King County

Accident Prevention Program
Safety Policies and Procedures

Department of Human Resources
Central Employee Services Division
Central Safety Section
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King County Safety Policy

King County is committed to maintaining a healthy, productive work force as part of our Investing In YOU strategy. Investing in our employees means taking care of employees, ensuring that they can perform their jobs and make King County a welcoming community where every person can thrive. This effort advances our True North and supports our Best-run government goals and Values.

An integral part of this commitment is our written Accident Prevention Program of safety policies and procedures that provide tools, resources, and environments that support safe, efficient, and healthy behaviors and encourage employees to proactively manage their health and well-being.

No job is so important or urgent that we should not take time to perform it in a safe manner. Accidents resulting in injuries cause unnecessary harm and stress to our staff or customers; accidents that cause damage to property and equipment represent needless waste and diminish our ability to work efficiently.

Supervisory planning, including a review of safe work procedures and the provision of protective equipment, helps to ensure a safe workplace. I urge all King County employees to lead the way in modelling safe work practices and ensure safe work environments. I further encourage employees to adopt a personal commitment to safety and health in their daily work.

Dow Constantine, King County Executive

Table of Contents

Section 1: Introduction 5

Section 2: New Employee Safety Orientation 8

Section 3: Emergency Evacuation 12

Section 4: Employee Safety Training 16

Section 5: Safety Inspections 22

Section 6: Reporting Hazards, Hazard Control, and Working Alone 29

Section 7: Safety Committees and Bulletin Boards 31

Section 8: First Aid Training and First Aid Kits 47

Section 9: Hazard Communication and Globally Harmonized System (GHS) 50

Section 10: Personal Protective Equipment and Clothing 53

Section 11: Respiratory Protection Program 63

Section 12: Hearing Conservation Program 76

Section 13: Emergency Eyewash and Shower 79

Section 14: Bloodborne Pathogens Exposure Control 81

Section 15: Asbestos and Other Regulated Building Materials 87

Section 16: Tools and Equipment 92

Section 17: Electrical Hazards 97

Section 18: Lockout/Tagout Control of Hazardous Energy 109

Section 19: Confined Space Entry Program 118

Section 20: Fall Protection 136

Section 21: Traffic Control and Flagging 149

Section 22: Heat-Related Illness (HRI) Prevention 151

Section 23: Workplace Violence 157

Section 24: Vehicle Safety 160
Section 25: Securing Loads 162
Section 26: Material Handling and Personnel Lifting Equipment 164
Section 27: Ergonomics and Body Mechanics 169
Section 28: Air Quality 175
Section 29: Reporting Work-Related Accidents and Illnesses 177
Section 30: Accident Statistics, Investigation, and Review 183
Section 31: Fire Extinguisher Inspection and Service 188
Section 32: Diving Safety 190
Section 33: Marine Safety 200
Section 34: Lightning 201
Section 35: Wildfire Smoke and Outdoor Air Quality 203
Section 36: Hot Work Program 211

Section 1: Introduction

This Accident Prevention Program describes the minimum requirements of King County's centralized Health and Safety Program and establishes a general framework for department programs. Each department is responsible for adding specific procedures and requirements, tailored to its work, to this Accident Prevention Program. All King County departments are required to ensure that their facilities, equipment, supplies, practices, and procedures meet or exceed applicable federal, state, and local safety and health standards.

Supervisors are responsible for implementing proper procedures and enforcing the rules and regulations that pertain to a position. There may be rules or procedures not covered in this document that employees are required to follow based on the unique aspects of the position. King County employees are expected to always follow work rules; work in a safe manner; and report to their supervisor any work practice, procedure, and equipment that may be unsafe.

Per Washington Administrative Code (WAC) 296-360-150 (4), employees are authorized to exercise good faith responses to a hazardous condition and if a work condition creates an imminent danger of a serious risk of injury or death to the employee or anyone else, stop work immediately, notify the supervisor, and only resume work when the hazard is corrected. Tag any equipment/tool that is defective "Do Not Use" until it is determined to be safe.

There are many hazards or problems that can be identified and corrected immediately by an employee and supervisor. There are other problems that can be addressed through an appropriate Safety Committee. More complex problems involving policy issues or requiring specific technical expertise may require additional assistance. The consultation and support services of Board-Certified Industrial Hygienists (CIH), Certified Safety Professionals (CSP), and/or Certified Professional Ergonomists (CPE) are accessible to all departments through the Central Safety Section of the Central Employee Services Division by calling 206-263-2506. Some departments such as Metro Transit, Department of Natural Resources and Parks, particularly Wastewater Treatment and Solid Waste divisions, have dedicated safety and health staff focused on those lines businesses. Consultation is still available to these organizations.

King County is committed to providing a safe and healthy workplace for every employee. Most work-related injuries occur because of unsafe acts. Each task involves junctures where an employee must consider a next move, and these decision points often involve choosing between a quick and easy or a safe route. No job is so important or urgent that time should not be taken to perform it in a safe manner. Accidents resulting in injuries or damage to property and equipment represent needless waste and diminish the ability to work efficiently.

Program Administration

The Revised Code of Washington (RCW) 49.17.060 requires King County to furnish each employee a place of employment free from recognized hazards that are causing or likely to cause serious injury or death. Below are the overarching responsibilities for all agency roles to ensure compliance with this law:

Managers and Supervisors

Managers and supervisors represent King County management and have responsibility to:

A. Ensure that each employee completes all appropriate training, including periodic refresher training as specified by this Accident Prevention Program or deemed necessary.

B. Ensure that employees report all on-the-job incidents or accidents.

C. Properly investigate and report all incidents and accidents.

D. Assess employee adherence to safety and health policies in employee annual performance reviews and evaluations.

E. Supervise the issuance and use of all personal protective equipment (PPE).

F. Evaluate each employee's level of experience and training as well as recognized medical restrictions and PPE requirements prior to making employee field assignments.

G. Conduct periodic evaluations with employees, during field and/or office activities, to ensure comprehension and compliance with safety and health policies.

H. Attend all required training sessions and safety meetings.

I. Perform other duties as specifically designated within the Accident Prevention Program.

Employees

Employees shall follow safety and healthy practices and procedures prescribed by policies applicable to their work duties, to include:

A. Attend all required training.

B. Properly use, maintain, and replace assigned PPE.

C. Complete and submit incident/security reports as required by policies contained herein.

D. Report to the employee's supervisor any hazardous or unsafe work conditions.

E. Perform other duties as specifically designated within the Accident Prevention Program.

Safety and Health Professionals

Safety and Health Professionals, Administrators, Project/Program Managers, and other similarly titled positions that perform safety and health functions whether in Central Safety or at the department or division level, have the following responsibilities for the administration of the Accident Prevention Program:

A. Assist in developing, revising, and administering safety and health policies in accordance with recognized hazards and Washington State Department of Safety and Health (DOSH) requirements.

B. Provide technical support to supervisors as requested.

C. Assist supervisors with training as requested.

D. Administer the agency's pre-employment, medical surveillance, hearing conservation, and respiratory program.

E. Assist supervisors with proper recordkeeping practices on employee training and testing as required.

F. Provide ergonomic evaluations for assigned divisions/departments.

G. Maintain and publish the Occupational Safety and Health Administration (OSHA) 300 form Summary of Injuries and Illnesses.

H. Perform other duties as specifically designated within the Accident Prevention Program.

Section 2: New Employee Safety Orientation

Introduction

Each employee contributes to the creation of King County's safety culture. As part of our obligation to develop, supervise, implement, and enforce safety and health training programs that are effective in practice and pursuant to WAC 296-800-14020, every new employee must be provided with a New Employee Safety Orientation that addresses job-specific hazards.

The orientation should be presented by the employee's immediate supervisor, or by an authorized person within the same work group during new employee onboarding.

New Employee Safety Orientation Topics

The orientation should address the applicable topics listed below as to the specific job and any other information necessary for the new employee to perform their job safely. Form 1-1 is a checklist to aid supervisors with a New Employee Safety Orientation.

Additional safety training may be needed prior to assigning certain hazardous work tasks. See Section 4, Employee Safety Training, for information on safety training classes offered by Central Safety .

For further assistance, contact your safety and health professional or email Central Safety at centralsafety@kingcounty.gov.

New Employee Safety Orientation should:

- Discuss the department's safety program, health and safety committee, and accident review process.
- Identify Safety Committee representative(s) and the department's Safety and Health Administrator by name.
- Explain how to report unsafe working conditions and/or work practices.
- Explain how to report a work-related injury.
- Describe where and how to get first-aid treatment.
- Discuss applicable safety rules and procedures, and any other task-specific information the employee needs to perform the job safely. This includes safe practices for machinery, equipment, and materials use, and a review of all known potential hazards.

- **Describe the Department's Hazard Communication Program, as Applicable**
  - Inform employee of Hazard Communication and the Globally Harmonized System (GHS) program and their "right to know".
  - Identify hazardous materials used or encountered on the job, and discuss signs and symptoms of over-exposure and related health effects.
  - Review proper chemical handling procedures and required PPE, if any.
  - Discuss emergency procedures in the event of spills, contact with chemicals, or other incidents.
  - Show the location of eyewash stations and emergency showers, where applicable, and other emergency equipment.
  - Review and explain Safety Data Sheets (SDS), including where they are located.

- **Demonstrate the Required PPE, if Any**
  - Applications – when, where, how to use
  - Limitations
  - Care and maintenance of PPE
  - Employee demonstration of competence in the use of required PPE

- **Describe Emergency Procedures**
  - Discuss emergency response – fire, earthquake, intruder, bomb threats.
  - Identify location of the Automated External Defibrillator (AED) if applicable, include who the site coordinator is, and availability of training.
  - Define what to do and where to go in the event of each an emergency.
  - Discuss how and when to use fire extinguishers and their location.
  - Clarify the supervisor's priorities, expectations, and performance measurement criteria.

Form 1-1

New Employee Safety Orientation Checklist

Employee Name: _____

Hire Date: _____ Today's Date: _____

Job Title: _____

Division/Section: _____

Work Location: _____

Orientation Performed By: _____

Job Title/Relationship to Employee: _____

Topics Covered

☐ **How to Report a Work-Related Injury**

A work-related injury or illness should be reported immediately to your supervisor or to _____.

☐ **Where/How to Get First Aid**

_____
_____

☐ **Discuss the Department's Safety Program, Health and Safety Committee, and Accident Review Process**

Identify at least one Safety Committee representative and the department's Safety and Health Administrator by name.

_____
_____

☐ **How to Report Unsafe Working Conditions and/or Work Practices**

The preferred method to report unsafe working conditions and/or work practices is through your department's chain of command starting with your immediate supervisor. If the issue is not addressed in a timely manner, it should be reported to your Safety Committee representative and brought before your Safety Committee. If the issue poses an immediate threat and it is not addressed promptly after being reported to your supervisor, it should be reported to the department Safety and Health Administrator identified above.

☐ Discuss specifically applicable safety rules and task-specific information the employee needs to perform the job safely, including a review of all known

potential hazards, and safe practices for machinery, equipment, and materials use.

☐ **Hazard Communication, as Applicable**
- ☐ Inform employee of existence of Hazard Communication Program and the "right to know".
- ☐ Identify hazardous materials used or encountered on the job, along with discussion of signs and symptoms of overexposure, and related health effects.
- ☐ Review of proper handling procedures and required PPE, if any.
- ☐ Discuss emergency procedures in the event of spills, personal contact, or other incidents.
- ☐ Explain Safety Data Sheets (SDS).

☐ **Required Personal Protective Equipment (PPE), if Any**
- ☐ Applications – when, where, how to use
- ☐ Limitations
- ☐ Care and maintenance
- ☐ Verify employee's ability to use required PPE properly

☐ **Emergency Procedures**
- ☐ Types of emergencies that might be reasonably anticipated.
- ☐ What to do and where to go in the event of each anticipated emergency.
- ☐ The location, site coordinator, and training for Automated External Defibrillator (AED).
- ☐ The location and how and when to use fire extinguishers.
- ☐ The location of eyewash stations, where applicable, and other emergency equipment.

☐ **Workplace health and safety priorities, expectations, and performance measurement criteria.**

I certify that I performed a New Employee Orientation which included the topics and issues indicated above.

_____	_____	_____
Supervisor signature	Printed Name	Date

I acknowledge that I participated in a New Employee Orientation that included the topics and issues indicated above, and I understand the material presented.

_____	_____	_____
Employee signature	Printed Name	Date

Section 3: Emergency Response & Evacuation

Incident Management & Emergency Response

In response to an incident or anticipated event in which Incident Command is established, a Safety Manager or Officer should be assigned. The Safety Officer monitors incident operations and advises the Incident Commander (IC) or Unified Command on all matters relating to operational safety, including the health and safety of incident personnel. Depending on the scale or the incident (Type 3 and complex incidents) additional safety units may be assigned as single resource in the Planning Section and Operations Section.

Additionally, the Office of Emergency Management (OEM) is responsible to ensure that the Departments are assessing and updating their Continuity of Operations Plans (COOP) routinely. OEM and the Departments will consult with their assigned Safety Officer as appropriate.

The Federal Emergency Management Agency (FEMA) has identified the roles and responsibilities of an incident Safety Officer here.

In summary, the Safety Officer:
1. Participates in Command and General Staff, planning, and operations meetings including with the Office of Emergency Management and/or the Health
2. Prepares and presents safety briefings
3. Identifies incident-related hazardous situations; identifies actions to mitigate risks and hazards with the greatest potential for serious accident or injury
4. Ensures the safety, welfare, and accountability of assigned incident personnel
5. Participates in the development of the Incident Action Plan (IAP) and approves any items with safety implications
6. Exercises emergency authority to stop unsafe actions at any time
7. Investigates, or coordinates the investigation of accidents occurring within the incident area
8. Provides safety updates to Command and General Staff during meetings, or as necessary
9. Completes IAP safety analysis (or equivalent) and develops planning matrix or risk analysis with the Operations Section
10. Prepares narratives or special reports, as necessary
11. Coordinates with health departments or subject matter experts from the Authority Having Jurisdiction (AHJ) on food safety and sanitation issues, as necessary
12. Conducts safety inspections of all logistical and operational sites (kitchen s, sleeping areas, helibases and so on)
13. Maintains a daily log of activities and decisions
14. Conducts safety analyses and prepares reports on all incident facilities and locations, as necessary; communicates safety issues or concerns to incident personnel at shift briefings

15. Delivers safety briefings and distributes safety messages
16. Monitors incident operations and advises the IC on all matters relating to the health and safety of incident personnel
17. Determines the need for subject matter experts to advise on or oversee unique safety issues or hazards, such as confined space, hazardous materials (HAZMAT), infectious diseases and so on.

Emergency Evacuation

Introduction
In the event of a major emergency, employees may be required to evacuate work areas. When an evacuation alarm is sounded, employees are required to evacuate. In some emergencies, such as earthquakes, sheltering in place is required. It is critical that employees take the time to become familiar with all marked exits from respective floors or work areas and exits leading outside.

Applicability
Detailed emergency action plans are required for every location and training is required for every employee.

Responsibilities
The Department of Executive Services (DES) and Facilities Management Division (FMD) maintain an Emergency Action Plan for the Courthouse Complex Buildings, including the King County Courthouse; King Street Center, Administration, Chinook, and Yesler Buildings. FMD also provides evacuation safety and floor warden training upon request. All departments occupying these buildings must follow and provide training on the applicable parts of the Emergency Action Plan for all employees.

For all other King County-owned locations, each department must prepare an emergency action plan and train their employees. If assistance is needed with this developing an emergency action plan contact FMD customer service or you assigned Safety Professional.

If the building space is leased and has six or more floors, the building management company is required to have an emergency action plan and train floor wardens. Departments must train all employees on the emergency action plan and evacuation procedures.

For leased space in buildings with fewer than six stories, each department must have a written emergency action plan and train employees.

Training
All employees must be trained on emergency response and evacuation procedures. Each department is responsible for training or ensuring training occurs for every employee for their respective facilities.

Training must include:

- Exit locations
- Evacuation routes
- How to sound the alarm and report an emergency
- Location of fire extinguishers and instructions on how to operate
- Designated assembly area (muster point) in the event of an evacuation

Building evacuation drills should be held annually.

Buildings with six floors or more floors are required to have tenant volunteers called floor wardens. They are trained by the building management to assist with evacuation to outdoor assembly areas and make sure everyone evacuates safely. Alarms will typically sound on the floor of the event and adjacent floors.

Section 4: Employee Safety Training

King County provides safety training programs to reduce on-the-job accidents and to meet state training requirements. All employee training must be documented. A record of training delivered by Central Employee Services Division (CESD) Central Safety is entered into the NeoGov training database and is accessible to each employee.

Central Safety offers training classes on many of these subjects at locations throughout the county and on-site training can be arranged for groups. To schedule safety training, contact a Central Safety Training Specialist at 206-477-3371 or 206-477-3370.

The following table provides information on training subjects, requirement authority, training frequency requirements, and training providers. Some King County departments may enforce different requirements. For course descriptions and schedules, visit: kingcounty.gov/audience/employees/safety-claims/safety-at-work/safety-training-classes.aspx

Subject	Training Provided by	Training for	Required by	Training Frequency	Comments
Accident Investigation Techniques	Home Department CESD Central Safety	All supervisors, managers, and safety committee members	None	One time at initial assignment	Information for supervisory personnel on handling accident investigations
Aerial Lifts and Elevating Work Platforms	Home Department CESD Central Safety	Employees operating this type of equipment	DOSH[1] WAC[2] 296-869-20025	Initial assignment as operator	Equipment vendor may provide training: training records must be retained by King County
Alternate Fueled Vehicle Safety	Home Department	Employees assigned or operating a vehicle with alternate	King County Policy	Initial assignment as operator	

[1] DOSH - Washington State Department of Labor and Industries, Division of Occupational Safety and Health

[2] WAC – Washington Administrative Code

Subject	Training Provided by	Training for	Required by	Training Frequency	Comments
		Fuel, such as Compressed Natural Gas (CNG), propane			
Asbestos Two-hour Informational Course	Home Department CESD Central Safety	Maintenance employees, as required	DOSH WAC 296-62-07722 (2)	Initial assignment and annually thereafter	Information for employees who maintain asbestos floor tile or are around asbestos materials
Asbestos Workers and Asbestos Supervisors	State-Certified Asbestos Trainer	Certified Asbestos Workers	DOSH WAC 296-65	Initial assignment is a five-day class and annually thereafter an eight-hour class	Certification required for workers who disturb or remove asbestos-containing materials
Bloodborne Pathogens	Home Department CESD Central Safety	Employees exposed to human body fluids	DOSH WAC 296-823-12005	Before first assignment and annually thereafter	Employees selected by job classification
Cardio-Pulmonary Resuscitation (CPR) and Automated External Defibrillator (AED)	Emergency Medical Services CESD Central Safety	Field employees, supervisors, managers, leads	DOSH WAC 296-800-15005	Every Two Years	EMS offers CPR and AED only; Central Safety offers First Aid, CPR and AED training
Confined Space Entry	Home Department CESD Central Safety	Employees entering confined spaces	DOSH WAC 296-809-40002	Before first assignment and retraining if any deficiencies in the program are discovered	Managers, supervisors, leads and selected employees must attend. Home Department must provide training on specific tools used during confined space entry

Subject	Training Provided by	Training for	Required by	Training Frequency	Comments
Defensive Driving * * This training is not intended to meet CDL holder requirements	CESD Central Safety	Frequent vehicle operators, averaging once per month	Executive Policy FES 12-1-4-EP	Every three years	Employees who drive their own vehicles on county business must attend
Educational Topics for Safety Meetings	Home Department	Safety meeting participants	DOSH CESD Central Safety	Subjects to be determined by safety committee	Videos/DVDs and assistance from Central Safety can be requested prior to safety meetings
Effective Safety Committees	Home Department CESD Central Safety	Affected employees and managers	None	As needed	Develops skills necessary for implementing safety programs
Energy Control Lockout/ Tagout	Home Department CESD Central Safety	All affected employees	DOSH WAC 296-803-60005	Initial assignment	Home department must maintain supplies, equipment inventory
Ergonomics and Body Mechanics	Home Department CESD Central Safety	All employees as needed	None	As needed	Information on avoiding repetitive motion injuries
Fall Protection	Home Department CESD Central Safety	All employees exposed to fall hazards	DOSH WAC 296-800-11015	Initial assignment to job exposed to falling from height	Retraining required if changes in workplace or equipment, or if inadequacies in prior training is noted
Fire Extinguisher Use	Home Department CESD Central Safety	All employees as needed	DOSH WAC 296-800-30025	When first hired and annually thereafter	Training course, demonstration, or video

Subject	Training Provided by	Training for	Required by	Training Frequency	Comments
First Aid	CESD Central Safety	Field employees, supervisors, managers, leads	DOSH WAC 296-800-15005	Every two years	CPR is also required. Central Safety offers First Aid/CPR/AED combination class
Forklifts and Powered Industrial Trucks	CESD Central Safety	Employees operating forklifts and powered industrial trucks	DOSH WAC 296-863-60005	Initial assignment as operators and every three years thereafter	Training must include both classroom and hands-on evaluation. Retraining required whenever any deficiencies are noted
Hazard Communication an Globally Harmonized System (GHS) Worker Right to Know	Home Department CESD Central Safety	All new employees	DOSH WAC 296-800-17030	Initial assignment	Training course or video available
Hearing Conservation	Home Department CESD Central Safety	Employees exposed to noise over an average of 85 decibels A (dBA)	DOSH WAC 296-817-20020	Initial assignment and annually thereafter	Videos available; basic training provided during required annual hearing tests
Heat Related Illnesses	Home Department CESD Central Safety	Employees working in outdoor temperatures above 80 degrees or above 52 degrees, if required to wear non-breathing clothing	DOSH WAC 296-62-09560	Annually	Training course or video available
How to File a Workers' Compensation Claim	CESD Central Safety	All new employees, supervisors, and managers	Department of Labor and Industries, Self-Insurance Regulations	Initial assignment, and as needed	This topic should be addressed in New Employee Safety Orientation

Subject	Training Provided by	Training for	Required by	Training Frequency	Comments
			WAC 296-15-320		
Job Safety Analysis	Home Department CESD Central Safety	Leads, supervisors, safety committee members	None	Initial assignment and as necessary	
Back Injury Prevention and Safe Lifting Techniques	Home Department CESD Central Safety	All affected employees	None	Initial assignment and as necessary	Videos available
New Employee Safety Orientation	Home Department	All new employees	DOSH WAC 296-800-140	Upon hire, or change in assignment	Overview of job-specific safety issues is required for new employees
Personnel Protective Equipment (PPE)	Home Department CESD Central Safety	Affected employees	DOSH WAC 296-800-16025	Before performing work requiring PPE	Overview of protective equipment selection and uses
Powder Actuated Tools	Home Department	Employees using gun powder activated tools	DOSH WAC 296-807-15005 WAC 296-155-36321	Initial assignment as operator	Training must be provided by equipment manufacturer
Respirator Use and Maintenance	Home Department CESD Central Safety	Employees who may be required to wear respirators and their supervisors	DOSH WAC 296-842-16005	Before worksite respirator use and annually thereafter	Video; fit check and demonstration
Safety Management	Home Department CESD Central Safety	All supervisors and managers	None	One time as requested	Information for supervisors on how to manage safety in their department

Subject	Training Provided by	Training for	Required by	Training Frequency	Comments
Secure Your Load	Home Department CESD Central Safety	Employees who load, secure, and/or transport loads	Executive Order PER-18-9 (AEO)	Initial assignment and as needed	Both in-person and on-line training are available
Workers' Compensation: Assist Your Workers in Filing Claims	CESD Central Safety	All supervisors and managers	None	Initial assignment and as needed	Workers' compensation information for supervisors and managers
Workplace Violence Prevention	CESD Central Safety	All employees	Recommended by Executive Policy PER-18-7 (AEO)	Initial assignment and as needed	Live training available for sign-up through NEOGOV
Work Zone Traffic Control and Flagging	CESD Central Safety	Employees who work as traffic flaggers or are responsible for traffic control	DOSH WAC 296-155-305 (6)	Initial assignment as flagger and every three years	Supervisors, managers, leads, and select employees

Section 5: Safety Inspections

Introduction
Periodic safety inspections offer an effective way to identify and correct potential hazards in the workplace and enhance safety awareness. It is recommended that a supervisor and/or an employee familiar with the work area conduct in-house safety inspections on a regular basis, depending on the type of work done.

Employees do not have to be safety experts to perform safety inspections of the workplace. Most safety hazards are recognizable to any person who looks for them.

Applicability
This policy applies to all King County departments and divisions.

Responsibilities
Each department, division, and work group are responsible for conducting worksite(s) inspections as needed.

Your Safety and Health Professional can provide inspection assistance upon request.

Procedures
Employees know their workplaces best. Look at the conditions and how things are done in the workplace and ask, “Is it safe?”. What could be done differently? If there are conditions or procedures that seem hazardous, they may not be as safe as they should or could be.

Clean up or correct any safety hazards or other recognized deficiencies immediately, if possible. Any perceived hazards that require further action should be reported to the employee’s supervisor and/or submitted to their Safety Committee for review. Imminent hazards should be reported immediately to supervisors and the respective department Safety and Health Professional or to CESD Central Safety at 206-477-3350 or centralsafety@kingcounty.gov.

