearing a respirator, the employees will be instructed on how to conduct a user seal check. A user seal check is a method of determining if the respirator has been put on properly and has been fitted properly. A user seal check must be conducted each time the respirator is worn. Refer to user seal check procedures on each respirator package. They are sometimes referred to as positive pressure and negative pressure user seal checks.
- If a proper fit cannot be accomplished, the wearer must select another respirator and repeat the user seal check procedure.
- A training roster shall be completed for each training session. This documentation will be used to facilitate the recordkeeping requirements. Respirator training records should be entered into LMS (Course Code WSDOT SAFE: Respirator protection Training).

- Employees must leave the contaminated work area:
  - Upon malfunction of the respirator.
  - Detection of leakage of contaminant into the respirator.
  - If increased breathing resistance of the respirator is noted.
  - If severe discomfort in wearing the respirator is detected.
  - Illness of the respirator wearer, including: sensation of dizziness, nausea, weakness, breathing difficulty, coughing, sneezing, vomiting, fever, and chills.
  - To wash face to prevent skin irritation.
  - To change filter/cartridge elements or replace respirators whenever they detect the warning properties of the contaminant or increased breathing resistance.

8.6-1 Hazard Assessment

A qualified person shall assess employee exposures to airborne contaminants to assure proper respirator selection. Based on the assessment, the proper respirator shall be selected to control the exposure. Exposure assessments shall be based on process information, work environment, historical data, and/or work practices relative to the type of contaminant. Where employees may be exposed to air contaminants in excess of a Permissible Exposure Limit (PEL), air monitoring shall be conducted to assure proper selection of respiratory protection and filter change out schedules (where applicable).

The PEL of an air contaminant does not have to be exceeded for an employee to use a respirator. The employee may request the use of a respirator because of a nuisance exposure or for personal reasons. These circumstances should be evaluated and respirator use approved if the circumstances favor the use of a respirator.

As needed, the Program Manager, supervisor, and qualified person should continually update and assess site hazards and respiratory requirements. This is especially true when work processes change and/or new chemicals or products are introduced to the work environment.

8.6-2 Respirator Selection

Respirators are selected for use by the Region Safety Office, consulting the Respiratory Program Administrator, as needed. The selection is based upon the physical and chemical properties of the air contaminants and the concentration level likely to be encountered by the employee (see Appendix 8-C). The Respiratory Program Administrator via supervisors will make a respirator available immediately to each employee who is placed as a new hire or a transferee to a job that requires respiratory protection. Replacement respirators/cartridges and filters will be made available as required. The selection of the proper respirator type will be made following the respirator manufactures guide, SDS, or other appropriate and authoritative reference. All respirators shall be NIOSH approved.

All tight fitting respirators (both negative and positive pressure) shall not be used with beards or other facial hair that prevents direct contact between the face and the sealing surface of the respirator. A loose fitting facepiece does not seal directly to the face. Therefore facial hair is not a concern. Example: a PAPR can be equipped with a loose fitting facepiece, such as a hood or helmet, and the employee can have facial hair.

8.6-2.1 NIOSH Certification

Supervisors and program managers (region specific) should become familiar with all the various types of respirators, the protection factors assigned to respirators, and the various filter cartridges used to protect employees against hazardous chemicals. 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. All filters, cartridges, and canisters must be labeled with the appropriate NIOSH approval label. Filter labels and respirator identification numbers must not be removed or defaced at any time. Respirator "parts" cannot be interchanged. If a part is broken, the respirator must be taken out of service until repaired. The various protection factors assigned to respirators and the filter cartridge color-coding and chemical protection assignments are identified and described in the following sections.

8.6-2.2 Assigned Protection Factors

- Filtering Face Piece P, R or N-100 (Dust Mask) Assigned Protection Factor (APF) = 10
- Half-face air purifying respirator (tight-fitting) – APF = 10
- Powered air purifying respirator (PAPR loose-fitting) – APF = 25
- Full-face air purifying respirator (tight-fitting) – APF = 50
- Powered air purifying respirator (PAPR tight-fitting) – APF = 1000
- Assigned Protection Factors for respirators not listed above can be found in WAC 296-842-13005 Table 5.

8.6-2.3 Chemical Protection and Color Coding

- **Acid gases** – white cartridge/filter
- **Ammonia** – green cartridge/filter
- **Acid gases, organic vapors and ammonia** – brown cartridge/filter
- **Acid gases and organic vapors** – yellow cartridge/filter
- **Carbon monoxide** – blue cartridge/filter
- **Chlorine gas** – white with ½ inch yellow stripe cartridge/filter
- **Organic vapors** – black cartridge/filter
- **Heavy metal dusts/fumes/mists** – purple or "magenta" cartridge/filter (also referred to as HEPA or P100)

Note: There are "other" chemical specific filter/cartridges available. Knowing or estimating the potential exposure to chemicals is essential for choosing the appropriate respirator. This is especially important when considering respirator and filter selection. For example, if based on exposure monitoring data and based on the scheduled work to be performed, you estimate that an employee will be exposed to a contaminant at five times above the permissible exposure limit (PEL). The employee should be able to use a half-face respirator, equipped with appropriate cartridge/filter with an assigned protection factor (APF = 10). In general, the assigned protection factor (APF) for a respirator is based on an exposure above the applicable PEL. Considering the example above, an estimate of exposure 20 times above the PEL would require a respirator user to use a respirator with an assigned protection factor of 20 or greater.

8.6-2.4 Recordkeeping

Records shall be kept on each employee who receives training and fit testing. This record will include the name, employee ID, location of respirator use, type of contaminant(s), respirator type, tester, medical evaluation, and results of fit testing. See Appendix 8-A for the form.

In addition, training records and recommendations from the licensed healthcare practitioner should be maintained. LMS and/or Safety Record Database can be used to assist with recordkeeping.

Documentation may be stored on a computer as long as it is available to safety and health personnel from the Department of Labor and Industries.

8.6-2.5 Purchasing

Only NIOSH approved respirators shall be purchased and kept in stock along with an adequate supply of cartridges and replacement parts. Unapproved respirators shall be removed from inventory.

8.6-2.6 Medical

Medical Questionnaire/Evaluation

Employees required to wear respirators as part of their job must be medically approved to do so. Voluntary use of filtering facepieces, also called "dust masks," is excluded. Employees must complete a medical questionnaire before being permitted to wear a respirator on the job. Employees are not permitted to wear respirators until a Licensed Health Care Professional (LHCP) has determined that they are medically able to do so. Any employee refusing the medical evaluation will not be allowed to work in the area requiring respirator use. Regions will identify a qualified LHCP who will provide a written recommendation regarding respirator use. The following shall be provided to WSDOT and the employee:

- Whether or not the employee is medically able to use the respirator.
- Any limitations of respirator use for the employee.
- What future medical evaluations, if any, are needed.
- A statement that the employee has been provided a copy of the written recommendation.

To initiate a medical questionnaire/evaluation, provide the employee with a respirator questionnaire. Once the employee has completed the questionnaire, it shall be submitted to the Region Program Manager in a sealed and addressed envelope. The Program Manager will forward the questionnaire to the contracted LHCP for review. The LHCP will provide the written recommendation for respirator use to the Program Manager and the employee.

Additional Medical Questionnaire/Evaluation

After an employee has received medical clearance and has begun to wear a respirator, additional medical evaluations will be provided under the following circumstances:

- Employee reports signs and/or symptoms related to one's ability to use a respirator, such as shortness of breath, dizziness, chest pains, or wheezing.

- At the discretion and frequency of the written report prepared by the LHCP.
- The LHCP informs the Program Manager in writing that the employee needs further examination or evaluation.
- Observations made during fit testing or program evaluations indicate a need for reevaluation.

8.6-2.7 Fit Testing

Employees who use tight-fitting respirators will be properly fitted and tested prior to required use of the respirator. Fit testing will be performed every 12 months for as long as the employees continues required use of a respirator.

If it is determined that an individual cannot obtain an adequate fit or face seal with an appropriate negative pressure respirator, a loose fitting powered air purifying respirator will be used instead.

Fit testing of employees with any hair growth such as stubble beard growth, beard, or long sideburns that extends under the face seal or interferes with valve function is prohibited.

Fit testing will be conducted by someone knowledgeable of and in conformance with fit testing requirements of WAC 296-842. The smoke will be continuously discharged around the respirator while the employee completes the following exercises to verify the seal of the respirator:

- Normal breathing
- Deep breathing
- Turning of the head side to side (Do not to let the respirator contact the shoulders while performing this step.)
- Tilting of the head up and down (Do not to let the respirator contact the chest while in the down position.)
- Talking (If the employee wishes to be supplied something to read to the instructor, then the following shall be used.)
- Bending over
- Normal breathing

The Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond his reach, his friends say he is looking for the pot of gold at the end of the rainbow.

8.6-2.8 Respirator Cleaning

Respirators shall be cleaned and disinfected as necessary. All respirators shall be cleaned using the methods provided in Appendix 8-B.

8.6-2.9 Respirator Maintenance

Respirators are to be properly maintained at all times 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 before use. The following checklist will be used when inspecting respirators:

- Facepiece
  - Cracks, tears or holes
  - Facemask distortion
  - Cracked or loose lenses/face shield
- Head straps
  - Breaks or tears
  - Broken buckles
- Valves
  - Residue or dirt
  - Cracks or tears
- Filters/Cartridges
  - Approval designation
  - Gaskets
  - Cracks or dents in housing
  - Proper cartridge for hazard

If there are any problems with the respirator found while inspecting, pull out of service until the problem is fixed or a new one is purchased

8.6-2.10 Cartridge Change Schedules

Employees wearing air-purifying respirators (APR) with P100 high efficiency particulate air (HEPA) filters for protection against dusts, silica, heavy metals, aerosols, asbestos, bird guano, and other particulates shall change the cartridges on their respirator in accordance with manufacturer recommendation, or if there is noticeable air restriction/flow, or if the filter is “lightly caked” with dusts/particles.

In general, employees wearing APRs with organic vapor cartridges or other types of cartridges shall change the cartridges in accordance with manufacturer recommendations or when there is any indication of breakthrough.

In many instances, breakthrough of certain chemical types (e.g., pure carbon monoxide, hydrogen sulfide) cannot be detected by an employee’s olfactory system. Therefore, specific change out requirements for chemical types encountered for a project or work activity shall be identified in a Site Specific and/or Work Specific Pre-Activity Safety Plan.

Respirator manufacturers, as well as the National Institute for Occupational Safety and Health, have developed software to evaluate change out schedules which can be accessed through their Web site.

8.6-2.11 Respirator Storage

Respirators must be stored in a clean, dry area according to the manufacturer's recommendations. Each employee shall clean and inspect their respirator according to the provisions of this program. Respirators shall be stored in a clean, dry environment in a manner that won't cause the respirator to be deformed. Storage in air-tight container, such as a bag and/or rigid, plastic container is strongly recommended. Cartridges will be stored in areas designated by the supervisor or Program Manager. Employees will have immediate access to filtering cartridges and replacement parts for their respirator type. Respirators that contain face-shields should be stored in a manner that reduces lens scratching or damage.

8.7 Appendices

Appendix 8-A	Respirator Record
Appendix 8-B	Respirator Cleaning Procedures
Appendix 8-C	Respiratory Use at WSDOT

To download a current copy of DOT Form 750-090, go to the Forms Management Web site: wwwi.wsdot.wa.gov/fasc/adminservices/forms/formfiles/WSDOT_forms

Washington State Department of Transportation

Respirator Record

Name	Employee ID Number	Organization Code
Supervisor's Name	Telephone Number	

Exposure

- ☐ Welding/Cutting/Brazing
- ☐ Spray Painting
- ☐ Vehicle Body Repair
- ☐ Pavement Marking
- ☐ Lead
- ☐ Pestcides
- ☐ Asbestos
- ☐ Silica
- ☐ Solvents
- ☐ Bridge Maintenance
- ☐ Abrasive Blasting
- ☐ Grinding/Sanding
- ☐ Pigeon Droppings
- ☐ Other (Specify) _____

Fit Test

Date of Fit Test	Type of Fit Test Used ☐ Qualitative ☐ Quantitative ☐ N/A
Tester	○ Pass ○ Fail

Respirator

Size
- ☐ Small ☐ Medium ☐ Large

Facepiece
- ☐ 1/2 Mask ☐ Full Face ☐ Hood/Helmet

Type
- ☐ SCBA
- ☐ PAPR
- ☐ Air Line
- ☐ Dust / Mist
- ☐ Other (Describe) _____
- ☐ Chemical Cartridge
- ☐ Gas Mask
- ☐ Combination

Manufacturer
- ☐ North
- ☐ MSA
- ☐ Willson
- ☐ Survivair
- ☐ 3M
- ☐ Bullard
- ☐ Northstar
- ☐ American Optical
- ☐ Scott
- ☐ Glendale
- ☐ Uvex
- ☐ Other _____

Model Number	Approval Number

Comments

DOT Form 750-090
Revised 02/2012

Appendix 8-B Respirator Cleaning Procedures

Use only the manufacturer respirator cleaning instructions or the instructions identified below for cleaning and disinfecting your respirator:

1. Remove filters, cartridges, or canisters. Remove speaking diaphragms, demand and pressure-demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.
2. Wash components in warm (43°C [110°F] maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
3. Rinse components thoroughly in clean, warm (43°C [110°F] maximum), preferably running water. Drain.
4. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
   a. Hypochlorite solution (50 ppm of chlorine) made by adding approximately 1 milliliter of laundry bleach to 1 liter of water at 43°C (110°F).
   b. Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6 to 8 grams ammonium and/or potassium iodide/100 cc of 4 percent alcohol) to 1 liter of water at 43°C (110°F).
   c. Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.
5. Rinse components thoroughly in clean, warm (43°C [110°F] maximum), preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on facepieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
6. Components should be hand-dried with a clean lint-free cloth or air-dried.
7. Reassemble facepiece, replacing filters, cartridges, and canisters where necessary.
8. Test the respirator by performing a negative and positive pressure check to make sure that all components work properly.

Work Activity	Containment's	Work Site	Estimated Respirator	WAC, PEL-TWA	Comments
Bridge/structure work containing lead paint, grinding, cutting, blasting, torching, etc.	Lead, and other heavy metal components	Any public roadway, bridge, or facility	Grinding-half/full-face APR, torching/ cutting – hooded or full face PAPR – with air exhaust	Lead – 0.05 mg/m3 Zinc – 5.0 mg/m3 Cadmium – 0.005 mg/m3 Chromium – 0.5 mg/ m3	*Any type of torching/ burning of lead paint can **quickly** expose employees/ contractors to levels of lead in excess of multiple times the PEL
Concrete hammering or saw cutting	Dust, respirable dust, silica	Any public roadway	Filtering HEPA face piece, half-face or full-face APR, equipped with P100, HEPA	Silica – 0.1 mg.m3 Dust – 10 mg/m3 Respirable dust – 5 mg/m3	Minimize dust using wet methods
Sweep or abrasive blasting or welding operations	Dust, silica, heavy metals, metal slag, etc	Any public roadway or facilities or bridge, etc.	Full/half-face APR equipped with P-100 HEPA	Lead – 0.05 mg/m3 Cadmium – 0.005 mg/m3 Chromium – 0.5 mg/ m3	Components of abrasive blast or substrate may contain hazardous components
Insecticide/Herbicide applications	Chlorinated compounds, organophosphates, etc.	Facilities and Roadways	Semi-volatile filters with half or full face APR, equipped with P100 HEPA	Heptachlor – 0.5 mg/ m3 Paratthion – 0.1 mg/ m3 Furadon – 0.1 mg/m3	Stay upward during application, follow manufacturer recommendations for filter cartridge
Asphalt Paving Operations	Asphalt Fumes	Facilities and Roadways	None required – P95 to P100 disposable dust mask is recommended	Asphalt Fumes – 5.0 mg/m3 Xylenes – 435 mg/ m3 Napthalene – 50 mg/ m3	Stay upwind during application, follow manufacturer recommendations for filter cartridge

Work Activity	Containment's	Work Site	Estimated Respirator	WAC, PEL-TWA	Comments
Environmental sampling or inspections	Asbestos, volatiles, and other unknowns	Facilities, groundwater, and others	Half or full face APR, equipped with P100 HEPA and volatile cartridge	Asbestos – 0.1 fiber/ cc Benzene – 0.1 ppm Toluene – 200 ppm	Manage organic cartridge breakthrough
Animal wastes	Pigeon, bat droppings	Bridges, overhangs, facilities, roofs, etc.	None required – P95 to P100 disposable dust mask is recommended	Not applicable	Avoid breathing dusts of animal wastes. Disinfect prior to commencing with cleaning procedures
Others – Per Region					

Note 1: The above work activities and the potential airborne hazards – Must NOT be performed in confined spaces (Tanks, Vaults, Culverts, etc.)
Note 2: Employees exposed or potentially exposed to "other" non-regulate hazards, and desiring respirators use must follow the Voluntary Respirator use procedures as documented in this Program.
***Note 3:** A site-specific safety and health plan is required to be prepared for any projects that require PAPR or supplied air respirators, and that deal with lead paint.

Estimated respirator – The respirator required to meet permissible exposure levels.
Hepa – High Efficiency Particulate Air
PEL – Permissible Exposure Level
IDLH – Immediately dangerous to life and health
TWO –Time Weighted Average (based on an 8 hour workday)
APR – Air Purifying Respirator
SCBA – Self-contained Breath Apparatus
PAPR – Powered Air-Purifying Respirator
SAR – Supplied Air Respirator

Respiratory Use at WSDOT
Work Sites and/or Work Activities Potentially Requiring Respirators
Table 1

Chapter 9 Hearing Conservation Program

9.1 Purpose

The Washington State Department of Transportation (WSDOT) Hearing Conservation Program (HCP) is designed to protect workers with significant occupational noise exposures from occupational noise-induced hearing loss.

9.2 Scope and Applicability

This chapter applies to all employees who may be exposed to 85 decibels or greater as measured on the A-weighted scale (dBA) and/or extreme impulse/impact noise, though different elements of the program may apply depending on the nature of the noise exposure.

9.3 References

- WAC 296-817 *Hearing loss prevention (noise)*
- WAC 296-27-01113 *Recording criteria for cases involving occupational hearing loss*

9.4 Definitions

A-Weighted – An adjustment to sound level measurements that reflects the sensitivity of the human ear. Used for evaluating continuous or average noise levels. Decibels measured using the A-weighted scale are abbreviated to "dBA".

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 a standard threshold shift (STS) is persistent or if the hearing threshold in the annual audiogram indicates significant improvement over the baseline audiogram.

HCP Enrolled Position – A position that has tasks or duties with noise exposure at or above 85 dBA over an 8-hour time-weighted average (TWA_8).

Recordable Threshold Shift – There is a change in the hearing threshold, relative to the baseline audiogram for that employee, of an average of 10 decibels (dB) or greater at 2000, 3000, and 4000 hertz (Hz) in one or both ears, AND the employee's overall hearing loss (threshold) is 25 dB or greater (averaged at 2000, 3000, and 4000 Hz) in the same ear as the change, AND age corrected.

Safety Organization – Headquarters Safety and Health Services Office staff, and Region Safety Office staff.

Standard Threshold Shift – A hearing level change, relative to the baseline audiogram, of an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear.

TWA_8 – Eight-hour time-weighted average.

9.5 General Responsibilities

Are as assigned in Chapter 1 of the *Safety Procedures and Guidelines Manual*, as well as the items below specific to Hearing Protection Policy. It is the responsibility of each employee to ensure implementation of WSDOT's Hearing Conservation Program.

9.5-1 Executive, Senior, and Mid-Level Management

- Understand and implement the provisions of WSDOT's Hearing Conservation Program.
- Ensure adequate funds are available to support the program including audiometric testing, employee training and appropriate hearing protection devices.
- Request engineering or administrative control alternatives be evaluated and implemented before employees are included in the HCP.
- Support supervisors in providing all elements of the HCP.

9.5-2 Supervisors

- Understand and implement the provisions of the Hearing Conservation Program.
- Assist Region Safety Office staff in identifying occupational noise exposures.
- Ensure that designated noise areas are clearly posted with warning signs, as applicable.
- Ensure that employees attend required audiometric testing and training.
- Discuss noise hazards and hearing protection as a part of Pre-Activity Safety Planning.
- Assist Region Safety Office staff in coordinating training, audiometric testing, and follow-up investigations to hearing threshold shifts or other potential program deficiencies.
- Ensure that employees exposed to 85 dBA or greater (regardless of duration) wear hearing protection.
- Know how to properly fit, use, and care for hearing protection devices.
- Ensure employees properly and consistently use hearing protection as required.
- Ensure that employees in an HCP Enrolled Position obtain a baseline audiogram within one year of assignment to a position with such noise exposures.
- Ensure that employees who leave an HCP Enrolled Position obtain a termination audiogram. These may include employees who transfer from HCP enrolled positions to non-HCP enrolled positions or leave service with WSDOT.

9.5-3 Employees

9.5-3.1 Employees Enrolled in the HCP

- Comply with all provisions of the HCP.
- Undergo baseline, annual, and termination audiometric testing or auditing, as required by the program.
- Properly and consistently use and care for hearing protection devices.
- Attend scheduled training, testing, and/or retesting.
- Assist the supervisors and managers in identifying work activities and locations where high noise exposure occur.
- Cooperate and participate in noise monitoring and when investigations for hearing threshold shifts or other possible program deficiencies are conducted.
- Contact their supervisor and/or Safety staff with concerns regarding effectiveness, use, and/or care of hearing protection devices.

9.5-3.2 Employees Not Required to Enroll in the HCP

Employees who have occasional exposure to occupational noise of 85 dBA or higher, but less than 85 dBA TWA_8, are not required to participate in the HCP, but are required to use hearing protection when in environments at or above 85 dBA (with limited exceptions noted in 6.1).

9.5-4 Human Resource Staff

- Ensure coordination of baseline audiometric testing and hearing conservation training (e.g. a check-off for audiometric testing and training in the in the New Employee Orientation) for employees who will be exposed to noise at or above 85 dBA TWA_8.
- Notify supervisors of new personnel so that the supervisor can determine the employee's occupational noise exposure and work with the Region Safety Office in scheduling baseline audiograms if required under this policy.

9.5-5 Safety Organization

9.5-5.1 Safety, Health and Employee Services Manager

- Implement the Hearing Conservation Program.
- Provide leadership and guidance on hearing loss prevention and HCP administration.
- Develop program performance measurements, goals, and strategies.
- Identify and support program needs regarding personnel, training, and equipment.
- Align resources to meet program needs.

9.5-5.2 Vacant

9.5-5.3 Region and HQ Safety Offices

- Develop and implement the HCP through region executives, managers, and supervisors.
- Identify job classifications, work activities and areas, processes, tasks, and/or equipment operations that require workers to be enrolled in the HCP.
- Coordinate employee baseline, annual, and termination audiometric testing (or audits, as applicable) and training with contracted vendors and/or affiliate clinics and ensure required communications are delivered to employees (e.g. notification of STS, medical referral, etc.).
- Ensure employees identified as experiencing a recordable threshold shift are entered into Compliance Suite (or equivalent) for inclusion on OSHA 300 log in accordance with WAC 296-27-01113.
- Evaluate the following, at a minimum, when responding to a standard threshold shift:
  - Employee noise exposure measurements.
  - Noise controls in the work area.
  - The selection of hearing protection available and refit employees as necessary.
  - Employee training on noise and the use of hearing protection and conduct additional training as necessary.
- Assist line management, such as managers and supervisors, in implementing activities toward the prevention of hearing loss.
- Coordinate, conduct, and assist with occupational noise exposure monitoring to meet regulatory requirements and program needs.
- When potential deficiencies in the program are identified, coordinate evaluation and correction.
- Identify and support program needs regarding personnel, training, and equipment.
- Maintain records of region employees in HCP.