Construction Project Inspections
For construction projects which last more than one-week, walk-around safety inspections must be conducted jointly by one member of management and one member of the crew, elected by the employees as their authorized representative. Walk-around safety inspections must be conducted weekly and documented.

Office Inspections
Form 5-1, the "Workplace Inspection Checklist" can be used for most indoor work environments. Upon request, Department Safety and Health Professionals will

assist employees with safety inspections. They can also help to create or modify a checklist specific to the employee's workplace for periodic inspections.

Regulatory Compliance Inspections
If the workplace is visited or inspected by an inspector from the Washington State Department of Labor and Industries, the Division of Occupational Safety and Health (DOSH), supervisors, and King County CESD Central Safety should be notified immediately at 206-477-3350.

When DOSH performs an inspection of a workplace, it is usually in response to an employee complaint. **It is a violation of Washington Administrative Code to discriminate against an employee for filing a safety or health complaint.** The State Compliance Safety Officer is required to contact the person in charge of the job site and has the right to interview employees privately.

The following DOSH Inspection List identifies what to do in the event of an unexpected visit from a Department of Labor and Industries inspector.

DOSH Inspection List

- Immediately notify the department's Safety and Health Professional or CESD Central Safety at 206-477-3350. Also inform a management representative from your department.

Determine the reason for the inspection.

- Do not deny the inspector access; however, request that a Safety and Health Professional and a department management representative participate in the inspection.

- Once the inspection is formally opened, answer all questions as politely, honestly, directly, and concisely as possible.

- Where possible, correct any noted deficiencies on the spot or before the conclusion of the inspection.

- Note where the inspector takes pictures and if possible, take duplicate photos.

- If the inspector takes any samples, ask for an explanation of what it is and why it is being taken.

- If the inspector requests a copy of the OSHA 300 log of injuries and illnesses, contact CESD Central Safety at 206-477-3350, and they will provide a copy.

- At the conclusion of the inspection, ask the inspector if any citations are intended to be issued and document the exact regulatory citation(s).

Form 5-1

Workplace Inspection Checklist

Location / Item	Yes	No	Comments
Aisles, Stairways, and Exits			
Exit signs visible, unobstructed, and illuminated with a minimum 20-foot candle			
Emergency lighting is operational			
Exit doors are not locked from inside			
Stairways have hand railings on both sides			
Minimum 44-inch-wide clearance			
Cords and wires are placed out of path or protected			
Surface level changes (like steps or floor recesses) are highlighted			
Free of obstructions; file drawers do not open into aisles			
Doors			
Glass doors have safety glass; decals 4.5 feet from floor and centered			
Doors swing away from passageway			
Lighting			
20- to 40-foot candles for ambient light; 30- to 100-foot candles for reading			
20-foot candle minimum for halls and stairways			
Air Quality			
Temperature 70 – 74 degrees Fahrenheit			

Location / Item	Yes	No	Comments
20 cubic feet per minute fresh air provided per person; CO_2 levels below 1000 parts per million			
Water leaks are repaired immediately, and water-damaged ceiling tiles and/or carpeting is thoroughly dried or replaced			
Copiers and printers are vented or separated from employee desks			
Electrical			
Electrical outlets properly wired and grounded			
All switch and outlet covers in place			
All appliances UL listed and have ground wire			
Extension cords have ground wire and are same size or greater than the appliance cord			
Sufficient number of outlets or power strips to eliminate or minimize extension cords			
Power cords in walking spaces are rubber covered or taped down and not placed under carpeting			
Floor stacks are protected by furniture or other obstruction			
Ground fault circuit interrupters (GFCI) in all wet locations			
All repairs made by qualified personnel only			
Floors			
Slip-resistant finish			
No tripping hazards			

Location / Item	Yes	No	Comments
Rugs and carpets free of holes and tears, and securely fastened			
Floor free of holes or depressions			
Wet floor signs used by custodians			
Parking Lots and Sidewalks			
Surfaces maintained			
Trip hazards highlighted			
Lighted at night			
Computer Workstations – For workstation evaluations and group training, contact CESD Central Safety at centralsafety@kingcounty.gov			
Desk, monitor, and keyboard heights proper			
Adjustable chairs with good back support available			
Footrests and wrist rests available where needed			
Mouse positioned close to keyboard			
Storage			
Floors kept clear			
Overhead sprinklers and smoke detectors unobstructive			
No storage on top of higher files or overhead bins			
File cabinets and bookshelves anchored to walls and/or floor			
Heaviest items on middle-to-lower shelves			
Flammables/combustibles in fire safety cans/cabinets; quantities limited to immediate use only			
Miscellaneous			

Location / Item	Yes	No	Comments
Open only one file drawer at a time; close after use			
All personnel trained in Hazard Communication and Globally Harmonized System (GHS)			
Fire extinguishers checked monthly and serviced annually			
Safety Data Sheets (SDS) Book up-to-date and available to employees			
Safety bulletin board used for safety purposes only; Washington Industrial Safety and Health Act (WISHA) poster, safety meeting minutes, emergency numbers posted			
First aid kit location marked			
First aid kit stocked			
Automated External Defibrillator (AED) location marked			
Accident Prevention Program manual available to all employees			

Section 6: Reporting Hazards, Hazard Control, and Working Alone

Reporting Hazards

If there are conditions or practices in a work area that feel unsafe, they should be brought to the attention of the employee's supervisor immediately. The supervisor is in the best position to assess the situation and will have the knowledge and resources to promptly take the appropriate corrective action.

Safety meetings or committees are also appropriate resources to help address safety concerns. The safety committees' primary duties are to provide a forum for open communication between management and employees to address safety related issues and review unsafe work conditions.

If confronted with a perceived serious, imminent, or immediate hazard and concerns remain after advising the supervisor, contact your designated Safety and Health Professional. If you do not know who that is, contact CESD Central Safety at centralsafety@kingcounty.gov. Employees will be directed to the Safety and Health Professional assigned to their department or division. Safety and Health Professionals are Certified Industrial Hygienists, Certified Safety Professionals, and/or Certified Ergonomists and are available to respond to a wide variety of occupational hazards.

Hazard Control

Workplace hazards should be controlled and/or eliminated according to the following hierarchy:

1. The most desirable method of hazard control is to eliminate the hazard altogether. Substitute a hazardous material or process with a safer material or process whenever feasible. For example, substitute a loud tool or machine for a quieter one. Any lingering hazard and/or potential new hazards associated with new processes must also be evaluated and controlled.

2. Institute engineering controls to reduce, isolate, or eliminate the hazard. Examples of engineering controls include:

    - Machine guarding
    - Local exhaust ventilation/fume hoods
    - Reactive silencers/mufflers
    - Enclosures for noisy machinery

3. Limit the duration of exposure to workplace hazards. Administrative controls, such as job task rotation can be used to reduce certain exposures to safe levels. For example, alternate repetitive work tasks among different workers to limit musculoskeletal disorders from performing the same task.

4. Use personal protective equipment. This is a last-resort measure, limited to the following situations:

    - During installation, maintenance, and repair of engineering controls, when an unprotected worker is at risk for injury or illness.
    - When it is not feasible or practical to reduce worker exposure to allowable levels using substitution or isolation techniques.
    - During emergencies, such as rescue operations.
    - Earmuffs or ear plugs are permissible as a long-term method to reduce noise exposure, but only as part of a comprehensive hearing conservation program and only when the eight-hour time-weighted average dose is less than 90 dBA.

Working Alone

There are very few occupational health and safety regulations which directly address the issue of employees working alone. Permit required confined space entry is one example. In instances when a second person is required by law, as in the case of confined-space entry, it is typically in a back-up or rescue capacity. Nevertheless, a back-up person or at least a “spotter” should always be present whenever an employee is engaged in a potentially hazardous activity. At a minimum, employees who work alone in high crime and remote areas of the county should have a means of communication, such as a two-way radio or cell phone.

Otherwise, working alone issues will be considered and addressed on a case-by-case basis. Concerns regarding working alone should be brought to the attention of the supervisor and/or a Safety and Health Professional.

Section 7: Safety Committees and Bulletin Boards

Introduction

Employee health and safety is an important issue in the workplace. Preventing accidents, creating a safety culture, and providing a safe and healthful work environment requires time, energy, and resources. An effective safety committee is a critical element in any safety program.

A well-managed safety committee enhances awareness of work-related safety issues, provides a forum for the discussion and resolution of those issues, and fosters communication between employees and management. Safety committee meetings offer an opportunity for management to demonstrate its commitment to workplace safety and to communicate a reciprocated commitment from employees.

A safety committee is a functional body in which each committee member represents a group of employees. This gives everyone a voice but keeps the meeting size to an effective number of participants.

Safety committee members bring employees' issues to the committee and take information back to co-workers regarding the committee's findings and actions, management's positions, and other health and safety-related news. The safety committee can assess training needs, and organize or sponsor training and other informational events as it deems necessary.

Applicability

A functional safety committee is a core requirement under Washington Department of Labor and Industries WAC-296-800-130. Every employer with 11 or more employees is required to establish a safety committee to address employee safety and health concerns. All King County employees and work groups must have representation on a safety committee or attend safety meetings. Because of the geographic distribution and the many different sizes, functions, and types of organizations within King County, work groups may have different types of safety representation.

State regulations permit safety meetings in place of a safety committee when:

- Employees work on different shifts with 10 or fewer employees on each shift.
- Employees work in widely separate locations with 10 or fewer employees at each location.

Crew Chief/Crew "tool-box" safety meetings may be held in place of regular safety committee meetings for groups that have unusual work shifts or dispersed work locations, but these meetings must meet certain minimum requirements to comply with State regulations:

- For routine work-crew operations, safety meetings must be held at least monthly.
- For construction projects lasting less than a month, Crew Chief/Crew safety meetings must be held at the beginning of each job, and at least weekly thereafter.
- Monthly safety meetings must include discussions of the results of any safety inspections performed, citations, accident investigations, and all work-related health and safety issues that arise.
- Project/weekly meetings should include a discussion of the hazards associated with a particular job and the appropriate safe work practices.
- Attendance and subjects discussed must be documented.

Work groups are encouraged to allot time for the discussion of safety issues in regular staff meetings. Staff meetings provide an opportunity for employees to bring safety issues to the attention of the safety committee representative and for the safety committee representative to report back to the staff. However, the informal, undocumented discussion of safety issues in a staff meeting does not constitute a safety meeting and does not take the place of a safety committee.

King County employees should first take work-related safety and health concerns to immediate supervisors. Imminent hazards should immediately be brought to the attention of the supervisor and a Safety and Health Professional. Health and safety issues that are not resolved in a timely manner, relative to the scope of work, within the immediate work group should be addressed by the work group's safety committee.

Safety Committee Program Development
To be effective the safety committee must be well-organized and have:

- Clear goals
- Action strategies
- Sufficient resources
- Well-informed, committed members

The following simple steps can assist in establishing a safety committee or reviving an existing one:

1. Establish The Need For The Committee

Every King County employee should have an employee-elected representative on an active, effective health and safety committee. Every employee should be:

- Aware of the committee’s existence
- Able to name their representative on the committee
- Familiar with the purpose and activities of the safety committee. If a work group is not currently represented on a safety committee, then either a

new safety committee should be established or a prior existing committee should be re-activated.

2. Organize the Committee

The committee should be organized with the following parameters in mind:

- A safety committee typically consists of between five and ten members
- Each employee-elected member should represent about five to thirty employees

Large departments might have several division-wide safety committees, or even several committees within a large division. In those instances, a central safety committee comprised of one representative from each division safety committee and at least one representative of the department's leadership team can address department-wide safety and health issues.

Establish a charter document that commissions the safety committee and establishes the rules. The charter document should clearly outline the scope of the committee, membership needs, roles and responsibilities, committee procedures, and goals.

Attachment 1 provides a sample Safety Committee Charter document.

3**. Elect/Select Committee Members**

The number of employee representatives on a safety committee must equal or exceed the number of management representatives. Employee representatives must be elected by employees for a term of one year. There is no limit to the number of terms an individual may serve if re-elected.

Employees often volunteer to serve on the safety committee, but even volunteers should be confirmed through an election process. The election can vary from a formal paper-ballot or show of hands to an e-mail balloting process. The election process should be documented and retained at least until the next election.

State rules stipulate that no more than half of the members of a safety committee may be selected by management. Management must select at least one representative to serve and participate on the safety committee. A safety committee cannot work without management's support and participation.

It is important for all safety committee representatives to attend meetings, participate, and serve as advocates for health and safety in the workplace.

4. **Document Committee Activities**

Documentation records include meeting minutes, reports to and by the committee, accident investigation and review reports, hazard assessments,

surveys, improvements, training organized or provided by the committee, and any additional relevant activities.

Safety committee meetings and safety meetings must be documented. Written meeting minutes should be posted on the safety bulletin board (see below) and/or distributed to all employees via e-mail. Safety committee and safety meeting minutes must be kept by the committee on file and available for inspection for at least one year.

Duties
The safety committee elects a chair and a notetaker and decides on the frequency of meetings. For the first couple of months and while getting established, the committee may need to meet once a week. Thereafter, the committee itself should determine the frequency of meetings. Work groups commonly schedule monthly meetings however in some cases such as office work environments, bi-monthly or quarterly meetings are sufficient. Meeting minutes, including attendance and subjects discussed, must be retained for at least one year.

The safety committee's primary duties include:

- Provide a forum for open two-way communication between management and employees

- Consider health and safety-related issues brought before the committee and the follow up on those issues as deemed appropriate by a simple majority

- Review safety and health inspection reports to assist in the correction of unsafe conditions or practices

- Review accident and injury reports and investigations since the last meeting

- Evaluate the accident prevention program on an on-going basis and make changes as deemed appropriate by a simple majority

Activities
Safety committees can be assigned a wide variety of activities but should remain focused on the following three major categories:

Evaluation Activities – Gathering and evaluating safety information in the workplace:

- Reviewing and addressing employee health and safety concerns
- Conducting safety inspections
- Conducting hazard assessments

- Reviewing accidents and/or analyzing accident investigations
- Reviewing safety suggestions

Development Activities – Creating and implementing safety-related programs and projects:

- Developing and implementing an employee safety feedback/suggestion system
- Assessing training needs and developing safety training
- Developing and communicating safety policies and procedures
- Selecting safety equipment vendors
- Evaluating and recommending safety equipment
- Recommending items for inclusion in the operating and capital improvement budget

Communication Activities – Communicating safety information throughout the organization:

- Communicating safety information to employees through newsletters or bulletin boards
- Conducting safety promotions such as safety fairs
- Providing safety training opportunities
- Maintaining a safety bulletin board (posters, suggestions, committee minutes, etc.)
- Generating safety improvement suggestions, ideas, and incentives

Sample documents, forms and information are attached for reference. For assistance with setting up or improving the effectiveness of a committee or for other questions, please contact the department's Safety and Health Professional or contact Central Safety at centralsafety@kingcounty.gov.

Safety Bulletin Board

State regulations (WAC 296-800-190) require a safety bulletin board in every fixed establishment with eight or more employees. The safety bulletin board must be centrally located in an area accessible to all employees such as a meeting, break, or lunchroom. The bulletin board must be dedicated to safety-related items such as safety meeting minutes, citations or other legally required notices, safety bulletins, newsletters, posters, accident statistics and other safety educational material.

The following items should be kept on your safety bulletin board. Items required by State regulations are noted.

- Your Rights as a Worker poster (required)

- Job Safety and Health Law poster (required)

- Notice to Employees – Self-Insurance poster (required)
- Safety meeting minutes
- OSHA 300A form summarizing accidents during the previous year (required to be posted from February 1st until April 30th each year)
- Any state citations or appeals (must be posted - follow directions on back of form)
- Names of safety committee members and work phone numbers
- Safety posters or other safety information
- Notices for audiometric exams or other medical exams or monitoring
- Notices for upcoming meetings, training, or other safety-related events
- Blank safety suggestion forms

Attachment 7-1

Safety and Health Committee Charter (SAMPLE)

This document establishes the existence of a standing Safety and Health Committee within the King County (*Department/Division*) and sets forth the protocols for the selection, organization, and operation of that committee.

The objective of the Safety and Health Committee is to serve as a forum for employees and management to directly participate in a collective effort to make the (*Department/Division*) a safe and healthy place to work.

It is the role of the Safety and Health Committee to establish and maintain an open dialogue between the management and staff, to contribute to the visibility and effectiveness of our health and safety program, and to enhance our efforts to provide a safe and healthful workplace for every employee. Management and employee participation are crucial to the success of this effort.

The Safety and Health Committee shall consist of at least one employee-elected representative from each work group, i.e. *(identify appropriate groups)*. Representation should be no fewer than three and no more than fifteen members on the committee. Elections are to be held once a year. There is no restriction on how many terms an elected Safety and Health Committee member may serve. At least one individual, but no more than half of the members of the committee, shall be selected by *(Department/Division)* management to serve on the committee. The name of each current Safety and Health Committee member and the group they represent shall be posted on the safety bulletin board in each lunchroom.

A Chair and a Notetaker shall be elected by the committee for a term of one year, but there is no restriction on how many terms they may serve, if re-elected. The committee Chair will call the meetings, set the agenda, and direct the meetings. The committee Chair may call an emergency meeting at any time deemed necessary. The committee Notetaker will take minutes of each meeting and distribute them to the members.

Safety and Health Committee meetings shall be held monthly, or as frequently as the committee deems necessary to effectively perform the following functions:

- Evaluate and review identified safety and health issues and/or reported deficiencies

- Determine measures for the correction of identified unsafe conditions or practices

- Review all work-related accidents, injuries and/or illnesses including identification of the cause(s) and the actions necessary to prevent a recurrence

- Review the results of inspections performed to help correct health and safety hazards

- Evaluate the department's health and safety program, including recommendations to improve identified deficiencies

Findings and/or recommendations carried by a simple majority shall be brought to the attention of the *(Department/Division)* Director in writing as deemed appropriate by the committee. The Director shall respond to all such written findings and recommendations in writing within 30 days.

Minutes of each meeting including attendance, topics of discussion, recommendations, and findings shall be prepared and posted on the safety bulletin board and maintained for a period of at least one year.

The King County *(Department/Division)* Health and Safety Program was developed and implemented in a spirit of cooperation to provide a safe and productive working environment for all employees. The program relies on participation by both management and staff. Every employee is encouraged to actively participate in the Safety and Health Committee either as a committee member or through an elected representative.

Attachment 7-2
Safety Committee Meeting Planner

Meeting Logistics: Date _____ Time _____ Length _____

Location _____

Topic	Agenda	Intended results

Attachment 7-3

Safety Committee Members

Instructions:
Use this worksheet to identify members of the Safety Committee. Information should include methods for communication and distribution of Safety Committee minutes and announcements.

Committee Chair _____

Member	Title	Division/ Section	Mail Stop	Phone Number

Chairing the Safety Meeting

Suggested Order of Business:

Call to Order by the Chair - The Chair leads the meeting and is responsible for maintaining order. The Chair should keep topics safety-related and time the meeting to give people a chance to respond and an opportunity to speak. The meeting should also be paced so that the Notetaker has adequate time for taking notes.

Read/Adopt Previous Minutes - Read the minutes from the previous meeting. The Chair will ask for corrections and comments at the end of reading. The Notetaker will enter the corrections in the new minutes. The minutes from the prior meeting may be sent out with the meeting notice and agenda for the current month, thus eliminating the need to read the minutes during the meeting. Comments and adoption of the minutes will still need to take place.

Unfinished Business - Discuss unresolved business recorded in meeting minutes from previous meeting. Ask for any other old business that may have been overlooked.

Review Safety Suggestions - Give a status report on prior safety suggestions. Read new safety suggestions and new answers to prior suggestions. The Chair should facilitate discussion of the suggestions and answers. Encourage employees to write safety suggestions rather than present oral suggestions to preserve an accurate record. Also, encourage employees to resolve issues within respective work groups and with the supervisor's assistance. (See safety suggestion information sheet).

Review Accidents and Near Misses - Read any accident reports made available since the last meeting. If possible, arrange for the employee to discuss the accident or near incident and encourage discussion (note, however, that the safety meeting usually does not serve as the accident review board).

New Business - Ask group for ideas and provide time for responses. The Chair may need to prompt the discussion. When new issues arise, try to determine who will assume responsibility if a response is needed and ask that person to report at the next meeting. Do not let the issue drop until it is resolved.

Special Presentations - Plan in advance. Try to get guest speakers, demonstrations by vendors, or other information of interest to the group.

Comments and Closing - Ask for comments from any safety office representatives, supervisors, or management attending the meeting. Adjourn meeting.

Taking Minutes

In general, the duties of the Notetaker are as follows:

- Record and keep minutes of the safety meetings.
- Read the minutes of the previous meeting at the next meeting.
- Record corrections to the previous meeting's minutes in the current minutes.

Minutes are records of meetings. They should be written accurately, clearly, and concisely. The minutes should be prepared as soon as possible after the meeting adjourns while the background and details of discussions can be recalled. One technique for taking minutes is to use headings, giving the subject of each paragraph a title. This makes it easy to locate each item of business in the minutes and an easy way to arrange your notes. The tone of the minutes should be objective without adjectives expressing opinions.

The Chair and Notetaker should work in collaboration to achieve a meeting pace that allows adequate time for recording. Full notes should be taken. Issues and the actions taken during the meeting need to be noted. If any motions are made, the notes should include the name of the person requesting the motion. If a responsibility has been assigned or assumed, the name of the assuming person should be recorded. If a discussion becomes very involved, note the major points made. The language of minutes is formal and follows traditional lines.

Both the Notetaker and the Chair should review the final safety meeting minutes, which should, thereafter, not be changed or rewritten. Changes to the minutes after reading at the next meeting should be noted in the meeting minutes for the subsequent meeting.

Attachment 7-4

King County Safety Meeting Minutes

Department: _____

Division: _____

Date: _____ Time: _____

List of Attendees	Members Absent

Order Of Business

Call Meeting To Order

Introduce And List Visitors (If Any)

_____

Read/Correct/Adopt Minutes From Previous Meeting

Review Of Unfinished Business – Progress Report Of Items From Previous Meeting

Review Safety Suggestions – New Suggestions, Status Of Old Suggestions

Review Accidents And Near Misses

Review Safety Inspection Reports

New Business

Special Presentations

Next Meeting Date, Time, Place: _____

Chair's Signature: _____

Notetaker's Signature: _____

Attachment 7-5

Safety Suggestion

Date: _____ Log Number: _____

Name/Job Title: _____

Department: _____

Location: _____

Safety Suggestion:_____

_____

_____

_____

_____

_____

Place this form in the Safety Suggestion box or give it to a safety committee member. The safety committee will review the suggestion, make a recommendation to management concerning its implementation, and provide a response to the requestor.

Referred To: _____

Date Referred: _____

Response Requested By: _____

Comments: _____

Attachment 7-6
Safety Suggestion Answer

Thank you for the safety suggestion. The following action will be taken in

response to the suggestion:

_____

_____

_____

_____

_____

_____

_____

Signature: _____

Safety suggestions are an opportunity for employees to identify safety problems and propose solutions, to recommend innovative solutions to previously identified safety problems, and to recommend new products or equipment. Safety suggestions may be submitted to a safety committee member or placed in a suggestion box, if available. Situations immediately hazardous to employees should be handled by directly contacting supervisors instead of using the Safety Suggestion system.

Each month, the safety committee should log and review new safety suggestions and make recommendations as to any action to be taken. The suggestion should then be assigned to the appropriate person within the organization to handle the suggestion.

Section 8: First Aid Training And First Aid Kits

First Aid Training

Washington Industrial Safety and Health rules require that all employees be provided with quick and effective first-aid attention in the event of an on-the-job injury.

The presence of personnel adequately trained in first aid procedures at or near places where employees work is required by the following:

- Whenever two or more employees are working at any worksite, a person or persons holding a valid First Aid certificate must be available

- All crew leaders, supervisors, or persons in direct charge of one or more employees must have a valid First Aid certificate

These training requirements may be met by completing a First Aid and Cardiopulmonary Resuscitation (CPR) course offered by CESD/Central Safety (206-477-3371) or by completing both the Health Department CPR training (206-263-8317) and the First Aid course offered by CESD/Central Safety.

First Aid Kits And Supplies

First aid kits must be readily available to all employees. Supplies must be stored in containers that adequately protect the contents, clearly marked, and unlocked; however, they may be sealed. Supplies must be easily moved to the location of an injured employee. The first aid provider generally should not have to travel through several doorways, hallways and/or stairways to access first aid supplies. A good general rule is to add a first aid kit if you have a change in elevation or change in work group (depending on work group size).

Additionally, all county vehicles must be equipped with first aid kits.

There are two standard classes of workplace first aid kits: Class A, designed to deal with the most common types of workplace injuries, and Class B, which are designed to deal with injuries in more complex or high-risk environments such as warehouses or outdoor areas.

Class A or a basic first aid kit should contain the following items:	Class B first aid kits for complex and/or high-risk environments should contain the following items:
16 adhesive bandages, 1x3 in.	50 adhesive bandages, 1x3 in.
1 adhesive tape, 2.5 yards	2 adhesive tape, 2.5 yards
10 antibiotic application single use packages, 0.5g application	25 antibiotic application single use packages, 0.5g application

10 antiseptic single use packages, 0.5g application	50 antiseptic single use packages, 0.5g application
1 breathing barrier	1 breathing barrier
1 burn dressing (gel soaked) 4x4 in.	2 burn dressing (gel soaked) 4x4 in.
10 burn treatment single use packages, 0.9g application	25 burn treatment single use packages, 0.9g application
1 chemical cold pack, 4x5 in.	2 chemical cold pack, 4x5 in.
2 eye coverings (with means of attachment), 2.9 sq. in.	2 eye coverings (with means of attachment), 2.9 sq. in.
1 eye/skin wash, 1 fluid ounce	1 eye/skin wash, 4 fluid ounces
1 First Aid guide	1 First Aid guide
2 pairs medical exam gloves	4 pairs medical exam gloves
6 hand sanitizers, 0.9g	10 hand sanitizers, 0.9g
1 roller bandage, 2 in. wide x 4 yds.	2 roller bandage, 2 in. wide x 4 yds.
1 scissors	1 scissors
	1 splint, 4x24 in.
2 sterile pads, 3x3 in.	4 sterile pads, 3x3 in.
	1 tourniquet, 1 inch wide
2 trauma pads, 5x9 in.	4 trauma pads, 5x9 in.
1 triangular bandage, 40x40x56 in.	2 triangular bandage, 40x40x56 in.

Note: First aid kits sold as ANSI Z308.1-2015 compliant will meet these minimum requirements.

Additional items, as appropriate for the type of work being performed and types of hazards in the workplace, may be added as needed. When deciding on the location and contents of first aid kits/supplies, consider these factors:

- Physical layout of the work environment, location of employees, ease of accessibility
- Whether multiple or larger first aid kits are needed based on the number of employees and work shifts
- Types of hazards, potential severity, and likelihood of occurrence

- Remoteness of the worksite to emergency medical services

- Recommendations of Safety and Health Professionals, trainers, emergency service providers, physicians or clinics, trade organizations

Kits should be inspected frequently to ensure the completeness and usability of all first aid supplies. Any supply beyond its marked expiration date should be discarded and replaced.

References:

WAC 296-800-150, First-aid
WAC 296-155-120, First-aid training and certification
WAC 296-155-125, First-aid supplies

Section 9: Hazard Communication and The Globally Harmonized System (GHS)

Introduction

King County is committed to the prevention of exposures that result in injury and/or illness through compliance with all applicable state health and safety rules, including the Globally Harmonized System (GHS) as described in WAC 296-901. The following hazard communication program has been established to ensure that all affected employees are knowledgeable concerning the dangers of all hazardous chemicals used at King County.

This program will be made available upon request to workers, their designated representatives, and the Washington State Department of Labor and Industries (L&I) - Division of Occupational Safety and Health (DOSH).

Responsibilities

Tasks in the Hazard Communication (HAZCOM) Program are assigned as follows:

Each department, division, and work group must have a GHS program specific to their worksite(s). An individual or group of people should be assigned responsibility for developing and maintaining the GHS program.

Supervisors are responsible for ensuring the following:

- Employees are current on their training
- Chemicals are correctly labeled when received and stored
- Employees have all required personal protective equipment (PPE) and they use it properly.

Employees are responsible for using hazardous chemicals and any associated PPE in accordance with training received.

Hazard Evaluation and Assessment

King County does not produce hazardous substances and relies upon the information supplied by the suppliers and/or manufacturers. King County departments are responsible for maintaining current chemical inventory and Safety Data Sheets (SDS), performing audits, and evaluating new chemicals for significant health and safety information.

Employee Information and Training

Every worker who will be potentially exposed to hazardous chemicals will receive initial training on the Hazard Communication Standard and this program before starting work. This training will be coordinated by the employee's respective department and division and will include:

- An overview of the requirements of the GHS Standard (WAC 296-901)

- A review of any operations in the work area where hazardous chemicals are present
- An explanation of labels on containers and instruction in secondary labeling procedures
- An explanation of SDSs, including their location and availability
- Physical hazards of the chemical products used
- Health hazards, including signs and symptoms of exposure
- Information on how to reduce or prevent exposure through work practices, engineering, and PPE
- Proper storage and temperature requirements
- Methods and techniques used to determine presence or release of hazardous chemicals into the work area
- Disposal and spill cleanup procedures
- Emergency procedures to follow if inadvertent contact/exposure occurs

Prior to introducing a new chemical, each potentially affected worker will be given information and training listed above for the hazard.

Additional training will be provided periodically and retraining as needed.

Safety Data Sheets
The Department will ensure that Safety Data Sheets (SDS) are available for all products containing hazardous materials. Hazardous chemicals will not be released for use until all SDSs are obtained and filed.

All SDSs will be annually reviewed and updated as necessary to ensure a current and complete chemical inventory.

Chemical Product List
A list of all hazardous chemicals used by each department will be documented. The chemical product list will include the product name, product category, hazard classification, and information relating to the SDS.

When new chemicals are introduced, the chemical product list will be updated in a timely manner.

Labeling Requirements
Each department will ensure that no container is released for use unless the manufacturer's label is prominently displayed and legible.

GHS complaint labels must have the following elements:
- Product identifier
- Signal word
- Hazard statements
- Pictograms

- Precautionary statements
- Suppliers' identification

Secondary containers not intended for immediate use shall have the product identity and hazard warning(s) affixed to them.

Some chemicals, like corrosives, cannot be used or stored in non-original containers.

Supervisors are responsible for ensuring all hazardous chemicals are properly labeled in their immediate work area.

Contractors and Other Employees
It is the responsibility of each department to provide other employees and contractors information about the hazardous chemicals their workers may be exposed to at King County. In addition to providing current SDSs, contractors will be informed of necessary precautionary measures and standard procedures adopted by King County.

Non-Routine Tasks
Employees may be required to perform non-routine tasks involving the use of hazardous substances. In those instances, each affected employee will be trained by their department on the specific hazards associated with those substances including:

- Proper use procedures.
- Control measures to reduce hazard exposure such as ventilation, respirators, or presence of others as a safety watch.
- Emergency response procedures.

Section 10: Personal Protective Equipment And Clothing

Introduction
Employees are potentially exposed to job-associated hazards. Although every effort is made to eliminate or minimize hazards through engineering and administrative controls, at times it is necessary to protect employees with the use of personal protective equipment (PPE).

Applicability
This program complies with WAC 296-800-160 and applies to all King County employees required to use PPE for their work. PPE will be selected based on task-specific hazard assessments. All PPE must be worn according to the manufacturer's instructions. PPE will be maintained by the user in a sanitary and reliable condition.

Respirators, important to protect against harmful vapor or dusts, are covered in Section 11, Respiratory Protection Program.

Responsibilities
Safety and Health Professionals are responsible for:

- Assisting supervisors to assess and address workplace hazards
- Assisting with developing written PPE programs
- Providing technical assistance to supervisors and managers in hazard assessment methodologies
- Assisting supervisors with employee training as requested
- Conducting routine audits of PPE programs at county departments
- Advising departments and divisions on appropriate PPE purchases, as requested
- Assisting supervisors to identify and implement corrective actions for continuous improvement of employee and workplace safety

Managers and Supervisors are responsible for:

- The overall development, implementation, and enforcement of PPE programs for their employees
- Working with Safety to assess and address workplace hazard
- Procurement of adequate quantities and sizes of PPE that is not personal in nature. Examples of PPE that is personal in nature and often used away from the worksite include safety shoes and cold-weather outerwear (see WAC 296-800-16020)
- Ensuring that employees comply with the requirements of proper selection, use, and maintenance of PPE
- Working with Safety to identify and implement corrective actions for continuous improvement of employee and workplace safety

- Employee training

Employees are responsible for:

- Using PPE as required by the written hazard assessment
- Notifying their supervisor regarding problems with PPE fit or adequacy
- Ensuring proper care and maintenance of PPE

Workplace Hazard Assessment

Protective devices for the head, eyes, face, ears (hearing), body (torso), hands and feet may be required and are selected to match the hazard(s) associated with a particular job.

A task-based hazard evaluation of work and the work environment must be conducted. This involves review of historical accident data and SDSs for chemical products. Tasks occurring in each facility and operation are reviewed and the types and severity of potential hazards are evaluated. The hazard evaluation includes observation of work activities to identify:

- Sources of motion, such as machinery or movement that could result in hazardous contact
- Sources of temperature extremes that could result in burns or ignition of protective equipment
- Types of chemical and dust exposures
- Sources of light radiation (i.e., welding, lasers, UV sources)
- Sources of falling objects or potential for dropping objects
- Sources of sharp objects
- Sources of rolling or pinching objects which could crush the feet
- Types of electrical hazards
- Layout of the workplace and location of coworkers

Data collected from these reviews and work audits are then analyzed to identify the specific types of protective equipment necessary to adequately control the identified hazards. Consideration is given to the following basic hazard categories:

- Impact
- Penetration
- Compression
- Chemical
- Heat or Cold
- Harmful Dust
- Light (optical) radiation
- Harmful Noise

Documentation

Written documentation is required for the hazard assessment. Attachment 1 is a form and instructions for conducting and documenting new job hazard analysis

(JHA), which also constitutes written certification that the assessment has been performed according to the requirements of WAC 296-800-160. The certification includes:

- The facility/operation(s) evaluated
- The name and signature of the person certifying that the evaluation has been performed
- The date(s) of the hazard assessment

Attachment 2 contains a sample hazard assessment for tasks commonly performed by county employees.

Hazard Reassessment
The workplace needs to be reassessed periodically based on the same criteria described above. At a minimum, PPE assessment updates are tied to:

- The purchase of any new PPE
- The use of new equipment or facilities
- The introduction of new operations or procedures
- Accidents – review of the suitability of PPE during an accident review/investigation

PPE Security And Control

PPE not personal in nature such as hard hats, safety glasses, work gloves, high visibility vests, ear plugs or earmuffs, are maintained at each facility or base of operations.

Fitting, Cleaning, And Maintenance
Comfort and fit are very important when selecting PPE. Wherever possible, equipment should have adjustable fitting devices. PPE is fitted to the individual during training and evaluated as part of the periodic assessment**.**

All PPE should be kept clean and properly maintained. PPE is normally issued to the employee. It is the responsibility of each employee to ensure that PPE is inspected, cleaned and maintained at regular intervals. Contaminated PPE which cannot be decontaminated must be disposed of in a manner that protects employees from exposure to hazards. Supervisors are responsible for ensuring that employees properly clean and maintain their PPE.

Training
King County provides employees with various training programs, including an initial health and safety orientation class (Section 2, New Employee Safety Orientation). PPE training courses cover the following:

1. When PPE is necessary
2. What PPE is necessary
3. How to properly don, doff, adjust and wear PPE
4. The limitations of the PPE

5. The proper care, maintenance, useful life, and disposal of the PPE

Before being allowed to perform work where PPE is required, each affected employee must demonstrate an understanding of the training. Each department is responsible for providing training for its employees, with assistance from the department's assigned safety and health administrator.

In addition, interim training is conducted when there are:

- Changes to the workplace making previous training obsolete
- Changes to the PPE making previous training obsolete
- Indications that the employee has not retained the requisite understanding or skill

General Selection Guidelines

Selection of PPE follows these general guidelines:

1. Evaluate the potential hazards and types of protective equipment available (e.g., splash protection, impact protection, hearing protection, etc.).

2. Compare hazards associated with the task and environment (e.g., chemical properties, physical hazards, intensities, etc.) with capabilities of the available protective equipment.

3. Select the appropriate type of protective equipment to protect employees from the hazards.

Selection Guidelines For Eye And Face Protection

All employees engaged in any activity that has exposure to eye or face hazards from flying, particles, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation must wear eye or face protection. Protective eye and face devices (glasses, goggles, or face shields) will comply with ANSI Z87.1-1989 or later.

Work activities such as grinding, milling, sanding, sawing, welding, chipping, and chiseling require the use of safety glasses. All other work tasks that generate dusts or flying debris also require the use of protective safety glasses or goggles.

Employees wearing prescription lenses while engaged in operations that involve eye hazards will wear eye protection that incorporates the prescription in its design. They may also wear eye protection that can be worn over prescription lenses without disturbing the proper position of the lenses. Contact lenses are not permitted in areas where eye injuries may be aggravated by chemical damage to the lenses.

For advice on proper selection of appropriate eye or face protection for a particular application, the employee may contact the safety and health administrator assigned to their work group.

Selection Guidelines For Head Protection
Employees will wear protective hard hats when there is a potential for injury to the head from falling or flying objects or low clearances. Hard hats are also required when performing construction and maintenance related task(s) on a public road-right-of-way. Protective hard hats will comply with applicable ANSI standard ANSI-Z89.1-1986 or later for general use OR ANSI- Z89.2-1971 or later for electrical workers.

Employees working in and around the asphalt dispensing equipment (Laythen box) in Roads Maintenance and those operating the button machine at Traffic and Signal are exempt from wearing hard hats. This exemption is only applicable when these employees are engaged in these operations and does not cover preparatory work.

SELECTION GUIDELINES FOR FOOT PROTECTION
Protective footwear (safety shoes-steel toe or reinforced toe shoes or boots) complying with ASTM F2412-18 and ASTM F2413-18 or later shall be worn when working in areas where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, and where employees' feet are exposed to electrical hazards.

Selection Guidelines For Hand Protection
Gloves are used to prevent cuts, abrasions, burns, and skin contact with chemicals or biological hazards that can cause skin or systemic effects. Contact your safety and health administrator for guidance on appropriate gloves for a particular application.

Selection Guidelines For Worker Visibility Apparel
All King County employees working on foot with duties within the right-of-way shall wear high visibility safety apparel meeting the requirements of ANSI/ISEA "American National Standard for High-Visibility Apparel" and labeled as meeting the **ANSI/ISEA 107-2004 or later, class 2 or 3 (FHWA Worker Visibility Rule, 23 CFR part 634)** standard. The apparel must also meet WAC 296-155 (Part E). The apparel background (outer) material color shall be either fluorescent orange-red or fluorescent yellow green as defined in the standard. The retroreflective material shall be orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors, and shall be visible at a minimum distance of 300 m (1,000 ft). The retroreflective safety apparel shall be designed to clearly identify the wearer as a person.

Approved safety vests are furnished by King County through the field operation storerooms.

References

29 CFR 1910 Subpart I, *Personal Protective Equipment.*

WAC 296-800-160

WAC 296 155-200

ANSI/ISEA 107-2004, class 2 or 3 (FHWA Worker Visibility Rule, 23 CFR part 634).

Attachment 10-1: Job Hazard Analysis

King County

Department/Division:	**Location:**	
Activity or Process:		
Job Title:	**Supervisor:**	
Prepared by Name:	**Signature:**	**Date:**

This document is the certification of hazard assessment for PPE for the workplace.

Task or Step	Hazards	Controls	Personal Protective Equipment (PPE)	Photo

Instructions:

Use this basic form to identify hazards, controls, and PPE at the job task (or step) level. You can modify the form to meet any additional needs of your workplace. JHA hazard information can be used to develop separate safe work procedures for employee use.

Job: Select a job (or main activity) to observe and analyze.

Tasks or Steps: List tasks or steps that are part of the job selected in the “Task” column.

Example: “Operating a table saw” would be the job while “Installing a blade” and “Ripping” would be separate tasks.

Hazards: Note any condition in the workplace that can potentially cause occupational injury, death, or disease (e.g., working at heights, slippery surfaces, exposed moving machinery parts, fire, explosion, noise, electricity, toxic emissions, corrosive chemicals, low oxygen, repetitive tasks, heavy lifting, infectious Bloodborne pathogens, assault, and homicide).

Controls: Note how to eliminate or minimize the hazard, (e.g., using a safer tool or equipment or chemical, adding safeguards to machinery, using safer work practices, using local exhaust ventilation for toxic emissions, and enclosing noisy equipment or moving workers away from such equipment to reduce exposure levels). This does not include PPE.

PPE: Detail what type of PPE is needed for each hazard that cannot be eliminated or minimized using controls.

Photos: Take before and after photos.

Attachment 10-2: SAMPLE: PPE Hazard Assessment Documentation

Note: Basic PPE for Trades Employees Consists of Safety Glasses and Safety Shoes

Location(s)	Task(s)	Occupation(s)	Hazard(s)	Additional PPE/controls
	Welding- All Types; Including Prep/Grinding	Welder	Thermal Burns, Metal Fumes, UV Radiation, Eye Damage, Cuts, Crushed Extremities, Electrical	Leathers, Thermal Gloves, Welding Hood/Shade, Face Shield, Ventilation, Respiratory Protection, Steel-Toed Boots, etc.
	Grinding	Welder; Maint Spec I&II;	Struck-By Flying Object	Goggles; Faceshield When Grinding
	Spray Degreasing Electrical Systems Or Coils	Electrician; Helper	TCE	Reusable Nitrile Gloves
	Battery System Maint/Repair	Maint. Spec.-I; II; Maint Worker; On-Call Maint.; Airport Maint	Acid, Fire (Hydrogen)	Reusable Nitrile Gloves; Faceshield; Splash Goggles; Ventilation; Emergency Washing Equipment
	Drywall Repair: Sanding	Carpenter I; II	Strains-Lifting; Struck-By; Strains-Movement; Falls	Hardhat; Goggles; Stilts; Fall Protection
	Drain Cleaning	Plumber; Plumber I; II	Corosives; Strains-Body Position; Struck By/Against	Reusable Neoprene Gloves; Faceshield; Splash Goggles
	Painting: Prep- Manual/ Air Scraping	Painter I; II	Falls; Truck-by	HH; Disposable Cloth Work Gloves; Fall Restraint

Location(s)	Task(s)	Occupation(s)	Hazard(s)	Additional PPE/controls
	Paint Thinner/ Waste Handling		Hands-chemical Contact	Goggles; Reusable Nitrile Gloves
	Animal Disposal	Animal Control Officer	Strains-lifting	Leather Gloves; Material Handling Devices
	Autopsy	Chief Medical Examiner; Medical Examiner; Autopsy Assistant	Cuts; Strains-lifting; Blood Borne Pathogens	Surgical Nitrile Gloves; Face Shield; Gown, Arm Protectors, And Shoe Covers

Assessment Conducted By: _____ Date: ___

Section 11: Respiratory Protection Program

Introduction

This program details the basic requirements and procedures for respiratory protection of King County employees. These requirements apply to employees working in areas with hazardous levels of airborne dusts, mists, vapors, gases, or fumes, or oxygen deficient atmospheres and when the hazard cannot be eliminated or reduced to safe levels.

Each department that has operations involving respiratory hazards will appoint a respirator program administrator who will oversee the program, coordinate fit-testing, and ensure all records are kept.

King County Central Safety (centralsafety@kingcounty.gov) supervises the Respiratory Protection Program development and implementation and can assist departments with meeting the program requirements.

Responsibilities

Safety and health professionals will support departments/divisions by:

- Providing technical support to supervisors in conducting respiratory hazard evaluations, including air monitoring
- Assisting supervisors in conducting training on the care and use of respirators
- Assisting supervisors in performing fit tests, upon request
- Assisting supervisors in obtaining medical evaluations for employees who use respirators, and for employees accidentally exposed to hazardous levels of airborne contaminants, as appropriate
- Updating the Respiratory Protection Program as necessary
- Advising supervisors on respirator purchases, upon request

Department Respirator Program Administrators, with the support of department managers and supervisors, are responsible for:

- Contacting Safety and Claims Management to evaluate tasks that may require respiratory protection
- Restricting the use of respirators to employees who have received initial and periodic (as determined by health care professional) medical clearance (except for voluntary use of dust masks or other filtering face pieces)
- Ensuring that employees receive initial and annual fit tests and training for the use of respirators required for their jobs
- Monitoring and ensuring that their employees properly use required respiratory protection
- Ensuring proper sanitation and maintenance of respirators
- Documenting monthly visual inspections of Self-Contained Breathing

Apparatus (SCBA) units, and ensuring annual service inspection by an authorized service representative
- Purchasing respiratory protective equipment for use by King County employees that has been certified by the National Institute for Occupational Safety and Health (NIOSH)
- Ensuring that the written Respiratory Protection Program is tailored to the needs of department employees, as necessary
- Revising and updating the hazard evaluation as needed (e.g., any time work process changes may affect employee exposure)

Employees are responsible for:
- Using required respirators in compliance with this program
- Notifying management of respirator malfunction or job circumstances where respiratory protection use might need to be reviewed
- Ensuring the care and maintenance of their assigned respiratory equipment
- Notifying management if their medical status changes and requires an updated medical evaluation for the use of respirators

Voluntary Use Of Respirators
Departments may choose to provide respirators for use in areas where respiratory hazard exposures are below the Washington State Department of Labor and Industries Permissible Exposure Limits (PELs). This is referred to as voluntary use.

Voluntary use of any respirator requires that employees receive the information contained in Table 2 of WAC 296-842-11005. See Appendix 1. This information must be posted or distributed in workplaces where there is voluntary respirator use. No additional requirements apply to the voluntary use of filtering face piece (dust mask) type respirators.

Voluntary use of other types of respirators (e.g., elastomeric respirators) must comply with the medical evaluation, cleaning, disinfecting and proper storage requirements. The requirements for breathing air must be met for use of air-supplying respirators.

Effective training must be given to ensure that voluntary respirator use does not create a hazard. A department-specific written program addressing these requirements must be developed.

Fit testing is not required for voluntary use respirators.

Training
Respirator users and their direct supervisors must be trained in selecting the proper type of respirator for each task requiring respiratory protection. Training must take place before any initial use of respirators, any change in respirator

type or procedures, and annually thereafter. The assigned Safety and Health Professional will assist managers and supervisors in providing training classes. Each user and direct supervisor must be able to demonstrate competency of the following:

1. Why the respirator is necessary. Include information identifying respiratory hazards such as hazardous chemicals, the extent of the employee's exposure and potential health effects and symptoms.

2. The respirator's capabilities and limitations. Include how the respirator provides protection and why air-purifying respirators can't be used in oxygen-deficient conditions.

3. How improper fit, use, or maintenance can compromise the respirator's effectiveness and reliability.

4. How to inspect, put on, seal check, use and remove the respirator.

5. How to clean, disinfect, repair, and store the respirator.

6. How to use the respirator effectively in emergency situations, including what to do when a respirator fails.

7. Medical signs and symptoms that may limit or prevent the effective use of respirators, such as shortness of breath or dizziness.

8. The employer's general regulatory obligations: develop a written program, select appropriate respirators, and provide medical evaluations.

Hazard Evaluation And Respirator Selection
Assigned Safety and Health Professional will assist manager and supervisors in conducting respiratory hazard evaluations. If the assigned safety and health professional is not known, please contact Central Safety at centralsafety@kingcounty.gov. The evaluations consist of the following steps:

1. Identify tasks and operations that involve potentially significant exposure to respiratory hazards

2. Evaluate physical, chemical, and biological characteristics of the hazard

3. Assess the extent of exposure, based on professional judgment and quantitative methods (air sampling)

If the exposure assessment determines that a respiratory hazard exists, control measures to reduce the exposure will be considered. If control measures are not feasible or cannot be immediately installed, respiratory protection is selected.

The type of respirator selected is based on a thorough review of the hazard, task characteristics, and efficacy of the respirator in controlling the hazard. The assigned protection factor for respirators required by WAC 296-842-13005 shall be used for selection.

If a chemical cartridge respirator is selected, the cartridge must either have an end-of-service life indicator or the replacement frequency must be specified. The change schedule will be determined based on a review of data on the breakthrough time of the contaminant. Such data are deemed reliable if provided by the manufacturer, published in a peer-reviewed journal or by established research agencies, such as NIOSH.

The findings of the respiratory hazard assessment must be conveyed and readily accessible to employees. Appendix 2 contains the current King County respiratory hazard assessment table.

Each department's Respirator Program Administrator is responsible for revising and updating the hazard evaluation as needed (i.e., any time work process changes may affect employee exposure). If an employee feels that respiratory protection is needed during a particular activity, s/he is to contact the supervisor, who will contact the Respirator Program Administrator. The Respirator Program Administrator will evaluate the potential hazard and will then communicate the results of that assessment back to the affected employees. If it is determined that respiratory protection is necessary, all other elements of this program will be in effect for those tasks and this program will be updated accordingly. The Safety and Health Professional will provide technical assistance to each Respirator Program Administrator.

Medical Evaluation
An initial medical evaluation is required to determine if employees have any physical condition that may limit or restrict the use of respiratory protection equipment.

Employees who are or may be required to wear respirators (voluntary use of filtering facepieces is exempt) must complete an initial medical questionnaire administered by a physician or licensed health care provider (PLHCP). The questionnaire must contain all information listed in WAC 296-842-22005, along with any additional questions recommended by the PLHCP. Questionnaires must be administered confidentially during normal work hours. *Department supervisors and managers are not permitted to review the completed forms.*

Based on questionnaire responses, the PLHCP will determine if a follow-up medical evaluation is required for each employee. The protocol for the follow-up examination is designed by the PLHCP.

The PLHCP must provide a written recommendation to the department containing only the following information:

- Any limitations on respirator use
- Need for follow-up medical evaluation(s)
- A statement that the PLHCP has provided the employee with a copy of the recommendation

Medical re-evaluations are required under any of the following conditions:

- The employee reports medical signs or symptoms related to respirator use
- The PLHCP recommends a re-evaluation
- Observations of the employee or workplace indicate the need for re-evaluation
- A change occurs in workplace conditions, including changes in physical work effort or environmental conditions

The department management will provide the PLHCP the following information:

- Type and weight of the respirator to be used by the employee
- Duration and frequency of use
- Physical work effort
- Additional personal protective equipment to be worn
- Temperature and humidity extremes
- A copy of this written program and the DOSH regulations (WAC 296-842-22005)

Central Safety will coordinate medical questionnaire procedures with each department for existing and new employees.