Appendix 9-E contains questions and answers on program issues with respect to responsibilities of Region Safety Office staff and supervisors.

9.5-6 Hearing Conservation Program (HCP) Elements

The basic elements of the HCP are:

1. Minimizing noise through use of engineering and administrative controls when feasible (e.g. changes in equipment or processes to reduce noise). Eliminating hazardous exposure is the best method of preventing noise-induced hearing loss.

2. Use of hearing protection when noise exceeds 85 dBA for any amount of time (with limited exceptions noted under Section 6.1).

3. Participation in hearing loss prevention training.

4. Participation in audiometric testing (or audits, as applicable).

9.5-6.1 Hearing Protection Use Policy

This policy requires employees to use hearing protection anytime work environment noise at is equals or exceeds 85 dBA at the position of the ear. This requirement applies regardless of length of time, with the limited exception stipulated below. In the event that hearing protection is not readily available to an employee, the employee shall not work in areas with exposure at or above 85 dBA until hearing protection is available.

Field level supervisors have been provided with sound level meters to evaluate noise conditions. As a practical guide, noise may be above 85 dBA if a person must raise his or her voice to speak with someone approximately three feet away (arm's distance). Unless sound level monitoring indicates otherwise in such conditions, noise should be assumed to be at or above 85 dBA and hearing protection should be worn.

This policy does not require hearing protection where employees are working in conditions that are predominantly below 85 dBA but may be subject to occasional very brief noise level increases that exceed 85 dBA (e.g., rural setting and an occasional loud truck drives by, or restroom air-hand dryers). Hearing protection must be worn if noise equals or exceeds 115 dBA or 140 dBC for any length of time, without exception.

1. **Hearing Protection Devices (HPD) – Personal Protective Equipment (PPE) –** When a permanent department employee (that is enrolled in the hearing conservation program) elects to purchase and wear custom molded earplugs when exposed to noise at or above 85dB during the course of regular duties, the employee is eligible for a reimbursement allowance of up to $75 per biennium to help offset the purchase cost.
   - **Procedure –** WSDOT shall provide two or more types of hearing protection devices at no cost to employees. Hearing protection devices are available in facilities and vehicles throughout WSDOT. Appendix 9-G summarizes advantages, disadvantages, and care for hearing protection devices.

     Hearing protection selected must reduce noise (inside the ear) to below 85 dBA TWA_8. Ideally, the HPD should reduce noise inside the ear to between 75-80 dBA, as this level will allow for communication, situational awareness, and perception of emergency signals. Improper or inconsistent use of protection by employees may indicate hearing protection selection is not ideal. Your Safety Office can provide assistance in selecting proper hearing protection.

     Employees with questions or concerns about the use, care or effectiveness of hearing protection devices shall immediately contact their supervisor or their Region Safety Office.

2. **Allowance Payable to Designated Permanent Employees for Custom Molded Earplugs –** When a permanent department employee that is exposed to noise at or above 85 dBA TWA_8 during the course of regular duties elects to purchase and wear custom molded earplugs, the employee is eligible for a reimbursement allowance of up to $75 per biennium to help offset the purchase cost.

- **Procedure**

  Employee Provides Receipt – Employees must provide their supervisor with proof of purchase (receipt) of custom molded earplugs to request reimbursement.

  Supervisor Reviews and Approves Reimbursement – The supervisor ensures that any employee requesting reimbursement is enrolled and participates in the hearing conservation program and exposed to noise at or above 85 dBA TWA_8 during their regular duties.

  The supervisor makes a copy of the receipt and indicates they have verified the PPE meets the required standard for reimbursement on the Invoice Voucher, Form 134-139. The receipt is then attached to the Invoice Voucher and submitted to the person with delegated authority to authorize/approve payments from their organization's budget for processing.

  Disputes – Any disputes concerning the wearing of custom molded earplugs, eligibility for the allowance, provider used, or exceptions to this procedure are to be referred to the Appointing Authority or designee. In some cases, custom molded earplugs could be more cost effective than disposable HPDs and/or result in improved use of hearing protection. Appointing Authorities (or designee) have authority to make judicious decisions regarding provision of custom molded hearing protection.

9.5-6.2 Training

WSDOT will provide training when an employee is first assigned to a position involving noise exposure that equals or exceeds 85 dBA TWA_8. Employees who remain in HCP enrolled positions will have refresher training at least annually thereafter. At a minimum, the initial and refresher training will include:

- The effects of noise on hearing (including both occupational and non-occupational exposures).
- Noise controls used in relevant work operations.
- The purpose of hearing protectors: The advantages, disadvantages, and attenuation of various types.
- Instructions about selecting, fitting, using, and caring for hearing protection.
- Employee rights to access records.
- The purpose and procedures for program evaluation including audiometric testing and hearing protection auditing when and if auditing is used in lieu of audiometric testing (refer to WAC 296-817-500).

Employees with exposure less than 85 dBA TWA_8 are encouraged, though not required, to have training including the above topics. Employees with exposure at or above 85 dBA, though at levels less than 85 dBA TWA_8, should discuss noise hazards and hearing protection as a part of Pre-Activity Safety Planning.

An employee with an STS must be retrained, as necessary, to assure they have the knowledge and skills to adequately protect themselves from occupational noise hazards.

9.5-6.3 Audiometric Testing

All WSDOT employees determined or estimated to have noise exposure at or in excess of 85 dBA TWA_8 shall be provided audiometric testing. Audiometric testing shall include:

- Baseline testing within one year of being assigned to a HCP enrolled position.
- Annual audiograms.
- Termination audiograms when an HCP Enrolled employee leaves service with WSDOT or transfers to a position with exposure below 85 dBA TWA_8.
- Retesting as necessary or appropriate.

In lieu of baseline audiograms, employees with exposure at or above 85 dBA TWA_8 that are hired for less than one year may undergo an auditing program conforming to requirements in WAC 296-817-500.

Employees assigned to short-term projects with exposures at or above 85 dBA TWA_8, but otherwise do not have routine exposure at that level, (such as pile driving inspections), shall have audiograms both immediately before and after the short-term project.

9.5-6.4 Affiliate Clinics

WSDOT has two providers for audiometric testing Listen Audiology Services, Inc. and Washington Audiology. Listen Audiology Services accepts test results from any certified testing facility. Washington Audiology has a list of affiliate clinics in Appendix 9-F have been identified to conduct audiometric testing when it is not feasible to have audiometric testing done by either testing provider. Washington Audiology Services, Inc. has provided the list of their affiliated clinics around the state that provide audiometric testing. Supervisors are required to contact their respective Region Safety Office for referral where the employees can obtain their audiometric testing. If an employee in the hearing conservation program requires testing from one of the clinics, they must provide the clinic a form (Appendix 9-A and 9-B) completed for the appropriate affiliated provider (Listen Audiology Services Inc. or Washington Audiology).

9.6 Appendices

Appendix 9-A	Listen Audiology Services, Inc. Testing Form
Appendix 9-B	Washington Audiology Testing Form
Appendix 9-C	Form Letter for Potential Hearing Loss from a Baseline Audiogram
Appendix 9-D	Tools for Determining Hearing Loss Baseline Calculation and OSHA-Recordability
Appendix 9-E	Supervisor and Safety Office Responsibilities – Questions and Answers
Appendix 9-F	Affiliate Clinics
Appendix 9-G	Hearing Protection Devices Information
Appendix 9-H	WSDOT Noise Monitoring Summary Table
Appendix 9-I	Hearing Clinic List

Listen Audiology Services, Inc. Testing Form

Name:_____ _____ _____
Last **First** **M.**

Date of Birth:_____ **Employer:**_____

Gender: ☐ **Male** ☐ **Female** **Job/Dept:**_____

PLEASE ANSWER THESE QUESTIONS JUST BEFORE YOUR HEARING TEST.

Yes	No	
☐	☐	Do you wear hearing protection at work? Percentage of time worn while in noise:_____
☐	☐	Have you been exposed to **loud*** noise in the past 14 hours? **(*Loud – you would have to shout to be heard at arm's length away during noise.)**
☐	☐	If yes, did you wear hearing protection? Type:_____

Please describe any recent ear/hearing problems:_____
_____

CHECK ALL THAT APPLY IN YOUR LIFETIME:

- ☐ Known hearing loss
  If yes, have you seen a doctor?
  ☐ Yes ☐ No
- ☐ Hearing aid(s)
- ☐ Ear surgery
- ☐ Military service
- ☐ Family history of hearing loss
- ☐ Noisy hobbies/Power Tools
- ☐ Hunting/Gun fire
- ☐ Ringing/noise in ears
- ☐ One ear hears better than the other
  If yes, ☐ Right better or ☐ Left better
- ☐ Persistent dizzy spells
- ☐ Chemotherapy
- ☐ Excessive Ear Wax
- ☐ Ear pain (continuous or often)
- ☐ Ear drainage
- ☐ Sudden or fluctuating hearing loss
- ☐ High blood pressure
- ☐ Serious Head Injury
- ☐ Allergies or sinusitis
- ☐ Feeling of pressure/fullness in ears
- ☐ Other_____

☐ ***I have read all of the above and none apply.***

Employee Signature:_____ ***Date:*** _____

Date:_____ **Time:**_____ **Clinic:** _____
Phone:_____
Tech:_____ **Location:**_____

CAOHC #:_____

(Hz)	500	1000	2000	3000	4000	6000	8000	Otologic Exam	Notes:	Audiometer Type:
Left										Serial #:
Right										Calibration Date:

Please email to: listenaudiology@comcast.net or send to 7008 153rd Pl SE, Snohomish, WA 98296

(This form is provided by Listen Audiology Services, Inc. for employees to complete prior to audiogram testing.)

WASHINGTON AUDIOLOGY SERVICES, INC.

Last Name (Please Print)	First	Middle	Sex: ❑ Male ❑ Female
Social Security # (optional):	Date of Birth:	Date of Hire:	**Employee ID#:**
WSDOT Region/Location:			
Org. Code:	**Job:**	Shift:	Shift Length:

1 *CHECK ALL THAT APPLY JUST BEFORE YOUR HEARING TEST:*

1. IS THIS YOUR FIRST HEARING TEST WITH *YOUR* COMPANY? ❑ YES ❑ NO
2. HAVE YOU BEEN EXPOSED TO **LOUD*** NOISE IN THE PAST 14 HOURS? ❑ YES ❑ NO
   (LOUD* = If you would have to shout to be heard at arm's length away during the noise.)
   IF YES, DESCRIBE THE NOISE:_____
3. IF YES, DID YOU WEAR HEARING PROTECTION DURING THE ENTIRE NOISE EXPOSURE? ❑ YES ❑NO
4. **WHEN IN HIGH NOISE AREAS AT WORK, I USE MY HEARING PROTECTION: (CHECK A BOX)**

Never = 0% **Always = 100%**

Not Exposed	0 0%	1 20%	2 40%	3 60%	4 80%	5 100%

5. HOW WOULD YOU RATE YOUR HEARING? (CIRCLE ONE) **UNKNOWN**, **VERY POOR**, **POOR**, **AVG**, **GOOD**, **VERY GOOD**
6. I wear: ❑ ear plugs ❑ ear muffs ❑ banded caps ❑ custom earplug ❑ (Brand & Model):_____

2 *CHECK ALL THAT APPLY IN YOUR LIFETIME:*

❑ Perceived hearing loss ❑L ❑R
❑ Dr. evaluated hearing loss ❑L ❑R
Approximate Date(s)_____
Cause, if known_____
19 ❑ High blood pressure
20 ❑ Have seen Dr. for ear problems ❑L ❑R
Describe_____
21 ❑ Ear surgery_____ ❑L ❑R
22 ❑ Head injury/unconsciousness
23 ❑ Hearing Aid(s) ❑L ❑R
32 ❑ Hearing loss common in family
36 ❑ Military service
37 ❑ Noisy hobbies
List:_____
39 ❑ Firearms: I shoot ❑ **L** or ❑**R** handed
❑ Worked in noisy jobs previously

00 ❑ I have read all the above and none apply.
This audiometric evaluation is not meant to be a substitute for regular medical care. If you are experiencing problems or concerns with your ears and/or hearing, please seek the advice of your physician.

3 *CHECK ALL THAT APPLY WITHIN THE LAST 12 MONTHS:*

❑ Have seen doctor for ears within the last 12 months? (explain below) ❑L ❑R
❑ Ear problems when using hearing protection devices? _____ ❑L ❑R

Have seen Dr.
10 ❑ Ear pain (continuous or often) ❑L ❑R - ❑
11 ❑ Ear discharge (pus) ❑L ❑R - ❑
12 ❑ Unexplained dizzy spells
13 ❑ Severe ringing in ears ❑L ❑R - ❑
❑ Constant ❑ Intermittent
Number of years:_____
14 ❑ Sudden hearing loss ❑L ❑R - ❑
15 ❑ Fluctuating hearing loss ❑L ❑R - ❑
16 ❑ Feeling of fullness in ears (unrelated to common cold) ❑L ❑R - ❑

35 ❑ Do you have a head cold, sinus or allergy problems **TODAY** that seems to be affecting your ears or hearing?

Still experiencing any of the above reported symptoms? ❑ Yes ❑ No

00 ❑ I have read all of the above and none apply.

PLEASE EXPLAIN ANY CHECKED RESPONSES:

OTOSCOPIC: L_____ R_____

Tester Comments:

I authorize the release of my hearing test data and the information I have provided above to my employer or other health care providers designated by my employer for the purposes of the hearing conservation program.

Employee signature:_____ **Date:**_____

e:\general office\client forms\testing\was annual testing form updated 1-24-00

(This form is provided by Listen Audiology Services, Inc. for employees to complete prior to audiogram testing.)

Form Letter for Potential Hearing Loss from a Baseline Audiogram

Washington State Department of Transportation

Lynn Peterson
Secretary of Transportation

Transportation Building
310 Maple Park Avenue S.E.
P.O. Box 47300
Olympia, WA 98504-7300
360-705-7000
TTY: 1-800-833-6388
www.wsdot.wa.gov

Date:

Employee:
Address:

Subject: Audiometric testing (Audiogram) Results

Dear Employee:

The Washington State Department of Transportation (WSDOT) provides a comprehensive hearing protection and Conservation Program (HCP). As part of its program, WSDOT has an aggressive audiometric testing and training program. It is important for your safety, the safety of your co-workers, and that of the motoring public that your hearing is conserved and hearing loss is prevented.

As a WSDOT employee, we expect you to protect your hearing. Every WSDOT employee who is exposed to noise level of at least 85 dBA is expected to wear hearing protection. Employees who are occupationally exposed to high noise levels (85 decibles as averaged over an 8-hour period) shall be enrolled and participate in the WSDOT Hearing Conservation Program. WSDOT provides hearing protection devices at facilities across the state. If your job activities require you to be exposed to high noise levels, you are required to use and maintain all appropriate hearing protection devices. We also expect and strongly encourage you to protect your hearing away from work.

The results of your recent audiometric test indicate that you may have a hearing loss which may be attributable to your exposure to excessive noise in the past. We encourage you to consult with your medical provider regarding important hearing conservation matters.

Enclosed please find your audiometric test results.

May you have a safe and healthy career with WSDOT. Should you have any questions or if I can provide you with any additional information, please don't hesitate to contact the Regional Safety Office.

Sincerely,

Region Safety Manager/Office

cc: Employee Supervisor

Washington State Department of Transportation

Lynn Peterson
Secretary of Transportation

Transportation Building
310 Maple Park Avenue S.E.
P.O. Box 47300
Olympia, WA 98504-7300
360-705-7000
TTY: 1-800-833-6388
www.wsdot.wa.gov

To: Outside Audiogram Provider (Place clinic name here)

Audiometric Testing Authorization Form

This individual has been instructed to obtain a audiometric test as part of his/her required participation in a Hearing Conservation Program provided by his/her employer, the Washington State Department of Transportation (WSDOT). This Hearing Conservation Program is in accordance with Chapter 296-817 WAC of the Division of Occupational Safety and Health (DOSH). Please adhere strictly with the outline below which summarizes what is required of your clinic with regards to this audiometric test.

Pure tone audiometric testing only. Please obtain thresholds bilaterally at the following frequencies: 500, 1000, 2000, 3000, 4000, 6000, and 8000 Hz.

Please use the Washington Audiology Testing Form attached form (below) for recording threshold and medical history information. Please note that the employee must sign the statement at the bottom which authorizes his/her release of information to employer designated health care providers for the purposes of the Hearing Conservation Program.

Results of the audiometric test are to be sent or faxed to Washington Audiology Services, Inc. within 48 hours of the date of testing. This is critical because retesting, if applicable, is only permitted within a specified period of time from the original test date.

Washington Audiology Services, Inc.
6987 Perimeter Road So, Ste 100
Seattle, WA 98108
Fax: 206 764-4760

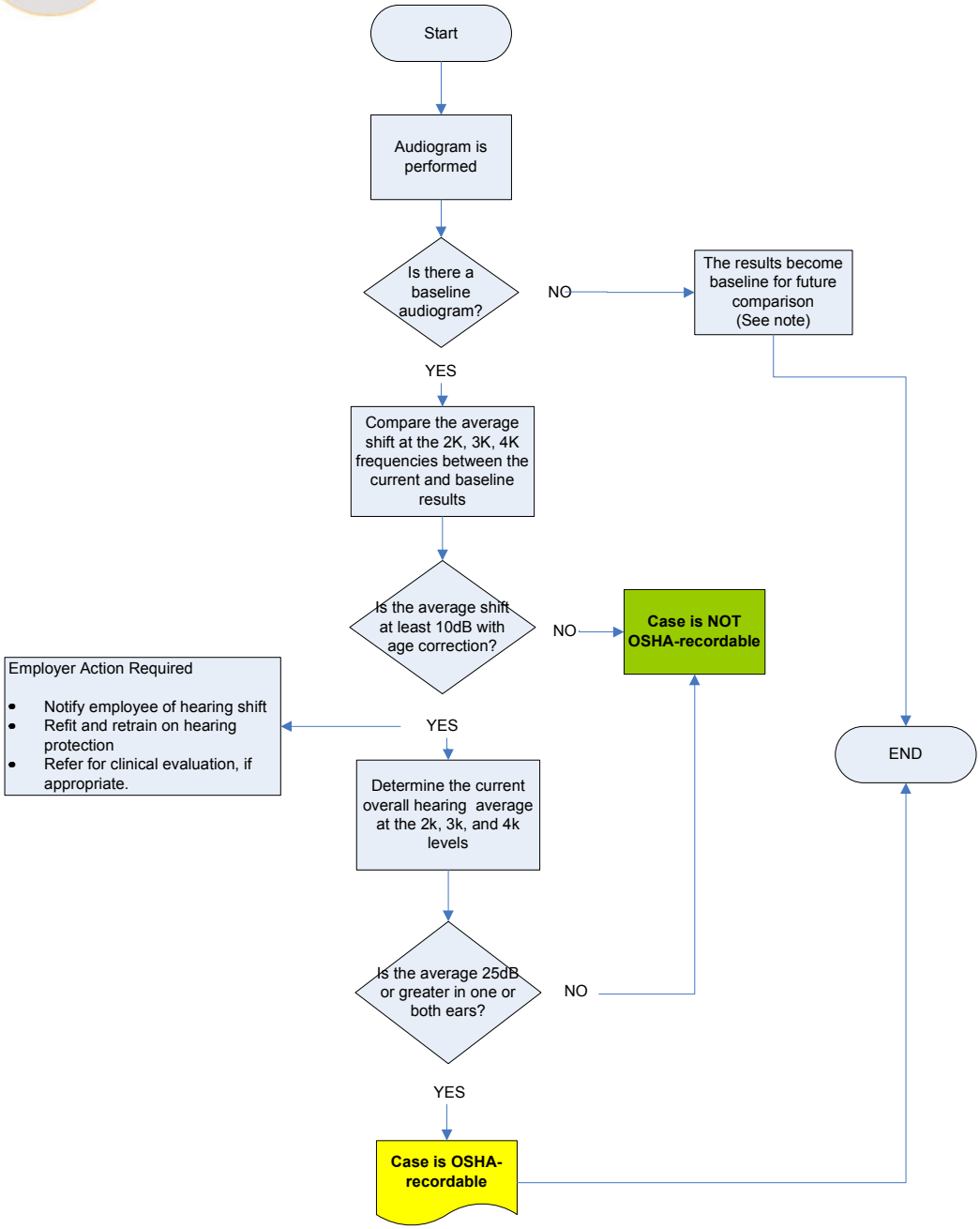
Audiometric tests must meet DOSH standards for Hearing Conservation Programs. This means that certain required standards apply to audiometric testers, audiometers, sound booths, etc. You already have or will be asked by Washington Audiology Services, Inc. to complete a survey to ensure that you meet these requirements and you may be asked to provide them with records to document this compliance. WSDOT requests your support in this very critical process.

Please send all invoices to Regional Safety Office: (address)

Thank you for your cooperation in these matters. Please contact the WSDOT individual noted below or Washington Audiology Services, Inc. with any questions you may have. Thank you.

Employee Signature/Date_____

Supervisor or Safety Manager Signature/Date/Phone_____



NOTE: The baseline for comparison with annual audiograms will remain the same until the baseline is changed as a result of an OSHA-recordable case (that is, the case meets both the 10dB with age correction shift AND the 25dB average hearing at 2, 3, and 4K frequencies). The results of the OSHA-recordable case then becomes the new baseline for future comparison.

Who is required to be enrolled in the WSDOT Hearing Conservation Program?

WSDOT employees who have occupational exposure to noise at or in excess of 85 dBA TWA_8 must participate in the HCP, including audiometric testing, training, and use of hearing protection.

Should WSDOT employees have their high noise exposure termination audiogram when transferred from a high noise "field" position to a low noise position (office setting) or when leaving WSDOT service?

Yes. WSDOT employees who transfer from high-noise positions to low-noise positions or leave WSDOT service will undergo a termination audiogram. This final audiometric test may be performed during a regularly scheduled testing schedule with the contract audiogram testing provider or at an affiliate clinic of the contracted audiometric service provider. The final audiometric testing results shall be provided to the employee in writing.

If employees want to participate in the HCP and don't have noise exposure at or above 85 dBA TWA_8 as part of their regular job duties, can they have their audiometric test annually as part of the WSDOT audiometric testing program?

No. If an employee does not have occupational noise exposure as part of their normal work operations, participation or enrollment in the WSDOT audiometric testing program is not authorized/approved. However, all the private health insurance options offered to WSDOT employees include coverage for annual hearing exams. Refer to your medical plan for further information.

Who is responsible for reporting OSHA recordable hearing losses?

The region is responsible for reporting the OSHA recordable hearing loss cases to HQ Safety and Health Office based on audiogram results from an authorized audiogram provider and entering the information into Compliance Suite (or equivalent). Headquarters will generate the OSHA 300 log. See Appendix 9-C, Flowchart in Determining Hearing Loss Baseline Calculation and OSHA-recordability.

Who is responsible for maintaining and compiling audiology testing data/ information?

HQ Safety and Health Office will maintain contractual agreements with audiometric providers to maintain testing records. As part of the contractual agreement, the audiometric vendor shall be responsible for maintaining employee records and other pertinent data/information. The HQ Safety and Health Office will routinely receive reports from the audiometric testing providers of the results of audiograms conducted. Regional Safety Offices should maintain records for their employees.

What happens if an employee has his/her audiometric tested at another clinic?