Respirator Fit Tests

Each department will arrange for respirator fit tests for employees who are required to use tight-fitting respirators (all respirators except for hooded powered air purifying respirators). Contact your Safety and Health Professional for assistance. If the assigned safety and health professional is not known, please call Central Safety at 206-477-3350.

Fit testing must occur prior to initial use and annually thereafter. In addition, testing is required whenever a different respirator face piece is used or whenever there are changes in the employee's facial characteristics.

The fit test must be administered using an L&I accepted quantitative or qualitative protocol (WAC 296-842-22010). Qualitative fit testing of negative pressure respirators is acceptable only if exposures are less than 10 times the Permissible Exposure Limit. The employee and supervisor will be provided with fit test results.

Fit test records will be maintained by each department, and shall include the following information:

- Type of respirator fit test used
- Manufacturer, model, and size of respirator tested
- Name of person tested, test operator, and date of test

Procurement

Based on the findings of the respiratory hazard assessment described above, supervisors and managers will procure adequate quantities and sizes of NIOSH-certified respirators.

NOTE: Bid Specifications and purchase orders must contain a statement such as "Only respiratory equipment certified by NIOSH is acceptable."

Supervisors will provide employees with the brand and model of respirator for which they have been fitted, will instruct employees regarding the specific tasks where they are to be used, and, if applicable, the cartridge replacement frequency.

Supervisors will provide spectacle inserts or prescription face shields for full-face respirators for employees, if needed.

Breathing air provided for supplied air respirators (SARs) must meet the requirements for Grade D breathing air (American National Standards Institute ANSI G-7.1.1989). This specification requires oxygen within 19.5-23.5% (volume/volume), Hydrocarbon (condensed) at no more than 10 parts per million (ppm), carbon monoxide at no more than 10 ppm, carbon dioxide at no more than 1000 ppm and no noticeable odor along with specific moisture content requirements. The supplier must provide a certificate of analysis.

If breathing air is supplied by in-house air supply apparatus, such as a compressed air system, then a written protocol must be developed and implemented that specifies all of the requirements listed in WAC 296-842-20015.

Respirator Use

No person may use a respirator or undergo fit testing if any of the following could affect the functioning of the respirator:

- Facial hair, stubble >24 hours growth), mustache, sideburns, beard, low hairline, bangs) which passes between the face and the sealing surface of the face piece of the respirator; or a mustache or beard which interferes with the functioning of the respirator's valves.
- A head covering which passes between the sealing surface of the respirator face piece and the wearer's face.
- Eyeglasses, goggles, face shield, welding helmet or other eye and face protective device that interferes with the seal of the respirator.
- Facial deformities or the lack of teeth or dentures that could prevent a

respirator from sealing properly.

Emergency use respirators will be used only under the following conditions:

- Written procedures will be developed at any location where respirators may be used for emergency and/or rescue purposes. Employees will be trained in these procedures, with emphasis on emergency rescue and limitations of the respiratory protection.
- All feasible controls will be implemented before allowing county employees to enter any atmosphere that is immediately dangerous to life or health (IDLH) due to a respiratory hazard. If the hazard cannot be adequately controlled, the worker will wear a SCBA or a positive pressure, supplied air respirator with escape bottle.
- An adequate number of standby employees trained in the proper procedures and equipped with the same level of protection must be stationed outside any potential IDLH atmosphere where employees must enter. Constant communication (visual, voice, or signal line) must be maintained between the standby persons and the employee entering the IDLH area.
- Other appropriate rescue and first-aid equipment must also be readily available for immediate use. If feasible, the local fire department should be requested to provide standby rescue services.

Respirator Inspection And Care
Inspection
Each employee who wears a respirator must inspect the device before and after each use. Routine respirator inspection must include a check of the tightness of connections and the condition of the face piece, headbands, valves, airlines, canisters, and cartridges. Rubber or elastomeric parts must be inspected for pliability and signs of deterioration.

Any malfunction of the respirator shall be reported to the immediate supervisor, who will supply replacement parts. Respirators in need of parts and/or repair beyond the users' capability to correct must be red tagged and removed from the work area until they can be repaired.

A respirator that is used only for emergency situations must be inspected after each use and at least monthly to ensure it is in satisfactory working condition. Air cylinders must be maintained fully charged according to manufacturer's instructions. The inspection must also include regulator and warning device operability.

Supplied air and SCBA respirator systems must also be inspected annually by an authorized service representative.

SCBA cylinders must be tested every three years and maintained as prescribed in Shipping and Container Specification Regulations of the Department of Transportation (49 CFR 173 and 178).
A record will be kept at the storage site with or near the SCBA respirator system indicating the dates and findings of respirator inspections.

Cleaning and Disinfecting
Respirators issued for the exclusive use of one worker should be cleaned after each day's use or more often if necessary; respirators used by more than one worker must be cleaned and disinfected after each use.

Supplied air respirators used in regulated areas must be cleaned according to the manufacturer's instructions.

Respirators that are shared among employees shall be completely cleaned and disinfected after each use by carrying out the following procedures:

1. Remove and set aside the filters or cartridges from the respirator. Disassemble valves and head strap.

2. Immerse the respirator and parts (other than the cartridges/filter) in a warm (140 degrees F) aqueous solution of a germicidal detergent (available from the respirator supplier). The respirator face piece and parts may be scrubbed gently with a cloth or soft brush. Make sure that all foreign matter is removed from all surfaces.

3. After washing and disinfecting the respirator, rinse it with clean, warm (140 degrees F) water and then allow it to dry.

4. After the respirator is dry, attach the air-purifying cartridges, replacing cartridges if necessary.

Note: If a respirator is contaminated with organophosphate pesticides, it should be washed with alkaline soap and rinsed with 50% ethanol or isopropyl alcohol.

Repair
Minor part replacement (such as valves, cartridges, and canisters) can be made to negative pressure respirators following manufacturer's instructions. Only authorized manufacturer representatives will do complicated repairs and all work on SCBAs.

All parts, cartridges and canisters must be from the same manufacturer as the respirator.

Storage

After inspection, cleaning, and maintenance respirators must be stored in a plastic bags or containers to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Respirators should not be put into lockers or toolboxes without a storage container.

Respirators, cartridges, or canisters must not be stored where chemicals may contaminate them.

Emergency respirators must be stored in special storage compartments, clearly marked and accessible at all times.

Respirator Program Evaluation
Each department's Respirator Program Administrator shall monitor the effectiveness of this program by:

- Conducting periodic unscheduled observation of employee activities at all workplaces to confirm proper respirator use
- Discussing respirator use with employees to confirm that training has been effective
- Conducting annual review and updating to maintain an effective Respirator Program

Documentation And Recordkeeping
To ensure the availability of this respirator program at all times, copies shall be distributed as follows:

- Master copy – Central Safety office.
- Electronic version – Available Online
- Hard copies – Accident Prevention Program books, and supervisors and respirator users without web access.

Records of respirator fit tests shall be kept by each department until the next fit test is administered.

Central Safety will maintain records of any hazardous exposure and medical evaluations for the duration of employment, plus 30 years.

Appendix 11-1

DOSH Advisory Information for Employees Who Voluntarily Use Respirators

• Respirators protect against airborne hazards when properly selected and used. Respirator usage that is required by DOSH or your employer is not voluntary use. With required use, your employer will need to provide further training and meet additional requirements in this chapter. DOSH recommends voluntary use of respirators when exposure to substances is below DOSH permissible exposure limits (PELs) because respirators can provide you an additional level of comfort and protection.

• If you choose to voluntarily use a respirator (whether it is provided by you or your employer) be aware that **respirators can create hazards for you,** the user. You can avoid these hazards if you know how to use your respirator properly AND how to keep it clean. Take these steps:

– Read and follow all instructions provided by the manufacturer about use, maintenance (cleaning and care), and warnings regarding the respirator's limitations.

– Choose respirators that have been certified for use to protect against the substance of concern. The National Institute for Occupational Safety and Health (NIOSH) certifies respirators. If a respirator is not certified by NIOSH, you have no guarantee that it meets minimum design and performance standards for workplace use.

■ A NIOSH approval label will appear on or in the respirator packaging. It will tell you what protection the respirator provides.

– Keep track of your respirator so you do not mistakenly use someone else's.

– **DO NOT** wear your respirator into:

■ Required use situations when you are only allowed voluntary use.

■ Atmospheres containing hazards that your respirator is not designed to protect against.

For example, a respirator designed to filter dust particles will not protect you against solvent vapor, smoke or oxygen deficiency.

Appendix 11-2

King County Respirator Use[a]

Dept/ Division	Occupations	Task/Hazard Description	Resp Types[b]	User Comments
DAJD	Corrections Officer	TB Patient Exposure	DM N95; PAPR	Respirator Worn If Transporting Suspected TB Patient
DAJD	Corrections Officer	Corrections Emergency Response Team (CERT)	GM	Riot Control
DAJD	Corrections Officer	Fire In Correctional Facility	SCBA	Assist Firefighters In Case of Facility Fire
FMD	Carpenter	Drywall Sanding Nuisance Dust	DM N95	Use When Sanding Without Vacuum Attachment
FMD	Hazmat Tech/Supervisor	Manual Demo- Lead Paint On Drywall, etc.	HF APR; N100	
FMD	Maint. Spec. / Worker; Plumber, Electrician, Steamfitter, Carpenter	Suspended Ceiling Work (Asbestos)	HOOD PAPR; N100; HF APR N100	
FMD	Asbestos Mgt Planner/Surveyor/ Coord	Asbestos surveys/ Oversight	HF APR; N100	MAY WEAR OTHER TYPES OF RESPIRATORS
FMD	Hazmat Tech/Supervisor	Asbestos Abatement: Surface Insul.	SA	
FMD	Hazmat Tech/Supervisor	Asbestos Abatement: Floor Tile	HF APR; N100	
FMD	Hazmat Tech/Supervisor	Asbestos Abatement: Full Enclosure	FF APR; N100 SA	
FMD	Hazmat Tech/Supervisor	Asbestos Abatement: Glove Bag	FF PAPR; N100	
FMD, ROADS	Painter	Painting: prep-scraping/ Sanding painted surface/organic vapors	HF APR; R100; OV	
FMD, ROADS	Welder	Welding- Unpainted Surface, Open Area/Welding Fume	HF APR; N100	Use if no forced ventilation available.

Dept/ Division	Occupations	Task/Hazard Description	Resp Types[(b)]	User Comments
FMD, ROADS	WELDER	GRINDING/ WELDING/ TORCHING- PAINTED SURFACE/ LEAD	HF APR, N100	INDOORS – MUST VENTILATE; OUTDOORS – MUST USE RESPIRATOR
FMD, ROADS	CARPENTER, PLUMBER, UTILITY	CONCRETE DEMO, SAWING, DRILLING/ SILICA	HF APR; N100	USE IF TASK IS OVER 15 MIN.
FMD, ROADS, PARKS	PAINTER; SIGN PAINTER	SPRAYING OIL: NO FORCED VENTILATION/ ORGANIC VAPORS	HF APR; OV/R100	USE IF TASK IS OVER 30 MIN. CHANGE CARTRIDGE- 8 HRS
DOT ROADS	BRIDGE MAINT. UNIT: CARPENTER; OPERATOR; UTILITY	BRIDGE PAINT MAINTENANCE/ LEAD	HF APR; R100	
DOT ROADS	PAINTER	SPRAYING OIL: WALK-IN BOOTH/ ORGANIC VAPORS	HF APR; R100/OV	USE IF PAINTING OVER 30 MIN; CHANGE CARTRIDGE- 8 HRS
FMD, ROADS, PARKS	SPRAY TECH; LANDSCAPE GARDENER	PESTICIDE/HERBICIDE APPLICATION	HF APR; P	
PUBLIC HEALTH	CHIEF MEDICAL EXAMINER; MEDICAL EXAMINER; AUTOPSY TECHNICIANS	AUTOPSY/ FORENSICS/ (TB/BBP)	DM N95 / LOOSE FIT PAPR; N100	USE DURING AUTOPSY
PUBLIC HEALTH	JAIL-LPN/PUB HEALTH NURSE/RN; REQUIRED AT JAIL; TB CLINIC; PARAMEDICS	TB, COVID AND OTHER AIRBORNE DISEASE PATIENT EXPOSURE	DM N95	RESPIRATOR WORN IF EXPOSED TO SUSPECT PATIENT
PARKS	POOL MGR; POOL FACILITY OPERATOR	EMERGENCIES: CHLORINE GAS	FF GM; CL	CHANGE CANISTER AFTER EACH USE AND EXP. DATE
PARKS	POOL FACILITY OPERATOR	ACID WASHING POOL SCALE	HF APR; AG	CHANGE CANISTER AFTER 8-HRS
SHERIFF'S OFFICE	SHERIFF'S DEPUTY; CORPORAL; SERGEANT	TEAR GAS USE	FF GM; OV; N95	CHANGE CANISTER AFTER EACH USE AND EXP. DATE

Dept/ Division	Occupations	Task/Hazard Description	Resp Types[(b)]	User Comments
RALS – ANIMAL SERVICES DIVISION	ANIMAL CONTROL OFFICERS	AMMONIA	HF APR, OV	INITIALLY ENTERING INDOOR HOARDING RESIDENCE CHANGE AT EXP. DATE

[(a)]Includes mandatory use of any type of respirator/voluntary use of non-dust mask type respirators

[(b)]Key to Respirator Types:

APR = Air purifying respirator
DM = Dust mask
PAPR = Powered air purifying respirator
HF = Half face
FF = Full face
N100 = High efficiency particulate filter; (P100 and R100 also acceptable)
R100 = High efficiency particulate filter; oil resistant
N95 = Dust mask or cartridge (P95 and R95 also acceptable)
OV = Organic vapor cartridge or canister
AG = Acid gas cartridge
P = Pesticide cartridge
SCBA = Self-contained breathing apparatus
SA = Supplied Air
PD = Pressure demand
GM = Gas Mask
CL = Chlorine canister

Section 12: HEARING CONSERVATION PROGRAM

INTRODUCTION

Exposure to hazardous noise can cause irreversible hearing loss. This can affect a person's ability to discriminate speech and communicate, as well as cause tinnitus, leading to a profound decrease in the quality of life. King County's hearing conservation program is designed to eliminate noise-induced hearing loss among King County employees by adhering to WAC 296-817, "Hearing Loss Prevention (Noise), and WAC 296-802, "Employee Medical and Exposure Records."

APPLICABILITY

This policy applies to all employees determined to have the potential for exposure to noise levels equaling or exceeding:

- An 8-hour time-weighted average (TWA) of 85 A-weighted decibels (dBA), using a slow response noise dosimeter
- A maximum of 115 A-weighted decibels (dBA), at any time, using a slow response sound level meter
- A peak reading of 140 C-weighted decibels (dBC), at any time, using a fast response sound level meter.

RESPONSIBILITIES

Safety and Health Professionals will:

- Conduct noise monitoring of work areas and specific jobs
- Determine which employees should be included in the hearing conservation program
- Coordinate annual hearing testing and training, except for Metro Transit and Wastewater who conduct their own testing and training

Supervisors must ensure that:

- Employees working in high noise areas are aware of these requirements and participate in the King County hearing conservation program
- Employees are provided with required training
- Appropriate hearing protection is available to employees
- Employees wear the proper hearing protection
- Employees included in the hearing conservation program participate in annual hearing testing
- Administrative or engineering controls are implemented, when feasible

Employees must:

- Wear appropriate hearing protection as required
- Attend annual hearing tests and training as required

NOISE MONITORING

Noise monitoring is conducted as deemed necessary or upon request at King County work locations where it is suspected that employee exposure to noise may exceed hearing conservation criteria. Noise monitoring is performed by your safety and health professionals. If the assigned safety and health professional is not known, please contact Central Safety at centralsafety@kingcounty.gov. Noise monitoring is conducted as required by WAC 296-817-20005. All employees will be notified of their monitoring results.

NOISE CONTROL

Reasonable administrative or engineering controls are the most effective and desirable means of reducing noise exposure and must be implemented where employee 8-hour TWA exposures exceed 90 dBA. Personal hearing protective devices may be used to reduce noise exposure where engineering controls are not feasible or where the 8-hour TWA is less than 90 dBA.

Appropriate hearing protection must be used by all employees exposed to noise levels equaling or exceeding:

- An 8-hour TWA of 85 dBA, using a slow response noise dosimeter
- A maximum of 115 dBA, at any time, using a slow response sound level meter
- A peak reading of 140 dBC, at any time, using a fast response sound level meter.

Personal hearing protection (ear plugs or earmuffs) must be available at all times during the work shift to employees who are required to use hearing protection. Supervisors are responsible for maintaining an adequate supply of hearing protection devices and for ensuring that employees use them.

AUDIOMETRIC TESTING

Central Safety provides audiometric testing for all employees participating in the hearing conservation program. The testing is conducted, and the results evaluated, according to WAC 296-817-400.

Baseline audiometric testing is conducted during pre-employment physical examinations. Records of all noise monitoring and audiometric testing results are maintained by Central Safety and are available upon request by King County employees. Audiometric test results are considered confidential medical records and are released to third parties only upon authorization of the employee.

Each employee whose audiometric testing results show a standard threshold shift, as defined in WAC 296-817, is notified in writing within twenty-one days of determination of the hearing loss. If the employee already wears hearing protection, s/he must be retrained in its use and fitted with more efficient hearing protection if necessary. If the employee does not wear hearing protection, s/he

must be provided hearing protection, trained in its use, and required to wear it. Additional medical testing, if necessary, is performed at no cost to the employee.

WARNING SIGNS
Work areas where employees may be exposed to noise levels at or above 115 dBA must be posted with warning signs. The signs indicate that the area is a "high noise area" and that hearing protection is required to be worn at all times.

EMPLOYEE TRAINING
All employees exposed to noise levels at or above 85 dBA for an 8-hour TWA must be given annual training that includes:

- The effects of noise on hearing (including both occupational and non-occupational exposures), and early signs of noise-induced hearing loss.
- Noise controls used in the workplace.
- The purpose of hearing protection: The advantages, disadvantages, and Noise Reduction Ratings (NRR) of various types.
- Instructions about selecting, fitting, using, and caring for hearing protection.
- The purpose and procedures for program evaluation including audiometric testing.
- The employees' right to access records kept by Central Safety.

QUESTIONS
The potential for overexposure to harmful noise associated with a given job can be determined by a noise survey. If you have any questions, contact your safety and health professional. If the assigned safety and health professional is not known, please contact Central Safety at centralsafety@kingcounty.gov.

Section 13: EMERGENCY EYEWASH AND SHOWER

INTRODUCTION

For work that involves a possibility for an employee's eyes or body to be exposed to injurious chemicals and/or material, emergency washing facilities must be provided in the immediate work area. Emergency eyewashes and/or showers will be provided, depending on the hazard present.

APPLICABILITY

An emergency eyewash must be present when there is potential for an employee's eyes to be exposed to corrosives, strong irritants, or substances with a significant degree of toxicity. These chemicals include acids, caustics, peroxides, aldehydes, pesticides, and concentrated detergents, among many other products. Consult a safety and health professional to determine if an eyewash is necessary for the chemicals used. If the assigned safety and health professional is not known, please contact Central Safety at centralsafety@kingcounty.gov.

An emergency shower must be present when there is the potential for major portions of an employee's body to contact corrosives, strong irritants, or substances with a significant degree of toxicity. These include the same items listed above for eyewashes.

RESPONSIBILITIES

Management of each department must ensure that all products used by employees are reviewed for any hazardous or toxic components, as required by the Hazard Communication and the Globally Harmonized System (GHS) Program (Section 9). Safety Data Sheets for products should indicate if there is concern for eye damage or injury from exposure to the product. Please consult the assigned safety and health professional for advice regarding whether the intended use of the product would require an eyewash or shower. If the assigned safety and health professional is not known, please contact Central Safety at centralsafety@kingcounty.gov.

TRAINING

All potentially affected employees must be trained about the hazards of the chemicals and the proper use of the equipment.

EMERGENCY EYEWASH

The eyewash must meet the following minimum requirements:

- Must have a tepid water range of 60-100 degrees
- Flushes both eyes simultaneously while the user holds the eyes open
- Has a valve with single-step activation that remains on without user assistance
- Delivers at least 0.4 gallons of water per minute for at least fifteen minutes
- Meets the ANSI Z358.1 – 2014 standards

EMERGENCY SHOWER

The shower must deliver water to cascade over the user's entire body at a minimum rate of 20 gallons per minute for at least fifteen minutes. The shower must meet the ANSI Z358.1 – 2014 standards.

LOCATION AND MAINTENANCE

Emergency eyewashes and showers must be located at a travel distance of no more than 50 feet and take no more than 10 seconds to reach. Emergency washing equipment and aisleways must be kept free of obstacles for easy access for a person who may not be able to see.

Plumbed eyewashes and showers must be activated weekly to ensure operation and to keep water in the pipes fresh and uncontaminated. Weekly testing helps clear the supply lines of sediment and bacteria build-up caused from stagnant water. Annual inspections meeting the manufacturer's recommendations are required.

Self-contained (non-plumbed) eyewashes must have the water changed and be cleaned in strict accordance to the manufacturer's recommendations to prevent biological contamination of the water which can cause serious eye infections. Generally, open units are changed every six months and sealed units every two years.

USE OF EMERGENCY EYEWASHES AND SHOWERS

If a contaminant contacts the eyes, immediately go to the eyewash and turn on the water. Hold open both sets of eyelids with fingers and flush the eyes for at least fifteen minutes. The fifteen minute-period of flushing is very important to remove chemicals that stubbornly attach to the surface of the eye and to remove chemicals that may have already penetrated the surface. Engage the assistance of another employee if possible.

If a contaminant contacts a significant portion of the body, immediately go to the emergency shower and turn it on. Remove any contacted clothing or all clothing if necessary and get under the shower for at least fifteen minutes. Again, this time period may be critical to remove certain chemicals. Do not put the contaminated clothing back on. Engage the assistance of another employee if possible.

Section 14: BLOODBORNE PATHOGENS EXPOSURE CONTROL

INTRODUCTION

Bloodborne pathogens are microorganisms that can be present in human blood and cause disease in humans. These pathogens include, but are not limited to, the human immunodeficiency virus (HIV), which causes AIDS; the Hepatitis B virus (HBV); and the Hepatitis C virus (HCV).

APPLICABILITY

This Bloodborne Pathogens Exposure Control Plan is applicable to all King County employees who may perform first aid or CPR in a workplace emergency, but who are not designated first-responders. This plan is intended to comply with WAC 296-823 and covers all employees who are not otherwise included in a departmental/divisional Bloodborne Pathogens Program, in the event of an unanticipated exposure incident.

If a job includes designated duties that involve occupational exposure to human blood or other potentially infectious materials as defined below, the department/division must have a written Bloodborne Pathogen Exposure Control Plan and employees must be included in a Bloodborne Pathogens Program specific to their job classification. That program supersedes this general plan.

RESPONSIBILITIES

Managers and supervisors are responsible for:

- Ensuring that their group has a specific bloodborne pathogens policy, if required (see applicability section above)
- Ensuring that employees who may be exposed to bloodborne pathogens during the course of their work are trained appropriately
- Ensuring that employees who experience an exposure during work follow the procedures outlined in this plan

Employees are responsible for following procedures as outlined in this or their group's bloodborne pathogens policy.

Definitions

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

"Exposure incident" is defined as a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's job duties.
"Non-intact skin" means skin that is damaged by a wound or lesions, or otherwise compromised by a condition such as eczema or some other form of dermatitis.

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

"Other potentially infectious materials (OPIM)" means human body fluids including semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids. "Saliva in dental procedures" is included above due to the likelihood of the presence of blood in the saliva as a result of the dental procedures. Otherwise however, saliva and sweat are not included in the definition of other potentially infectious materials.

"Parenteral contact" refers to exposure via a cut or puncture wound inflicted by a potentially contaminated sharp, such as a piece of glass or a used hypodermic needle.

"Sharps" defined as used hypodermic needles, potentially contaminated broken glass, jagged pieces of metal, razor blades, or other sharp-edged items.

"Universal Precautions" is an approach to infection control. According to the concept of universal precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

ASSESSING EXPOSURE INCIDENTS

For reporting and follow-up purposes, an "exposure incident" is defined as a specific incident involving eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially contaminated materials that results from the performance of an employee's job duties.

All human blood and other potentially infectious materials are presumed to be infectious. Sweat and saliva are not considered to be infectious body fluids unless there is reason to suspect the presence of blood or other potentially infectious materials in the sweat or saliva. If an exposed employee's blood or other potentially infectious body fluids are splashed in the eyes, mouth, up the nose, or on non-intact skin, an exposure incident has occurred.

Contact with healthy, intact, unabraded skin does not necessarily constitute an exposure incident. For example, if blood splashes on intact skin and is immediately washed off, it would not constitute an exposure incident. However, if the contact goes unnoticed and/or a significant amount of time passes before the blood can be washed off, there is a much greater likelihood that subsequent eye, nose, mouth, or non-intact skin contact may have occurred. Performing first aid while observing universal precautions and using appropriate personal protective

equipment does not constitute an exposure incident unless there is some specific body fluid contact as described above.

If the skin is broken by a potentially contaminated item, either by incision, laceration, puncture, abrasion, or other trauma, an exposure incident has occurred.

EXPOSURE PREVENTION AND CONTROL PROCEDURES

First aid providers need to take every reasonable precaution to limit contact with a victim's body fluids. If an accident requires an employee to administer first aid or CPR at work, use nitrile gloves and a CPR mask, as appropriate, to prevent contact with the victim's body fluids. These items should be included in all first aid kits. Following any first aid/CPR emergency, all potentially contaminated surfaces must be cleaned with an appropriate disinfectant solution. If no other disinfectant cleaner is available, a solution of one-part chlorine bleach to nine parts water may be used.

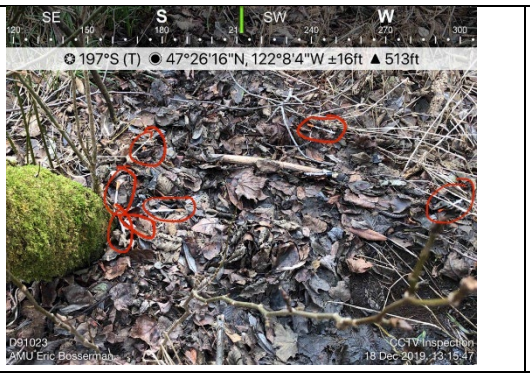
After a first aid emergency, place all potentially contaminated clothing, clean-up materials and other contaminated items into a plastic bag. Give the bag to the paramedics upon their arrival or take it to the hospital with the exposed employee. Do not eat, smoke, touch the face, or apply lotions or cosmetics until hands have been thoroughly washed.

Although such occurrences are rare, King County employees in "low risk" occupations have been cut and/or stuck by potentially contaminated sharps hidden in flower boxes, flower beds or other vegetation, trash containers, and rubbish piles. Never dig in soil or reach in vegetation with hands when there is no visibility. As a rule, always consider the possible presence of contaminated sharps before reaching under, behind, on top of, or into anything or anywhere that cannot be seen. Handle closed trash bags by the neck only and carry them away from your body and do not compress trash with hands.

Required PPE and Equipment

• Sharps container • Garbage picker, pliers, or tongs • Steel toed boots • Puncture resistant gloves	

Handling potentially contaminated sharps



- Always wear the proper PPE when handling sharps.
- Place sharps container on the ground (do not hold a sharps container while putting sharps into it)
- With pliers or tongs place needles needle side down into the sharps container
- Pick up needles by the barrel, do not pick them up by the plunger
- Even while wearing puncture resistant gloves never pick up sharps by hand. Always use pliers or tongs.
- If employees are working with others, be aware of their location before picking up a sharp. Employees should not turn towards others while holding a sharp in pliers or tongs.
- Never walk with a sharp in pliers or tongs, if the sharps container is not within reach, put the sharp down and move the container.
- To make pickup faster, gather sharps in a reachable area with pliers or tongs and place into a pile. Use pliers or tongs to put the piled sharps into a sturdy, leak-proof sharps container on the ground.

Disposal
Once sharps are safely in a sharps container, make sure the receptacle in the lid is tightly closed. Dispose of the sharps container at one of the locations below or another authorized sharps disposal site:

King County Public Health has a 24/7 drop box at

- Downtown 2124 4th Ave, Seattle
- Auburn Public Health Center: 901 Auburn Way North, Suite A, Auburn
- Eastgate Public Health Center: 14350 SE Eastgate Way, Bellevue
- Federal Way Public Health Center: 33431 13th Place S, Federal Way

King County Transfer Stations

- Bow Lake Recycling & Transfer Station, 18800 Orillia Rd S, Tukwila, WA
- Shoreline Recycling & Transfer Station, 2300 N 165th St, Shoreline, WA
- Vashon Recycling & Transfer Station, 18900 Westside Hwy SW, Vashon, WA
- Factoria Recycling & Transfer Station, 13800 SE 32nd St, Bellevue, WA

POST-EXPOSURE FOLLOW-UP PROCEDURES

Following an exposure incident, an exposed employee should:

- Wash exposed areas of the body with soap and warm water
- Report incident to your supervisor as soon as possible
- Go to the Harborview Medical Center Emergency Room for proper follow-up care, including antibiotics and or tetanus, hepatitis B vaccine shots, and anti-HIV injections
- Advise hospital staff they are a King County employee and the incident was work related; and
- Fill out a King County Workers' Compensation claim form

Following the post-exposure evaluation, the attending physician will provide the immediate supervisor with a written opinion. This opinion will be limited to a statement that the employee has been informed of the results of the evaluation and told of the need, if any, for further evaluation or treatment. The supervisor is required to provide the employee a copy of the physician's opinion within 15 days. The physician's written opinion will be the only information provided to the employee's supervisor regarding the exposure incident; all other medical findings and records will remain confidential.

TRAINING

Any job may involve some possibility of exposure to blood or other potentially infectious materials. While it is not possible to specifically address and control every exposure risk, training in hazard awareness and precautionary measures can greatly reduce the potential for bloodborne pathogens exposure incidents. King County provides training on bloodborne pathogens to all occupationally exposed employees and it is included in the county's first aid training.

Bloodborne Pathogens training includes the following topics, as appropriate:

- An accessible copy of the regulatory text of the bloodborne pathogens standard and an explanation of its contents
- A general explanation of the epidemiology and symptoms of bloodborne diseases
- An explanation of the modes of transmission of bloodborne pathogens
- An explanation of the exposure control plan and how an employee can obtain a written copy
- An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials

- An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and personal protective equipment
- Information on the types, proper use, location, removal, handling, decontamination, and disposal of personal protective equipment
- An explanation of the basis for selection of personal protective equipment
- Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and discussion of the criteria for determining who receives the preventative vaccination series
- Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials
- An explanation of the procedures to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available
- Information on the post-exposure evaluation that the employer is required to provide for the employee following an exposure incident
- An explanation of the signs and labels and/or color coding intended to inform/warn employees of potential hazards
- An opportunity for interactive questions and answers with the person conducting the class

If an employee has not received bloodborne pathogens training, the employee should ask the supervisor, assigned group's safety and health professional, safety committee representative, or contact the safety training staff. If unsure who to contact, please contact Central Safety at centralsafety@kingcounty.gov.

Section 15: ASBESTOS AND OTHER REGULATED BUILDING MATERIALS

INTRODUCTION

Hazardous building materials can be found in buildings of any age or condition. Specific federal, state, and local health and safety regulations govern maintenance, disturbance, and disposal of these materials. Regulated building materials are materials regulated by law because of potential health and environmental impacts and include but are not limited to the following: asbestos, lead, polychlorinated biphenyls (PCBs), mercury, chlorofluorocarbons (CFCs), and crystalline silica. When intact or undisturbed, regulated building materials do not pose a health risk to workers and building occupants. Damage can release these materials into the air, with the potential for exposure by inhalation and/or ingestion. Maintenance, demolition, and renovation must be conducted in accordance with applicable health and safety regulations to reduce and prevent potential exposures.

APPLICABILITY

Most King County employees have no contact with asbestos and other regulated building materials in work environments because of appropriate management practices. Recognized friable (easily crumbled) asbestos products have been contained in restricted areas or removed from King County facilities. Employees who may have risk of exposure to airborne asbestos and other regulated building materials are building tradespersons, custodians, and vehicle mechanics.

All projects involving potential disturbance of building materials must be evaluated for asbestos-containing materials and other regulated building materials. During building renovation, demolition or maintenance, specific federal, state, and local health and safety regulations governing these materials apply to workers, including training, work practices, disposal, and other regulations.

RESPONSIBILITIES

Building owners are responsible for conducting hazardous materials surveys prior to performing maintenance, janitorial, or construction activities. All asbestos removal/abatement and/or disturbance of regulated building materials at King County facilities must be conducted in accordance with applicable regulations.

It is not possible to visually determine if a material contains asbestos or other regulated building materials. The presence of asbestos can only be determined by specific sampling and analytical procedures conducted by qualified individuals. **Contact Central Safety at (206) 477-3350 with any questions or to report damaged building materials.** For a list of building materials that may contain asbestos, see Appendix A.

It is the responsibility of each organizational unit and/or department involved in the planning, leasing, or selling of real estate, capital construction and demolition projects, maintenance, repair and renovation of King County properties to develop specific safety plans that meet the requirements for the management of all regulated building materials. If removal is contracted out, then the Project Manager must ensure that the contractor is currently licensed/authorized for such work by the State of Washington.

Vehicle maintenance operations must ensure that new vehicles and replacement parts do not contain any asbestos. The current state contract for new vehicles specifies there be no friction products containing asbestos. There are currently no vehicle mechanics properly trained or equipped for working with asbestos-containing friction products or gaskets.

TRAINING

All building tradespersons and custodians who work in or disturb buildings with asbestos-containing building materials must receive annual asbestos awareness training. Training requirements specific to other regulated building materials also apply. Workers removing asbestos must have a current State of Washington certification to perform disturbance or removal of asbestos-containing materials. Initial and annual training are required.

Appendix 15-1:

Asbestos is the name given to a group of naturally occurring fibrous minerals that are resistant to heat and corrosion. Because of its fiber strength and heat resistance, asbestos has been used in a variety of building construction materials for insulation and as a fire retardant. Asbestos has also been used in a wide range of manufactured goods, mostly in building materials (roofing shingles, ceiling and floor tiles, paper products, and asbestos cement products), friction products (automobile clutch, brake, and transmission parts), heat-resistant fabrics, packaging, gaskets, and coatings. Asbestos use in building materials peaked in the years following World War II through the 1970's. Though its use is banned in a very limited number of building products, such as thermal system insulation (e.g., pipe and boiler insulation) and spray-applied surfacing material (e.g., popcorn ceiling texture and fireproofing) it is not banned outright in the United States, and asbestos may still be found in new buildings.

Banned Uses of Asbestos

the following asbestos-containing products are banned under the Toxic Substances Control Act (TSCA).

- Corrugated paper
- Rollboard
- Commercial paper
- Specialty paper
- Flooring felt
- New commercial uses that begin after August 25, 1989

Under the Clean Air Act (CAA), the following asbestos-containing uses are banned.

- Asbestos pipe insulation and asbestos block insulation on facility components, such as boilers and hot water tanks
- Spray-applied surfacing asbestos-containing materials

Under the Consumer Product Safety Act (Consumer Product Safety Commission), asbestos in artificial fireplace embers and wall patching compounds are banned. Under the Food and Drug Administration (FDA), asbestos-containing filters in pharmaceutical manufacturing, processing, and packing are banned.

Source: EPA

Under normal conditions, asbestos containing materials that are intact and in good condition are not hazardous to building occupants. Asbestos is harmful when material is damaged, and fibers become airborne and are inhaled. Exposure to airborne asbestos fibers can cause asbestosis, mesothelioma, and lung cancer.

The following is a list of commonly found construction and demolition materials that may contain asbestos (this is not a complete list of all asbestos-containing materials).

Friable Materials (materials that easily crumble):

- Acoustical ceiling tiles
- Air-duct cement, tape, and insulation (white paper on seams and or complete wrap)

- Block insulation, Magnesia (MAG)
- Building insulation – Vermiculite in walls, attics- Not including fiberglass, Cellulose, Rockwool
- Adhesives/ Mastics (if dry and brittle)
- Caulks and putties (if dry and brittle)
- Fire doors & Walls
- Flashing cement
- Furnace cement
- Gaskets (furnaces, boilers, woodstoves)
- Interior wall and ceiling textures, skim and brown coats
- Joint compound & taping mud compound
- Nicolite™ roof paper
- Patch compounds
- Petroleum bound built up, felt layered, rolled, and patch roofing (nonpliable, brittle)
- Plaster
- Sheet vinyl flooring
- Floor tile measuring 9"x9" and 12"x12" that has been shattered, fragmented, and broken into pieces
- Mastics (if dry and brittle)
- Silver roofing paint
- Sink undercoating (sprayed on)
- Spray applied insulation soundproofing and fireproofing
- Spray applied textured or acoustical ceilings (popcorn texture, orange peel, trowel)
- Stucco
- Tank and boiler insulation (white in color with chalk like appearance or may look like corrugated cardboard and is often called air-cell) not including fiberglass
- Thermal system pipe insulation (white in color with chalk like appearance or may look like corrugated cardboard and is often called air-cell) not including fiberglass
- Vapor barrier products (if dry and brittle)
- Wallboards
- Window glazing (if dry and brittle)

Nonfriable Materials (materials that don't easily crumble):
Petroleum-bound nonfriable materials are generally pliable and will not be rendered friable unless brittle. Other types of nonfriable materials can be rendered friable by activities such as sanding, grinding, breaking, or if the nonfriable material is not handled appropriately.

- Adhesives/mastics (pliable)
- Cement asbestos board, known as CAB/Transite in whole pieces that have not been shattered or fragmented

- Cement siding and roofing products, known as CAB/Transite in whole pieces that have not been shattered or fragmented
- Cement water pipe (not shattered or fragmented, whole pieces)
- Petroleum bound built up, rolled, and patch roofing (pliable)
- Floor tile measuring 9”x9” and 12”x12” that has been shattered, fragmented, and broken into pieces
- Mastics (pliable, not dry nor brittle)
- Window glazing (pliable)

Section 16: TOOLS AND EQUIPMENT

INTRODUCTION

Most King County jobs require the use of some type of tools, equipment, or machinery, all of which can present hazards if they are not operated and maintained in accordance with the manufacturer's instructions. Following basic tool and equipment safe operating procedures can mitigate hazards and minimize the impact on the body.

King County workers must only use tools and equipment they are trained and authorized to use. Leave repair and maintenance to those designated to perform these tasks. Any equipment found to be defective or unsafe must be removed from use and marked "Unsafe-Do Not Use" until corrective action is taken.

Any machine that could expose a person to injury from a point of operation, such as blades, cutters, rotating parts, powered drive belts, gears, or chains, must be provided with guards that completely enclose the hazardous parts of the machine. All guards should be in place and properly adjusted before the machine is operated. If guards are removed for an approved, specific procedure, they must be replaced immediately after finishing.

APPLICABILITY

This program applies to all employees who use machines, tools, or equipment at work.

RESPONSIBILITIES

Safety and health professionals will:

- Develop written programs
- Provide technical assistance to supervisors and managers
- Assist in employee training

Managers and supervisors will:

- Evaluate or seek help to identify appropriate tools for job tasks
- Equip employees with necessary tools to perform their jobs safely
- Ensure compliance with the safety program
- Provide and coordinate training for employees on tool use

Employees must:

- Comply with management directives with respect to tool use
- Review manufacturers' instructions before using any tool
- Only use tools for their intended purposes

TRAINING

All King County employees using machines, tools, or equipment for a job must be trained in use, maintenance, and storage. Training shall be provided by knowledgeable individuals. Where possible, it is recommended that training be provided by manufacturer's representatives.

GENERAL REQUIREMENTS

- Tools and equipment shall be used only for the purpose for which they are designed
- All tools, regardless of ownership, shall be of an approved type, maintained in proper condition, and subject to inspection at any time
- Tools with sharp edges shall be stored and handled in such a way as to not cause damage or injury to personnel
- Damaged machines, tools, and equipment must not be used
- Tools, except those normally carried on belts, that must be raised or lowered from one elevation to another shall be placed in an approved container or firmly attached to hand lines
- Tools shall not be left laying around to pose tripping or stumbling hazards
- Tools shall not be placed unsecured on elevated places
- All hand-held power tools must be equipped with constant pressure switches that will shut off the power when the pressure is released
- Switches or valves on any type of power tools shall not be wired or tied in the open position

SPECIFIC REQUIREMENTS - POWER TOOLS

Power tools should be inspected, tested, and determined to be in safe operating condition before using. Portable electric tools, equipment, and appliances must meet one or more of the following:

- The exposed noncurrent-carrying metal parts of the portable or plug-connecting equipment that may be energized must be grounded
- The equipment must be of the approved double-insulated type and be conspicuously marked as such
- The equipment must be self-contained and battery-operated
- Equipment must be used according to the manufacturer's guidelines and recommendations

Portable power tools present hazards similar to those presented by stationary machinery in addition to the risk of handling. Sources of injury include shock, particles in eyes, fires, falls, gas explosions, and falling tools.
The following general guidelines must be followed:

- Always disconnect power lines before changing accessories on a portable tool, replace the guards, and put in the correct adjustment before the tool is used again.

- Suspend power lines over work areas in such a way as to prevent lines from being struck by people or materials moving through the area. Keep lines away from sharp edges, oils, hot surfaces, and chemicals.
- Establish and maintain a systematic inspection schedule of each tool to help prevent accidents. Tag and withdraw from service all defective tools until repaired.

Portable Abrasive Wheels
Abrasive wheels shall be used only on machines provided with safety guards and recommended for such use by the manufacturer. Before use, ensure that a safety guard covers the spindle end, nut and flange projections.

Portable Grinders
When using the vertical portable grinder, ensure that safety guards are in place. They must have a guard with maximum exposure angle of 180 degrees and located between the user and the wheel during use.

Bench Grinder
- When using abrasive or wire wheels, wear a face shield, goggles, or safety glasses.
- Since most defective wheels break when first started, run all new wheels at full operating speed for at least one minute before work is applied.
- Ensure the immediate area in front of the grinder is cleared of all people before starting.
- Do not grind on the side of a grinding wheel unless it is designed for that purpose.
- Ensure that there is no more than 1/8 of an inch between the tool rest and grinding wheel. This must be adjusted as wheel wears down.

Band Saw
- Ensure that the saw table is well lighted, yet free from glare.
- Ensure that an adjustable guard is installed around the saw blade and does not interfere with the movement of stock or the vision of the operator.
- Keep the floor around the saw clean and do not allow it to get slippery.
- Ensure that the working distance around the saw is ample and free of traffic to avoid any accidental bumping of either the stock or the operator into the saw.
- Wear safety glasses to protect eyes from flying particles.
- Clean accumulated shavings from underneath the saw to prevent build up and potential hazard.

Electrical Drill Press
- Always use a sharp drill bit to prevent breakage.
- Keep hair and sharp clothing away from revolving parts.
- Wear safety glasses.

- Remove key or drift from chuck before starting drill.
- Securely clamp work before drilling to prevent a frozen drill from spinning the drill material.

Table Saw

- Table saws must be equipped with saw blade hoods, a spreader or riving knife, and non-kickback fingers or dogs.
- Keep hands out of the line of the cut while feeding.
- Hold the stock against a gauge and never saw freehand.
- Clamp the filler board to the table between the gauge and the saw to guide the stock when ripping it with a narrow clearance on the gauge side.
- Stand out of the line of the stock to avoid kickbacks. A heavy leather or plastic apron will give additional protection.
- To help prevent kickbacks, set the saw blade so that no more than three teeth or 1/8" of the blade are exposed above the stock.
- The lower the saw blade is set, the less chance there is of kickback.
- Keep saw blades sharp to prevent material from pinching.
- Check blades regularly for cracks and replace the blade if necessary.
- Clear sawdust and slivers away from the saw with a brush or stick and never with the hands.
- Clean accumulated shavings from underneath the saw to prevent build up and a potential hazard.

Circular Hand Saw

- Ensure the guard operates freely, it encloses the teeth completely when it is not cutting and the unused portion of the blade when it is cutting.
- Start and stop the saw outside the work.
- Keep the body out of the line of the cut at the beginning and end of the stroke.

Other Woodworking Machinery

- Ensure that all other woodworking machinery such as swing saws, radial saws, jointers, boring and mortising machines, shapers, planers, lathes, sanders, veneer cutters, and other miscellaneous woodworking machinery are effectively guarded to protect the operator and other employees from hazards inherent to their operations.
- Provide a power control device on each machine to make it possible for the operator to cut off the power to the machine without leaving the position point of operation.
- Ensure that power and operating controls are located within reach of the operator's regular work location, making it unnecessary to reach over the cutter to make adjustments. This does not apply to constant pressure controls used only for setup purposes.
- Ensure that each operating treadle is protected against unexpected or accidental tripping.

- On applications where injury to the operator might result if motors were to restart after power failures, make sure that provisions are made to prevent machines from automatically restarting upon restoration of power.

Electric Drill

- Adequately secure the work by using a clamp, jig, or vise, and do not hold small work in hands.
- Wear adequate eye protection whenever a drill is in use, especially when the work is near head level or overhead.
- Ensure that the chuck key or drift has been removed from the chuck before a drill is started.

PERSONAL PROTECTIVE EQUIPMENT (PPE) REQUIREMENTS

Employees must use appropriate PPE when working with tools. Consult Section 10 – "Personal Protective Equipment and Clothing" of this Accident Prevention Program for more details on selection, fitting, cleaning, and maintenance of PPE. For further assistance with PPE, contact your department's assigned safety and health professional.

Section 17: ELECTRICAL HAZARDS

INTRODUCTION

Use of electrical equipment, such as computers, copy machines, tools or even microwave ovens occur in almost all work areas and there are some basic procedures to follow to prevent electrical shock or fires.

Some departments have licensed electricians who install and maintain electrical systems and equipment. See Attachments 1 and 2 of this section for procedures for electricians and HVAC engineers.

APPLICABILITY

All employees have some risk of electrical shock or fire from electrical equipment.

RESPONSIBILITIES

Employees should periodically inspect electrical equipment used. Look for obvious problems such as breaks or cuts in cord insulation, wire insulation pulled away from plugs and exposing wires, plugs with any blades or grounding prongs damaged or missing, or any equipment that has a burning smell or is not operating correctly. Report any problems to your supervisor.

Management and supervisors must ensure the purchase of equipment that is listed by a nationally recognized electrical testing laboratory, such as Underwriter's Laboratory (UL listed). When adding business machines, appliances or other equipment that use moderate amounts of power, consult with a licensed electrician to determine if the existing circuit has adequate capacity. Items such as large copy machines, refrigerators, and microwave ovens require separate circuits. Portable space heaters are typically not permitted because they commonly overwhelm the circuit's capacity and can be a fire hazard.

Use equipment only if it is in good condition and in only the way it was intended. Defective electrical equipment or improper use can cause serious or fatal injuries.

Employees who are not qualified electricians, working in an elevated position, or on the ground near overhead lines, must stay at least 10 feet away from energized power lines with voltages of 50,000 volts or less. For power lines over 50,000 volts, the minimum distance is 10 feet plus 0.4 inch for every 1000 volts over 50,000 volts. This includes any possible conductive objects.

When an employee works in a confined or enclosed space (such as a manhole or vault) that contains exposed energized parts, electricians must have protective shields, protective barriers, or insulating materials as necessary to avoid inadvertent contact with these parts.

Exposed, energized equipment must be insulated or guarded in areas where there are trades workers or others who may handle conductive equipment, such as pipes or vents.

Attachment 17-1
Electrician and HVAC Engineer Safety Procedures

The following work procedures shall be observed:

Compliance with requirements listed in the National Electrical Code (National Fire Protection Association No. 70 – American Safety Standards C2), Underwriter's Laboratories, Washington Department of Labor and Industries standards, and King County Safety Standards. The most stringent rule or procedure should be accepted as standard operating procedures and any deviation is to be cleared through the Central Safety Office.

Whenever possible, equipment and circuits must be de-energized, locked out and tagged. Equipment and circuits must then be tested to ensure they have been entirely de-energized.

Before working on capacitor circuits, disconnect external power and use insulated tools or conductors.

Be careful around electrical equipment. Avoid assuming unstable positions, which might lead to falls into equipment.

Portable ladders shall have nonconductive side rails if they are used where the employee or the ladder could contact exposed energized parts or power lines.

Conductive articles of jewelry and clothing, such as watch bands, bracelets, rings, key chains, necklaces, cloth with conductive thread or metal rivets, shall not be worn if they might contact exposed energized parts.

Maintain adequate clearances from energized circuits and components. Minimum safe clearances are 6 inches for 750 volts or less, and 2 feet for 750 volts to 15,000 volts. The minimum distance to be maintained from energized high voltage lines without insulating barriers (rubber blankets) is 10 feet.

Make sure that non-current-carrying metal parts are grounded. Visually inspect or conduct tests as appropriate to determine the adequacy of grounds.

Immediately report to your supervisor any unsafe and hazardous facilities and equipment.

Working on energized equipment

Live parts to which employees may be exposed, shall be de-energized before the employees work on or near them, unless it is infeasible due to additional or increased hazards, equipment design, operational limits or need for testing live

parts. Live parts that operate at less than 50 volts to ground do not need to be de-energized if there will be no increased exposure to electrical burns or arcs.

Examples of increased or additional hazards include interruption of life support equipment, deactivation of emergency alarm systems, shutdown of hazardous location ventilation equipment, or removal of illumination from an area without minimal natural light. Examples of work on or near energized circuit parts due to design or operational limits includes needed testing of energized circuits or work on circuits that are part of much larger systems that would require shutting down the whole system in order to work on one circuit or piece of equipment.

The two major risk hazards when working on energized equipment are electrical shock and arc flash. An additional major hazard is falls caused by shocks and arcs.

The procedures and personal protective equipment required by the National Fire Protection Agency, *NFPA 70E, Electrical Safety Requirements for Employee Workplaces, 2000 or later,* shall be followed by King County employees as a minimum to help prevent accidents and injuries. These requirements are listed in Attachment 2 of this section.