All attempts should be made to get the employee's audiometric tested through the contracted audiometric vendor or one of their affiliate clinics. If an employee cannot get their audiometric tested at Washington Audiology or an affiliate clinic – then the employee is required to use the form provided in Appendix 9-B.

What happens if a Recordable Threshold Shift (RTS) is observed in a WSDOT employee?

If you believe the audiogram may be inaccurate or the loss may not be persistent (e.g., employee had sinus congestion, testing was conducted with high levels of external noise), you can retest. If a retest is conducted within 30 days and indicates there was no RTS, it does not need to be recorded on the OSHA 300. If testing greater than 30 days after the initial test indicates the shift was not persistent, the entry on the 300 log can be deleted or lined out.

What happens if retesting confirms the RTS?

If the RTS is confirmed, the following action will be taken:

- The employee shall be notified of the STS in writing by the RSO.
- Evaluate the following, at a minimum, when responding to a standard threshold shift:
  - Employee noise exposure measurements.
  - Noise controls in the work area.
  - The selection of hearing protection available and refit employees as necessary.
  - Employee training on noise and the use of hearing protection and conduct additional training as necessary.

West Coast Hearing Clinic
1812 Summer Avenue
Aberdeen, WA 98520
360-533-0633 or 1-800-962-1396

North Cascade ENT Clinic
20302 77th Avenue NE
Arlington, WA
360-435-6300

Occupational Health Services – Auburn
1000 Auburn Way South
Auburn, WA 98002
253-395-2002

Hear for Life
124 Winslow Green
Bainbridge Island, WA 98110
206-842-6374

Evergreen Speech & Hearing
1800 116th Avenue NE Ste #103
Bellevue, WA 98004
425-454-1883

Whatcom Occupational Health
3015 Squalicum #220
Bellingham, WA 98225
360-676-1693

Northland ENT
3130 Sequalicum Prkway Ste #100
Bellingham, WA 98225-1936
360-734-6645

Kitsap Audiology
2635 Wheaton Way
Bremerton, WA 98310
360-373-1250

Advanced Hearing & Speech
1800 Cooks Hill Road Suite K
Centralia, WA 98531
360-807-8856

Colville Medical Group (NE Medical Group)
1200 East Columbia
Colville, WA 99114
509-684-3701

Everett Clinic – Occupational
3927 Rucker Avenue
Everett, WA 98201
425-317-3632

Sonus Pacific Hearing & Speech Services
3224 Colby Avenue #B
Everett, WA 98201
425-259-5066

Healthforce (Paine Field)
11001 31st Place West #1
Everett, WA 98204
425-267-0299

Healthforce (Formerly Providence Occ Med)
3311 Wetmore Avenue
Everett, WA 98201-4322
425-259-0300

U.S. Healthworks
1300 South 320th Street
Federal Way, WA 98003
253-839-2727

Multicare Healthworks
502 54th Avenue East
Fife, WA 98424
253-459-7500

Virginia Mason
100 NE Gilman
Issaquah, WA 98027
425-557-8000

Columbia Basin Hearing Center
1149 N. Edison ste D
Kennewick, WA 99336
509-736-4005

KGH Occupational Health Services
241 W 8th Avenue
Kennewick, WA 99936
509-586-5133

U.S. Healthworks
24031 104th Avenue SE
Kent, WA 98031
253-852-1824

Hear for Life
25995 NE Barber Cut Off Road
Kingston, WA 98346
360-297-0431

Evergreen Speech & Hearing – Kirkland
12333 NE 130th Lane Ste #203
Kirkland, WA 98034
425-899-5050

Lower Columbia Hearing Services
820 11TH Avenue Ste #A
Longview, WA 98632-2402
360-425-0044

U.S. Healthworks – Lynnwood
4320 196th Street SW Ste #428
Lynwood, WA 98036
425-774-8758

Moses Lake Clinic
840 East Hill
Moses Lake, WA 98837
509-765-0216

North Cascade ENT Clinic
111 South 13th Street
Mount Vernon, WA 98273
360-336-2178

Sound ENT Olympia
406 Yauger Way #B
Olympia, WA 98502
360-754-6069

Robertson Hearing Clinic
3230 14th Avenue NW
Olympia, WA 98502
360-866-2500

Hear for Life
115 Village Way
Port Ludlow, WA 98365
360-437-7767

Peninsula Hearing Inc.
19319 7th Avenue Ste #114
Poulsbo, WA 98370
360-697-3061

Hearing Advantage, The
20700 Bond Road NE
Poulsbo, WA 98370
360-697-1300

U.S. Healthworks
3850 South Meridian
Puyallup, WA 98373
253-840-1840

Evergreen Speech & Hearing – Redmond
8301 161st Avenue NE Ste #203
Redmond, WA 98052
425-882-4347

U.S. Healthworks
15937 Redmond Way
Redmond, WA 98052
425-882-0100

Occupational Health Services – Renton
3600 Lind Avenue SW #170
Renton, WA 98055
425-656-5020

Columbia Basin Hearing Center
215 Van Gieson
Richland, WA 99352
509-943-2682

U.S. Healthworks – North Seattle
8313 Aurora Avenue North
Seattle, WA 98103
206-784-0737

U.S. Healthworks
1151 Denny Way
Seattle, WA 98109
206-682-7418

Work Clinic
13030 Military Road South Ste #100
Seattle, WA 98168
206-243-9675

Healthforce Occupational Medicine
3223 First Avenue South Ste #C
Seattle, WA 98134
206-624-3651

North Seattle Public Health Center
10501 Meridian Avenue North
Seattle, WA 98733
206-296-4765

Hearing Advantage (The)
777 North Fifth Avenue Ste #201
Sequim, WA 98382
360-582-2616

Shelton Family Medicine
939 Mountain View Drive Ste #100
Shelton, WA 98584
360-426-2653

Spokane Valley ENT
1300 West Knox Avenue
Spokane, WA 99205
509-354-6450

Spokane ENT
217 W. Cataledo
Spokane, WA 99201
509-789-1020

Occupational Medicine Associates
323 East Second Avenue Ste #102
Spokane, WA 99202
509-455-5555

U.S. Healthworks – N. Newport Way
9222 North Newport Hwy Ste #1
Spokane, WA 99218
509-467-4545

Occupational Health Solutions, Inc.
P.O Box 14317 (99206)
200 N. Mullan Ste #222
Spokane, WA 99214
509-534-6820

Multicare Healthworks – Allenmore
Medical Center
1901 S. Union Street #A-203
Tacoma, WA 98405
253-459-6811

Port Clinic
1930 Port of Tacoma Road
Tacoma, WA
253-272-6677

Dr. Rone & Erwin
316 MLK Jr. Way #305
Tacoma, WA 98405
253-272-7114

U.S. Healthworks – Tacoma
2624 S. 38TH STREET
Tacoma, WA 98984
253-475-5908

U.S. Healthworks
200 Andover Park East #8
Tukwila, WA 98188-3722
206-575-3136

Healthforce – Tukwila
6720 Fort Dent Way
Tukwila, WA 98188-2580
206-242-3651

Columbia River Occupational Health
2105 NE 129th Street #107
Vancouver, WA 98686
360-891-4900

Evergreen Audiology Clinic
16209 SE McGillivray Blvd #M
Vancouver, WA 98683
360-892-3445

Earcare Hearing Aid Centers
8317 E. Mill Plain Blvd
Vancouver, WA 98664
360-690-4388

Walla Walla ENT Clinic
320 Willow
Walla Walla, WA 99362
509-525-3720

Yakima Hearing & Speech Center
303 S. 12th Avenue
Yakima, WA 98902
509-453-8248

Appendix 9-G Hearing Protection Devices Information

Hearing Protection Devices (HPDs)

HPD	Advantages	Disadvantages	How to Use	Care and Cleaning
Formable Type Plugs	• Many varieties available • Usually provide highest level of protection and comfort. • Compatible with other PPE • Range of attenuation, including highest levels reduction available	• Requires proper insertion technique to obtain good fit and protection • Hygiene concerns with rolling/handling and insertion	"Roll, Pull, and Hold". Compress plug into a tight cylinder. Quickly insert the plug (reach over your head and pull on the top of the opposing ear to open the ear canal during insertion). Hold plug in place until it has fully expanded.	Dispose after use or use manufacturer recommendations for cleaning and care.
Pre-molded Plugs	• Reusable • Size options for good fit • Compatible with other PPE • Do not require rolling • Good for moderate level noise attenuation	• May require sizing to ensure proper fit • Some find this type uncomfortable for longer term use	Choose the size that has optimal ear canal fit.	Wash in warm soapy water and keep dry.
Custom Molded Plugs	• Many options available, including filters to enhance communication or connection to radios or phones • Compatible with other PPE. • Do not require rolling • Range of noise reduction depending on model	• Higher initial cost • Maintenance and upkeep more difficult than disposable types • Requires exact fit; amount of protection may be affected by weight changes, and manufacturing flaws,	Simply slide into ear.	Follow manufacturer's instructions.
Ear Muffs	• Easy to fit properly. • Can be used in combination with other devices • Some equipped with electronics to enhance communication	• May be uncomfortably warm in hot work conditions. • May not be compatible with some equipment/ PPE	Ear cups must fit snug around the entire ear. Nothing should interfere with seal around ear.	Keep equipment clean with warm soapy water and keep dry. Replace when damaged or band loses tension.
Semi-Insert	• Convenient for intermittent noise • Do not require rolling • Good for low to moderate noise conditions	• Band pressure may be uncomfortable for longer term use	Insert into ear. Pulling upward and outward on the ear when inserting each side can improve fit and protection.	Follow manufacturer's instructions.

Appendix 9-H WSDOT Noise Monitoring Summary Table

Noise monitoring studies (noise "dosimetry") conducted by WSDOT to evaluate noise exposures are summarized in the table below. Full reports of noise and other exposure monitoring can be found on the WSDOT intranet site for Industrial Hygiene Monitoring Reports. If there are processes or tasks that may have exposure at or above 85 dBA TWA_8 and do not appear on the summary table below, coordinate noise monitoring with the Regional Safety Office. This table will be updated annually, so additional monitoring that is not yet listed in the table may be available.

Process	Above or Below 85 dBA TWA_8	Result TWA
Bridge Inspections	Below	75.1 - 77.5
Bridge Inspections	Below	75.2 - 75.4
Culvert Inspection (no vactor)	Below	77.8
Culvert Inspection (vactor assisted)	Below	73.0 - 73.3
Drilling	Above	83.9 – 90.4
Facilities Maintenance	Below	55.6 - 79.5
Facilities Maintenance - Landscaping	Below	75.7
Facilities - HVAC PM	Below	62.9 - 67.8
Facilities Maintenance - Parking Lot Snow Removal	Below	68.1
Materials Lab Bolt Testing	Below	66.3 - 67.2
Materials Lab Aggregate Testing	Below	80.3-83.2
TDO Electronic Counting	Below	59.7
TDO Manual Counting	Below	58.8
TDO Electronics Installation	Above	84.0 - 85.6
Engineering Inspections -Concrete Pouring & Ticket Taking	Below	79.2
Engineering Inspections I-90 Path	Below	71.3
Engineering Inspections - Demolition Project	Below	70.4 - 77.1
Engineering Inspections - Electrical	Below	67
Engineering Inspection - Dowell Bar Retrofit	Below	75.9 - 80.3

Process	Above or Below 85 dBA TWA_8	Result TWA
Engineering Inspections - Electrical	Below	<74
Survey & Engineering Inspections	Below	<74
Engineering Inspections -Dowel Bar Retrofit	Below	82.1
Engineering Inspections - Bridge Construction	Below	<74
Engineering Inspections - Asphalt Grinding	Below	80.9
Engineering Inspections -Vibrating Probe	Below	78.7
Engineering Inspections - Earth Moving	Below	68.2 - 77.5
Drainage Construction -Engineering Inspections	Below	68.5
Engineering Inspection I-5 construction site (exit construction)	Below	61.8 – 72.6
Engineering Inspection I-5 construction site (information technology system improvement project)	Below	75.2
Engineering Inspection – Paving Operation	Below	75.1 – 78.1
Concrete Demolition - Engineering Inspections	Below	71.4 - 74.9
Engineering Inspections - Pile Driving	Above and Below	63.1 - 92.9
Shaker Trailer (project aggregate testing trailer)	Below	72.6
Surveying	Below	74.5
Surveying	Below	61.8 – 72.6

Process	Above or Below 85 dBA TWA_8	Result TWA
Surveying	Below	72.2
Surveying	Below	66.8 – 75.2
Survey Hubbing	Below	78.2 - 79.4
IRT	Below	71.8 to 75.8
IRT	Below	76.7
Rest Area Landscaping Maintenance	Above	86.9
Traffic and Signal Monitoring (Manual)	Below	65.2
Sweeper	Below	76.6
TMA	Below	69.9
Brush Cutting/Tree Trimming	Above	84.3 - 86.6
Asphalt Inlay (“Dig Outs”, or “Grind and Fills”)	Above	84.7 - 85.2
Paint Removal - TNB	Below	<74 – 82.2
Dump Truck Driving	Below	73.4 - 79.7
Dump Truck Driving	Below	74.0
Brush Cutting/Tree Trimming	At	84.9
Snow Blowing	Below	76.0
Snow Blowing	Below	79.7
Snow Blowing	Below	75.7
Snow Plow/Control	Below	82.3
Custodial	Below	62.7
TEF	Below	64.9
TEF	Below	<74 - 74.4
TEF	Below	69.2 - 72.3
TEF Fabrication	Below	74.0
Signals	Below	73.9
Signals	Below	77.7
Sweeper	Below	73.5
Courier	Below	59.3
Section Patrol	Below	69.7
Section Patrol	Below	78.8
Section Patrol	Below	72.9
UBIT driving	Below	79.9
Grinding & Button Installation	Above	83.5 - 85.6
Hood Canal Bridge Routine Maintenance Activities	Below	73.9 to 80.3

Process	Above or Below 85 dBA TWA_8	Result TWA
Sign Installation	(slightly) Below	83.3
Mowing	Below	68
Mowing	Above	87.6
I-90 Tunnels	Below	78
Guardrail Repair	Below	79.1 - 81.2
Flagging	Below	56.9-66.8
Bridge Tending	Below	72.4
Vactor	Below	72.6 - 74.4
Vactor	Above	91-93
Vactor	Above	86.4
Vactor	(Slightly) below	78.7 - 84.1
Print Shop (HQ)	Below	73

	Clinic	Address	Contact	Phone	Fax
US Healthworks - Statewide					
Health Force Clinics - Statewide					
Group Health Clinics - Statewide					
Olympic Region					
Port Angeles	Federal Certified Hearing CTR	Sequim, WA *Call to schedule *Only test once a month- call to schedule		800-924-1577	
	Certified Hearing Incorporated	819 Georgiana St. # B Port Angeles, WA 98362	Brenda Haltom	360-452-2228	360-457-9666
Forks	Federal Certified Hearing CTR	800 Olympic Dr Forks, WA 98331* *Only test once a month- call to schedule		800-924-1577	
	Certified Hearing Incorporated	51 N Spartan Ave, Unit D Only test on Tuesdays	Brenda Haltom	360-374-0774	
Northwest Region					
Bellingham	Whatcom Occupational Health	3010 Squalicum Pkwy, Bellingham, WA 98225		360-676-1693	
Sedro Woolley	Federal Certified Hearing CTR	209 Ferry St Sedro Woolley, WA 98284 (East End)	Debbie	360-855-1207	360-855-1407
Arlington/ Everett	HeatlhForce Occupational Health	3726 Broadway #101 Everett, WA 98201		425-259-0300	
South Puget Sound					
Enumclaw	Sonus Hearing Care Center	120 14th ave SE # D Puyallup, WA 98372		253-845-3190	253-845-3271
Belfair/ Bremerton, WA	Audiologists Northwest	1411 Wheaton Way Bremerton, WA 98310	Receptionist	360-479-4065	360-479-3828
Pacific Cascade					
Compound	Robertson Hearing Clinic	909 Trosper RD SW Tumwater, WA 98512	Receptioinist	360-866-2500	360-866-2521
Webster's Nursery	Robertson Hearing Clinic	909 Trosper RD SW Tumwater, WA 98512	Receptioinist	360-866-2500	360-866-2521
Tumwater	Robertson Hearing Clinic	909 Trosper RD SW Tumwater, WA 98512	Receptioinist	360-866-2500	360-866-2521

	Clinic	Address	Contact	Phone	Fax
Chehalis	Advanced Hearing and Speech	1570 N National Ave Chehalis, WA 98532		360-740-8992	360-740-8993
Castlerock, Longview	Ear Nose Throat Clinic	1801 1st Ave #3A Longview, WA 98632	Cheryl	360-636-4469	360-425-4970
Battleground/ Vancouver, WA	Columbia River Occupational Health	2105 NE 129th St Suite 107 Vancouver, WA 98686	Charise	360-891-4900	360-546-3510
Aberdeen, WA	West Coast Hearing Clinic	1812 Summer Ave Aberdeen, WA 98520		360-533-0633	
Hoquiam, WA	All Ears Hearing Clinic	1933 Riverside Ave Hoquiam, WA 98550		360-533-2778	
Illwaco, WA	Ocean Beach Hosp. Avada Audio.	No address		360-532-2093	
Longview	Lower Columbia Hearing Svcs.	820 11th Ave Ste A Longview, WA 98632		360-425-0044	
Olympia	Westcare Clinic	3000 Limited Lane NW Olympia, WA 98502		360-357-9392	
Olympia	Hearing Healthcare Ctr Inc.	2421 Harrison Ave NW Olympia, WA 98502		360-754-0305	
Olympia	Sound ENT Olympia	406 Yauger Way # B Olympia, WA 98502		360-754-6069	
Shelton	Shelton Family Medicine	939 Mountain View Dr Ste 100 Shelton, WA 98584		360-426-2653	
South Bend	All Ears Hearing Clinic	610 Robert Bush DR, South Bend, WA 98586		360-875-0577	
Vancouver	Evergreen Audiology Clinic	16209 SE McGillivray Blvd # M Vancouver, WA 98683		360-892-3445	
Vancouver	Earcare Hearing Aid Clinic	8317 E Mill Plain Blvd Vancouver, WA 98664		360-690-4388	

	Clinic	Address	Contact	Phone	Fax
Southeast					
Yakima	Yakima Hearing and Speech Center	303 S. 12th Ave Yakima, WA 98902	Sheri	509-453-8248	509-248-9012
Husum, WA	Providence Occupational Health	811 13th St Hood River, OR 97031	Receptionist	541-387-6475	
			Elke	541-387-6383	
	Hears the Answer	608 E. 2nd The Dalles, OR 97058		541-296-6304	
	Note: They have a clinic in Hood River that is open for appointments on Tues/Thurs. Please call their Dalles number for all scheduling.				
Wenatchee, WA	Kasper Ronda AUD MA	933 Red Apple Rd Wenatchee, WA 98801	509-662-7143		
Ellensburg, WA	NW Audiology and Hearing	603 N Main St 2 Elensburg, WA 98926	509-962-9575	509-962-5575	
Northeast					
Omak, WA	Federal Certified Hearing CTR	Omak, WA *Call to schedule *Only test once a month- call to schedule		800-924-1577	
Loomis, WA	Federal Certified Hearing CTR	Omak, WA *Call to schedule *Only test once a month- call to schedule		800-924-1577	
Deer Park- Spokane	Spokane Ear Nose and Throat	217 W Cataldo Ave Spokane, WA 99201	Receptionist	509-624-2326	509-789-5798
			Marguerite	509-789-5798	
Colville	Spokane Ear Nose and Throat	217 W Cataldo Ave Spokane, WA 99201	Receptionist	509-624-2326	509-789-5798
			Marguerite	509-789-5798	

Chapter 10 Confined Space Entry

10.1 Purpose

To provide guidance for the establishment of confined space entry programs for Washington State Department of Transportation (WSDOT) operations and facilities asxrequired by applicable regulations.

10.2 Scope and Applicability

This chapter has been developed for confined space entry using the referenced WAC chapters as guidance. All confined space entries shall comply with this document to ensure the safety of personnel entering confined spaces on all WSDOT work sites. Contractors or subcontractors entering confined spaces shall develop and implement their own confined space program.

10.3 References

- WAC 296-809 *Confined spaces*
  http://apps.leg.wa.gov/WAC/default.aspx?cite=296-809
- WAC 296-24-69507 *Confined spaces (welding)*
  http://apps.leg.wa.gov/WAC/default.aspx?cite=296-24-69507
- WAC 296-24-70007 *Work in confined spaces (welding)*
  http://apps.leg.wa.gov/WAC/default.aspx?cite=296-24-70007
- WAC 296-24-71501 thru 71507 *Health protection and ventilation (welding)*
  http://apps.leg.wa.gov/WAC/default.aspx?cite=296-24-71501, -71503, -71505, and -71507
- WAC 296-155-203, 280, 410, 655, and 657 *Construction confined space requirements*
  http://www.lni.wa.gov/wisha/rules/construction/HTML/296-155c.htm#WAC296-155-203, -280, -410, -655, and -657
- WAC 296-155-415 *Ventilation and protection in welding, cutting heating*
  http://apps.leg.wa.gov/WAC/default.aspx?cite=296-155-415
- WAC 296-155 Part N *Excavation, trenching and shoring*
  http://apps.leg.wa.gov/WAC/default.aspx?cite=296-155
- WAC 296-155 Part Q *Tunnels and shafts, caissons, cofferdams, and compressed air*
  http://apps.leg.wa.gov/WAC/default.aspx?cite=296-155

10.4 Definitions

Alternate Entry – Procedures that can be used for permit-required confined spaces when the only hazard is an atmospheric hazard and certain conditions are met.

Combustible Atmosphere – Any atmosphere which may explode or ignite if a source of ignition is present.

Confined Space – A space that is all of the following:

- Large enough and arranged so an employee could fully enter the space and work.
- Has limited or restricted entry or exit. Examples of spaces with limited or restricted entry are tanks, vessels, silos, storage bins, hoppers, vaults, excavations, and pits.
- Not primarily designed for human occupancy.

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

Entrant – An employee who is authorized by the employer to enter a permit-required confined space.

Entry Supervisor – The person (such as the supervisor, lead, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this section.

Flammable Atmosphere – Any atmosphere in excess of 10 percent of the Lower Explosive Limit (LEL) and below the Upper Explosive Limit (UEL).

Hazardous Atmosphere – An atmosphere that may expose employees to the risk of death, incapacitation; and impairment of ability to self-rescue. That is, escape unaided from a permit-required confined space, injury, or acute illness caused by one or more of the following:

- Flammable gas, vapor, or mists 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 percent or above 23.5 percent.
- Atmospheric concentration of any substance which may exceed a permissible exposure limit. For additional information about atmospheric concentration, see Chapter 296-62 WAC Parts F, G, and I, *General occupational health standards*, and Chapter 296-841 WAC *Respiratory hazards*.

Hot Work – Any work involving burning, welding, riveting, cable socketing, or similar operation which can produce fire or toxic byproducts. Any work which produces a source of ignition.

Immediately Dangerous to Life and Health (IDLH) – Any of the following conditions:

- An immediate or delayed threat to life.
- Anything that would cause irreversible adverse health effects.
- Anything that would interfere with an individual's ability to escape unaided from a permit-required confined space.

Inerted Space – A space that has had an inert gas (argon, CO^2, etc.) introduced to reduce the oxygen content to 6 percent by volume or less.

Isolation – The process by which a permit-required confined space is removed from service and completely protected against the release of energy and material into the space by such means as:

- Blanking or blinding.
- Misaligning or removing sections of lines, pipes, or ducts.
- A double block and bleed system.
- Lockout or tagout of all sources of energy.
- Blocking or disconnecting.