Attachment 17-2
Electrician Procedures and Personal Protective Equipment
Working On or Near Live Circuits

Working on live circuits means touching energized parts. Working near live circuits means working close enough to energized parts to pose a risk even if the employee is working on de-energized parts. Common tasks where employees may need to work on or near live circuits include:

- Taking voltage measurements
- Opening and closing disconnects and breakers
- Racking breakers on and off the bus
- Removing panels and dead fronts
- Opening electric equipment doors for inspection.

There should be standard written procedures and training for these common tasks. For instance, when opening and closing disconnects, use the **left-hand rule** when possible (stand to the right side of the equipment and operate the disconnect with the left hand). For other situations where an employee might need to work on or near live circuits, the work unit should institute a written live work permit system which must be authorized by a qualified supervisor.

Live-Work Permit System

A live work permit should, at a minimum, contain this information:

- A description of the circuit and equipment to be worked on and location
- The date and time covered by the permit
- Why live work will be done
- Results of shock hazard analysis and determination of shock protection boundaries
- Results of flash hazard analysis and determination of flash protection boundary
- PPE to be worn and description of safe work practices to be used
- Who will do the work and how unqualified persons will be kept away
- Evidence of completion of job briefing, including description of job-specific hazards.
- Supervisor/manager approval signature

An example live work permit is provided in Appendix I of this section.

Approach Distances to Exposed Live Parts
The National Fire Protection Association defines three approach distances for shock hazards and one for arc flash. *** **Electric shock** (see table 1).

- The **limited approach boundary** is the closest distance an unqualified person can approach, unless accompanied by a qualified person.

- The **restricted approach boundary** is the closest distance to exposed live parts a qualified person can approach without proper PPE and tools. Inside this boundary, accidental movement can put a part of the body or conductive tools in contact with live parts or inside the prohibited approach boundary. To cross the restricted approach boundary, the qualified person must:

  (a) Have a documented plan that is approved by the manager responsible for the safety plan.
  (b) Use PPE suitable for working near exposed live parts and rated for the voltage and energy level involved.
  (c) Be certain that no part of the body enters the prohibited space.
  (d) Minimize the risk from unintended movement by keeping as much of the body as possible out of the restricted space; body parts in the restricted space should be protected.

- The **prohibited approach boundary** is the minimum approach distance to exposed live parts to prevent flashover or arcing. Approaching any closer is comparable to making direct contact with a live part. To cross the prohibited approach boundary, the qualified person must:

  (a) Have specified training to work on exposed live parts.
  (b) Have a documented plan with proper written work procedures and justifying the need to work that close.
  (c) Complete a written risk analysis.
  (d) Have steps (b) and (c) above, approved by the manager responsible for the safety plan.
  (e) Use PPE appropriate for working near exposed live parts and rated for the voltage and energy level involved.

Arc flash. The **flash protection boundary** is the distance at which PPE is needed to prevent incurable burns (second degree or worse) if an arc flash occurs though first- and second-degree burns could still be sustained. For systems of 600 volts and less, the flash protection boundary is 4 feet, based on an available bolted fault current of 50 kA (kiloamps) and a clearing time of 6 cycles (0.1 seconds) for the circuit breaker to act, or any combination of fault currents and clearing times not exceeding 300 kA cycles. For other fault currents and clearing times, see NFPA 70E.

When the parts needing repair have been de-energized but are still inside the flash protection boundary for nearby live exposed parts, and the parts cannot be de-energized, then barriers such as insulated blankets should be used to protect

against accidental contact or proper PPE must be worn.

Proper Personal Protective Equipment
When working on or around live circuits, be sure to wear the right PPE to protect against electric shock and arc flash. Never wear clothing made from synthetic materials, such as acetate, nylon, polyester, or rayon - alone or combined with cotton. Such clothing is dangerous as it can burn and melt into the skin.

The type of PPE worn depends on the type of electric work being done (see table 2).

Once the hazard/risk category has been identified, check requirements for clothing and other PPE when working on or near energized equipment within the flash protection boundary (see tables 3 and 4). These PPE requirements protect against electric shock and incurable arc-flash burns. They do not protect against physical injuries from arc blasts.

The minimum PPE required would be an untreated natural fiber long-sleeve shirt, long pants and safety glasses with side shields (hazard/risk category 0).

For more information, employees can contact their local union, Center for Construction Research and Training (CPWR) at (301) 578-8500 or www.cpwr.com, or the National Institute for Occupational Safety and Health at 1-800-35-NIOSH or www.cdc.gov/niosh.

Table 1. Approach Boundaries to Live Parts for Shock Prevention

	Limited approach boundary			
Nominal system voltage range, phase to phase	**Exposed movable conductor**	**Exposed fixed- circuit part**	**Restricted approach boundary (allowing for accidental movement)**	**Prohibited approach boundary**
0 to 50 volts	Not specified	Not specified	Not specified	Not specified
51 to 300 volts	10 ft. 0 in.	3 ft. 6 in.	Avoid contact	Avoid contact
301 to 750 volts	10 ft. 0 in.	3 ft. 6 in.	1 ft. 0 in.	0 ft. 1 in.
751 to 15,000 volts	10 ft. 0 in.	5 ft. 0 in.	2 ft. 2 in.	0 ft. 7 in.

Source: From a portion of table 2-1.3.4, Approach Boundaries to Live Parts for Shock Protection (NFPA 70E *Standard for Electrical Safety Requirements for Employee Workplaces, 2000 edition*). Tables are reprinted with permission.

Table 2. Hazard Risk Category Classification (within flash protection boundary)

For low-voltage tasks (600 volts and below), this table applies only when there is an available short-circuit capacity of 25 kA or less, and when the fault clearing time is 0.03 seconds (2 cycles) or less. For 600-volt-class motor control centers, a short-circuit current capacity of 65 kA or less and fault-clearing time of 0.33 seconds (20 cycles) is allowed. For 600-volt-class switchgear, you need a short-circuit current capacity of 65 kA or less and fault-clearing time of 1 second (60 cycles). For tasks not covered in this table and tasks involving equipment with larger

short-circuit current capacities or longer fault-clearing times, a qualified person must conduct a flash hazard analysis (see section 2-1.3.3, Part II, NFPA 70E).

	Hazard/Risk Category	V-Rated Gloves	V-Rated Tools
Opening Doors and Covers			
Opening hinged covers (to expose bare, energized parts)			
240 volts or less	0	N	N
600-volt-class motor control centers	1	N	N
600-volt-class lighting or small power transformers	1	N	N
600-volt-class switchgear (with power circuit breakers or fused switches)	2	N	N
NEMA E2 (fused contactor) motor starters, 2.3 kV through 7.2 kV	3	N	N
1 kV and over (metal clad switchgear)	3	N	N
1 kV and above metal clad load interrupter switches, fused or unfused	3	N	N
Removing bolted covers (to expose bare, energized parts)			
240 volts or less	1	N	N
600-volt-class motor control centers or transformers	2*	N	N
600-volt-class lighting or small power transformers	2*	N	N
600-volt-class switchgear (with power circuit breakers or fused switches)	3	N	N
NEMA E2 (fused contactor) motor starters, 2.3 kV through 7.2 kV	4	N	N
1 kV and above (metal clad switchgear)	4	N	N
1 kV and above metal clad load interrupter switches, fused or unfused	4	N	N
Opening transformer compartments for metal clad switchgear 1 kV and above	4	N	N
Installing, Removing or Operating Circuit Breakers (CBs), Fused Switches, Motor Starters or Fused Contactors			
Installing or removing circuit breakers or fused switches, 240 volts or less	1	Y	Y
Inserting or removing (racking) CBs from cubicles, doors closed			
600-volt-class switchgear (with power circuit breakers or fused switches)	2	N	N
NEMA E2 (fused contactor) motor starters, 2.3 kV through 7.2 kV	2	N	N
1 kV and above metal clad switchgear	2	N	N
Inserting or removing (racking) CBs or starters from cubicles, doors open			
600-volt-class switchgear (with power circuit breakers or fused switches)	3	N	N

NEMA E2 (fused contactor) Motor Starters, 2.3 kV through 7.2 kV	3	N	N
1 kV and above metal clad switchgear	4	N	N
Operating circuit breaker (CB), fused switch, motor starter or fused contactor, covers on/doors closed			
240 volts or less	0	N	N
>240-<600 volt panelboards/switchboards (molded case or insulated case CBs)	0	N	N
600 volt class motor control centers	0	N	N
600 volt class switchgear (with power circuit breakers or fused switches)	0	N	N
NEMA E2 (fused contactor) motor starters, 2.3 kV through 7.2 kV	0	N	N
1 kV and above (metal clad switchgear)	2	N	N
1 kV and above metal clad load interrupter switches, fused or unfused	2	N	N
Operating circuit breaker, fused switch, motor starter or fused contactor, covers off/doors open			
240 volts or less	0	N	N
>240-<600 volt panelboards/switchboards (molded case or insulated case CBs)	1	N	N
600 volt class motor control centers	1	N	N
600 volt class switchgear (with power circuit breakers or fused switches)	1	N	N
NEMA E2 (fused contactor) motor starters, 2.3 kV through 7.2 kV	2*	N	N
1 kV and above (metal clad switchgear)	4	N	N

Working on Energized Parts			
Working on energized parts, voltage testing, applying safety grounds			
240 volts or less	1	Y	Y
>240-<600-volt panelboards/switchboards (molded case or insulated case CBs)	2*	Y	Y
600-volt-class motor control centers	2*	Y	Y
600-volt-class switchgear (with power circuit breakers or fused switches)	2*	Y	Y
600-volt-class lighting or small power transformers	2*	Y	Y
600-volt-class revenue meters	2*	Y	Y
NEMA E2 (fused contactor) motor starters, 2.3 kV through 7.2 kV	3	Y	Y
1 kV and above metal clad switchgear	4	Y	Y
1 kV and above metal clad load interrupter switches, fused or unfused	4	Y	Y
Working on control circuits with exposed energized parts, 120 volts or below			
600-volt-class motor control centers	0	Y	Y

	600-volt-class switchgear (with power circuit breakers or fused switches	0	Y	Y
	NEMA E2 (fused contactor) motor starters, 2.3 kV through 7.2 kV	0	Y	Y
	1 kV and above metal clad switchgear	2	Y	Y
Working on control circuits with exposed energized parts, over 120 volts				
	600-volt-class Motor Control Centers	2*	Y	Y
	600-volt-class switchgear (with power circuit breakers or fused switches)	2*	Y	Y
	NEMA E2 (fused contactor) motor starters, 2.3 kV through 7.2 kV	3	Y	Y
	1 kV and above metal clad switchgear	4	Y	Y
Other Tasks				
Reading panel meters while operating meter switches		0	N	N
Metal clad load interrupter switches, fused or unfused, 1 kV and above				
	Outdoor disconnect switch operation (hookstick operated)	3	Y	Y
	Outdoor disconnect switch operation (gang-operated, from grade)	2	N	N
	Insulated cable examination, in open area	2	Y	N
	Insulated cable examination, in manhole or other confined space	4	Y	N
Removing/installing other equipment				
	Starter "buckets" for 600-volt-class motor control centers	3	Y	N
	600-volt-class revenue meters	2*	Y	N
	Covers or cable troughs for 600-volt-class revenue meters	1	N	N

2* = A double-layer switching hood and hearing protection are required, in addition to the other hazard/risk category 2 requirements of table 3-3.9.2 of Part II of NFPA 70E. See tables 3 and 4.

kV = kilovolt

Note: Applying safety grounds after voltage testing does not require voltage-rated tools. Voltage-rated gloves or tools are rated and tested for the maximum line-to-line voltage on which work will be done. The hazard/risk category may be reduced by one number for low-voltage equipment listed here where the short-circuit current available is less than 15 kA (less than 25 kA for 600-volt-class switchgear).

Source: Adapted from table 3-3.9.1, Hazard Risk Category Classifications (NFPA 70E Standard for Electrical Safety Requirements for Employee Workplaces, 2000 edition). Tables are reprinted with permission. Copyright ©2000 National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association on the referenced subject, which is represented only by the standard in its entirety.

Table 3. Simplified, Two-Category, Flame-Resistant Clothing System

Applicable tasks	Clothing requirement
All hazard/risk category 1 and 2 tasks listed in table 2 On systems operating at less than 1000 volts, these tasks include work on all equipment except • Insertion/removal of low-voltage motor starter "buckets"	Everyday work clothing Flame-resistant long-sleeve shirt (minimum ATPV of 5) worn over an untreated cotton T-shirt with FR pants (minimum ATPV of 8) Or FR coveralls (minimum ATPV of 5) worn over an untreated cotton T-shirt (or an

• Insertion/removal of power circuit breakers with the switchgear doors open • Removal of bolted covers from switchgear. On systems operating at 1000 volts or more, tasks also include the operation, insertion, or removal of switching devices with equipment enclosure doors closed.	untreated natural-fiber long-sleeve shirt) with untreated natural-fiber pants.
All hazard/risk category 3 and 4 tasks listed in table 2 On systems operating at 1000 volts or more, these tasks include work on energized parts of all equipment. On systems of less than 1000 volts, tasks include insertion or removal of low-voltage motor-start motor control center "buckets," insertion or removal of power circuit breakers with the switchgear enclosure doors open, and removal of bolted covers from switchgear.	Electric "switching" clothing Double-layer FR flash jacket and FR bib overalls worn over either FR coveralls (minimum ATPV of 5) or FR long-sleeve shirt and FR pants (minimum ATPV of 5) worn over untreated natural-fiber long-sleeve shirt and pants worn over an untreated cotton T-shirt Or Insulated FR coveralls (minimum ATPV of 25, independent of other layers) worn over untreated natural-fiber long-sleeve shirt with untreated cotton blue jeans ("regular weight," minimum 12 oz./sq. yd. fabric weight), worn over an untreated cotton T-shirt.

FR - flame resistant.
ATPV - arc thermal performance exposure value of the clothing in calories/cm2.
Source: Based on Table F-1 in appendix F of NFPA 70E, Electrical Safety Requirements for Employee Workplaces, 2012.

Table 4. Flame-Resistant Protective Clothing and Equipment

Flame-resistant protective clothing and equipment	**Protective systems for hazard/risk category (4 = most hazardous)**			
Hazard/risk category number	**1**	**2**	**3**	**4**
1				
Flash suit jacket (2-layer)			X	X
Flash suit pants (2-layer)			X	X
Head protection	X	X	X	X
Flame-resistant hardhat liner	As Needed	As Needed	X	X
Eye protection (safety glasses + side shields or safety goggles)	X	X		
Face protection (double-layer switching hood)			X	X
Hearing protection (ear canal inserts)	X	X	X	X
Leather gloves or voltage-rated gloves with leather protectors	X	X		
Leather work shoes	As Needed	As Needed		

Source: Based on personal protective equipment requirements of table 3-3.9.2 of NFPA 70E, Electrical Safety Requirements for Employee Workplaces. Tables are reprinted with permission. Copyright ©2000 National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association on the referenced subject, which is represented only by the standard in its entirety.

ATTACHMENT 17-2

TO BE COMPLETED BY ELECTRICALLY QUALIFIED PERSONS PERFORMING THE WORK	
Building:	Area/Room #
Start Work Date: Click or tap to enter a date.	End Work Date: Click or tap to enter a date.
Description of Equipment Location:	
Description of Why Equipment Cannot be De-Energized:	

Results of Shock Hazard Analysis			
Maximum Voltage:		Glove Voltage Rating:	
Limited Approach Boundary:	ft	in	
Prohibited Approach Boundary:	ft	in	
Restricted Approach Boundary:	ft	in	

Results from Arc Flash Hazard Analysis				
Risk Category:		FR Rated Clothing Level:		Cal/cm^2
Arc Flash Boundary	ft	in		

Safety Checklist

- ☐ Workers are trained, qualified, and knowledgeable to perform the task
- ☐ The work can be done safely
- ☐ Workers have the properly rated PPE and insulated tools in good working order
- ☐ Means for restricting unauthorized access to the work zone have been established
- ☐ Job briefing has been conducted and available for review (NFPA-70E 2020 Annex I)
- ☐ Emergency response information has been provided

Electrically Qualified Person(s)		
Name:	Signature:	Date:
Name:	Signature:	Date:
Name:	Signature:	Date:

Approval to Perform the Energized Work	
Supervisor Name:	Title:
Department:	Date: Click or tap to enter a date.

ENERGIZED ELECTRICAL WORK PERMIT (EXAMPLE)

Section 18: LOCKOUT/TAGOUT CONTROL OF HAZARDOUS ENERGY

INTRODUCTION

Lockout/tagout is a way to ensure electricity or other energy is not turned on or released while servicing or maintaining machines and equipment including piping systems. Other energy includes mechanical, hydraulic, pneumatic, chemical, thermal, and gravity. Release of uncontrolled hazardous energy can result in serious injury or death.

APPLICABILITY

This program establishes the minimum requirements for the lockout/tagout of machines and equipment, as defined by WAC 296-803. It shall be used to ensure machines and equipment are isolated from all potential energy sources and locked out and/or tagged out before employees perform servicing or maintenance activities where the unexpected energization, start-up, or release of stored energy could cause injury.

RESPONSIBILITIES

Tasks in the Lockout/tagout (LOTO) Program are as follows:

Safety and health professionals will:

- Provide assistance in reviewing current lockout/tagout procedures
- Provide training

Each department, division, and work group is responsible for identifying all machines or equipment that require the use of a lockout/tagout procedures before any service or maintenance is performed. Specific protocols for machines and equipment must be prepared before service or maintenance is conducted.

Supervisors are responsible for ensuring that:

- Authorized and affected employees are trained on current on LOTO procedures.
- Retraining is provided when there is a change in job assignment, machine/equipment, energy control procedures, or any deviations in procedures.
- LOTO devices and tags are available and in good working order.

Employees are responsible for:

- Following the LOTO procedures.
- Notifying immediate supervisors of any equipment problems or safety concerns that occur.

TRAINING

Each employee participating in activities of LOTO shall be trained in the safety significance of those procedures. All affected new, transferred, and other

employees whose work operations are or may be in the area shall be trained in the purpose and use of the LOTO.

Training will include:

- An overview of general requirements of WAC 296-809
- Roles and responsibilities surrounding LOTO procedures
- Types of energy sources and energy isolating devices
- A review of any operations where LOTO procedures may be conducted
- Location of tags, devices, and personal protective equipment (PPE)

Training will be provided periodically and retraining as needed.

DEFINITIONS

Affected employee - Employees whose job requires them to operate or use a machine or equipment on which servicing, or maintenance is being performed under lockout or tagout, or whose job requires them to be in an area potentially influenced by the servicing or maintenance being performed.

Authorized/designated individual - An individual who is trained, qualified, and authorized by management to perform a specific assignment. This authority and responsibility include deactivating and locking or tagging out equipment and/or systems, in compliance with WAC 296-803 and this lockout/tagout program, when servicing or maintenance activities could create exposure for the authorized person or other affected employee(s).

Capable of being locked out - An energy-isolating device is capable of being locked out if it has a hasp or other attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy-isolating devices are capable of being locked out if lockout can be achieved without the need to dismantle, rebuild, or replace the energy-isolating device or permanently alter its energy control capability.

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

Energy-isolating device - A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: A manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors and, in addition, no pole can be operated independently; a slide gate; a slip blind; a line valve; a block; and any similar device used to block or isolate energy. The term does not include a push button, selector switch, remote control switches, automatic circuit activating devices, and other control circuit type devices.

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

Lockout - The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the controlled equipment cannot be operated until the lockout device is removed.

Lockout device - A device that utilizes a lock, either key or combination type, to hold an energy isolating device in the safe position.

Servicing and/or maintenance - Work activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning, or clearing of machines or equipment, and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or startup of the equipment, or release of hazardous energy.

Tagout - The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the 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 of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed in accordance with approved procedures.

GENERAL LOCKOUT/TAGOUT REQUIREMENTS

1. Before an employee performs any repair, maintenance or adjustment on any equipment or utility where unexpected energizing, start up, or release of stored energy could occur, the energy source must be isolated/rendered inoperative and then locked and tagged out in that position.

2. If an energy isolating device is not capable of being locked out, the authorized servicing person shall utilize the tagout system.

3. Whenever major replacement, repair, renovation, relocation, or modification of machines or equipment is performed, and whenever new machines or equipment are installed, energy isolating devices for such machines or equipment shall be designed to accept a lockout device.

4. The unauthorized removal of the tag, or the operation or use of equipment or machines which have been tagged out, is cause for disciplinary action.

PREPARATION FOR LOCKOUT/TAGOUT

A survey of each affected area must be completed prior to implementing the locking and tagging out procedures to identify all switches, valves, controls, or other energy isolating devices that may need to be locked or tagged out. More than one energy source may be involved and in need of identification.

A re-inspection of these controls or energy sources shall be done at least annually to ensure that the procedures and requirements of this program are met. Both initial and re-inspections shall be documented. A copy of this report will be forwarded to the employee's respective Safety Office. A blank report is included in Attachment 1. This report shall include:

1) Identity of the machine or equipment

2) Location

3) Type of energy involved

4) Job title of employees authorized to lockout/tagout equipment

5) Job title of employees affected by lockout/tagout

6) Isolation method

7) Isolation Location

LOCKOUT/TAGOUT TAG

Tags must be used for both lockout and tagout only. The tag will be completed and installed by authorized lockout/tagout personnel. Tags shall meet the following standards:

1) The tag shall be of a durable material and shall identify by name, the person applying the tag and date.

2) The tag shall warn against hazardous conditions and include a legend such as: "Do Not Start", "Do Not Operate", or other such warnings.

3) The tag will be completed and installed by the authorized locking or tagging out person.

4) Tags shall be used in conjunction with locks wherever possible. Each lock should have only one key that remains in the possession of the employee using the lock.

5) Tags and lock out devices shall be standardized.

6) Tags and locks shall be of substantial strength to prevent removal without

the use of excessive force.

LOCKOUT/TAGOUT PROCEDURES

Whenever a tag is used to tag out equipment or machines, the following procedures will be followed:

1) Notify all affected employees that a lockout/tagout system is going in effect and the reason. The authorized employees shall know the type and magnitude of energy that the equipment or machine uses and understand the hazards presented.

2) If the equipment or machine is operating, shut it down by the normal stopping procedures.

3) Operate the switch valve or other energy-isolating device so that the equipment is isolated from its energy source. Stored energy such as in springs, elevated machine members, rotating flywheels, hydraulic systems, air, gas, steam, or water pressure must be dissipated or restrained by repositioning, blocking, bleeding, etc.

4) Lockout/tagout the energy-isolating device with assigned individual locks/tags.

5) After ensuring that no personnel are exposed, operate the normal operating control to make certain the equipment will not operate. CAUTION: Return operating control to the "off" or "neutral" position after the test.

The equipment or machine is now locked out or tagged out and service or maintenance may begin.

RESTORING EQUIPMENT OR MACHINES TO NORMAL OPERATIONS

1. After servicing or maintenance is complete and the equipment is operationally intact and ready for normal operations, check the area around the equipment to ensure there is no exposure to the hazard of restart. All affected employees are notified that the lockout device has been removed.

2. After all tools have been removed from the equipment or machine, the guards reinstalled, and employees are clear, remove all lockout/tagout devices. Operate the energy-isolating device to restore energy to the equipment or machine. Ensure the equipment or machine is operating correctly as specified by the manufacturer.

3. Each lockout or tagout device shall be removed from each energy-isolating device by the employee who applied the device. Exception: When the authorized employee who applied the lockout or tagout device is not

available to remove it, that device may be removed by the supervisor of the authorized employee if:

A. The supervisor verifies that the authorized employee who applied the device is not at the facility.

B. A reasonable effort has been made to contact the authorized employee regarding the removal of the lockout/tagout device.

C. The removal of locks and/or tags is accomplished by an approved supervisor trained in lockout/tagout practices and following procedures one and two above.

D. The authorized employee is informed that the device was removed upon returning to the facility before they resume job functions.

PROCEDURE INVOLVING MORE THAN ONE PERSON

In the preceding steps for lockout/tagout, if more than one person is required to lockout/tagout equipment, each shall place their own personal lockout/tagout devices on the energy-isolating device. When an energy-isolating device cannot accept multiple locks or tags, a multiple lockout/tagout device (HASP) may be used. If lockout is used, a single lock may be used to lockout the equipment or machine with the key being placed in a lockout box or cabinet which allows the use of multiple locks to secure it. Each employee will use their own lock to secure the box or cabinet. As each employee no longer needs to maintain the lockout protection, that employee will remove their own lock from the box or cabinet.

PROCEDURE INVOLVING SHIFT OR PERSONNEL CHANGE

When lockout/tagout procedures are in use and overlaps a shift change or a change in personnel performing the job task, the oncoming employee will apply their own lockout/tagout device at the lockout position on the equipment or machine, if possible, prior to the removal of the device of the outgoing employee. Both employees must be present at the lockout/tagout change. Outgoing employees will strike their name from the warning tag check list and oncoming employees will place their name on the warning tag check list. All other procedures remain the same.

OUTSIDE PERSONNEL

1. Whenever outside personnel, such as contractors, are to be engaged in activities covered by this program, the King County employee and the outside employer must inform each other of their respective lockout/tagout procedures.

2. The outside employer must ensure that all outside personnel comply with all requirements of King County's lockout/tagout procedures.