Lower Explosive Limit (LEL)/Lower Flammable Limit (LFL) – The minimum vapor concentration of a combustible gas or vapor in air which will ignite if an ignition source is present. The term Minimum Explosive Concentration (MEC) is used for dusts.

Oxygen Deficient Atmosphere – An atmosphere which contains oxygen levels less than 19.5 percent by volume or which has a partial pressure of 135 millimeters of mercury or less. This may deviate at higher altitudes and should be determined for an individual location. Some of the more common causes of this problem are oxidation of metals (rust), bacterial action, combustion, and displacement by other gases.

Permissible Exposure Limits (PELs) – Refer to airborne concentrations of substances without regard to the use of respiratory protection and represent conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect.

Permit-Required Confined Space (PRCS) – A confined space that has one or more of the following characteristics capable of causing death or serious physical harm:

- Contains or has a potential to contain a hazardous atmosphere.
- Contains a material with the potential for engulfing someone who enters.
- Has an internal configuration that could allow someone entering to be trapped or asphyxiated by inwardly converging walls or by a floor, which slopes downward and tapers to a smaller cross section.
- Contains any physical hazard. This includes any recognized health or safety hazards including engulfment in solid or liquid material, electrical shock, or moving parts.

- Contains any other recognized serious safety or health hazard that could either:
  - Impair the ability to self-rescue, or
  - Result in a situation that presents an immediate danger to life or health.

Qualified Person – A confined space qualified person is an employee who has had confined space training and is familiar with:

- The recognition of hazards associated with entry into confined spaces.
- Procedures for use of entry permits.
- Atmospheric testing techniques and methods.
- Interpretation of atmospheric test results.
- Ventilation methods and equipment.
- Use of personal protective equipment.
- Safe work practices.
- Use of respirators.

Standby Attendant – A person stationed outside one or more permit-required confined spaces to monitor the entrant(s).

10.5 General Responsibilities

In addition to the responsibilities outlined, it is the responsibility of employees at all levels to ensure implementation of WSDOT's confined space entry procedure. It is also the responsibility of each employee to immediately report any unsafe act or condition to his or her supervisor.

10.5-1 Organizational Responsibilities

Are as assigned in Chapter 1 as well as the items below, specific to confined space entry.

10.5-2 Executive Management and Senior Management

- Ensure that site managers, supervisors, and other site personnel have the required experience to perform assessments and identify all confined spaces at sites under their control.
- Ensure that adequate funds are available, budgeted for the purchase of confined space equipment and related supplies.
- Perform periodic audits of employee training.

10.5-3 Mid-Level Management

- Retain confined space entry permits for a minimum of one year.
- Ensure implementation of this policy.

10.5-4 Supervisors

- Ensure that all confined space work is planned and implemented with safety as an integral part of the process.
- Participate in the development and implementation of Pre-Activity Safety Plans for the purpose of preventing injuries and accidents in confined spaces.
- Ensure that all employees involved are trained in confined space entry procedures and guidelines.
- Require active employee participation in each of the following involving confined space entry:
  - Pre-Activity Safety Plans.
  - Safety meetings.
  - Appropriate safety training.
  - Safety inspections of work activities, facilities, equipment, and vehicles.
  - Report any unsafe conditions to their supervisor immediately.
- Take immediate action when necessary to correct any reported hazards.
- Identify and monitor employee confined space entry training program needs.
- Monitor field and facility operations to ensure consistency with confined space entry procedures and guidelines.
- Use all appropriate personal protective equipment (PPE).
- Coach and mentor co-workers in confined space entry safety performance.
- Execute responsibility for the establishment and maintenance of a Confined Space Entry Program.

10.5-5 Entry Supervisor

- Ensure that **all** duties prescribed for entry supervisors under applicable regulations, training, and this policy are met.
- Ensure proper permits and safety procedures are followed closely at the jobsite.
- Ensure all safety precautions are taken and safety equipment needed for the operation is on site.
- Ensure only trained employees perform any of the tasks or activities associated with a confined space entry.
- Communicate appropriate needs to managers and/or supervisors.
- Know where confined and permit-required confined spaces are located at their worksite/facility.
- Ensure permit-required confined spaces are posted with warning signs.
- Ensure employees are provided with PPE as necessary for their job.
- Verifies and checks **all** of the following:
  - The appropriate entries have been made on the permit.
  - All tests specified by the permit have been conducted.
  - All procedures and equipment specified by the permit are in place before approving the permit and allowing entry to the space.

- Authorizes the entry into a permit-required confined space by ensuring entry condition have been met and signing the entry permit.
- Oversees entry operations.
- Knows about the hazards that may be faced during entry, including the mode, signs or symptoms, and consequences of the exposure.
- Terminates the entry and cancels the permit when:
  - The assigned task or job has been completed.
  - A condition in the space that isn't covered by the entry permit is discovered
- Verifies that rescue services are available and that there is a way to contact them.
- Removes unauthorized individuals who enter or attempt to enter the permit-required confined space during entry operations.
- Determines that entry operations remain consistent with the terms of the entry permit and acceptable entry conditions are maintained:
  - Whenever responsibility for a permit-required space entry operation is transferred.
  - At regular intervals dictated by the hazards and operations performed within the space.

10.5-6 Standby Attendant

- Ensure that **all** duties prescribed for Attendants under applicable regulations, training, and this policy are met.
- Understands the hazards that may be faced during entry, including the mode, signs or symptoms, and results of exposure to the hazards.
- Is aware of the behavioral effects of exposure to the hazard.
- Continuously maintains an accurate count of entrants in the space.
- Maintains an accurate record of who is in the permit-required confined space.
- Communicates with entrants as necessary to monitor their status or alert them of the need to evacuate the space.
- Monitors activities inside and outside the space to determine if it's safe for entrants to remain in the space.
- Orders entrants to evacuate the space immediately if **any** of the following conditions occur:
  - A prohibited condition.
  - The behavioral effects of hazardous exposure in an entrant.
  - A situation outside the space that could endanger entrants.
  - The attendant can't effectively and safely perform all required duties
- Takes the following actions when unauthorized persons approach or enter a space:
  - Warn unauthorized persons to stay away from the space.
  - Tells the unauthorized persons to exit immediately if they have entered the space.
  - Informs entrants and the entry supervisor if unauthorized persons have entered the space.

- Performs non-entry rescues as specified by rescue procedure.
- Has the means to respond to an emergency affecting one or more of the permit spaces being monitored without preventing performance of the attendants duties to the other spaces being monitored.
- Carries out no duties that might interfere with their primary duty to monitor and protect the entrants.
- Calls for rescue and other emergency services as soon as entrants may need assistance to escape from the space.
- Monitors entry operations until relieved by another attendant or all entrants are out of the space.
- Shall not enter confined space to perform rescue services.

10.5-7 Entrant

- Ensure that all duties prescribed for Entrants under applicable regulations, training, and this policy are met.
- Perform the assigned task.
- Review the permit before entry.
- Know the hazards they may face during entry, including the mode, signs or symptoms, and results of exposure to the hazards.
- Use equipment properly.
- Communicate with the attendant as necessary so the attendant can:
  - Monitor entrant status
  - Alert entrants of the need to evacuate
- Alert the attendant whenever either of these situations exist:
- A warning sign or symptom of exposure to a dangerous situation such as, behavioral changes, euphoria, giddiness potentially from lack of oxygen or exposure to solvents.
- A prohibited condition.
- Exit from the permit-required confined space as quickly as possible when one of the following occurs:
  - The attendant or entry supervisor gives an order to evacuate.
  - The entrant recognizes any warning sign or symptom of exposure to a dangerous situation.
  - The entrant detects a prohibited condition.
  - An evacuation alarm is activated.

10.5-8 Safety Organization

Region Safety Office staff shall be responsible for the following confined space entry:

- Assist in developing or securing required training for all employees who have confined space responsibilities.
- Provide consulting services on regulatory interpretation and requirements of confined space classification or entry.

10.6 Policy

Each region will be responsible for protecting employees from the hazards of entry into confined spaces. These hazards include, but are not limited to, toxic, flammable, or oxygen deficient atmospheres and mechanical, electrical, chemical, or temperature hazards.

Concerned organizations will develop and enforce procedures which include planning, general precautions and work practices, evaluation of hazards, ventilation requirements, personal protection, isolation, training, recordkeeping, and responsibilities.

Procedures developed by each concerned organization will comply with WAC 296-809 and should address each project or location with a confined space in the organization. The identification of confined spaces and tasks and the hazards associated with them is required before procedures can be developed. The following are minimum requirements for confined space entry procedures:

- Personnel assigned to confined space work will be specifically trained for confined space entry.
- Ventilation must be provided for all alternate and permit-required confined spaces that have a known or potential atmospheric hazard, to ensure safe entry conditions prior to and during entry and work. Spaces that are specifically inerted to eliminate fire or explosion hazards do not require ventilation, though special procedures and respiratory protection are needed to safely conduct such work.
- A standby attendant must be present for all permit-required confined space entries and work.
- The confined space atmosphere and other potential hazards must be evaluated and appropriate protective procedures developed and equipment used.
- Rescue procedures must be established prior to entry into permit-required spaces. Rescue equipment and personnel will be available for confined space operations, as required.
- Prior to entry, the work crew will review the work to be done, potential hazards, and establish necessary safety and emergency procedures.
- The entry supervisor will complete and sign the entry-permit and, when required, hot work permit.

It is very important that the procedures developed are specific to the hazards and work common to the organization's confined spaces. The procedures that follow in Section 8, Procedures, are broad in scope and contain recommendations and requirements to maintain consistent confined space procedures throughout the department. There may be some recommendations that are not appropriate for all confined spaces.

For some WSDOT operations, a variance from WAC 296-809 requirements may be appropriate. Entry procedures for the protection of WSDOT personnel must be developed and implemented before a variance may be requested. Variance requests will be coordinated with and reviewed by the Region Safety Office.

If services are required for special circumstances to assist with the identification, procedural development or training of employees, these services shall be requested of the Region Safety Offices.

10.7 Confined Space Classifications

10.7-1 Permit-Required Confined Space

All confined spaces shall be considered permit-required confined spaces until designated otherwise by persons with an appropriate level of training and experience to make such a determination. Once an appropriate evaluation has been accomplished by a qualified person, and the space(s) meet conditions below, permit-required confined spaces may be reclassified as either an alternate entry confined space or a non-permit required space. The Confined Space Evaluation form in Appendix C may be used to assist with determination and classification.

To best ensure safety, all efforts shall be made to eliminate hazards before entry into a confined space creating non-permit required conditions. (Note that atmospheric hazards are generally considered to be controlled, but not eliminated, using forced air ventilation.

All hot work in confined spaces must be conducted using the permit entry procedures, including hot work permitting.

10.7-2 Alternate Entry Confined Space

Alternate entry procedures can be implemented instead of permit-entry procedures if the following conditions are met:

- The permit-required confined space is reclassified as an Alternate Entry Confined Space by a qualified person. The monitoring and inspection data justifying this reclassification shall be available at the work site.
- This documentation shall support that the only hazard in the confined space is an actual or potentially hazardous atmosphere.
- Continuous forced air ventilation is all that is required to maintain the atmosphere in a safe entry condition.

10.7-3 Non-Permit-Required Confined Space

Reclassify a confined space as a non-permit-required confined space:

- When a confined space is reclassified as a non-permit-required confined space, monitoring and inspection data shall be available at the work site to justify this action.
- This documentation shall support that the space does not contain any hazard that could cause serious physical harm or death to the entrant, including, but not necessarily limited to, atmospheric hazards, engulfment in a liquid or solid material, entrapment or any other serious safety or health hazard such as electrical shock or moving parts.

10.8 Procedures

10.8-1 Confined Space Identification

Survey all work locations, projects, and tasks within the organization to identify all confined spaces and the tasks and potential hazards associated with them.

Keep records for each confined space at your local facility and ensure that it is readily available to employees who must enter the confined space. These records will provide historical information on the hazards and procedures for the confined space. The records shall contain, as a minimum, the following:

Keep records for each confined space at your local facility and ensure that it is readily available to employees who must enter the confined space. These records will provide historical information on the hazards and procedures for the confined space. The records shall contain, as a minimum, the following:

- A copy or record of each entry permit issued for work in the confined space,
- Any incident or accident reports for work done in the confined space,
- Entry and work procedures developed for the confined space.
- An example of the entry and hot work permit can be found in Appendix 10-B of this document. The hot-work permit (form 750-061) can be found on the WSDOT intranet forms page.

When a permit-required confined space entry has been conducted, coordinate with the regional safety office to ensure reviews required under WAC 296-809-50006 are completed.

10.8-2 Training

For each project or job which requires entry into a confined space, specifically assign individuals for the entry who are competent in the evaluation of hazards, protective measures, first aid, and CPR.

All persons involved in confined space entry must posses the understanding, knowledge and skills necessary to safely perform assigned duties.

Employees with confined space responsibilities will be specifically trained for confined space entry (Course Code AZR). Training will include the following, as applicable to spaces entered and duties:

- Proper use and maintenance of personal protective equipment required for entry.
- Recognition and control/elimination of confined space hazards.
- Operation, maintenance, and calibration of atmospheric testing equipment.
- Powered ventilation equipment.
- Non-entry rescue procedures.
- Emergency and evacuation procedures.
- The communication systems to be used.
- Lockout/Tagout and isolation procedures.
- Assigned duties of entrants, attendants, and entry supervisors.
- Any other information required to safely perform confined space related work.

10.8-3 General Safety Requirements

Forced air ventilation will be maintained at all times in confined spaces that have an actual or potential hazardous atmosphere. If, for any reason, the ventilation fails or is otherwise interrupted, the confined space will be evacuated immediately. The ventilation provided will be of sufficient quantity to control the potential hazards of the confined space. If necessary, respiratory protection will be used in addition to ventilation and the space will be monitored regularly or continuously while occupied. Gas-powered ventilation will not be used unless it is positioned to prevent the exhaust gases from entering the confined space.

Note: When the space has been specifically inerted to eliminate the risk of fire or explosion, ventilation is not required. No personnel shall enter these spaces until the inert gas has been removed and the oxygen content has been restored to between 19.5 percent to 23.5 percent by volume.

A standby attendant will be positioned outside the permit-required confined space, appropriately equipped, and trained to obtain emergency assistance. This person will have the capability to communicate with workers in the space at all times. The standby attendant is not a rescuer. This person is responsible for communicating with and assisting confined space workers and obtaining emergency assistance.

The confined space will be evacuated immediately when any of the following conditions exist:

- The ventilation fails for any reason.
- The oxygen concentration falls below 19.5 percent or exceeds 23.5 percent.
- The concentration of combustible gas or vapor equals or exceeds 10 percent LEL.
- The concentration of any toxic contaminant, including combustible gas, exceeds the permissible exposure limit in WAC 296-809 or the exposure limit specified on the Material Safety Data Sheet (MSDS) and suitable respiratory protection is not being used.
- There are any indications of ill effects, such as:
  - Euphoria
  - Dizziness
  - Disorientation
  - Profuse sweating
  - Visual difficulties
  - Irritation, odors, or tastes
  - Change in heart rate
  - Change in breathing rate
  - Loss of coordination or dexterity
  - Weakness in the knees
  - Chest pains
  - Signs and symptoms identified on the MSDS

- There is a failure of any equipment or instrument required to protect the safety and health of employees. The space may be reentered after a complete reevaluation of the confined space, to ensure the safety and health of workers. Suitable protective equipment and monitoring of the confined space will be used as required.

Personal protective equipment suitable for the potential hazards will be used when entering a confined space. Although the equipment can vary from job to job, it may include:

- Respiratory protection equipment
- Chemical protective clothing
- Hand protection
- Eye and face protection
- Head protection
- Hearing protection
- Fall Protection

When employees may be required to wear respirators, all provisions of Chapter 8 Respiratory Protection Program will apply.

All tools, fire extinguishing, and other emergency equipment, as needed, will be present at the work site prior to entry into the confined space.

Where fall hazards are present, employees must follow provisions of the Fall Protection Program (and applicable regulations, In addition, appropriate controls shall be implemented to protect entrants from objects falling in the space.

Anyone noting a malfunction of any gas detector, sampling device, ventilation equipment, or any other device required for safe work shall notify fellow employees and evacuate the confined space immediately. Replacement or repaired equipment will be obtained prior to entry or reentry. Persons noting the malfunction should personally report the malfunction to the entry supervisor.

Equipment used for safe entry into confined spaces shall be maintained in accordance with manufacturer specifications, including air monitoring, rescue, emergency communication and other essential equipment,

If a hazardous atmosphere exists or can develop, workers will wear a safety harness with lifeline attached to a means of non-entry rescue equipment (tri-pods, booms, etc.). No employee will enter an IDLH atmosphere.

Compressed gas cylinders (except breathing air) shall not be allowed in any confined space. Compressed gas lines will be protected from rupture or damage.

Electrical circuits and mechanical hazards which may present a hazard in the confined area will be disconnected, locked out, and tagged in accordance with WAC 296-155-429 or WAC 296-803, as appropriate. Water standing in any confined area near electrical outlets or transformers will require that electrical outlets or transformers be disconnected and locked out before entry into such areas.

10.8-4 Rescue Procedures

Prior to entry into a permit-required confined space, an action plan must be prepared which provides a means for rescue of persons from the space in the event of an emergency. An emergency includes heart attacks and injuries that would require assistance for safely removing the person from the space. Each situation requires specific instructions and may vary from space to space.

WSDOT does not employ trained entry rescue personnel. Non-entry retrieval systems are the preferred method of rescue and will be used whenever feasible. Employees providing non-entry rescue service will undergo practice sessions at least every twelve months, in representative conditions of permit-required confined spaces.

When non-entry rescue is not feasible, a third part rescue service will be used as the entry rescue team. Note that many local fire departments may not be trained or equipped to perform confined space rescue, which is why emergency arrangements must be prearranged. Each individual emergency rescue plan shall be coordinated with the designated rescue organization, prior to confined space entry, to ensure the availability and appropriateness of their services. A plan to call 911 in the event of an emergency is not acceptable unless rescue has been coordinated with the public rescue service ahead of time.

Consideration must be given to how the standby attendant will obtain emergency assistance. An additional means of communication such as emergency radios, loud speaker systems, bells or alarms, portable or fixed air horns, etc., may be required.

10.8-5 Pre-Entry Procedures and Planning

An Entry Supervisor will evaluate the confined space. A Confined Space Entry (DOT Form 750-094) will be issued, as necessary, after the evaluation and planning are completed. See Appendix 10-B for sample forms.

A planning session by an entry supervisor and the work crew will address the following items:

- Time and date of entry.
- Work to be performed and procedures to use.
- Materials to be used.
- The hazards of the work and materials.
- The known hazards of the confined space.
- Emergency and safety procedures.
- Training required for safe work.

Evaluation of confined space atmospheres:

- The confined space atmosphere will be tested for oxygen deficiency, flammability and toxicity immediately before entry into the space is allowed. The monitoring equipment shall be calibrated in accordance with manufacturer's instructions. The entry crew should assist in or observe this evaluation. The evaluation will consider possible sources of contamination from the surrounding environment, the work to be performed, and the confined space itself. The following method will be used:
  - Test the atmosphere of the confined space with direct reading instruments and, if necessary, use colorimetric tubes for potential hazards. The testing procedure outlined in the following section should be used.
- When testing the confined space atmosphere, the following procedure should be used:
  - Smoking is prohibited in or near the entrance of a confined space. Care must be taken to eliminate any possibility of a spark or ignition source until the space has been tested and is determined to be free of combustible gas.
  - The initial test should be conducted by inserting a probe into the confined space atmosphere through a vent hole or some other opening, where available. The purpose of the initial test is to determine if a hazardous atmosphere has accumulated in the vicinity of the entrance. Where no openings exist, the entrance cover should be opened on the downwind side just enough to allow insertion of the sampling device.
  - If the initial test indicates no flammable atmosphere (and has acceptable oxygen concentrations), remove the cover, and from outside the space, conduct tests for oxygen content, combustible gases, and toxic contaminants.
  - Ventilate the confined space prior to entering to complete the evaluation. The entire area to be entered shall be tested to evaluate the accumulation of contaminants that are lighter or heavier than air. Testing should start at the entrance and continue into and around the confined space until all areas, top to bottom, of the space have been evaluated.
- The Confined Space Entry Permit shall be completed by the entry supervisor. The Hot Work Permit (if required) should be completed by work crew lead person and/or entry supervisor. A permit is an authorization in writing, specifying the location and type of work to be done. It certifies that confined space hazards have been evaluated by the entry supervisor and that necessary protective measures have been taken to ensure the safety of each worker.
- After the space has been determined to be safe for entry, the entry supervisor will review the information on the permits for accuracy and completeness and assign the expiration time for the permit. The entry supervisor will then review the potential hazards, required equipment, and work practices and procedures to be followed with the entering crew and sign the permit, authorizing entry.
- The entry permit shall be available at the work site outside the confined space. It shall be dated and carry an expiration time that is valid for a maximum of one shift only. A permit with the same requirements is required for each shift. A sample entry permit is included in Appendix 10-B.

10.8-6 Permit-Space Entry Procedures

Entry is not permitted without a properly completed entry permit. Reentry after a lunch break may require reevaluation of the atmosphere, depending on the nature of the hazards.

Forced air ventilation will be provided and be of sufficient quantity to control any potential atmospheric hazards. The ventilation air intake shall be positioned to prevent toxic or flammable contaminants from entering the confined space atmosphere. If the hazards cannot be controlled by this ventilation, the space shall be reevaluated to determine the source of the contamination. The source shall be secured to prevent the reintroduction of the contaminants into the space using WAC 296-803 Lockout/Tagout (Control of Hazardous Energy) for guidance.

No WSDOT employee will enter an IDLH atmosphere.

When tests for oxygen deficiency, flammability, or toxicity indicate that one or more atmospheric hazards may exist in the confined space, the space will be ventilated to obtain a safe atmosphere before entry. The presence of a safe atmosphere will be verified by testing. Continuous monitoring of the atmosphere may be necessary during the work operations to ensure the safety of the crew when a potentially hazardous atmosphere is present or could develop.

Provide entrants, or their authorized representatives, with an opportunity to observe the pre-entry and periodic testing.

Whenever a confined space is occupied, a standby attendant will be positioned outside the space, appropriately equipped and trained, to obtain emergency assistance. This person will have the capability to communicate with workers in the space at all times.

Entry into confined spaces where evaluation of the atmosphere indicates a hazard exists or could develop is prohibited until the entry supervisor has identified appropriate emergency and protective equipment and procedures and issued an entry permit.

The entry supervisor will take positive steps to prevent accidental introduction of hazards through interconnecting equipment such as piping, ducts, vents, drains, or other means. This may require:

- Isolating the tank or confined space from all potential sources of hazards by one of the following:
  - Remove a valve, spool piece, or expansion joint and cap the open ends. Tag the lines.
  - Insert a blank in the line and tag it.
- Safety Lockout/Tagout – If mechanical or electrical hazards exist that will pose a potential hazard to the employee entering the confined space, the mechanical or electrical hazard will be secured, locked out, and tagged prior to the entry.
- Secure or relieve components which are hazardous due to gravitational or stored energy forces.
- Position ventilation intakes to prevent the entry of contaminated air.

Appropriate protective equipment will be used by all employees entering confined spaces.