3. Deviations from the King County's control program are not permissible

without specific prior approval.

PERIODIC INSPECTION

The supervisor or designee will conduct a periodic inspection of the energy control procedures at least annually to ensure that the procedures and requirements of this program are being followed.

- The inspection will be performed by an authorized employee other than the persons using the energy control procedure being inspected.
- The inspection and follow up action will identify and correct any deviation or inadequacies observed.
- The inspection will include a review of energy control procedures used by authorized employees for specific lockout/tagout of equipment or machines serviced, maintained, or repaired by the employee.

All inspections will be documented by written report. A copy of the report will be forwarded to the assigned safety and health professional. If unsure who that is, please contact Central Safety at centralsafety@kingcounty.gov. The report shall include:

- Identity of the machine or equipment
- Date of inspection
- Employees included in the inspection
- The person performing the inspection

ATTACHMENT 18-1

LOCKOUT/TAGOUT CHART

Date: _____ Dept./Div.: _____

EQUIPMENT TYPE	LOCATION (ADDRESS, BUILDING, OR ROOM)	ENERGY HAZARD (TYPES OF POWER)	ISOLATION METHOD	ENERGY ISOLATION LOCATION	AUTHORIZED EMPLOYEES (JOB TITLE)	AFFECTED EMPLOYEES (JOB TITLE)

EXAMPLE: COMPLETED LOCK OUT TAG OUT CHART

Date: _____ Dept./Div.: _____

EQUIPMENT TYPE	LOCATION (ADDRESS, BUILDING OR ROOM)	ENERGY HAZARD (TYPES OF POWER)	ISOLATION METHOD	ENERGY ISOLATION LOCATION	AUTHORIZED EMPLOYEES (JOB TITLE)	AFFECTED EMPLOYEES (JOB TITLE)
Welding shop exhaust fans	Welding shop	120 Volts Rotating fan blades	Tagout	Switch box on west wall near door	Welder Electrician	Welder Electrician
Two Heater Fans	Welding shop near ceiling	208 Volts Rotating fan blades Hot heating elements	Lockout & Tagout	Switch box adjacent to heater	Electrician HVAC Engineer	Welder Electrician HVAC Engineer
Arc Welder	Shop Area	208 Volts	Lockout & Tagout	North wall, middle of shop	Electrician Welder	Electrician Welder

Section 19: CONFINED SPACE ENTRY PROGRAM

INTRODUCTION

A confined space is a space that meets all the following conditions:

- Large enough for a person to fully enter and perform work
- Has a limited means of entry or exit
- Not designed or equipped for continuous occupancy

A permit required confined space is one that has one or more of the following hazards or characteristics:

- Contains or has a potential for a hazardous atmosphere
- Contains a material that could drown or cover an entrant
- Has an internal configuration that could trap or asphyxiate an entrant by inwardly converging walls of a floor that slopes downward to a smaller cross section
- Contains any physical hazard, including engulfment, electrical shock, or moving parts
- Contains any other recognized serious safety or health hazard

Confined spaces with these hazards can cause serious injuries or death for the entrant and people who may try to rescue the entrant. Rescuers not trained to recognize potential confined space hazards commonly succumb to the same hazard upon entry, such as a deadly atmosphere.

APPLICABILITY

It is mandatory that employees enter a confined space only after they have been trained, the space has been evaluated, a confined space entry permit or alternate method documentation has been completed (for permit required confined spaces), and all other safety and health considerations have been met.

RESPONSIBILITIES

Safety and health professionals will:

- Provide technical assistance to divisions and departments in implementing this procedure
- Review addenda to this policy
- Assist each division or department in annual program evaluation as requested

Each division or department with employees entering confined spaces must develop a written document identifying all of the confined spaces and determine if those spaces have hazards that make them permit spaces and specifying the required entry procedures. Otherwise, the permit-required confined space procedure in this section shall be followed when entering any confined space.

Each division or department with employees who may inadvertently enter confined spaces must identify and provide training to those employees to

recognize the spaces, potential hazards, and not to enter those spaces. These employees include but are not limited to utility workers, construction project managers, engineers, environmental inspectors/investigators, environmental scientists, sheriffs, and building construction inspectors.

Each Division or Department will:

- Designate a Confined Space Program Administrator
- Develop a Written Program (customizing this Section 19 on Confined Space Entry is acceptable). See attachment #1 to ensure all required elements of the written program are included.
- Develop and implement the means, procedures and practices necessary for safe entry into permit spaces
- Establish and ensure adequate training for a confined space rescue team or have written agreement with an emergency rescue service that covers all permit-entry confined spaces
- Submit a copy of the program to the safety and health professional for review. If the assigned safety and health professional is not known, please contact Central Safety at centralsafety@kingcounty.gov.
- Have the primary responsibility to identify and evaluate all confined spaces in workplaces under their control and to determine which shall be permit required
- Be responsible for implementing this policy and procedure
- Ensure that employees receive the training necessary to have the knowledge, skills and understanding to carry out the duties associated with their role in permit space entry
- Conduct required evaluations of program effectiveness

Supervisors will:

- Ensure no unauthorized entry into permit spaces
- Ensure employees are aware of the permit spaces they may encounter and the precautions that must be followed
- Ensure employees are trained in confined space before any task involving confined space is assigned

Employees will:

- Be aware of the permit spaces they may encounter
- Perform only authorized entries
- Follow all procedures precisely
- Participate in all training

TRAINING

All employees with the occupational responsibility or that may possibly enter confined spaces, and their supervisors, must receive training.

In-depth training is required for employees who enter confined spaces (entrants), employees who assist entrants (attendants), and their supervisors. All employees who may possibly enter confined spaces require training to recognize confined spaces, the potential hazards of those spaces, and be instructed not to enter them.

DEFINITIONS

Confined Space - Any location that has all the following characteristics:

1. Large enough and arranged so an employee could fully enter the space and work
2. Has a limited or restricted means for entry or exit
3. Is not primarily designed for continuous human occupancy

Permit Required Confined Space (permit space) - A confined space that has one or more of the following characteristics:

1. Contains or has a potential to contain a hazardous atmosphere
2. Contains a material with the potential for engulfing (drowning or covering) an entrant into the confined space.
3. Has an internal configuration that could allow an entrant to be trapped or asphyxiated by inwardly converging walls, or by a floor which slopes downward and tapers to a smaller cross-section.
4. Contains any physical hazard. This includes any recognized health or safety hazards including engulfment in solid or liquid material, electrical shock, or moving parts.
5. Contains any other recognized serious safety or health hazard
6. Includes, but is not limited to, storage tanks, process vessels, pits, vats, wells, sanitary sewers, storm water sewers, sumps, boilers, ventilation and exhaust ducts, tunnels, underground utility vaults and pipelines.

Permit Space Entry Procedures - Steps that must be used in a permit space where atmospheric hazards are present or potential, and not entirely and safely controlled, or there are physical hazards not entirely or safely controlled.

Alternative Method Procedures - Procedures that may be used in a permit space, where prior to entry all physical hazards have been eliminated and any atmospheric hazards present or potentially present during the entry can be entirely and safely controlled, with the use of forced air ventilation.

GENERAL REQUIREMENTS

Unauthorized entry into permit spaces is forbidden.

Identification and Determination of Permit Required Confined Spaces

Initial evaluation and designation of permit spaces and work procedures shall be performed by a Competent Person.

King County recognizes all confined spaces as permit spaces, requiring full permit procedures, until assessed and determined otherwise. Once a confined space is assessed, and if certain specified conditions are met, the confined space may be entered under alternative methods (see Confined Spaces and Entry Procedures).

Where feasible, permit spaces must have a label or sign affixed at a conspicuous location near all access points. The wording, “DANGER – PERMIT REQUIRED CONFINED SPACE, DO NOT ENTER”, or similar wording will satisfy this requirement. If signage is not feasible, then effective training must be given to employees potentially entering these spaces.

Air Monitoring
Air monitoring will be performed by trained and competent personnel prior to and continuously during entry of any confined space.

The checklist forms in this document shall be used to record initial and subsequent supplemental air monitoring results.

Atmospheric testing shall be performed in the following order:

1. Oxygen (0_2 - 19.5% to 23.5%)
2. Flammability (< 10% LEL)
3. Carbon monoxide (CO < 35 ppm)
4. Hydrogen sulfide (H_2S < 10ppm)

Readings shall be allowed to stabilize long enough to account for response time of instrument and length of sample tube.

Pre-entry testing shall be performed before removal of lid if possible, before any ventilation to assess if a hazardous atmosphere exists. Stratification or inaccessible areas must be taken into consideration. If entry is required to assess atmosphere, a full permit entry is required with extreme caution.

Testing records must be retained for at least one year and audited during the annual program review.

Site calibration and visual inspection of the air monitoring equipment shall be according to the manufacturer’s direction on the same day just prior to use. Additional daily calibration or bump tests with calibration gas may be needed or appropriate.

Training
Training shall be provided:

- Before an employee is assigned to duties under this policy

- When there is a change in confined space operation that presents a hazard for which the employee has not been trained
- When deviations from procedures or inadequacies in the program have been identified

Training shall consist of the following, as a minimum:
- The hazards, controls for entry and health symptoms for adverse effects of some of the atmospheric hazards
- The contents of this policy
- Use, requirements, and limitations of the alternative method procedures
- Use of personal protective equipment
- A review of atmospheric monitoring equipment, including anticipated hazardous conditions and factors which could occur inside or outside the space
- Rescue procedures

Competency Determination and Certification
Each employee shall be determined to be proficient and certified as proficient in their assigned duties (Entrant, Attendant, or Entry Supervisor).

Proficiency Determination: The Confined Space Program Administrator (or respective delegate) can determine employee proficiency by:
- Observing employee performance using safe work procedures and equipment to perform job tasks during training exercises that simulate actual confined space conditions
- A comprehensive written exam
- Any other method that is effective

Proficiency Certification: The certification shall contain each employee's name, the trainer's written or electronic signature or initials, and the dates of training. The certification shall be available for inspection by employees, their authorized representatives, and authorized state regulatory representatives.

Contractors
Division or department representatives shall inform contractors of the following, prior to permitting their entry into confined spaces:
- The workplace contains permit required confined spaces and that entry is allowed only through compliance with a permit required confined space program meeting the requirements of WAC 296-809
- The elements that make the space a permit required confined space program
- Any precautions and procedures that the division or department has implemented for the protection of employees in or near the permit required confined space where contractor personnel will be working

Division or department representatives will debrief the contractor after entry tasks are completed to discuss any hazards or unusual conditions experienced.

CONFINED SPACES – ENTRY PROCEDURES
Alternative Methods

A permit-required confined space may be entered without a permit using alternative methods when monitoring and inspection data supports one of the following:

- All hazards have been eliminated
- All physical hazards have been eliminated and continuous forced air ventilation controls the actual or potential hazardous atmospheres

Qualifications

1. It must be demonstrated that there are no hazards present other than hazardous atmospheres that continuous forced ventilation alone is sufficient to control.

2. Physical hazards, such as electrical, mechanical, natural gas, drowning and engulfment must be eliminated by lock out or blank out procedures.

3. Alternative method procedures may only be authorized for a maximum of one work shift. A new authorization must be made for each work shift.

4. If entry into a permit space is required to obtain the documentation needed to characterize and control hazards in the space, the entry shall be done using the full permit space entry procedures.

5. Activities occurring in the confined space introducing atmospheric hazards must be carefully assessed to ensure no hazard will occur. Some examples of these activities are painting, sand blasting, welding or use of solvents.

6. This entry procedure is not acceptable if respiratory protection is required for entry or for the work performed.

7. Only trained employees shall be allowed to enter the confined space.

Entry Procedure

1. The alternative method checklist shall be used to document the date, location, duration of entry, procedures, conditions of entry, all conditions that require evacuation of the space, and name, title and signature of entry supervisor. This checklist must be kept available to all entrants.

2. The space to be entered shall be isolated using all appropriate means to prevent the introduction of materials or hazardous energies into the

confined space. The space shall be cleaned, purged, flushed, or ventilated to eliminate hazardous atmospheres or conditions.

3. Floor or surface openings shall be promptly guarded to prevent accidental falls of persons or materials.

4. Where ventilation controls are applicable

    a. The internal atmosphere shall be tested and documented in accordance with the air monitoring procedures in Section 4 in General Conditions and Requirements.
    b. Any re-entry requires new air monitoring. During entry, the atmosphere should be frequently retested or continuously monitored to ensure no hazardous atmosphere.
    c. Continuous, forced ventilation shall be used throughout the entry into the space. The ventilation shall be directed to ventilate the immediate area where the employee is or will be present.

Safety Equipment

Divisions or departments shall supply and maintain the following equipment and any additional equipment necessary for safe entry:

- Continuous forced air ventilation supplied by electric or gas-powered blowers of sufficient volume to prevent hazards. Gas powered blowers must have air intakes located away from motor exhaust to prevent any uptake of exhaust. All air intakes must be located in clean air areas.
- Barriers for floor or surface openings
- Personal protective equipment – PPE shall be specified.
- Illumination shall be provided to give adequate light to work safely and exit quickly in case of an emergency.

Divisions or departments shall be responsible for ensuring that all employees are properly trained in using such equipment. Protective clothing and equipment shall be carefully examined to ensure it is in good working order.

FORM 19-1: ALTERNATIVE METHODS DOCUMENTATION
(For a period not longer than one work shift)

Date: _____

Evaluator/Competent person:
Print Name_____
Print Title _____
Signature _____

Location of work _____

Description of space _____

Purpose of entry _____

Time in / time out _____

Entrant(s) _____

Potential atmospheric hazards _____

Physical hazards

____ Engulfment	____ Internal configuration	____ Mechanical
____ Fire	____ Pneumatic	____ Stored energy
____ Electrical	____ Thermal	Other _____

Abatement of physical hazards _____

Is forced air ventilation required? _____

If yes, specify ventilation equipment and amount of ventilation
_____

Space fully ventilated? _____

PPE required _____

Atmospheric test results
Equipment model _____ Serial # _____ Calibration date _____

Location	Time	Oxygen (19.5 – 23.5)	LEL (<10%)	H_2S (<10%)	CO (<35 ppm)

Tests performed by: _____
Other pertinent information:

Full Permit-Required Entry Procedures (High Hazard Entry)

Entry Procedure

1. Prior to entry, the permit space shall be evaluated for potential hazards and the controls necessary to allow safe entry shall be specified.

2. A Confined Space Entry Permit shall be issued prior to entering any high hazard permit required space.

3. Pre-Entry Inspection – Immediately preceding entry to the space, the authorized entrant, attendant and entry supervisor shall thoroughly examine the entry permit and be knowledgeable with the terms, conditions and contents. This shall be done at the entry location.
    a) The pre-entry inspection shall consist of verifying all conditions of the permit have been met and all atmospheric monitoring and other testing has demonstrated acceptable entry conditions.
    b) The entry supervisor shall sign the permit after having completed the pre-entry inspection.
    c) Review emergency and evacuation signals.

4. The space to be entered shall be isolated using all appropriate means to prevent the introduction of materials or hazardous energies into the confined space. Isolation steps shall be specified on the permit. This shall include lockout/tagout procedures.

5. The permit space shall be cleaned, purged, flushed or ventilated to eliminate or control hazardous atmospheres.

6. Any condition which makes it unsafe to remove an entrance cover, such as pressure or high temperature, shall be eliminated before the cover is removed.

7. The opening shall be promptly guarded to prevent accidental falls of persons or materials into the opening.

8. The atmosphere within the space shall be tested and recorded on the permit in accordance with the Air Monitoring Procedures specified previously. The readings shall be recorded on the permit.

9. Continuous forced ventilation shall be used throughout the entry into the confined space. The ventilation shall be directed to ventilate the immediate area where the employee is present.

10. The atmosphere shall be continuously or periodically tested to ensure that ventilation is preventing a hazardous atmosphere. The frequency of testing

shall depend on the initial values measured and expected hazard and documented on the permit.

11. Entry into the confined space shall be prohibited until the entry permit, all necessary tools, equipment, and retrieval systems are available, in place, and ready for use.

12. The use of retrieval systems is mandatory for permit space entry.

Duties of Entry Supervisor

The entry supervisor must perform the following:

1. Know all the potential hazards, including the mode, signs or symptoms and consequences of exposure and the methods to control the hazards.
2. Verify that the entry permit has been properly completed, atmospheric and other testing has been performed with acceptable results, the procedures to be used will allow for safe entry, and all necessary equipment is available and in place before authorizing entry.
3. Terminate entry and cancel the permit when the work has been completed or when acceptable entry conditions are not met.
4. Verify that rescue service is available and that the attendant has the means to quickly summon the service.
5. Remove unauthorized individuals who enter or attempt to enter the permit space.
6. Determine, at intervals dictated by the hazard, that acceptable entry conditions are maintained throughout the permit space entry.

Duties of Authorized Entrant

The entrant must perform the following:

1. Know all the potential hazards, including the mode, signs or symptoms and consequences of exposure and the methods to control the hazards.
2. Properly use all equipment required.
3. Communicate with attendant.
4. Alert the attendant whenever:
    a) Any warning sign or symptom of exposure to dangerous situations is recognized.
    b) A prohibited condition is detected.
5. Exit from the permit space as quickly as possible whenever:
    a) Ordered to evacuate by attendant or entry supervisor.
    b) Any warning sign or symptom of exposure to dangerous situations is recognized.
    c) A prohibited condition is detected.
    d) Any other reason which would prevent safe entry or exit is detected.

If the space is evacuated for any of the above reasons, the permit is void and re-entry is not allowed. The conditions which caused the evacuation shall be recorded on the canceled entry permit. Re-entry is not permitted until the

conditions which caused the evacuation are evaluated, the control procedures and acceptable entry conditions are modified, and a new permit is issued.

Duties of Entry Attendant

The attendant must perform the following:

1. Know all the potential hazards, including the mode, signs or symptoms and consequences of exposure and the methods to control the hazards.
2. Know possible behavioral effects due to hazardous exposure.
3. Maintain an accurate count of authorized entrants in the permit space and ensure the authorized entrants identified on the entry permit are the only persons in the space.
4. Remain at the permit space entry during an entry until relieved by another attendant.
5. Communicate with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space.
6. Monitor activities inside and outside the space to determine safety for entrants to remain in the space and orders entrants to evacuate the permit space if:
    a) A prohibited condition is detected.
    b) A behavioral effect of hazard exposure is detected.
    c) A situation outside the space that could affect entrants is detected.
    d) The attendant cannot effectively and safely perform all these duties.
7. Know how to contact rescue and emergency services and be able to convey detailed directions to the site.
8. Summon rescue and other emergency services as soon as it is determined the entrants may need assistance to escape the space.
9. Take the following actions when unauthorized persons approach or enter a permit space:
    a) Warn the unauthorized person that they must stay away from the permit space.
    b) Advise the unauthorized person that they must exit immediately if they have entered the space.
    c) Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the space.
    d) Document the action on an incident form.
10. Perform non-entry rescue.
11. Does not perform any other duty that may interfere with the primary duty to monitor and protect the authorized entrants.

Using a single attendant to monitor entry into multiple spaces is not authorized.

Entry Permit

The entry permit shall be issued prior to entering the permit-required confined space. The entry permit shall be posted at the entrance to the permit space at all times during entry activities if feasible.

The entry permit shall be completely filled out. It shall list:

1. The phone number and any necessary contact information for rescue and emergency response.
2. The location, specific description, and identification of the space to be entered.
3. The anticipated hazards.
4. The entry purpose and work to be performed.
5. Date, times, and duration of the entry. The duration must not be longer than one work shift. A new permit must be completed for each work shift.
6. Atmospheric testing must be completed before any ventilation or disturbance of the space to determine hazard potential.
7. Initial and subsequent testing must be recorded on the permit or additional data sheets. Frequency of testing must be determined and recorded on permit.
8. Any additional concerns such as lockout locations, isolation procedures or affected divisions or departments.
9. Entry supervisor's signature, to be added after reviewing the permit with entrants and attendants and ensuring conditions are fulfilled and safe entry can proceed.

Other Conditions

Specific atmospheric hazards:
Employees shall not enter or work in any permit space which contains an oxygen deficiency or excess (<19.5% or > 23.5% oxygen), a flammable hazard (>10% LEL), H_2S (>10 ppm), CO (>35 ppm), or any other contaminants which would require the use of supplied air respirators.

When exposures may exceed state permissible exposure limits (PEL), and the use of air purifying respirators is legally permitted, then they may be used in conformance with DOSH regulations. Use of air purifying respirators and filters must be approved by an industrial hygienist. If the assigned industrial hygienist is not known, please contact Central Safety at centralsafety@kingcounty.gov.

Communication Equipment
Communication between entrants and attendant shall be made by voice or radio. At a minimum a cell phone must be used by the attendant for possible communication with rescue or emergency services. Entry is prohibited if no form of immediate communication can be made by phone or radio.

Retrieval System – Harness and Retrieval lines

1. Personnel retrieval tripod or other approved personnel lifting device shall be used if the permit space is a vertical type entry greater than four (4) feet deep.

2. A full body, fall protection harness shall be worn in vertical type permit spaces. This harness shall be equipped with a quick release device to remove the retrieval line in case of entanglement.
3. Harnesses shall not contain conductive attachments if work is to be performed on electrical utilities.
4. The harness shall be connected to a retrieval line. The retrieval line shall be attached so the non-entry rescue can begin as soon as the attendant becomes aware of an emergency.

Illumination and tools

Illumination shall be provided to give adequate work and emergency exiting light. Temporary lighting shall be equipped with adequate guards to prevent contact with the bulbs.

If there is a potential for flammable vapors or gasses, then all lighting shall be approved for Class 1, Division 1 atmospheres. Tools may also need to be spark resistant and intrinsically safe.

Emergencies

1. Under no circumstances shall King County employees attempt to enter a confined space to perform entry rescue operations. If an emergency requires an entry rescue, the attendant shall immediately notify the designated rescue team or rescue service.

2. It shall be determined that an entry rescue team or rescue service is available well before entry. Calling 911 is not a valid option for emergency entry rescue, unless the agency has reviewed each confined space, understood associated hazards, and there is documentation that the outside entry rescue team activated by the 911 call has agreed and are available at a moment's notice to be the emergency entry rescue team.

3. If non-entry rescue can be performed by means of the retrieval line and harness, the attendant shall utilize such equipment for this purpose.

4. If a rescue service is not available, this situation must be discussed with the assigned safety and health professional well in advance before any entry is planned. If the safety and health professional is not known, please contact Central Safety at centralsafety@kingcounty.gov.

5. Before designating a rescue service, it must be determined if the service is able to respond in a timely manner and is properly trained and equipped.

6. Inform the rescue service of the hazards they may confront when called upon to perform a rescue.

7. Provide the rescue service with access to all permit spaces so they may develop appropriate rescue plans and practice operations.

8. The rescue service must agree to notify the Confined Space Program Administrator (or their delegate) if the rescue service becomes unavailable.

FORM 19-2: CONFINED SPACE ENTRY PERMIT

Location of space _____

Description of space _____

Purpose of entry/work_____

Date _____ Time/shift _____

Hazard(s)_____

Emergency/Rescue phone # _____ Name _____

Required PPE/Equipment

___ Head protection	___ Respirator	___ Eye protection
__ Hearing protection	___ Gloves	___ Boots
___ Coveralls	___ Full body harness	___ Tripod/Fall arrester
___ Communication tools	___ Blower	Others _____

Air Monitor Model _____ Serial # _____

Pre-Entry Monitoring

	O_2 19.5% – 23.5%	CO < 35 ppm	LEL < 10%	H_2S < 10 ppm	Other
Before entry opening					
After entry opening					
After ventilation					

Blower type/CFM _____

Blower placement/efficiency _____

Other requirements _____

Have the following precautions been taken?	YES	NO	NA
1. Has the space been checked for contamination?	__	__	__
2. Are all lines connected to space properly isolated?	__	__	__
3. Is all electrical equipment locked out?	__	__	__
4. Is all mechanical equipment immobilized?	__	__	__
5. Is a hot work permit needed?	__	__	__
6. Non-entry rescue equipment set up?	__	__	__
7. All PPE on site?	__	__	__
8. Communication procedure set up?	__	__	__
7. Rescue and emergency personnel plan?	__	__	__
8. Continuous air monitoring required?	__	__	__

I have checked each step in preparing to do this entry and am satisfied that this permit accurately represents the steps taken to assure safe confined space entry:

	Full name (print)	Signature	Date	Time
Entry Supervisor				
Attendant				
Entrant 1				
Entrant 2				

Entry Monitoring results - Permit is revoked if any reading exceeds these limits:

Time	O_2 19.5%-23.5%	CO < 35 ppm	LEL < 10%	H_2S < 10 ppm	Other

PERMIT-REQUIRED CONFINED SPACE LOCATIONS LIST

Where feasible, each division or department must identify permit-required confined spaces and their locations. When similar types of spaces e.g., comparable size and depth public sewer manhole pits is ubiquitous, that type of space can be identified by specific description instead of individual identification and location. A Confined Space Evaluation Form is included at the end of this section. Contact your safety and health professional for advice and direction for classifying spaces. If the safety and health professional is not known, please contact Central Safety at centralsafety@kingcounty.gov.