10.8-7 Alternate Entry Procedures

If the space has met all the conditions specified in Section 7.2, alternate entry procedures can be used instead of permit entry procedures. At a minimum, alternate entry procedures must include the following elements:

- Eliminate any unsafe conditions before removing an entrance cover.
- Guard the opening with a railing, temporary cover, or other temporary barrier to prevent accidental falls through the opening and protect entrants from objects falling into the space.
- Certify that pre-entry measures have been taken (such as safe removal of the cover and having protection needed to gather pre-entry data), with the date, location of the space, and signature of the person certifying.
- Make the pre-entry certification available before entry to each entrant.
- Test the internal atmosphere with a calibrated, direct-reading instrument for all of the following, in this order, before an employee enters the confined space:
  - Oxygen content
  - Flammable gases and vapors
  - Potential toxic air contaminants
- Provide entrants, or their authorized representatives, with an opportunity to observe the pre-entry and periodic testing.
- Make sure the atmosphere within the space isn't hazardous when entrants are present.
- Use continuous forced air ventilation, as follows:
  - Wait until the forced air ventilation has removed any hazardous atmosphere before allowing entrants into the space.
  - Direct forced air ventilation toward the immediate areas where employees are, or will be, and continue ventilation until all employees have left the space.
  - Provide the air supply from a clean source and make sure it doesn't increase hazards in the space.
- Test the atmosphere within the space as needed to make sure hazards don't accumulate.
- If a hazardous atmosphere is detected during entry, do all of the following:
  - Evacuate employees from the space immediately.
  - Evaluate the space to determine how the hazardous atmosphere developed.
  - Implement measures to protect employees from the hazardous atmosphere before continuing the entry operation.
  - Verify the space is safe for entry before continuing the entry operation.

10.8.8 Coordination with WSDOT Contractors

Contractors performing work within agency-owned permit required confined spaces (PRCS) are required to follow the confined space requirements in WAC 296-809. WSDOT must inform a contractor with work in an agency-owned PRCS of the following:

- Confined spaces may only be entered if they meet the requirements of WAC 296-809.
- Any known hazards associated with agency-owned PRCSs. This should be based on any previous WSDOT experience entering the PRCS.
- Specific precautions and procedures that WSDOT requires for the protection of employees that work in or near the identified PRCS.

In addition to the above, WSDOT personnel must coordinate entry operations with the prime and any sub-contractors when working in or near identified PRCS. This coordination must include:

- Review of the contractor's confined space plan and any hazards that are associated with the contractor's work, and discussion of entry procedures prior to commencement of work activities.

10.9 Hot Work

Hot work in confined spaces shall comply with WAC 296-155-400 and/or WAC 296-24-680 to 722, as applicable. A Hot Work Permit (Form 750-061) is required for any hot work conducted in a confined space.

In addition to the confined space entry safeguards, hot work shall not be started inside a confined space or on its exterior surface until tests for flammability have been made and a hot work permit has been issued.

Provisions shall be made to maintain conditions below 10 percent of the lower explosive limit and to prevent accumulation of toxic contaminants.

Fire extinguishing equipment will be readily available to employees involved in confined space hot work. Class A (water extinguishers) shall be used for confined space hot work. ABC or CO^2 fire extinguishers shall be used in a confined space only by persons wearing self-contained breathing apparatus.

Hot work in confined spaces shall only be conducted on clean, bare metal. All coating oils, cleaning/degreasing compounds, solvents, salts, and any other substance that may create a toxic by product must be removed prior to conducting hot work.

Local or general dilution ventilation to reduce contaminants to the lowest feasible levels is required for hot work in confined spaces.

Respiratory protection is required if ventilation can not reduce contaminants to below permissible exposure limits.

Gas cylinders and welding machines must not be brought into the confined space at any time.

10.10 Management Controls

The confined space entry program developed by concerned organizations must contain provisions for evaluating its effectiveness. This evaluation should include the following:

- Periodic audits of employee training.
- Review of entry procedures to ensure the proper permits, procedures, and equipment are used for each confined space entry.

10.11 Appendices

Appendix 10-A	Sample Warning Sign
Appendix 10-B	Confined Space Entry and Permit
Appendix 10-C	Confined Space Evaluation Form

DANGER

Confined Space # 01
Entry Permit Required

Contact: John Smith
Phone: 123-4567
Safety Office: 234-5678

To download a current copy of WSDOT Form 750-094, go to the Forms Management website at: wwwi.wsdot.wa.gov/fasc/adminservices/forms/formfiles/wsdot_forms.

Washington State Department of Transportation

Confined Space Entry Permit

Location, Description and Classification of Confined Space

Date	Purpose of Entry/Work to be done	Time Started
Division/Unit		Time Completed
Supervisor(s) in Charge of Crew	Type of Crew	Phone

Hazards in Confined Space
Check all that apply and ensure each hazard is eliminated or controlled before and during entry:

- ☐ (Potentially) Hazardous atmosphere
- ☐ Material with potential to engulf
- ☐ Electrical shock
- ☐ Moving parts
- ☐ Temperature extremes
- ☐ Trapping or asphyxiation hazard (inwardly coverging walls or floor which slopes downwards and tapers to a smaller section)
- ☐ Any Other hazard that is capable of impairing self rescue or presents immediate danger to life or health (describe):

Requirements Completed (All applicable must be completed before entry)	Completed	N/A
Lockout - De-energize	☐	☐
Line(s) Broken, Capped or Blanked	☐	☐
Purge, Flush, and Vent	☐	☐
Ventilation	☐	☐
Lighting (explosion proof as necessary)	☐	☐
Respirator (list type) _____	☐	☐
Protective Clothing	☐	☐
Standby Safety Personnel	☐	☐
Full Body Harness with "D" Ring	☐	☐
Emergency Escape/Retrieval/Rescue/ Equipment	☐	☐
Lifelines	☐	☐

Requirements Completed (All applicable must be completed before entry)	Completed	N/A
First Aid/CPR Equipment & Trained Personnel	☐	☐
Communication Equipment	☐	☐
Secure area (post, flag and protect from falling objects)	☐	☐
Hot Work Permit	☐	☐
Add any other requirements necessary for entry		

Atmospheric Checks	Acceptable Conditions	Initial Checks	Checks After Isolation and Ventilation	Periodic Checks Hr 1	Hr 2	Hr 3	Hr 4	Hr 5	Hr 6	Hr 7	Hr 8
% of Oxygen	19.5% to 23%										
L.E.L. [1]	≤ 10%										
Carbon Monoxide	< 35 ppm										
Hydrogen Sulfide	< 10 ppm										

Atmospheric monitoring conducted by:

Note: continuous/periodic tests shall be performed throughout the job. Contact Region Safety Office with questions.

[1] L.E.L. Lower Explosive Limit, also referred to as lower flammable limit (LFL).
Records must be maintained for at least one year.

DOT Form 750-094
Revised 08/2011

Distribution: Original to Division/Unit, Copy to Regional Safety Office

Sampling Equipment	Name	Model/Type	Date Calibrated	Identification Number

Communication procedures between entrants and attendants

Emergency Services

Emergency services must be arranged **prior** to **permit-required** confined space entry (**including 911 services**). Only persons who have been trained and equipped for entry rescue may enter the space to perform rescue services. Do **not** attempt an entry rescue if you are not trained and equipped to do so. If a person is down for no apparent cause, you must assume that toxic gases or an oxygen deficiency exist.

Emergency/Rescue Service Provided by

Phone Number/Contact Information

Describe Procedures (include necessary equipment):

Print Name	Initial	Authorized Role [2]
		◯ Entrant ◯ Attendant
		◯ Entrant ◯ Attendant
		◯ Entrant ◯ Attendant
		◯ Entrant ◯ Attendant
		◯ Entrant ◯ Attendant
		◯ Entrant ◯ Attendant
		◯ Entrant ◯ Attendant

2 Check the person's authorized role. Remember, a person cannot be both an attendant and entrant; they can only serve one role.

Entry Supervisor Authorization - All Entry Conditions Satisfied

Signature	Date

Permit expiration date and time (may not be longer than required to perform work)

Date Time

Post entry review of permit conducted by	Date

Post entry reviews must be done within one year of entry.

DOT Form 750-094
Revised 08/2011

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Washington State Department of Transportation

Appendix C
Confined Space Evaluation

Space Location / I.D.
Space Description

Complete this form for any space which may be considered a confined space.
A confined space is defined as having those **all** characteristics listed in **#1** through **#3** below.

◯ Yes ◯ No 1. Is the space large enough and shaped so an employee can enter and work?

◯ Yes ◯ No 2. Does the space have a limited or restricted means for entry or exit?

◯ Yes ◯ No 3. Is the space NOT designed for employee occupancy?

If the answers to **all** questions **#1** through **#3** above are **"YES"**, then the space is a **Confined Space**.
Continue with questions **A** through **E** below to determine if and what type of **permit** is required to enter.

◯ Yes ◯ No A. Does the space contain, or have the potential to contain, a hazardous atmosphere, i.e., oxygen deficiency, flammable vapors, toxic gases or dusts, etc., or pipes, ducts, vents or other entry points for potentially hazardous substances, or will volatile chemicals be used, or will painting or other work that could create a breathing hazard be performed?

Specify potential or known hazards: _____

◯ Yes ◯ No B. Does the space contain a material with the potential for engulfment of a worker, e.g., grain, sand or water?

Specify potential or known hazards: _____

◯ Yes ◯ No C. Does the space have an internal shape such that a worker could be trapped or suffocated by inwardly converging walls, floor or ceiling?

Specify potential or known hazards: _____

◯ Yes ◯ No D. Does the space contain other recognized safety or health hazards, such as: (check all that apply)

- ☐ mechanical hazards;
- ☐ exposed or vulnerable electrical wires or energized equipment;
- ☐ gas or chemical lines
- ☐ hydraulic or steam lines; or
- ☐ temperature extremes/heat stress

Specify potential or known hazards: _____

◯ Yes ◯ No E. Will welding, cutting, torch work, or other hot work be performed?

Specify potential or known hazards: _____

- If you answered **"NO"** to **all** questions **A** through **E**, then the space can be designated a **Non-Permit** Required Confined Space.
- If you answered **"YES"** to question **A** or **E**, and **"NO" to B, C, and D**, the space can be classified as an **Alternate Entry Space,** otherwise, it is a **Permit-Required Confined Space**.
- If you answered **"YES"** to question **B,C, or D**, then classify as a **Permit-Required Confined Space.**
- If you answered **"YES" to question E**, then a **Hot Work Permit** must also be completed and issued.

Name	Signature	Department

DOT Form 750-027
Revised 05/2012

Contact your Regional Safety Office if you have any questions.

Chapter 11 Fall Protection Program

11.1 Purpose

To provide guidance for the establishment of a Fall Protection Program for the Washington State Department of Transportation (WSDOT) operations and facilities as required by Washington Administrative Code (WAC), Chapter 296-155, Part C-1.

11.2 Scope and Applicability

This program has been developed for fall protection compliance using the referenced WAC chapters as guidance. All fall protection issues shall comply with this document to ensure the safety of personnel working at height on all WSDOT work sites. Contractors or subcontractors working at height shall have their own fall protection program in place.

11.3 References

WAC 296-155, Part C-1 set forth requirements for employee performing activities covered under this chapter.

Note: Additional standards requiring fall protection include:

- Chapter 296-869 WAC *Vehicle mounted aerial platforms, and boom supported elevation work platforms*
- Chapter 296-874 WAC *Scaffolds*
- Chapter 296-876 WAC *Ladders, portable and fixed*
- Chapter 296-155 WAC *Safety standards for construction work*, *Part J: Stairways: Part L: Cranes, rigging and personnel lifting: Part M: Pile driving: Part O: Placing and removal of forms, and vertical slip forms: Part P Steel erection temporary floors*
- And other chapters applicable WAC codes

11.4 Training

Managers, supervisors, or competent persons shall assess work areas with hazardous situations that are likely to expose an employee to a fall. After assessing the work area where fall protection systems is required, affected employees shall be trained in proper selection, inspection, installation, and use of a fall protection system. Region Safety Offices shall assist in developing or securing required training of effected employees.

Manufacturers written instructions will be used in all training. Samples must be present during training. Employees must demonstrate a complete understanding of proper use of equipment before being permitted to use any fall protection system

11.4-1 Definitions

Anchorage – Means a secure point of attachment for lifelines, lanyards, or deceleration devices which is capable of withstanding the forces specified in this part.

Affected Area – Means the distance away from the edge of an excavation equal to the depth of the excavation up to a maximum distance of fifteen feet. For example, an excavation ten feet deep has an affected area extending ten feet from the edge of any side of the excavation.

Catch platform – Means a type of fall arrest system that consists of a platform installed within four vertical feet of the fall hazard is at least forty-five inches wide and is equipped with a standard guardrail system on all exposed sides.

Competent person means an individual knowledgeable of fall protection equipment, including the manufacturer's recommendations and instructions for the proper use, inspection, and maintenance; and who is capable of identifying existing and potential fall hazards; and who has the authority to take prompt corrective action to eliminate those hazards; and who is knowledgeable of the rules contained in this part regarding the installation, use, inspection, and maintenance of fall protection equipment and systems.

Deceleration device means any mechanism, such as a rope grab, ripstitch lanyard, specifically woven lanyard, tearing or deforming automatic self-retracting lifelines/ lanyards, etc., which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.

Deceleration distance means the additional vertical distance a falling employee travels, excluding lifeline elongation and free fall distance before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the location of an employee's full body harness attachment point at the moment of activation (at the onset of fall arrest forces) of the deceleration device during a fall, and the location of that attachment point after the employee comes to a full stop.

Equivalent means alternative designs, materials, or methods to protect against a hazard which the employer can demonstrate and will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in this standard.

Floor hole means an opening measuring less than twelve inches but more than one inch in it least dimension in any floor, roof, platform, or surface through which materials but not persons may fall, such as a belt hole, pipe opening, or slot opening.

Floor opening means an opening measuring twelve inches or more in its least dimensions in any floor, roof, platform, or surface through which persons may fall.

Personal fall arrest system means a fall arrest system that is worn by the employee to arrest the employee in a fall from elevation. It consists of an anchor point, connectors, a full body harness, and may include a lanyard, deceleration device, lifeline, or suitable combinations of these.

Fall Prevention System A system intended to prevent a worker from falling from one elevation to another. Such systems include positioning device systems, guardrail, barriers, and restraint systems. These devices do not absolutely prevent a worker from falling; their function is to keep the worker at the same elevation.

Fall protection work plan means a written planning document in which the employer identifies all areas on the job site where a fall hazard of ten feet or more exists. The plan describes the method or methods of fall protection to be used to protect employees, and includes the procedures governing the installation use, inspection, and removal of the fall protection method or methods which are selected by the employer. See WAC 296-155-24611(2) and (DOT Form 750-001 and 750-001A)

Free Fall Distance – The vertical displacement of a fall arrest attachment point on the climber's full body harness between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance, lifeline, and lanyards elongation but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.

Full Body Harness – Means a configuration of connected straps that meets the requirements specified in ANSI Z359.1 2007 or updates that follow all standard, which may be adjustable to distribute a fall arresting force over a least the thighs, shoulders, and pelvis, with provisions for attaching a lanyard, lifeline, or deceleration devices.

Note: Wherever the word "harness" is used by itself in this document, it refers to a full body harness unless otherwise specified.

Hazardous slope means a slope where normal footing cannot be maintained without the use of devices due to the pitch of the surface, weather conditions, or surface material.

Personal fall restraint system – Means a fall restraint system that is worn by the employee to keep the employee from reaching a fall point, such as the edge of a roof or elevated work surface. It consists of an anchor point, hardware assemblies, a full body harness and may include a lanyard, restraint lines, or suitable combinations of these.

Lanyard – A flexible line of webbing, rope, or cable used to secure a full body harness to a lifeline or an anchorage point usually two, four, or six feet long.

Positioning device system means a full body harness that is worn by an employee, and is rigged to allow an employee to be supported on an elevated vertical or inclined surface, such as a wall, pole or column and work with both hands free from the body support.

Safety net system and their use shall comply with the following provisions as described in WAC 296-155-24613(2) as a fall arrest system.

Safety watch system means a fall protection system as described in WAC 296-155-24615(6), in which a competent person monitors one worker who is engaged in repair work or servicing equipment on low pitch roofs only.

Self-retracting lifeline means a deceleration device which contains a wound line which may be slowly extracted from, or retracted onto, the device under slight tension during normal employee movement, and which after onset of a fall, automatically locks the drum and arrests the fall.

Locking snap hook means a connecting snap hook that requires two separate forces to open the gate; one to deactivate the gate keeper and a second to depress and open the gate which automatically closes when released; used to minimize roll out or accidental disengagement.

Warning: Non locking snap hooks are prohibited. Snap hooks may not be connected to each other or to loops in webbing.

Fall Distance – Means the actual distance from the worker's support to the level where a fall would stop

Unprotected sides and edges means any open side or edge of a floor, roof, balcony/deck, platform, ramp, runway, or walking/working surface where there is no standard guardrail system, or parapet wall of solid strength and construction that is at least thirty-nine inches in vertical height.

Walking or working surface means any area including, but not limited to, floors, a roof surface, bridge, the ground, and any other surface whose dimensions are forty-five inches or more in all directions, though which workers can pass or conduct work. A walking/working surface does not include vehicles or rolling stock on which employees must be located in order to perform their job duties.

Warning line system means a barrier erected on a walking and working surface or a low pitch roof 4:12, to warn employees that they are approaching an unprotected fall hazard(s).

11.5 General Responsibilities

Are as assigned in Chapter 1 as well as the items below specific to Fall Protection Policy. It is the responsibility of each manager, supervisor, and employee to ensure implementation of WSDOT's safety procedure and guideline on Fall Protection. It is the responsibility of WSDOT to provide and maintain equipment that is adequate and is safe in design and construction.

11.5-1 Executive, Senior, and Mid-Level Management

- Ensure that site managers, supervisors, and other site personnel have the required experience to perform assessments and identify all fall hazards at sites under their control.
- Provide or replace fall protection equipment as required to perform work in compliance with this program.
- Perform periodic audits of employee training.
- Review Fall Protection Work Plans to ensure the proper procedures and equipment are utilized.

11.5-2 Supervisors

- Use all appropriate personal protective equipment.
- Ensure that all personnel working at height have been properly trained in the use and limitations of the fall protection devices that they are utilizing.
- Assist in the development of site specific Fall Protection Plans and rescue requirements under their responsibility.
- Replace equipment that has arrested a fall or is damaged.

11.5-3 Competent Persons

- Capable of identifying existing and potential fall hazards; and who has the authority to take prompt corrective action to eliminate those hazards.
- Shall have the responsibility and authority to shut down operations that are not in accordance with this program.

- Knowledgeable of fall protection equipment, including the manufacturer's recommendations and instructions for the proper use, inspection, and maintenance
- Complete the Fall Protection Work Plan (DOT Form 750-001 and 750-001A) prior to the commencement of work activities involving recognized fall hazards ten feet or more.

After completing the Fall Protection Work Plan, the following steps must be followed for proper selection and application of the system.

- An anchor for a full body harness system shall be capable of supporting (per person)
  1. 3,000 pounds when used in conjunction with;
     a. A self-retracting lifeline that limits the maximum free fall distances to two feet or less; or
     b. A shock absorbing lanyard that restricts the forces on the body to nine hundred pounds or less.
  2. 5,000 pounds for all other personal fall arrest system applications
- Only properly trained employees may use a fall protection systems.
- Select an appropriate anchorage connector. The connector must be properly attached to the anchor above the head or as high as practicable. The connector must not be capable of coming off or sliding extending the fall.
- Select the proper size full body harness, dons, and properly adjust to fit according to the manufacture recommendations.
- A shock-absorbing or self-retracting lanyard must be attached to the anchorage connector and the back D-ring of the harness.
- Positioning lanyards should be used from the hip D-rings to an anchor. This will allow an employee to use both hands when in a work position.

11.5-4 Employees

Employees shall be responsible for the following Fall Protection Program activities:

- Ensure that fall protection in use at the work site has been inspected daily prior to use for defects that would render it unusable.
- Coach and mentor co-workers in fall protection performance.
- Notify supervisors/competent person of defective equipment and unsafe conditions immediately.
- Ensure proper selection and use in accordance with the Fall Protection Work Plan (DOT Form 750-001 and 750-001A)

Note: Not all height is required to have a fall protection work plan (FPWP), but a Pre-Activity Safety Plan (PASP) known as (Activity Hazards Analysis or Job Hazard Analysis) is to be performed, including the environmental conditions, tools and/or equipment to be used.

11.5-5 Safety Personnel

- Assist in developing or securing required competent person and fall protection/ prevention training.
- Assist in assessment of fall hazards and the understanding of applicable safety standards.

11.6 Fall Prevention

Regardless of height, Guardrail systems are the preferred method for fall prevention.

When employees are exposed to all open sided floors, walkways, platforms, or runways above or adjacent to dangerous equipment, such as rock crushing equipment and material handling equipment and similar hazards such as floor holes and floor openings, that cannot be covered, shall be guarded with a standard guardrail system.

Employees shall also be protected from falling into or onto impalement hazards, such as: conduit, rebar, or exposed steel or wood stakes to set forms.

Employees exposed to a fall hazard of four (4) feet or more to the ground or lower level while on a walking working surface shall be guarded by one of the fall protection systems.

1. WAC 296-155-24615(2) *Guardrail system*
2. WAC 296-155-24615(1) *Fall restraint system*
3. WAC 296-155-24613(1) *Personal fall arrest system*
4. WAC 296-155-24613(2) *Safety net system*
5. WAC 296-155-24613(3) *Catch platform*
6. WAC 296-155-24615(4) *Warning line system*

11.7 Anchorage Connectors

Anchorage connectors are designed to offer a fall protection connection to a structure that will support a static load of 5,000 pounds per employee. Anchorages connectors should be positioned above the head as to not allow a free fall to be greater than 6 feet or cause a swing fall. Anchorage connectors shall not be used for any other purpose.

11.7-1 Shock Absorbing Lanyards, Self-Retracting Lanyards and Positioning Lanyards

Shock-absorbing lanyards are designed to offer a single user connection to the user's harness from an anchorage connector. The lanyard must be connected with the shock absorber end attached to the back D-ring of the harness and the other end to the overhead anchorage connector. Shock-absorbing lanyards may extend an additional 42 inches during fall arrest.

Self-retracting lanyards offer a single user connection between an anchorage connector and the back D-ring of the harness. This allows free movement up and down without disconnecting.

Lanyards without shock-absorbing devices or inertia breaks are for positioning and restraint use only and shall not be used between the anchorage connector and back D-ring. Restraint lanyards may be used to prevent an employee from reaching an unguarded edge.

Lanyards shall not allow the user to contact a lower level based on the total fall distance.

11.7-2 Full Body Harness

The full body harness is the primary part of the Personal Fall Arrest Systems, personal fall restraint system, and positioning device systems. The following parts of the harness are described as to their proper use.

- Back D-ring attachment is used for connecting to a Personal Fall Arrest System (PFAS). The back D ring may also be use for fall restraint.
- The front D-ring is used for ladder climbing, and vertical rope and rescue or retrieval. The front D ring may be used for rescue or retrieval.
- Hip D-rings are used for restraint or work positioning. When using hip D-rings for work positioning, both D-rings must be used.
- Shoulder D-rings are only used for rescue purposes.

11.7-3 Inspection Criteria

All components (including hardware, lanyards, and full body harnesses must be inspected before each use. If, at any point during the inspection there is a doubt as to the integrity of any component of the equipment, tag it and remove it from service. Consult your direct supervisor for instructions.

Inspection must contain the following:

- Labels shall be present and legible.
- Inspect fabric parts including rope, webbing, stitching, and shock absorber cover for cuts, tears, broken or loose stitching, and burns. Also inspect for knots, unbraiding of splices, and fuzziness of fibers.
- Inspect metallic and plastic parts for evidence of defects, damage, distortion, cracks, corrosion, burrs, sharp edges, loose or missing parts, alterations, and evidence of excessive heat.
- Perform annual inspection and record the date and corrective action.

11.7-4 Selection and Application of Fall Protection Equipment

- Limitations listed below must be taken into consideration when utilizing a Full Body Harness
- Physical limitations of a Full Body Harness include the total weight of a person including clothing, tools, and other user-borne objects will not exceed the manufacture recommendations. Pregnant women should consult with their doctor before using a full body harness on different fall protection systems. Working at height has inherent risks for workers who may have poor physical condition and in event of a fall may reduce an employee's ability to withstand shock loads during fall arrest or prolonged suspension.

- Chemical hazards or environments may damage parts of fall protection equipment. If a work area is in a chemically aggressive environment, a more frequent inspection may be required.
- Heat or hot work will damage parts of fall protection equipment. Select the proper equipment when in a work area involving welding, burning, or other heat producing activities.
- Electrical hazards shall be eliminated. Metallic parts of fall protection equipment may conduct electric current. Non- conductive harness are available check with you supervisor
- Sharp and abrasive edges or surfaces shall be avoided. If unavoidable, protective barriers must be employed to prevent direct contact.
- Any part of fall protection equipment exposed to forces of arresting a fall shall be taken out of service and tagged- out of service. Contact your region safety office of proper methods for disposal.

11.7-5 Maintenance, Cleaning, and Storage

- There will be no maintenance or servicing of fall protection equipment by anyone other than the manufacturer. Damaged equipment shall be marked-out of service and destroyed.
- Clean fall protection equipment with a solution of water and laundry detergent. Dry with a clean cloth and hang to air dry. Do not speed up drying with heat. Excessive accumulation of paint, dirt, or other foreign matter may prevent proper functioning of equipment. Any concerns or questions with any part of fall protection equipment must be addressed.
- Store equipment in a cool, dry, and clean place out of direct sunlight. Avoid storing in areas where chemicals or oils or their vapors may be present.

11.8 Appendices

Appendix 11-A Fall Protection Plan

To download a current copy of DOT Form 750-001, go to the Forms Management website: wwwi.wsdot.wa.gov/fasc/adminservices/forms/formfiles/WSDOT_forms

Chapter 12 Ergonomics Program

12.1 Purpose

The purpose of the Washington State Department of Transportation's (WSDOT) Ergonomics Program is to prevent and control work-related musculoskeletal disorders while improving employee efficiency and comfort.

12.2 Scope and Applicability

The Ergonomics Program encompasses all department employees. Many job-tasks contain risk factors that may contribute to the development of ergonomics-related injuries, termed musculoskeletal disorders (MSDs). Through proper assessment and control of risk factors, potential disorders and injuries may be reduced, prevented, and even eliminated while also improving employee efficiency and comfort. The Ergonomics Program uses a combination of education, training, guidelines, job-task evaluations, and ergonomic interventions to reach its goals.

The table below provides a few examples that illustrate the relationship between work settings, job-tasks, risk factors, and body areas that may be affected.

Work Settings	Job-Tasks	Risk Factors	Affected Body Areas
Industrial	Guardrail Installation	Heavy Exertion, Repetitive Work, Awkward Postures	Low-Back, Shoulders, *DUE
	Vehicle Maintenance	Repetitive Work, Vibration (Tool Use), Awkward Postures	*DUE, Low-Back, Whole Body
Office & Computer	Data Entry and Computer Mouse Use	Repetitive Work, Contact Stress, Awkward Postures	Low-Back, Shoulders, *DUE

*Distal Upper-Extremities (see Definitions below)

12.3 Definitions

Best Practices – The most efficient (least amount of effort) and effective (best results) way of accomplishing a task.

Complex Ergonomics – A term used to describe ergonomics related cases that involve multifaceted issues including the interaction of several risk factors and/or complex cognitive processes.

Distal Upper-Extremity (DUE) – The portion of the body that includes the elbow, forearm, wrist, and hands.

Ergonomic Interventions – A redesign of working methods, job-tasks, equipment, and/or workplace design to reduce and/or eliminate ergonomic risk factors.

Ergonomics-Related Injuries – Usually termed musculoskeletal disorders (MSDs). These are injuries that are caused by repeated exposure to ergonomic risk factors. Most MSDs are classified as occupational illnesses.

Ergonomic Risk Factors – Stressors to the musculoskeletal system that research has shown to be associated with an increased risk of developing musculoskeletal disorders. Major risk factors include, but are not limited to, the use of heavy exertion or force, awkward postures, repetitive movements, vibration, and contact stress.

Ergonomics – Per the Human Factors and Ergonomics Society, ergonomics is "the scientific discipline concerned with the understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data, and other methods to design in order to optimize human well-being and overall system performance."

General Ergonomics – A term used to describe ergonomics related cases that involve general risk factors. Most cases involving "general ergonomics" can be addressed by reducing and eliminating risk factors.

Musculoskeletal Disorders (MSDs) – Illnesses of the soft tissues of the musculoskeletal system (i.e., muscles, tendons, nerves, ligaments, joints) that are primarily caused or exacerbated by repeated exposure to ergonomic risk factors. Examples include tendonitis, epicondylitis, low-back pain, and carpal tunnel syndrome. These types of injuries are usually classified as "occupational illnesses." Many times the term Work-Related Musculoskeletal Disorder (WMSD) is used to identify injuries caused at work vs. at home.

Musculoskeletal Disorders (MSDs) Signs and Symptoms – Signs and symptoms of MSDs can include numbness, tingling, pain, and/or loss of strength. If an MSD is left untreated it can become debilitating over time. Early reporting of MSD signs and symptoms is extremely important.

Occupational Illnesses – Illnesses that pertain to work-related injuries/disorders that develop over a period of time. See Musculoskeletal Injuries (MSDs) above.

Overexertion Injuries – A musculoskeletal injury caused when the human body is worked beyond its physical limits. These types of injuries are lumped into the MSDs category.

Participatory Program – A program in which employees at every level within a company are involved in and responsible for the program's success.

Sprains and Strains – An injury classification that describes injuries to muscles, tendons, and ligaments. Sprains and strains are usually caused by overexertion to muscles, tendons, ligaments, and/or joints. Risk factors that can cause MSDs can sometimes also cause sprains/strains. The reduction of ergonomic risk factors in a job-task will usually also reduce the risk of sprains/strains.

12.4 General Responsibilities

Are as assigned in Chapter 1 of the *Safety Procedures and Guidelines Manual* M 75-01 as well as the items below specific to the Ergonomics Program.

- Assume responsibility and ensure compliance with the Ergonomics Program's policies.
- Seek assistance through the program's structure as applicable.
- Assist fellow employees as applicable.

12.4-1 Executive, Senior, and Mid-Level Management

- Ensure employees can feasibly adhere to the Ergonomics Program.
- Actively support, participate, and assist in the dissemination of the Ergonomics Program.
- Encourage all employees to perform the ergonomics self-assessment found on the Safety Web site.
- Encourage employees to perform simple exercises and stretches as recommended on the WSDOT Ergonomic Training and Education Web site under Stretch and Flex Programs.

12.4-2 Supervisors

- Ensure employees are aware of and are complying with the Ergonomics Program.
- Ensure ergonomics are addressed in task training of employees.
- Ensure ergonomic risk factors are applied to proper selection and use of equipment.
- Ensure personnel have been trained in ergonomic risk factors.
- Coach and mentor employees in ergonomics.
- Ensure ergonomics are included in PASP.
- Ensure department employees are performing their jobs with the least amount of strain on their musculoskeletal systems as possible.
  - Ensure employees receive the required training.
  - Ensure equipment/tools are available, as feasible, to help reduce ergonomic risk factors.
- Report successful ergonomic interventions (new methods/tools/equipment) that reduce ergonomic risk factors that other department employees could benefit from.
- Encourage employees to perform simple exercises and stretches as recommended on the WSDOT Ergonomic Training and Education Web site under Stretch and Flex Programs.

12.4-3 Employees

- Adhere to training requirements.
- Perform job-tasks using proper methods, equipment, and/or tools to help reduce or eliminate ergonomic risk factors. (Don’t take shortcuts.)
- Inform supervisor of job-tasks that contain ergonomic risk factors if they cannot be successfully addressed.
- Inform supervisor of successful ergonomic interventions for further dissemination throughout the department.

12.4-4 Safety Organization

12.4-4.1 Ergonomics Program Manager

- Develop and administer the department’s Ergonomics Program and strive for continuous improvement.
- Develop and manage an ergonomics related injury/illness database and provide relevant data as requested.
- Develop ergonomics content for the Safety and Health Services Office Web site.

- Ensure department Safety staff are adequately trained on general ergonomics.
- Assist Region Safety Offices with complex ergonomics issues and mitigation techniques.
- Develop, maintain, and share Best Practices.
- Serve as the ergonomics technical expert for the department.
- Work with other programs, as applicable, to help reduce ergonomics-related injuries throughout the department.

12.4-4.2 Region Safety Offices

- Provide or arrange for ergonomics related training and education as required by the program.
- Be proactive – Identify and share Best Practices and other ergonomics related information through the program's structure.
- Assist employees with the development of Pre-Activity Safety Plans to address and manage ergonomic risk factors. See Section 5.3.
- Perform general ergonomics related work site and job-task evaluations, interventions, and follow-up as requested/needed in a timely manner.
- Request assistance from the Ergonomics Program Manager when technical expertise is required.

12.5 Policy

12.5-1 Education and Training

Education and training is intended to enhance the ability of employees to recognize work-related ergonomic risk factors and to understand and apply appropriate control strategies, i.e., interventions.

Training will be completed individually or in group settings and will be provided in one or in a combination of the following formats:

- Oral presentations.
- Videos and online presentations.
- Distribution of educational literature.
- Hands-on equipment and work practice demonstrations.

Training in the recognition and control of ergonomic risk factors will be provided according to the program's structure and employee responsibilities as follows:

- To all new employees.
- To all employees assuming a new job assignment.
- When new jobs, tasks, tools, equipment, machinery, workstations, or processes are introduced.
- When high exposure levels to ergonomic risk factors have been identified.
- When an employee reports a musculoskeletal disorder.
- Periodic refresher training shall be conducted at the discretion of line management and/or through the program's structure.

The minimum training will include the following elements:

- An explanation of the department's Ergonomics Program and individual employee responsibilities in the program.
- A list of the major ergonomic risk factors and how to mitigate them.
- A discussion of ergonomics-related injuries including their signs, symptoms, and consequences of injuries caused by ergonomic risk factors.
- An emphasis on the importance of early reporting of the signs, symptoms, and injuries related to sprains/strains and occupational illnesses.

The department's Ergonomics Web site will contain ergonomics related educational and training materials for use in individual and/or group training.

12.5-2 Reporting

Employees that experience signs or symptoms of an ergonomics-related injury shall immediately convey their concerns to their supervisor. Early reporting is stressed.

Ergonomics related injuries shall be reported on DOT Form 750-100 (Accident/Incident Report) according to established injury reporting guidelines.

12.5-3 Pre-Activity Safety Plans (PASPs)

- PASPs will include a listing of the major ergonomic risk factors (heavy exertion or force, awkward postures, vibration, contact stress, and repetitive movements) and controls that may be associated with job-tasks, as appropriate.
- Employees and supervisors will discuss the ergonomic risk factors and controls, as appropriate, prior to beginning work activities.
  - Discussions will include the risk factors that are or will likely be involved in work and how to avoid the risks.
  - Employees will report job tasks that pose a risk for the development of sprains/strains and occupational illnesses to their supervisor.
  - Consider stretching and flexing before work. Guidelines on safe stretching and flexing are available.

12.5-4 Work Site and Job-Task Evaluations and Interventions

Job-task evaluation and ergonomic interventions will be completed according to the program's structure (Section 4.0) and employees' responsibilities.

12.5-4.1 Triggers for Work Site Evaluations

- When an employee reports a ergonomics-related concern.
- Jobs, processes, or work activities where work-related ergonomic risk factors have been identified.
- Any major change of jobs, tasks, equipment, tools, processes, scheduling, or changes in work shift hours that involve ergonomic risk factors.

Work-related risk factors to be considered in the evaluation process include, but are not limited to:

- Physical risk factors including force, postures (awkward and static), static loading and sustained exertion, fatigue, repetition, contact stress, extreme temperatures, and vibration.
- Administrative issues including job rotation/enlargement, inadequate staffing, excessive overtime, inadequate or lack of rest breaks, stress from deadlines, lack of training, work pace, work methods, and psychosocial issues.
- Environmental risk factors including noise, lighting, glare, temperature, humidity, and personal protective equipment and clothing.
- Combinations of risk factors.

All ergonomics related issues will be evaluated and addressed in a timely manner, as appropriate. Work site and job-task evaluations will generally be scheduled based upon the following:

- Any job, process, operation, or workstation which has contributed to a worker's current ergonomics-related injury.
- A job, process, operation, or workstation that has historically contributed to ergonomics-related injuries.
- Specific jobs, processes, operations, equipment, or workstations that have the potential to cause ergonomics-related injuries or limit work efficiency and comfort.

12.5-4.2 Job-Task Interventions

- Engineering controls are the most desirable and reliable means to reduce workplace exposure to potential harmful effects. This is achieved by focusing on the physical modifications of jobs, workstations, tools, equipment, or processes.
- Administrative controls are means of controlling or preventing workplace exposure to potentially harmful effects by implementing administrative changes such as job rotation, job enlargement, rest breaks, adjustment of pace, redesign of methods, and worker education.
- Personal protective equipment (PPE) is not recognized as an effective means of controlling hazards and does not take the place of engineering or administrative controls. Acceptable forms of PPE include kneepads and various types of gloves including anti-vibration.

Management of ergonomic evaluations and interventions shall include:

- Respond promptly to ergonomics related issues, as appropriate.
- Ensure proper attention is being given to the employee(s) and incident.
- Ensure education and training have been given and interventions have been implemented, as applicable.
- Maintain communication with the appropriate employee(s) throughout the evaluation and intervention period.
- Perform follow-up evaluations to ensure intervention's effectiveness.
- Relay information including successful ergonomics interventions throughout the department using the program's structure, as appropriate.

Chapter 13 First Aid

13.1 Purpose

This chapter provides guidance for the establishment and maintenance of adequate first-aid capabilities within the Washington State Department of Transportation (WSDOT).

13.2 Scope and Applicability

This procedure has been developed for first-aid compliance using the referenced Washington Administrative Code (WAC) chapters as guidance.

This safety policy presents guidelines for the use of first aid to protect WSDOT employees from further injury. It includes provisions for training and discussion on the requirements for a written first-aid program. This document also details the areas of responsibility for managers, supervisors, employees and safety organizations within WSDOT. This safety policy affects any employee who is involved in first-aid activities.

13.3 References

- WAC 296-800-15005 *Make sure that first-aid trained personnel are available to provide quick and effective first aid* http://apps.leg.wa.gov/WAC/default.aspx?cite=296-800-15005
- WAC 296-800-15020 *Make sure appropriate first-aid supplies are readily available* http://apps.leg.wa.gov/WAC/default.aspx?cite=296-800-15020
- WAC 296-800-15030 *Make sure emergency washing facilities are functional and readily accessible* http://apps.leg.wa.gov/WAC/default.aspx?cite=296-800-15030
- WAC 296-800-15035 *Inspect and activate your emergency washing facilities* http://apps.leg.wa.gov/WAC/default.aspx?cite=296-800-15035
- WAC 296-800-15040 *Make sure supplemental flushing equipment provides sufficient water* http://apps.leg.wa.gov/WAC/default.aspx?cite=296-800-15040
- WAC 296-155-120 *First-aid training and certification* http://apps.leg.wa.gov/WAC/default.aspx?cite=296-155-120
- WAC 296-155-125 *First-aid supplies* http://apps.leg.wa.gov/WAC/default.aspx?cite=296-155-125

13.4 General Responsibilities

Are as assigned in Chapter 1 as well as the items below specific to first aid.

It is the responsibility of each manager, supervisor, and employee to ensure implementation of WSDOT's safety policy and procedure on first aid.

13.4-1 Executive and Senior Management

- Ensure that adequate funds are available and budgeted for the purchase and/or replacement of first-aid supplies as required to perform first aid in compliance with this policy.
- Ensure a periodic audit of employee training is performed.

13.4-2 Supervisors

- Ensure appropriate employees receive first-aid training.
- Ensure that all employees have been properly trained in the use and limitations of the first-aid supplies and PPE that they are utilizing.
- Ensure supplies that have been opened, used, expired, or damaged are replaced immediately.
- Perform a periodic audit of employee training.

13.4-3 Employees

- Attend first-aid training if a requirement of the position.
- Coach and mentor co-workers in first-aid performance.
- Notify supervisor of defective, opened, expired, or damaged first-aid supplies and unsafe conditions immediately.

13.4-4 Safety Organization

Region Safety Office personnel shall:

- Assist in developing or securing required first-aid training.
- Identify and communicate requirements for compliance with applicable and statutorily required safety standards.
- Ensure all first-aid training rosters are entered into the appropriate training management system.

13.5 First-Aid Certification and Training Requirements

Every facility shall have several individuals trained in first-aid, cardio pulmonary resuscitation (CPR), and automated external defibrillator (AED) use.

13.5-1 Who Needs First-Aid Certification

- All field crew leaders, supervisors, and persons in direct charge of one or more employees.
  - An employee appointed to a position as supervisor of a crew (two or more employees) who does not have first-aid certification will be permitted up to 30 days to obtain certification providing another crew member has the necessary certificate.

  - Although not required by the first-aid safety standards, offices and shops are encouraged to have several individuals trained in first-aid.
- Employees participating on any WSDOT emergency response team.

Please Note: Participation on emergency response teams is strictly voluntary; it is not a condition of employment. Participants on Medical Emergency Response Teams may choose not to render assistance in any situation.

13.5-2 Certification Training

- Initial First-Aid Certification
  - Initial first-aid certification may be obtained via successful completion of WSDOT Course Code APS (a minimum of four hours in length with 1 hour of hands-on practical demonstration of course competencies to include first-aid, CPR, and AED use) or comparable course of training.
  - For those employees having a valid first-aid certificate or a higher level of medical certification from an approved course other than that provided by WSDOT, the certificate will remain valid until the certification is due for renewal.
- Recertification
  - Follow your vendor's requirements.
  - Recertification may be obtained via successful completion of WSDOT Course Code APS (a minimum of four hours in length with 1 hour of hands-on practical demonstration of course competencies to include first aid, CPR, and AED use) or comparable course of training or a higher level of certification.
  - This guidance document does not preclude any organizations, groups of employees, or offices from conducting or requesting more frequent first-aid training.

13.6 First-Aid Supplies and Facilities

- A first-aid kit shall be readily accessible to employees at all WSDOT work sites.
- At least one first-aid kit shall be available on WSDOT construction jobs, drill sites, and other transient or short duration jobs.
- All vehicles used for transporting field employees shall be equipped with first-aid supplies.
- When practical, a poster shall be fastened and maintained either on or in the cover of each first-aid kit and at or near all phones plainly stating the worksite address or location, and the phone numbers of emergency medical responders for the worksite.
- The size and quantity of first-aid kits required to be located at any one site, shall be determined by the number of personnel normally dependent upon each kit and is depicted in Appendix 13-A.
- The minimum components suggested for each size first-aid kit are specified in Appendix 13-A.
- First-aid kits should be inventoried for completeness, serviceability, and expiration dates periodically.

- First-aid supplies are available through normal supply channels. (Check with your Purchasing Office to determine the current supply contract.)
- To protect first-aid kit components the following provisions apply:
  - First-aid kit containers used in field operations shall be stored in containers that protect them from damage, deterioration, or contamination.
  - A cabinet-type first-aid kit is permissible for use within a building.
  - Individually sealed packaging is required for those first-aid kit components which must be kept sterile.
- Emergency washing facilities shall be readily available in the immediate work area for employees who may be exposed to harmful concentrations of contact chemical agents. Employees shall require no more than 10 seconds to reach emergency washing facilities in order for the facilities to be considered readily available. These facilities should be within a travel distance of no greater than 50 feet (15.25 meters).
- Emergency washing facilities means either emergency showers, eyewashes, face washes, or other similar units and is defined as follows:
  - Emergency Shower – A unit that allows water to cascade over the user's entire body. It shall deliver a minimum of 20 gallons (75 liters) of water per minute for 15 minutes or more.
  - Eyewash – A device to irrigate and flush both eyes simultaneously while the operator holds the eyes open.
  - The on-off valve shall be activated in 1 second or less and shall remain on without the use of the operator's hands until intentionally turned off.
  - The emergency eyewash equipment shall deliver at least 0.4 gallons (1.5 liters) of water per minute for 15 minutes or more.
- The department may issue small supplemental eyewash equipment used to augment the requirement for emergency washing facilities; however, in no event shall it be used as a substitute. Such units are usually 16 oz or 32 oz bottles and immediately deliver potable water or other medically approved eye flushing solution for less than 15 minutes.
- All plumbed emergency eyewash facilities shall be activated weekly and inspected annually to ensure that they function correctly and that the quality and quantity of water is satisfactory for emergency washing purposes.

13.6-1 First-Aid Station (Wall Mounted/Affixed)

- First-aid stations shall be located as close as practical to the highest concentration of personnel and requires unobstructed direct access.
- First-aid stations shall be well marked and available to personnel during all working hours.
- One person holding a valid first-aid certificate shall be responsible for the proper use and maintenance of the first-aid station.
- The station shall be equipped with at least one portable first-aid kit.
- First-aid station supplies <u>should</u> be inventoried <u>periodically</u> when on a job site or immediately after any use.

13.7 Hazard Assessment

When you complete your Pre-Activity Safety Plan or its equivalent in WSF's Safety Management System (SMS) for your work sites, you should also assess the hazards for the types and quantities of supplies for your first-aid kits. The following information may provide you with some ideas for developing your kit contents.

Potential Hazard	First-Aid Kit Consideration
Amputation	Plastic garbage bags (small, medium, and large), bandaging materials, sterile padding and dressings.
Biting or stinging insects	Sting-kill wipes, bee and wasp spray, meat tenderizer.
Chemical burns	Dry, sterile dressing, bottled water (enough for 20 minutes flushing).
Cuts	Antiseptic swab, first-aid ointment, gauze compress, tape, scissors, towelettes, anti-bacterial wash, medical gloves, tweezers.
Dehydration & heat stroke	Bottled water, cold packs.
Electric shock	CPR kit, thermal space blanket (for shock).
Electrical burn	Dry, sterile dressing, burn dressings.
Fall hazard from working on ladders, uneven terrain, etc.	Triangular bandages, ammonia inhalants, thermal space blanket (for shock), arm or wire splint.
Fractures	Wooden, plastic (1/4 × 3 × 12-15 inches), air inflatable or SAM splints, padding material, roll of elastic wrap (to attach splint), tape.
Frostbite or hypothermia	Thermal space blanket, heat packs.
Poison ivy, poison oak, poison sumac	Calamine lotion.
Poisoning during pesticide spraying **Warning**: Always read the labels on poisons for first-aid requirements.	Emergency and/or poison control center number (1-800-222-1222), syrup of Ipecac (use only if advised by doctor or Poison Center), two 1-quart containers of clean water, tongue depressors (to stir with) two small, plastic empty jars with tight-fitting lids, can of evaporated milk (attach opener to can with rubber band), blanket (for treating shock), plastic bandages and tape (to cover contaminated areas), disposable medical gloves, and goggles.
Splinters	First-aid tweezers, needle.
Sprains	Elastic bandages, cold packs, splinting materials.
Sunburn	Sun block , burn cream.

13.8 Recordkeeping

Records shall be kept on each employee who receives training for a minimum of three years from the date of training. Employee training records shall be stored in Learning Management System (LMS).

Documentation may be stored on a computer as long as it is available to safety and health personnel from the Department of Labor and Industries.

13.9 Appendices

Appendix 13-A First-Aid Kit and Supplies

First-Aid Kit Supplies – Example

Number of Personnel Normally Assigned to Worksite	Minimum First-Aid Supplies Required at Work Site
1 to 50 Persons	First-Aid Kit
1 to 5	10-package kit
6 to 15	16-package kit
16 to 30	24-package kit
31 to 50	36-package kit

51 to 200 Persons	First-Aid Station Wall Mounted/Affixed
51 to 75	One 10- and one 36-package kit
76 to 100	One 16- and one 36-package kit
101 to 150	One 24-and one 36-package kit
151 to 200	Two 36-package kits

Please Note: You do not have to purchase pre-packaged first-aid kits. You can design a first-aid kit specifically for your work location and hazards you have identified utilizing Section 7.0, Hazard Assessment. This list below would be equivalent to the 36-package kit for up to 50 employees. If the work site has more than 50 employees, you would double the number of kits proportionately.

Treatment Supplies	Minimum Quantity
1” adhesive band-aids	1 box 100p/box
3” × 3” gauze pads	10
4” × 4” gauze pads	15
Burn sheets	1
Eye cover gauze pads	2 pkg
Kling or roller gauze 2”	6
Kling or roller gauze 4”	6
Medical tape 1”	2 rolls
Medical tape 2”	2 rolls
Surgical pads 5” × 9”	4
Trauma dressings	4
Triangular bandages	8
Water-gel burn dressing 8” × 18”	1
Sting Swabs	2 pkg
General Medical Supplies	
Alcohol pads/wipes	10
Forceps (tweezers)	1 pair
Instant cold packs	4*
Instant hot packs	4*
Penlight	1
Rescue blanket (silver styled)	4
SAM splint	1*
Trauma shears	1 pair
CPR/Airway Management Supplies	
CPR barrier	2
Medical PPE & Administrative Supplies	
Anti-microbial hand wipes	40
Black or blue ball point pen	1
Medical exam gloves Medium	5 pair
Medical exam gloves X-Large	5 pair
Note Pad	1
Protective glasses/medical masks	2 pair
Red BIO-Bag 7-10 gallon size	1

*Quantity may increase based on work location and anticipated weather conditions.

Chapter 14 Chemical Hazard Communication

14.1 Purpose

The Washington State Department of Transportation (WSDOT) is committed to the prevention of exposures that result in injury and/or illness; and to comply with all applicable health and safety rules. To make sure that all affected employees know about information concerning the dangers of all hazardous chemicals used by WSDOT, the following Chemical Hazard Communication program has been established.

The purpose of this Chemical Hazard Communication program is to ensure that:

- Hazardous substances present in the work place are properly identified and labeled.
- Employees have access to information on the hazards of these substances.
- Employees are provided with information and training on how to prevent injuries or illnesses due to exposure to these substances.

14.2 Scope and Applicability

This chapter of the *Safety Procedures and Guidelines Manual* M 75-01, affects all WSDOT employees that use or may be exposed to hazardous chemicals in the course of their duties and have been developed using the referenced Washington Administrative Code (WAC) chapters as guidance.

This written program will be available through the agency intranet and through the Region Safety Offices for review by any interested employee. A copy may also be maintained with Material Safety Data Sheet (MSDS) binders.

14.3 References

- WAC 296-800-170 through 17055 *Hazard communication*
  http://apps.leg.wa.gov/WAC/default.aspx?cite=296-800-170
- WAC 296-828-100 through 300 *Hazardous chemicals in laboratories*
  http://apps.leg.wa.gov/WAC/default.aspx?cite=296-828-100

14.4 General Responsibilities

In addition to the responsibilities outlined in Chapter 1, there are responsibilities specific to hazard communication as detailed below.

It is the responsibility of employees at all levels to ensure implementation of WSDOT's procedure and guideline on hazard communication. It is also the responsibility of each WSDOT employee to report any new chemical hazard introduced into their workplace and immediately notify the supervisor of any unsafe act or condition.

14.4-1 Executive and Senior Management

- Provide resources necessary to furnish employees with MSDSs, proper labeling, as well as training and information regarding hazardous chemicals in their work areas.

14.4-2 Supervisors

Ensure that all affected employees:

- Receive hazard communication training (Course Code AEX).
- Develop and maintain a list of hazardous chemicals used during work operations.
- Have access to MSDSs and the hazardous chemical list.
- Maintain proper labeling for hazardous chemical containers.
- Understand proper hazardous chemical procedures as outlined on Pre-Activity Safety Plans (PASPs) and/or other safety policies.
- Ensure that employees follow established safety procedures.
- Adequately inform any non-WSDOT personnel sharing the same work area of the hazardous substances to which their employees may be exposed while performing their work.

14.4-3 Employees

- Know the hazards and precautionary procedures for the hazardous substances used in their work area.
- Attend required training.
- Plan and conduct operations in accordance with the PASP, MSDS, and good safety and health practices.
- Use personal protective equipment and clothing in accordance with prescribed training, PASPs, and the product MSDS.

14.4-4 Safety Organization

Region Safety Office staff are responsible for providing resources (i.e., reference materials) and technical support to assure employees are protected from hazardous substances. Specific responsibilities include:

- Assist supervisors in identifying hazardous substances present in the work area and evaluating potential hazards of operations.
- Periodically review operations to assure necessary elements of the hazard communication program and PASPs are being implemented.
- Provide or support employee training.
- Recommend appropriate engineering controls, administrative controls, and personal protective equipment.

14.5 Policy

14.5-1 Employee Information and Training

Supervisors of employees who work with hazardous chemicals will make sure that before starting work, each new employee will complete a course that includes information and training on the following:

- An overview of the requirements contained in the Hazard Communication Standard
- Hazardous chemicals present at the work places.

- Physical and health risks of the hazardous chemical.
  - The information and training may be designed to cover categories of hazards, such as flammability or cancer-causing potential, or it may address specific chemicals. Chemical-specific information must always be available through labels and MSDSs.
- The symptoms of overexposure.
- How to determine the presence or release of hazardous chemicals in the work area.
- How to reduce or prevent exposure to hazardous chemicals through use of the Priority of Hazard Controls.
- Steps the employer has taken to reduce or prevent exposure to hazardous chemicals.
- Procedures to follow if employees are overexposed to hazardous chemicals
- How to read labels and review MSDSs to obtain hazard information
- Where MSDSs and this written program can be accessed

14.5-2 Material Safety Data Sheets (MSDSs)

Material safety data sheets are readily available to all employees. Employees can review material safety data sheets for all hazardous chemicals used in their workplace. Material safety data sheets must be available immediately in the event of an emergency and within the work-shift for all other conditions.

WSDOT maintains an account with MSDS Online, which contains a large, though not comprehensive, database of MSDSs. Our MSDSOnline ®[1] account can be accessed through the agency intranet. If the MSDS for a product is not found in this database, you can submit a request to have it included (see the WSDOT MSDS intranet page to submit a request to our account administrator).

Other methods for attaining MSDSs are as follows:

- Obtain one at the time of purchase (vendors and/or the manufacturer are required by law to provide an MSDS if requested. Contact your Purchasing Office if the vendor will not supply an MSDS).
- Contact the manufacturer by phone or locate the MSDS on their Web site.
- MSDS internet databases such as:

  www.msdsxchange.com
  www.msdssearch.com/msdssearch.htm
  www2.siri.org/msds/index.php

[1] http://hq.msdsonline.com/wsdot3777/Search/Default.aspx

14.5-3 Hazardous Chemical Container Labeling

All hazardous chemical containers used in the workplace will clearly identify the chemical on the label, and include an appropriate hazard warning as well as the manufacturer's name and address. If the label is removed or becomes illegible, the information must be replaced by some means. Chemical label examples are included as Appendix 14-A. Other acceptable systems of labeling include standardized formats developed by the National Fire Protection Association (NFPA) and the Hazardous Materials Information System (HMIS). Contact your Region Safety Office if you would like more information.

Before working in areas where hazardous chemicals are transferred through pipes or where pipes are insulated with asbestos-containing material, employees will contact personnel responsible for maintaining the system for the following information:

- The chemicals in the pipes.
- The physical or health effects of the chemicals or the asbestos insulation.
- The safe work practices to prevent exposure.

14.5-4 Hazardous Chemical Inventory

Each facility or mobile unit must create and maintain an inventory of hazardous chemicals in their workplace. Detailed information about the physical and health effects of each chemical is included in a material safety data sheet; the identity of each chemical on the list matches the identity of the chemical on its material safety data sheet. Appendix 14-B contains a hazardous chemical inventory template form.

14.5-5 Non-Routine Tasks

Before employees perform special (non-routine) tasks that may expose them to hazardous chemicals, their supervisors will inform them about the chemicals' hazards. Their supervisors will also inform them about how to control exposure and what to do in an emergency.

Spill response guidance is included as Appendix 14-C.

14.5-6 Multi-Employer Work Places

On a work site with multiple employers, each employer must provide the work site with the following information:

- Copies of MSDSs (or make them available at a central location) for any hazardous chemicals that the other employer(s)' employee may be exposed to while working.
- Inform other employers of any precautionary measures that need to be taken to protect employees during normal operating conditions or in foreseeable emergencies.
- Provide other employers with an explanation of the labeling system that is used at the work site.

14.6 Appendices

Appendix 14-A	Chemical Label Examples
Appendix 14-B	Chemical Inventory Template
Appendix 14-C	Chemical Spill Management

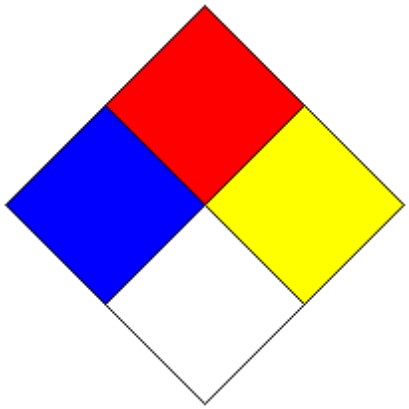
If a label becomes illegible or detached from a container, you can use a label like this to replace the necessary information.

Name of Chemical:
Physical Hazards:
Health Hazards, Target Organs, or Systems:
Optional Information, such as Personal Protective Equipment or Safe Handling:

Standardized labeling systems from the National Fire Protection Association (NFPA) or the Hazardous Materials Information System (HMIS) are also acceptable. Contact your Region Safety Office for more information.

Examples of these labels are presented below and are available from many safety vendors:

NFPA



HMIS

Appendix 14-B Chemical Inventory Template

Region:	Person Compiling List:
Org Code:	Contact No.:
Facility Name:	Facility Location:

Chemical Name*	Manufacturer	Location Used

*Use exact name and product number (when available). A manufacturer may have many different formulations using similar names. It is important to have the right MSDS.

Appendix 14-C Chemical Spills Response Guidance

Introduction

This appendix provides guidance for minor spills of small quantities in occupied facilities.

If your facility has quantities of regulated chemicals that require compliance with more substantial spill control programs such as Spill Prevention Control and Countermeasures (SPCC), Washington State Dangerous Waste Spill Response Plan, Stormwater Pollution Prevention Programs (SWPPP), or designated hazardous materials spill responders, follow procedures established under those programs.

Contact information is provided at the end of this appendix if you need additional guidance or assistance in determining appropriate response to a chemical spill.

Spill Response

The following are general guidelines to be followed for a chemical spill. The MSDS or other material specific information may provide more applicable guidance.

- Immediately alert area occupants and supervisor, and evacuate the area, if necessary. Prevent other persons from entering into an uncontrolled spill area by locking and/or placing a sign on entrances or other effective means.
- If there is a fire, medical attention is needed, or if the spill is beyond the facility's ability to safely control, contact 911.
- Attend to any people who may be contaminated where possible if it will not place you or others at risk. Contaminated clothing must be removed immediately and the skin flushed with water for no less than 15 minutes. Clothing must be laundered before reuse. See First Aid for Chemical Exposure below for more information.
- If a volatile, flammable material is spilled, immediately warn everyone, control sources of ignition and ventilate the area.
- Protect floor drains or other means for environmental release if this can be accomplished without risk to your safety and health. Spill socks and absorbents may be placed around drains, as needed.
- Report all hazardous chemical spills to your supervisor and the Region Safety Office.

First Aid Procedures for Chemical Exposure

WSDOT's first aid policy is contained in Chapter 13 of the *Safety Procedures and Guidelines Manual* M 75-01. The following is general guidance; more specific information may be obtained from the MSDS, poison control, or emergency medical services. In all cases, the incident should be reported to the supervisor and Region Safety Office regardless of severity and an Accident/Incident Report Form 750-100 EF completed.

Chemicals on Skin or Clothing

- Immediately flush with water for no less than 15 minutes (unless otherwise directed by the MSDS). For larger spills, a safety shower should be used.
- While rinsing, quickly remove all contaminated clothing or jewelry. Seconds count. Do not waste time because of modesty.
- Use caution when removing pullover shirts or sweaters to prevent contamination of the eyes.
- Check the Material Safety Data Sheet (MSDS) to determine if any delayed effects should be expected.
- Discard contaminated clothing or launder them separately from other clothing. Leather garments or accessories cannot be decontaminated and should be discarded using appropriate waste bags.

Do not use solvents to wash skin. They remove the natural protective oils from the skin and can cause irritation and inflammation. In some cases, washing with a solvent may facilitate absorption of a toxic chemical.

For flammable solids on skin, first brush off as much of the solid as possible, then proceed as described above.

Chemicals in Eyes

- Immediately flush eye(s) with water for at least 15 minutes. The eyes must be forcibly held open to wash, and the eyeballs must be rotated so all surface area is rinsed. The use of an eye wash fountain is desirable so hands are free to hold the eyes open. If eyewash is not available, pour water on the eye, rinsing from the nose outward to avoid contamination of the unaffected eye.
- Remove contact lenses while rinsing. Do not lose time removing contact lenses before rinsing. Do not attempt to rinse and reinsert contact lenses.
- Seek medical attention regardless of the severity or apparent lack of severity. Explain carefully what chemicals were involved.

Chemical Inhalation

- Close containers, open windows or otherwise increase ventilation, and move to fresh air. Assure that contaminated air will not be discharged where it may negatively impact others. Maintenance staff may be able to make adjustments to the ventilation system that will increase air flow and provide the maximum amount of fresh outside air.
- If symptoms, such as headaches, nose or throat irritation, dizziness, or drowsiness persist, seek medical attention. Inform medical providers about what chemicals were involved.
- Review the MSDS to determine what health effects are expected, including delayed effects.

Accidental Ingestion of Chemicals

- Immediately go to a medical facility or contact the Poison Control Center at 1-800-222-1222 for instructions.
- Do not induce vomiting unless directed to do so by a health care provider.

Accidental Injection of Chemicals

Wash the area with soap and water and seek medical attention, if necessary.

Injury/Illness Reporting Procedures

Exposure to hazardous chemical must be reported in accordance with the WSDOT Accident Reporting and Recordkeeping policy.

Chemical Spill Contacts

Call 911 if there is a medical emergency

Poison Control	WA State Department of Health Poison Center	1-800-222-1222
Industrial Hygienist	Corey Lane	360-705-7793 (x7793)
HQ Safety Office	HQ Safety	360-705-7099 (x7099)
Eastern Region Safety	Mike Dubee	509-324-6070 (x6070)
NC Region Safety	Phil Rogers	509-667-3009 (x3009)
NW Region Safety	Rod Jones	206-440-4819
Olympic Region Safety	Anthony Riley	360-357-2615 (x2615)
SC Region Safety	Wayne Frudd	509-577-1610 (x1610)
SW Region Safety	Ralph Martinez	360-905-2010 (x2010)
Doug Pierce	Environmental Manager (Maintenance & Operations)	360-705-7812 (x7812)
Norm Payton	Water Quality Manager	360-705-7848 (x7848)
Mike Stephens	Environmental Manager (Construction)	360-570-6656 (x6656)

Chapter 15 Lead Exposure Control Program

15.1 Purpose

To provide guidance for the establishment of a lead program for Washington State Department of Transportation (WSDOT) operations and facilities as required by Washington Administrative Code (WAC) Chapters 296-155-176 and 296-62-07521.

15.2 Scope and Applicability

This program has been developed for lead work using the referenced WAC chapters as guidance. All lead work activities shall comply with this document to ensure the safety of personnel on all WSDOT work sites. Contractors or subcontractors performing lead work shall develop and implement their own written lead compliance program.

15.3 References

- WAC 296-155-176 *Lead (in Construction)*
  www.lni.wa.gov/wisha/rules/construction/html/296-155b-1_2.htm#wac296-155-176
- WAC 296-62-07521 *Lead (in General Industry)*
  http://apps.leg.wa.gov/wac/default.aspx?cite=296-62-07521
- WAC 296-802 *Employee medical and exposure records*
  http://apps.leg.wa.gov/wac/default.aspx?cite=296-802
- WAC 296-818 *Abrasive blasting*
  http://apps.leg.wa.gov/wac/default.aspx?cite=296-818
- WAC 296-841 *Airborne Contaminants*
  http://apps.leg.wa.gov/wac/default.aspx?cite=296-841
- WAC 296-842 *Respirators*
  http://apps.leg.wa.gov/wac/default.aspx?cite=296-842
- WAC 296-24-71501 through 71507 *Health protection and ventilation (welding)*
  http://apps.leg.wa.gov/wac/default.aspx?cite=296-24-715
- WAC 296-155-415, *Ventilation and protection in welding, cutting, and heating*
  www.lni.wa.gov/wisha/rules/generalsafety/html/24_i-2.htm#wac296-24-715

15.4 Definitions

Action Level – Thirty micrograms of lead per cubic meter of air (30 µg/m3) over an 8-hour time weighted average (TWA).

Exposure – That concentration of lead in the work place air, as measured in the employee's breathing zone, without regard to the use of respiratory protective equipment.

Lead – Metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.

Negative Exposure Assessment – A determination that exposures associated with a process or task are below the PEL and/or Action Level, or that a trigger task has exposures below stipulated levels.

Permissible Exposure Limit (PEL) – Fifty micrograms of lead per cubic meter of air (50 $\mu g/m^3$) averaged over an 8-hour period. If an employee is exposed to lead for more than 8-hours in any work day, the permissible exposure limit shall be reduced according to the following formula:

Maximum permissible limit (in µg/m3) = 400 ÷ hours worked in the day.

Qualified Lead Worker – Any employee who has been appropriately trained and equipped to work in a designated lead work area.

Safety Organization – Headquarters Safety and Health Services Office staff and Region Safety Office staff.

Trigger Tasks – Are those tasks listed in WAC 296-155-17609 which requires that an employee be treated as though exposure exceeds the PEL unless an exposure assessment determines lower exposure levels. When lead is present, until an exposure assessment determines otherwise, the following tasks, are treated as though employee exposure is at the following levels:

- Manual demolition of structures (e.g. dry wall), manual scraping, manual sanding, heat gun applications, power tool cleaning with dust collection systems, spray painting with lead-paint, are treated as though employees are exposed between 50 and 500 $\mu g/m^3$.
- Using lead containing mortar; lead burning; rivet busting; power tool cleaning without dust collection systems; cleanup activities where dry expendable abrasives are used; and abrasive blasting enclosure movement and removal shall be treated as though employee exceeds 500 $\mu g/m^3$.
- Abrasive blasting, welding, cutting; and torch burning are treated though employee exposure exceeds 2,500 $\mu g/m^3$.

15.5 Organizational Responsibilities

Are as assigned in Chapter 1 of the *Safety Procedures and Guidelines Manual* M 75-01 as well as the items below specific to lead exposure.

15.5-1 Executive, Senior, and Mid-Level Management

- Ensure the site manager, supervisor and other site personnel should have the required experience to perform these assessments and identify all lead exposure hazards at sites under their control.
- Provide or replace lead exposure control equipment as required to perform work in compliance with this program.
- Perform periodic audits of employee training.
- Review Lead Exposure Control Work Plans to ensure the proper procedures and equipment are utilized.

- Ensure the establishment and maintenance of a lead exposure control program.
- Designate, in writing, Qualified Person(s) for each lead work project. Notify the Region Safety Office of the name of each Qualified Person.
- Ensure that control measures are followed.

15.5-2 Supervisors

- Assess and identify all lead exposure hazards at sites under their control.
- Develop Lead Exposure Control Work Plans with assistance from Region Safety Office and/or Industrial Hygienist, as needed (see Appendix 15-A).
- Ensure that all employees entering or working in designated lead work areas wear appropriate protective clothing at all times.
- Ensure coveralls fit properly for employees who are required to wear coveralls for lead work. Coveralls must be worn in a way that affords maximum protection from lead contamination of personal clothing and body.
- Ensure that the appropriate label is properly affixed to each poly bag before leaving the lead change area.
- Ensure that lead workers obtain and use only appropriate gloves for lead work, except as provided elsewhere in this program.
- Ensure that lead workers obtain and use face shields when required by specific operations.
- Ensure that all employees wear and properly use respiratory protective equipment before entering or working in a designated lead work area.
- Ensure that work areas and job sites are cleaned thoroughly at the end of each shift, at the completion of each job, or prior to removing lead work area signs, whichever is sooner, to prevent the spreading of lead scrap or dust.
- Supervisors who perform lead work or who enters a designated lead work area will be qualified in lead work.
- Ensure that employees located immediately outside the lead work area are not exposed to lead.
- Ensure employees are reminded to clean hands and faces prior to eating, drinking, or consuming tobacco products.
- Ensure employees are instructed to obtain clean coveralls, gloves, and respirators whenever necessary to protect skin or clothing from contamination.
- Ensure that employees use appropriate containers for contaminated clothing and lead waste.
- Ensure the Region Safety Office is notified when there has been a production change that may result in new or additional exposure to lead so additional monitoring can be performed.

15.5-3 Employees

- Wear appropriate protective clothing at all times.
- Comply with lead exposure control measures.
- Wear and properly use respiratory protective equipment before entering or working in a designated lead work area.
- Use appropriate containers for contaminated clothing and lead waste.
- Clean hands and face prior to eating, drinking, or consuming tobacco products.
- Participate in medical surveillance.
- Participate in lead work practice reviews where elevated blood lead levels are discovered.

15.5-4 Safety Organization

- Assist in developing or securing required lead awareness training.
- Assist in assessment of lead exposure and the understanding of applicable safety standards.
- Ensure that Qualified Persons as identified by managers of major organizations are trained in proper lead work procedures and evaluating hazardous conditions.
- Assist in the development of Pre-activity Safety Plans (PASP) on specific lead work projects under his/her responsibility.
- Ensure all employee exposures to lead are within the appropriate guidelines set forth by this program and WAC 296-842.
- Maintain and calibrate test equipment.
- Approve respiratory equipment.
- Assist in developing or securing training for all employees exposed to lead at or above the action level and where the possibility of eye or skin irritation from lead or ingestion of lead exists.
- Perform or coordinate air monitoring in lead work areas to determine exposures to airborne lead in the employee's breathing zone.
- Inform employees of the airborne lead level in their breathing zone within one week of completion of lab work.
- Maintain a list of qualified persons.
- Coordinate lead work practice reviews when elevated blood lead levels are discovered.

15.6 Lead Activities and Health Hazards

15.6-1 Lead Activities at WSDOT

Lead emitting activities at WSDOT are primarily bridge repair/maintenance, road maintenance and inspection projects. Most of these projects are unscheduled maintenance but some are routine scheduled activities. Crews are usually composed of approximately five or fewer persons. Lead-containing coatings may be disturbed through grinding, welding, heat-straightening, rivet busting, cutting, and small-scale painting. Freeway expansion joints and automobile exhaust deposits may involve lead impacted work. When feasible, needle guns equipped with high efficiency particulate air filters or similar removal methods are used to remove lead prior to conducting the maintenance work. Specific control methods used for each project will be identified on the Lead-Exposure Control Work plan.

Many of the maintenance activities are small scale/short duration projects lasting minutes to hours.

Larger scale bridge painting and construction, is generally contracted to private companies.

15.6-2 General Health Hazard Information

Excessive lead exposure can lead to a variety of adverse health effects, potentially damaging the nervous, blood, and reproductive systems. Lead may cause cancer. Excessive lead exposure can result in weakness, exhaustion, insomnia, facial paleness, anorexia, weight loss, malnutrition, constipation, abdominal pain, colic, anemia, gum lead line, tremors, paralysis of wrist and/or ankles, decreased hand-grip strength, brain damage, kidney disease, gout, eye, skin irritation, decreased hearing acuity, elevated blood pressure, reduced sperm count, impaired sperm mobility and abnormal sperm structure, headache, possible deficits in some neuropsychological performance measures (verbal memory, visual or spacial relationship abilities, executive functions), mood changes (irritability, depression), nausea, vomiting, and seizures, coma, and even death (at extremely high exposures).

Because lead work can cause illness, lead exposures must be controlled to levels below the permissible exposure limit (PEL) and should be minimized to the extent possible. Effective control requires an awareness of potential health hazards and effective use of control measures. This program describes these measures in detail. Management must ensure that they are followed.

15.7 Personal Protective Equipment

15.7-1 General

When performing work exceeding the PEL, employees shall use the following, as appropriate for the work being conducted.

- Coveralls or similar full-body work clothing.
- Gloves, hats, and footwear or disposable footwear coverlets; and
- Face shields, vented goggles, or other appropriate protective equipment which complies with WAC 296-800-160.

Clean and dry protective clothing shall be provided daily for employees exposed at or above 200 µg/m^3 and at least weekly for exposures below 200 µg/m3 for use by lead workers. Protective clothing will be repaired or replaced as necessary to maintain effectiveness.

All of the following actions are **prohibited**:

- Bringing contaminated protective clothing or equipment into eating areas
- Taking contaminated personal protective equipment home.
- Removal of lead from protective clothing or equipment by blowing, shaking or any other means that disperses lead into the air.

When removing personal protective equipment and clothing, employees shall follow procedures outlined in Section 13 of this chapter or procedures equivalent in effectiveness.

Contaminated protective clothing that is to be cleaned, laundered, or disposed of, is placed in a closed container that prevents dispersion of lead outside the container and is labeled as follows:

CAUTION
CLOTHING CONTAMINATED WITH LEAD. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.

If clothing will be cleaned or laundered by an outside service, the service shall be provided written notice of the harmful effects of lead.

15.7-2 Respiratory Protection Requirements

During operations where exposure mitigation controls do not reduce exposures below the PEL, appropriate respirators shall be worn by all employees performing such work.

All personnel using respirators shall be enrolled in WSDOT's Respirator Protection Program (Refer to Chapter 8 of this Manual, Respiratory Protection Policy), including medically evaluation, training, and fit testing (as necessary) prior to using respiratory protection.

Appropriate respirators must be selected to ensure sufficient protection. Respirators must reduce employee exposure below the PEL. Appropriate respirators can be selected following the procedures on the Lead Exposure Control Work Plan provided in Appendix 15-A.

Contact the Region Safety Office with questions or concern regarding appropriate respiratory protection, including provision of powered air-purifying respirators.

15.8 Housekeeping

Lead work areas shall be designated by displaying in a conspicuous manner signs and/or barrier tape with the following printed on it.

Warning

Lead Work Area

Poison

No Smoking or Eating

These signs and/or barrier tape shall be erected prior to commencement of lead activities.

Employees engaged in lead work must ensure that work areas, equipment, and surfaces are maintained as free as practicable of lead contamination.

No equipment or material shall leave a lead work area unless it has been:

- Bagged
- Contaminated and labeled as lead-contaminated waste, and/or
- Decontaminated, (e.g. tools and equipment vacuumed thoroughly, and/or wet wiped to ensure lead contamination has been removed).

Only vacuums equipped with HEPA filtered-exhaust shall be use for lead cleaning activities.

Cleaning any lead contaminated surface or material with compressed air or sweeping is prohibited.

15.9 Training

Employees and supervisors who perform lead work or who enter a designated lead work area shall be qualified in lead work. Each employee who works in a designated lead work area where airborne concentrations of lead exceed the action level (30 $\mu g/m^3$), shall be a qualified lead worker. In order to obtain and maintain qualifications the following items are required:

- Compliance with Chapter 8, Respiratory Protection Policy, as it applies to assigned respiratory protection.
- Training will include:
  - Specific operations with potential for exposure to lead above the action level.
  - The purpose and description of the Medical Surveillance Program and medical removal protection program.
  - Information regarding adverse health effects associated with excessive exposure.
  - Engineering controls and work practices associated with lead work.
  - The contents of this chapter, PASPs, or other applicable compliance plans.
  - The lead standard(s): WAC 296-62-07521 and/or 296-155-176 and appendices, as applicable.

- Prohibition of chelating agents unless under the direction of a licensed physician.
- Employee right of access to medical and exposure records.

Employee training shall be documented in the Learning Management System (LMS). Course Code for lead-training is as follows:

- AZS is used for Safe: Lead Exposure Control

15.10 Air Monitoring in Lead Work Areas

The Region Safety Office will coordinate air monitoring with the Industrial Hygienist.

Employees in work areas that meet or exceed the action level, but do not exceed the PEL, must be monitored for exposure semiannually.

Employees in work areas that exceed the PEL will be monitored for exposure on a quarterly basis.

Supervisors shall inform the Region Safety Office when there has been a production change that may result in new or additional exposure to lead so additional monitoring can be performed.

The Region Safety Office shall inform employees of the airborne lead level in their breathing zone within five business days of receiving results.

15.11 Medical Surveillance and Removal

Any employee exposed at or above the Action Level for one or more days will have initial biological monitoring available (blood lead and zinc protoporphyrin testing and analysis).

WSDOT shall maintain its Medical Surveillance Program for all employees who are or may be exposed above the action level for more than 30 days per year. The medical surveillance and removal program shall comply with all WAC requirements. Regions may implement more protective medical monitoring and removal practices.

WSDOT shall assure that lead medical surveillance is performed by or under the supervision of a licensed physician.

In addition to WAC medical surveillance and removal requirements, the Region Safety Office will coordinate a review of lead work practices with assistance from the Industrial Hygienist for any employee in their lead medical monitoring program with blood lead level exceeding 25 µg/dl to assure employees are properly protected from lead hazards.

Appendix 15-C provides medical surveillance flow charts to assist in implementing medical surveillance procedures.

15.12 Hygiene Facilities and Practices

Hand washing facilities, including soap, water, and towels shall be available at all worksites involving lead exposure. Employees exposed to lead above the PEL shall wash their hands and prior to eating, drinking, smoking, applying cosmetics, before entering eating areas, and at the end of the lead project/shift. Wipes

and cleaning products specially designed to remove lead can be used as a supplement to hand washing.

Clean change areas shall be provided for employees whose airborne exposure exceeds the PEL. The change areas shall be equipped with separate storage facilities for protective work clothing and equipment and for street clothes to prevent cross-contamination.

When performing work with exposures above the PEL, an area for eating, breaks, activities that is free of lead contamination shall be available at each work site.

- Employees exposed at or above the PEL should follow these or equally effective measures when leaving the work area and at the end of the shift:
- Upon leaving work area, and arriving in the change area, HEPA vacuum contaminated coveralls and other PPE while still being worn. Never use compressed air or shaking to remove dust/lead.
- Remove protective coveralls by carefully rolling down the coveralls.
- Place PPE in closed and labeled container (sealed bag, sealable tub, etc.)
- Remove respirator last, follow proper cleaning and storage procedures
- Wash hands and face (shower if available or as soon as you get home)
- Never take contaminated PPE into eating areas or home.

15.13 Required Contents of Lead Work Plans

Where work exceeds the PEL, a written lead work plan will be developed before the start of the project. At a minimum, the work plan will contain the following elements:

- A description of each operation in which lead is emitted; e.g., machinery used, material processed, controls in place, crew size, employee job responsibilities, operating procedures, and maintenance practices.
- A description of the specific means that will be employed to achieve compliance, including engineering plans and studies used to determine methods selected for controlling exposure to lead.
- Air monitoring data which documents the source of lead emissions.
- A work practice program which includes a description of housekeeping practices, hygiene facilities, PPE, and exposure control equipment and its expected efficacy.
- If administrative controls (e.g., limiting exposure through employee rotation) are used, list all affected employees, duration, and exposure levels, as well as any other information demonstrating effectiveness of this control.
- Any other relevant information.

Use the Lead Exposure Control Work Plan provided as Appendix 15-A.

15.14 Appendices

Appendix 15-A	Lead Exposure Control Work Plan
Appendix 15-B	Lead Engineering Control
Appendix 15-C	Medical Surveillance Flowcharts

Appendix 15-A Lead Exposure Control Work Plan

To download a current copy of DOT Form 750-060, go to the Forms Management website: wwwi.wsdot.wa.gov/fasc/adminservices/forms/formfiles/wsdot_forms

Washington State Department of Transportation

Lead Exposure Control Work Plan

Date	Project Location	*Supervisor/Competent Person	No. of People on Crew

Description of Work (e.g. equipment used, materials involved, special procedures/practices, responsibilities)

*Supervisor/Competent Person means one who is capable of identifying existing and predictable lead hazards in the surrounding or working conditions and who has authorization to take prompt corrective measures to eliminate them.

When lead is present if doing these "trigger tasks" (check all that apply)	Treat as if exposed at this level[1]	Use appropriate respiratory protection[2] for exposure level (check protection used)	Methods to Reduce/Control Lead Exposure (check all that apply)[3].
☐ Torch burning ☐ Cutting ☐ Welding ☐ Abrasive blasting	≥2,500 µg/m3 (50 times the PEL or more)	☐ Full-face PAPR (tight fitting) ☐ Hood or helmet PAPR with manufacturer confirmed APF of 1000 ☐ Full-face airline respirator in continuous flow or positive pressure mode	☐ Prior removal with tool equipped with dust control ☐ Ventilation (mechanical) ☐ Employee rotation to distribute lead exposed work ☐ Dust suppression/wet methods ☐ Prior removal with chemical stripper ☐ Encapsulation ☐ Other, describe:
☐ Rivet busting ☐ Lead burning ☐ Power tool cleaning without dust collection systems ☐ Using lead containing mortar ☐ Abrasive blasting enclosure movement and removal	≥500 µg/m3 (10 times the PEL or more)	☐ Any of the respirators listed above ☐ Full-face respirator ☐ Hood or helmet PAPR ☐ Half-face airline respirator in continuous flow or positive pressure mode	
☐ Manual demolition of structures ☐ Manual scraping ☐ Manual sanding ☐ Heat gun applications ☐ Power tools cleaning with dust collection systems ☐ Spray painting with lead paint.	≥50 µg/m3 to 500 µg/m3	☐ Any of the respirators listed above ☐ Half-face respirator	
☐ Inspections ☐ Any item not listed	Contact your safety office for guidance prior to job	Contact the safety office prior to job	

1 If you have recent air monitoring on a similar job (e.g. tasks, equipment, environmental conditions, paint lead content), you can use that to determine exposure.
2 Other appropriate options may be available. Contact your safety office for more information. APF = assigned protection factor (see WAC 296-842-13005)

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[3] All feasible control options must be implemented to reduce exposures below the PEL. If respirators are the only method used to reduce exposures, describe in detail why other controls are not feasible.

_____

_____

_____

Requirements for all lead work

- ☐ All employees trained in lead-safe work practices
- ☐ Soap, water (drinking water quality), and towels available and used before eating, drinking, smoking, or other "hand to face" activities
  - ☐ on site or ☐ at facility no futher than three minutes away
- ☐ Area for lunch and breaks that is free of lead contamination. List location: _____
- ☐ All employees have been offered/had access to initial blood testing
- ☐ Other PPE (as applicable) gloves, hardhat, welding gloves, work boots, eye protection/hearing protection
- ☐ No eating, drinking, smoking, or other hand to face activities conducted in lead work zone
- ☐ Equipment, tools, work surfaces where lead dust may accumulate are cleaned with HEPA vacuum and/or wet cleaning methods at end of
  - ☐ shift ☐ project
- ☐ Job will be routinely inspected by Supervisor/Competent person
- ☐ Air monitoring has been performed in the last 12 months on similar job or will be treated as "trigger task" exposures levels listed on previous page

All items below are also required if exposures are at or above the PEL (50 micrograms per cubic meter of air) or doing trigger tasks with no monitoring within previous 12 months showing exposures are below the PEL

- ☐ Coveralls: worn during all lead work, removed or HEPA vaccumed before entering lunch/break area or leaving work site, and removed at end of shift and placed in sealed and labeled bag or other container that will prevent dispersion of dust. Coveralls or other exposed garments must never be taken home.
- ☐ Respiratory protection used selected based on either:
  1. _____ As required by trigger task level
  2. _____ Recent air monitoring: contact the Safety Office to identify applicable air monitoring
- ☐ Employees medically cleared for respirator use and fit tested

All employees on job site must sign the lead control plan

Supervisor/Competent Person Printed Name	Supervisor/Competent Person Signature	Date Signed

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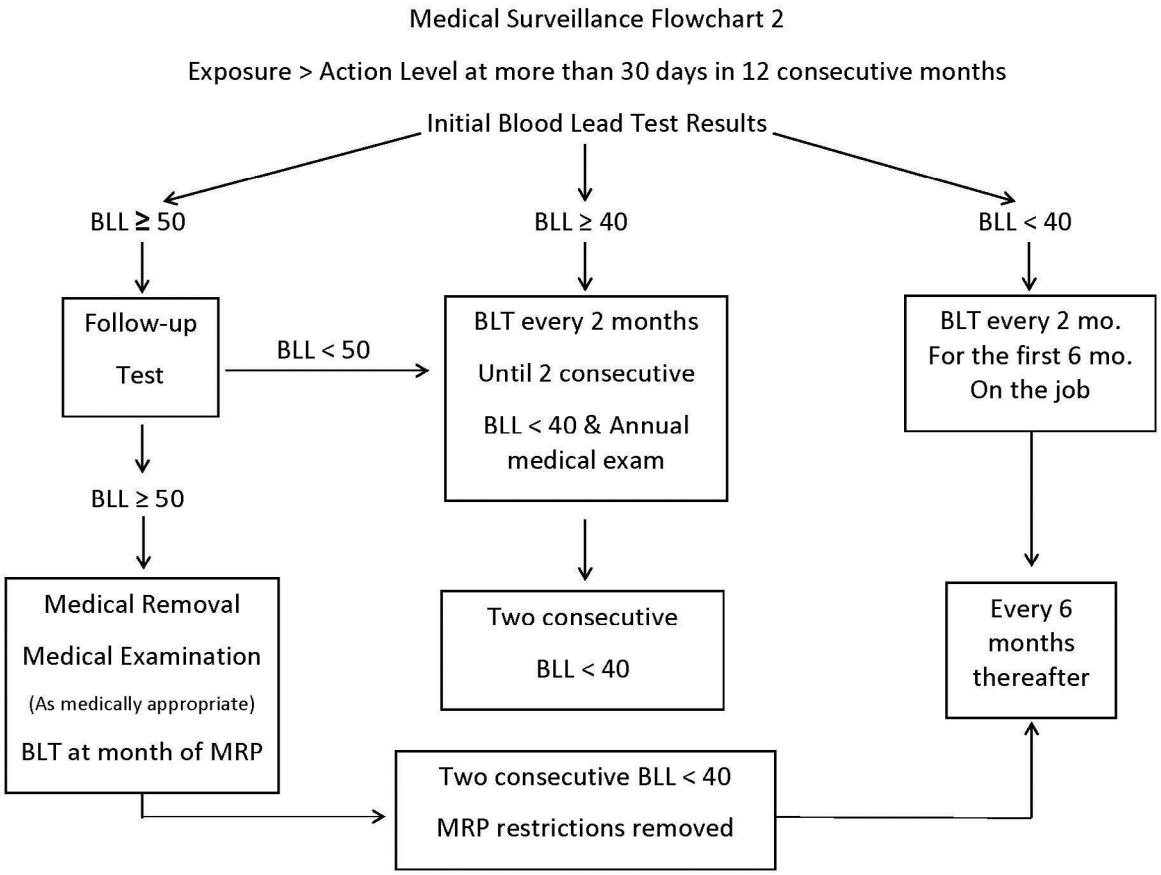
Appendix 15-B Lead Engineering Control Overview

Control Method	Advantages	Disadvantages
Power Tools with HEPA filter equipped Vacuum Attachments	• Substantially reduces airborne lead exposures • Can reduce or eliminate emissions to environment	• Noise • May not be able to reach all surfaces due to size and shape restrictions
Chemical Paint Strippers	• Can eliminate all or nearly all airborne lead exposures • Can eliminate emissions to the environment • Little or no noise	• Can contain caustic or toxic chemicals • Normally requires application many hours in advance of removal • May require more than one application
Local Exhaust Ventilation	• Removes lead at source before reaching employee • Substantially reduces airborne lead exposure • Low noise	• Worksite configuration, weather, access to power, mobility of work may restrict feasibility
General Ventilation	• Redirects plume away from employee and/or dilutes airborne contaminates to reduce airborne exposure • Low noise	• Worksite configuration, weather, access to power, mobility of work may restrict feasibility
Job Rotation	• Reduces exposures by distribution among more employees • Individual employees recieve less intence/safer amounts of exposure	• Exposes more employees


Medical Surveillance Flowchart 2
Exposure > Action Level at more than 30 days in 12 consecutive months
Initial Blood Lead Test Results
BLL ≥ 50
BLL ≥ 40
BLL < 40
Follow-up Test
BLL < 50
BLT every 2 months Until 2 consecutive BLL < 40 & Annual medical exam
BLT every 2 mo. For the first 6 mo. On the job
BLL ≥ 50
Medical Removal Medical Examination (As medically appropriate) BLT at month of MRP
Two consecutive BLL < 40
Every 6 months thereafter
Two consecutive BLL < 40 MRP restrictions removed
BLL: Blood Lead Level BLT: Blood Lead Test MRP: Medical Removal

Chapter 16 Outdoor Heat Exposure

16.1 Purpose

To establish an Outdoor Heat Exposure program for the Washington State Department of Transportation (WSDOT) operations and facilities as required by Washington Administrative Code (WAC) 296-62-095 through 296-62-09650.

16.2 Scope and Applicability

This chapter has been developed for employee protection using the referenced WAC chapter as guidance. The following requirements are only in effect during the months of May 1 through September 30, annually, when employees working are exposed to the outdoor heat at or above an applicable temperature listed in Table 1.

Note: Employees working outside for 15 minutes or less in 1 hour are exempt. This may be applied every hour during the work shift.

16.3 References

- WAC 296-62-095 *Outdoor Heat Exposure*
  http://apps.leg.wa.gov/WAC/default.aspx?cite=296-62&full=true#296-62-095

16.4 Definitions

Acclimatization – the body's temporary adaptation to work in heat that occurs as a person is exposed to it over time.

Double-layer woven clothing – clothing worn in two layers allowing air to reach the skin. For example, coveralls worn on top of regular work clothes.

Drinking water – potable water that is suitable to drink. Drinking water packaged as a consumer product and electrolyte-replenishing beverages (i.e. sports drinks) that do not contain caffeine are acceptable.

Engineering controls – the use of devices to reduce exposure and aid cooling (i.e. air conditioning).

Environmental factors for heat-related illness – working conditions that increase susceptibility for heat-related illness such as air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air movement, workload (i.e. heavy, medium, or low) and duration, and personal protective equipment worn by employees. Measurement of environmental factors is not required by WAC 296-62-095.

Heat-related illness – a medical condition resulting from the body's inability to cope with a particular heat load, and includes, but is not limited to, heat cramps, heat rash, heat exhaustion, fainting, and heat stroke.

Outdoor environment – an environment where work activities are conducted outside. Work environments such as inside vehicle cabs, sheds, and tents or other structures may be considered an outdoor environment if the environmental factors affecting temperature are not managed by engineering controls. Construction activity is considered to be work in an indoor environment when performed inside a structure after the outside walls and roof are erected.

Vapor barrier clothing – clothing that significantly inhibits or completely prevents sweat produced by the body from evaporating into the outside air. Such clothing includes encapsulating suits, various forms of chemical resistant suits used for PPE, and other forms of non-breathing clothing.

16.5 Organizational Responsibilities

16.5-1 Executive, Senior, and Mid-level Management

- Ensure that adequate funds are available and budgeted for the purchase and/or replacement of water supplies as required meeting requirements of this regulation.
- Conduct site visits to ensure WSDOT safety expectations and requirements are being met.

16.5-2 Supervisors

- Ensure appropriate employees receive initial training and annually thereafter and apply requirements when performing necessary work.
- Take immediate action when necessary to correct any reported deficiencies as it applies to this standard.
- Identify and monitor employee safety training program needs.
- Monitor field operations to ensure consistency with this standard.

16.5-3 Employees

- Comply with the requirements of this standard.
- Monitor own personal factors for heat-related illness including consumption of water or other acceptable beverages to ensure hydration.
- Stop specific work activities if unanticipated hazardous/unsafe conditions are encountered and report those conditions to their supervisor.
- Report signs and symptoms of heat-related illness in either themselves or in coworkers to the person in charge.

16.5-4 Safety Organization

- Provide guidance/technical assistance to all levels of the department regarding this standard.
- Identify and communicate requirements for compliance with applicable and statutorily required safety standards.
- Conduct routine field visits and consultation with staff to ensure compliance.

16.5-5 Training

Training on the following topics will be provided annually to all supervisors and employees who may be exposed to outdoor heat at or above the temperatures listed in Appendix 16-A:

- The environmental factors that contribute to the risk of heat-related illness.
- General awareness of personal factors that may increase susceptibility to heat-related illness including, but not limited to, an individual's age, degree of acclimatization, medical conditions, drinking water consumption, alcohol use, caffeine use, nicotine use, and use of medications that affect the body's responses to heat. This information is for the employee's personal use.
- The importance of removing heat-retaining personal protective equipment such as non-breathable chemical resistant clothing during all breaks.
- The importance of frequent consumption of small quantities of drinking water or other acceptable beverages and how much water is necessary.
- The importance of acclimatization.
- The different types of heat-related illness, the common signs and symptoms of heat-related illness, and responding to signs and symptoms of heat related illness.
- The importance of immediately reporting signs or symptoms of heat-related illness in either themselves or in co-workers to the person in charge and the procedures the employee must follow including appropriate emergency response procedures.
- Procedures for moving or transporting an employee(s) to a place where the employee(s) can be reached by an emergency medical service provider if necessary.

16.6 Appendices

Appendix 16-A Outdoor Heat Exposure

Appendix 16-A Outdoor Heat Exposure

On days where the temperature is at or above those listed below, employees must be provided a sufficient quantity of drinking water and it shall be readily available at their work site.

- 89°F All other clothing
- 77°F Double-layer woven clothes including coveralls, jackets, rain gear, and sweatshirts.
- 52°F Non-breathing clothes including vapor barrier clothing or PPE such as chemical resistant suits