FORM 19-3. CONFINED SPACE EVALUATION

Completed by A Competent Person		
Evaluator Name:		Date:
Job Title:	Email:	
Building/Area:	Room #	
Description of Space:		
Check if the following statements apply to the space being evaluated		
Confined Space		
☐ Large enough and arranged so an employee can fully enter the space and work		
☐ The space has limited or restricted entry or exit		
☐ The space is NOT primarily designed for continuous human occupancy		
If all states are checked, the space is a Confined Space.		
Permit Required Confined Space		
☐ 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		
Contains a physical hazard or any other health safety hazard that could impair the ability to self-rescue or result in a situation of immediate danger of life or health. Check all that apply: ☐Mechanical ☐ Chemical ☐ Thermal ☐ Electrical ☐ Steam ☐ Biological ☐ Gravity ☐ Hydraulic ☐ Pneumatic ☐ Other _____		

Current Status		
Is the area currently posted as a confined space?	☐ Yes	☐ No
Is the area currently posted as a Permit Required Confined Space?	☐ Yes	☐ No
Additional Comments:		

Send completed forms to the assigned Safety and Health Professional

Section 20: FALL PROTECTION

INTRODUCTION

Employees working or walking on elevated surfaces where a fall hazard may be present must have an approved form of protection from falls. Permanent types of protection, such as guardrails, walls, parapets, or covers for surface openings should typically be present. Construction, maintenance, or inspection work may lead to areas or situations where permanent protection is not present and, in those cases, and any others, an adequate form of fall protection is required.

APPLICABILITY

This program applies to all King County employees exposed to:

- Fall hazards of four (4) feet or more.
- Any significant openings in walking/working surfaces.
- Any height where there could be a fall onto projections, items or machinery that could cause serious injury.

Exemptions to the four-foot height are described below. If there is any conflict or overlap between this program with any other regulations or policies, the provision that is more protective of the employee and/or public safety shall apply. This program supplements, but does not replace, state regulations regarding fall protection and prevention.

All employees must be trained before being assigned or permitted at any area of a worksite that involves exposure to fall hazard as defined by this program.

A written fall protection work plan is required where a fall hazard of 10 feet or greater exists.

RESPONSIBILITIES

Safety and health professionals:

- Coordinate with supervisors and leads to plan, schedule and implement training required according to this program.
- Provide technical assistance as requested to managers, supervisors or crew leads designing more complex fall protection plans.

Management:

- Department directors, division and section managers, oversee compliance including providing adequate funding for training and equipment required by this program.

Supervisors and Leads:

9. Consult with the assigned safety and health professional for technical assistance with more complex fall protection plans. If the safety and health professional is not known, please contact Central Safety at centralsafety@kingcounty.gov.
- Coordinate with the assigned safety and health professional to arrange required training for employees who may be exposed to fall hazards during construction or maintenance activities.
- Maintain copies of training completion records.
- Coordinate refresher training when there is a change in the fall protection regulations, new fall protection equipment is purchased, and when any deficiencies are noted in the fall protection procedures.
- Assist employees under their supervision in becoming familiar with and in adhering to all provisions of this program and any relevant regulations.
- Require that a fall protection work plan is completed for each construction or maintenance-related activity where a fall potential of greater than 10 feet exists.

Employees:

- Follow the provisions of this program and all applicable fall protection work Plans
- Daily inspect their assigned equipment prior to use at each job site
- Read and be familiar with manufacturers' operating manuals for all fall protection equipment they use
- Report immediately to their supervisor or crew chief any fall protection equipment, facility, structure, or work practice that poses a fall hazard to themselves or other employees

DEFINITIONS

Competent Person: 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 requirements contained in WAC 296-880 regarding the installation, use, inspection, and maintenance of fall protection equipment and systems.

Construction Work: All or any part of excavation, construction, erection, alteration, repair, demolition, and dismantling of buildings and other structures and all operations in connection therewith; the excavation, construction, alteration and repair of sewers, trenches, caissons, conduits, pipe lines, roads and all operations pertaining thereto; the moving of buildings and other structures, and to the construction, alteration, repair, or removal of wharfs, docks,

bridges, culverts, trestles, piers, abutments or any other construction, alteration, repair or removal work related thereto.

Fall Arrest System: A system designed to stop a free fall from elevation. A fall arrest system can be a personal fall arrest system worn by the employee, safety nets, or catch platform.

Fall Protection Work Plan: A written planning document which identifies all areas on the job site where a fall hazard of 10 feet or greater exists. The plan describes the methods of fall protection to be utilized to protect employees, and includes the procedures governing the installation, use, inspection, and removal of the fall protection method(s) selected by King County (see Attachment 1).

Fall Restraint System: An approved device and any necessary components that function together to restrain an employee in such a manner as to prevent that employee from falling. Fall restraint systems include guardrails, walls 39” or higher, or personal fall protection systems.

Hole: A gap or void two inches or more in its least dimension, in a floor, roof, or other surface.

Infrequent: The task or job is performed only on occasion, when needed (e.g., equipment breakdown), on an occasional basis, or at sporadic or irregular intervals.

Personal fall arrest system: Restraint system with approved safety equipment components such as body harnesses, shock absorbing lanyards, deceleration devices, horizontal and/or vertical lifelines and anchorages, interconnected and rigged as to arrest a free fall. A body belt shall not be used as part of a personal fall arrest system. Properly designed and placed nets or catch platforms can be fall arrest systems.

Safety Watch System: A type of fall protection system in which a competent person is responsible for recognizing and warning one employee of a fall hazard. One employee is conducting non-construction, both infrequent and temporary work, on a low pitch roof not within six feet of the roof edge while a second employee, a properly trained competent person, acts as the safety watch. The safety watch must also have full control over the work, have a clear view of the worker, maintain normal voice communication, and perform no other duties. There can only be two people on the roof and no mechanical equipment can be in use while the safety watch system is being used.

Temporary: The duration of the task the worker performs is brief or short.

Walking/Working Surface: Any surface, whether vertical or horizontal, on which an employee walks or works to perform his/her job duties including, but not limited to, floors, roofs, ramps, or bridges.

Wall Opening: An opening at least 30 inches in height and 18 inches wide, in any wall or partition, through which persons may fall, such as an opening for a window or chute.

Warning Line System: A barrier erected on a walking and working surface or a low pitch roof (4 in 12 or less), to warn employees that they are approaching an unprotected fall hazard(s). The warning line must consist of rope, wire, or chain and supporting stanchions and must be erected 15 feet or less from the unprotected edge. The line must be flagged at 6 foot intervals with high visibility material, must have a minimum tensile strength of 500 pounds, and must be supported so that it is equal to or between 36 inches and 45 inches in height (including sag). Stanchions must be capable of resisting 50 pounds applied horizontally 30 inches above the working surface in the direction of the unprotected edge. The line must be attached to the stanchions so that pulling on one section of the line does not result in slack in adjacent sections. Points of access, materials handling areas, and storage areas must be connected to the work area by an access path formed by two warning lines. When the path to a point of access is not in use, it must be blocked with a warning line meeting the same requirements of the overall warning line.

REQUIRED USE

An appropriate type of fall protection is required for the following:

- Any walking/working surface with edges 4 feet or higher. Guardrails are required unless they are infeasible.
- Any walking/working surface of any height where there could be a fall onto projections, items or machinery that could cause serious injury. Guardrails are required unless they are infeasible.
- Openings or holes in walking/working surfaces must be covered or have guardrails.
- Wall openings, from which there is a drop of more than 4 feet, and the bottom of the opening is less than 39 inches above the working surface, shall be guarded.

Exceptions to the 4-foot rule, which require fall protection at 10 feet and higher apply to the following:

- For roof installation or maintenance work on low pitched roofs of 4-in-12 pitch or less. Personal fall arrest/restraint systems or a warning line system may be used.
- For top plate, structural steel, joist, truss installation/work or work on scaffolds.
- Leading edge work, where floor or roof surfaces are being attached and the height over the edge of the surface is 10 feet or more. Personal fall

arrest/restraint systems or a warning line system may be used.

Personal fall arrest systems are required in articulated boom lifts and as required by manufacturers of scissor lifts (usually scissor lifts that lift extraordinarily high).

The following are exemptions to the 4-foot rule where fall protection is not required. These exemptions do not apply on steep pitch roofs, where construction work is underway, or when fall protection systems have been installed and are available for workers to use for pre-work and post-work inspections, investigations, or assessments.

- During initial installation of the fall protection anchor prior to engaging in any work activity, or the disassembly of the fall protection anchor after all work activities have been completed.
- When employees are inspecting, investigating, or assessing roof level conditions or work to be performed only on low pitch roofs prior to the start of any work or after all work activities have been completed.

Examples of activities recognized as inspecting or assessing include:

- Measuring a roof to determine the amount of materials needed for a project.
- Inspecting the roof for damage without removing equipment or components.
- Assessing the roof to determine what method of fall protection will be provided to employees.

Examples of activities NOT recognized as inspecting or assessing include:

- Delivering, staging, or storing materials on a roof.
- Persons estimating or inspecting on roofs that would be considered a “hazardous slope”.

When work, other than construction work, is performed 15 feet or more from the roof edge, the employer is not required to provide any fall protection, provided the work is both infrequent and temporary and the employer implements and enforces a work rule prohibiting employees from going within 15 feet of the roof edge without using fall protection.

PROCEDURES

Engineering Controls

Where feasible, fall hazards will be eliminated by installing temporary guardrails or covering floor openings.

Fall Protection Work Plan

A Fall Protection Work Plan shall be developed for any job task (construction or maintenance activity) that exposes an employee to a fall hazard of 10 or more feet. The Fall Protection Work Plan must be developed and evaluated on a site-by-site basis and shall address:

1. A brief description of the worksite and location of all fall hazards in the

affected work area.

2. Description of the method of fall arrest or restraint to be provided.

3. Description of the correct procedures for the assembly, maintenance, inspection, and disassembly of the fall protection system to be used.

4. Description of the correct procedures for the handling, storing, and securing of tools and materials.

5. Description of the method of providing overhead protection for workers who may be in, or pass through, the area below the worksite.

6. Description of the rescue plan for prompt, safe removal of injured workers, including, but not limited to, the following:

    a) Emergency telephone numbers for medical and rescue assistance.

    b) Site address and specific directions for getting to the site.

    c) Location of first-aid kit.

    d) Special equipment needed for rescue, such as cranes, ladders, etc.

    e) Location and availability of personnel trained and competent in rescue procedures.

EQUIPMENT

Each employee who is assigned to work in an area where there is a fall hazard of 4 feet or more shall be trained by the supervisor or lead on the specific equipment that will be used at that site, as identified in the fall protection work plan.

The manufacturer's written instructions on the use, inspection and maintenance of all fall protection equipment must be kept in a specific and easily accessible location (e.g., the crew office) and the employees must be aware of the instructions.

Safety nets must be inspected at least once per week according to manufacturer's specifications for wear, damage, and other deterioration. Safety nets must also be inspected after safety nets after any occurrence which could affect the integrity of the safety net system. Any and all defective components must be removed from service.

A Class III full body harness is the only personal fall protection device approved by this policy for fall arrest protection.

GENERAL PROVISIONS
The Fall Protection Work Plan must be available on the job site for inspection by on-site workers, the Department of Labor and Industries, or safety and health professionals.

If at any time an employee has a question concerning safety in a fall hazard situation, the employee shall leave the area and discuss the concern with a supervisor or lead. If the employee feels unsafe in a situation requiring fall protection equipment, they should immediately discuss this concern with the supervisor and/or consult with safety and health professional. If the safety and health professional is not known, please contact Central Safety at centralsafety@kingcounty.gov.

Employees must receive training required by the fall protection program and be trained on the specific equipment used before performing work involving falling hazards. If employees are not trained in the use of fall protection equipment, they shall not work in areas in which a fall hazard exists.

TRAINING
Supervisors and leads will coordinate with their safety and health professional to ensure that employees who may be exposed to fall hazards receive training from a competent person. If the safety and health professional is not known, please contact Central Safety at centralsafety@kingcounty.gov.

Fall prevention and protection training shall include instructions on the following topics:

1. Types of fall hazards that may be encountered during various field activities

2. Components of the written Fall Prevention and Protection Program

3. Components of the fall protection work plan form and instructions on how to complete it.

4. Fall arrest and prevention equipment required, including its use, handling, storage, maintenance and inspection.

5. Procedures employees must follow in the event of a fall-related accident

RECORDKEEPING
Copies of all fall protection work plans, revisions to existing plans and training records shall be kept by supervisors or leads.

Form 20-1

EMPLOYEE FALL PROTECTION WORK PLAN

Department/Division_____

Shop/Unit_____Date_____

Location of Fall Hazard_____

Brief Description of Work and Hazard

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

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_____

Fall Hazards: (check all that apply)

Roof:

1. Roof over 10' above next level ___
2. Flat or sloped with 4/12 pitch and under ___
3. Sloped with over 4/12 pitch ___
4. Leading edge work (within 6') ___

Openings:

5. Unguarded sides/edges ___
6. Skylights ___
7. Hatches ___
8. Shafts ___
9. Other ___

Access:

10. Roof Hatch ___
11. Portable ladder ___
12. Fixed ladder ___
13. Scaffolding ___
14. Powered personnel lift ___
15. Swing staging ___
16. Bosun chair ___

Other:

17. Potential overhead hazard ___
18. Electrical hazard ___
19. Other ___

Methods of Protection: (check all that apply)

1. Parapet walls 36-42" high ___
2. Guardrails ___
3. Top rail, mid rail, toe boards ___
4. Vertical/horizontal lifeline ___
5. Equip safety line/backstay ___
6. Lifeline/Backstay anchor points ___
7. Lanyard and harness ___
   (a) Fall arrest ___
   (b) Fall restraint ___
8. Warning line ___
9. Catch platforms/safety nets ___
10. Hard hats ___
11. Pedestrian barricades ___
12. Fully decked work surface ___
13. Fully decked overhead barrier ___
14. Guardrail screen barrier ___
15. Equipment tag/safety lines ___
16. Radio ___
17. Other ___

[If "other" is marked under Fall Hazards or Methods of Protection, provide a detailed description in Safety System or on an attached sheet.]

Engineering:
Does this job/building require design/engineering changes for safe work?
NO ____ YES ____

Installation Checklist:	YES	NO	Not required
System and components installed	___	___	___
Overhead hazard protection installed	___	___	___
Electrical/Mechanical protection installed	___	___	___
Designated loading area established	___	___	___
Material storage 10 feet from perimeter	___	___	___
System and components inspected	___	___	___
Personal protection equipment inspected	___	___	___

Safety System:
(Describe system and component assembly, especially for a temporary installation) _____

Overhead Hazard Protection:
(Briefly describe additional steps needed for overhead hazard protection such as barriers, ground fencing, scaffold fencing)
_____

Electrical/Mechanical Safety:
(Briefly describe additional steps needed to provide electrical and/or mechanical safety)
_____

Rescue Planning & Emergencies:

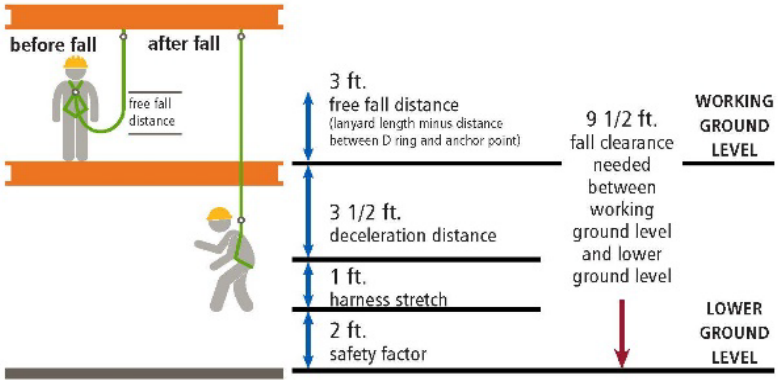
Select or describe applicable methods for prompt, safe rescue of fallen employees in fall arrest systems.
☐ Technical Rescue Services
☐ Self-Rescue Device(s)
☐ Moveable Stairs/Step Ladder
☐ Aerial Lift
☐ Other: _____

Departments are highly encouraged to equip full body harnesses with suspension trauma straps to lower the potential severity of an arrested fall. Always call 911 or radio department/division communications center if a fall occurs. If in the City of Seattle and the worker is suspended by fall protection equipment, ask for the Seattle Fire Department LINE RESCUE.

Determine Fall Clearance (for Fall Arrest Systems only)
If a worker falls, when wearing a fall arrest system, what is the minimum fall clearance from the anchor point to the worker's feet including a 2 feet safety factor? (Calculate below). The calculated minimum fall clearance of a specific fall protection system may **never** be equal to or greater than the distance between the working ground level and the lower level.

Description	**Distance (ft.)**
Lanyard length or free fall distance for self-retracting lifeline (SRL)	
Deceleration Distance (3.5 ft for most lanyards, usually included in free fall distance for SRL)	
Worker's height from D-ring to feet	
Harness stretch	1 foot
Safety factor	2 feet
Minimum fall clearance (sum of above)	

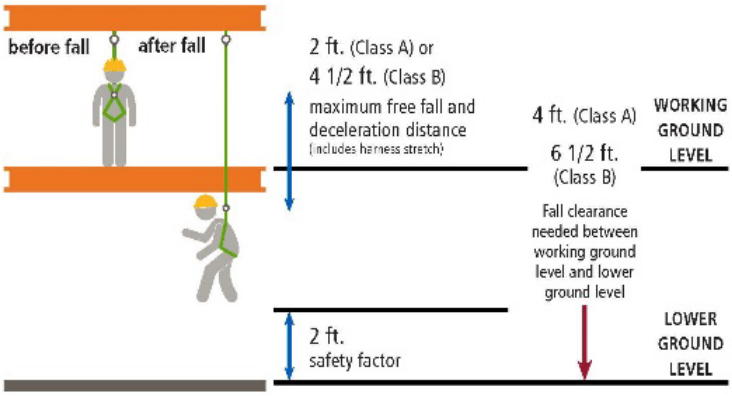
Calculating Fall Clearance using a Shock-Absorbing Lanyard Example:



- First, determine the length of free fall distance (length of the lanyard minus the distance between your D ring and the anchor point above you). In this example, we've determined the free fall distance to be 3 feet.
- Next, add the maximum elongation of the shock absorber during deceleration (3.5 feet).
- Then, add Harness stretch of 1 foot and a safety factor of 2 feet to allow for the possibility of an improperly fit harness, a taller than average worker and/or a miscalculation of distance.
- The total, 9.5 feet, is the fall clearance needed between the working ground level and the lower ground level.

Calculating Fall Clearance using a Self-Retracting Lifeline (SRL) Example:

- First, determine the maximum Free Fall Distance and deceleration distance (2 feet for a Class A SRL or 4.5 feet for a Class B SRL). This includes Harness Stretch, so no need to add an extra 1 foot.
- Next, add a safety factor of 2 feet to allow for the possibility of an improperly fit harness, a taller than average worker, and/or a miscalculation of distance.



- The total, 4 feet or 6.5 feet, is the fall clearance needed between the working ground level and the lower ground level.

Employee Signature _____ Date _____

Signature of supervisor or lead _____ Date _____

Section 21: TRAFFIC CONTROL AND FLAGGING

INTRODUCTION

Many King County employees perform work on public roads and highways. Often, the work performed affects the usual flow of traffic. If work is occurring where vehicle traffic is possible, traffic control procedures and devices must be used in accordance with Part VI of the Manual on Uniform Traffic Control Devices (MUTCD) and WAC 296-155-305.

Flaggers may be a component of a traffic control plan. If signs, signals, and barricades do not provide necessary protection at work zones, then flaggers or other appropriate traffic controls must be used. However, flaggers are to be used only when other reasonable traffic control methods will not adequately control traffic in the work zone.

APPLICABILITY

This section applies to any county employee who may have traffic control responsibilities. This includes employees who have traffic control duties only occasionally, such as temporarily relieving another crew member.

RESPONSIBILITIES

Safety and health professional will:

- Provide training, on request, to county employees whose job duties include traffic control.

Managers and supervisors will:

- Determine what traffic control measures and equipment are needed, taking into account traffic conditions, road conditions, time of day, weather and other factors. These duties may be delegated to others.

- Ensure that job site workers with specific traffic control responsibilities are trained in traffic control techniques, device usage, and placement.

- Ensure that each traffic control flagger has the qualifications, training and equipment necessary to perform the assigned task in accordance with the MUTCD.

- At a minimum, traffic control flaggers must have a stop/slow paddle, an ANSI Class 2 high-visibility garment (vest or shirt), safety shoes and a hard hat before approaching any right-of-way to control traffic.

- During hours of darkness (1/2 hour before sunset until 1/2 hour after sunrise) traffic control flaggers must wear white coveralls, or coveralls or

trousers having retro-reflective banding on the legs. Rain gear pants often meet this requirement. Additionally, the hard hat must be marked with at least 12 square inches of retro-reflective material applied to provide 360 degrees of visibility. Flagger stations shall be illuminated during hours of darkness by floodlights that do not create glare that poses a hazard for drivers.

- WAC 296-155-305 also requires a series of three or four advance warning signs for all flagging operations.

- Ensure flagger stations are positioned appropriately.

- Flagger stations must be located far enough in advance of the workspace so that the approaching road users will have sufficient distance to stop before entering the workspace.

- Flaggers must stand either on the shoulder or in a closed lane prior to stopping road users. A flagger must only stand in the lane being used by moving road users after road users have stopped. Flaggers must be positioned so they are not exposed to traffic or equipment approaching from behind.

- A single flagger must not flag traffic from within an intersection. When flagging at an intersection there must be a flagger controlling each intersection leg. Flagger directions cannot conflict with the signal light display; the signal light must be either shut down or placed in flash mode as appropriate, except during emergencies.

Employees will:

- Perform traffic control/flagging duties in accordance with the MUTCD and WAC 296-155-305.

- Report any deficiencies that affect the ability to adequately control traffic in compliance with the MUTCD and WAC 296-155-305.

TRAINING

Central Safety offers the State of Washington Flagger Certification Course. This is required for any employee whose duties include temporary traffic control. Training must be updated every three years.

REFERENCES

Manual on Uniform Traffic Control Devices
WAC 296-155-305
WAC 468-95-302

Section 22: HEAT-RELATED ILLNESS (HRI) PREVENTION

INTRODUCTION

Exposure to excessive heat can result in heat-related illnesses (HRI) such as heat rash, fatigue, heat exhaustion, fainting or heat stroke. Employees engaged in strenuous activities at high temperatures are more susceptible, and exposure to direct sunlight increases the heat effect. Heat-generating equipment or surfaces can amplify the temperature, and increased relative humidity hampers the body's ability to release internal body heat.

APPLICABILITY

This program applies to all employees performing outdoor work in areas with high temperatures and humidity. These are generally temperatures of 80 degrees and above.

This program complies with WAC 296-62-095 and takes effect when the outdoor temperature is 80 degrees Fahrenheit or above, for personnel performing outdoor work wearing regular work clothes. It takes effect at 52 degrees for employees wearing non-breathing clothes (vapor barriers) such as Tyvek suits.

In high heat situations (90 degrees Fahrenheit or more) additional requirements apply.

This program does not apply to incidental exposure, defined as work activity outdoors for not more than fifteen (15) minutes in any sixty (60) minute period.

RESPONSIBILITIES

Safety and health or department/division Safety and Health Professionals will:

- Develop written HRI programs
- Provide technical assistance to supervisors and managers
- Provide employee training as requested

Supervisors and managers will:

- With assistance from Safety and Health Professionals, evaluate HRI hazards, including temperature, relative humidity, radiant heat (sun or hot surfaces), degree of physical workload, and clothing or PPE contribution
- Ensure compliance with this program.
- Ensure employees receive annual training prior to work assignment
- Provide a sufficient quantity of suitably cool drinking water (minimum of one quart per hour per employee) and a shaded area (canopies, truck cabins, air-conditioned vehicles, etc.) for employee rest when needed to prevent HRI.
- Encourage employees to frequently consume water or other acceptable beverages to ensure hydration.

- Encourage and allow employees to take a preventative cool-down period as needed
    - When temperatures reach 90 degrees or above, ensure that employees take at minimum the mandatory cool-down rest periods of 10 minutes every 2 hours
    - When temperatures reach 100 degrees or above, ensure that employees take at minimum the mandatory cool-down rest periods of 15 minutes every hour
- Closely observe employees for signs and symptoms of HRI. Possible methods include:
    - In-person communication
    - Communication by radio or cell phone
    - Implementing a mandatory buddy system
- Relieve employees showing symptoms of HRI from duty and provide sufficient means to reduce body temperature if needed.
- Carefully evaluate employees removed from work before return to work.
- Ensure medical attention for employees experiencing signs of serious HRI.

Employees will:

- Comply with management directives for prevention of HRI.
- Recognize symptoms of HRI.
- Recognize the following personal factors that affect susceptibility to HRI, including, but not limited to:
    - level of physical fitness, age (either young or older)
    - degree of acclimatization, drinking water consumption
    - previous heat-related illness, alcohol use (even night before)
    - pregnancy, medical conditions, use of prescription or nonprescription diuretic (antihypertensive) medications,
- Drink adequate amounts of water (one quart per hour)
- Notify management when symptoms of HRI emerge
- Ask for breaks when needed to reverse possible onset of HRI
- Attend training on assessment, prevention, and treatment of HRI

DEFINITIONS

Acclimatization – The body's' temporary adaptation to work in the heat that occurs as a person is exposed to it over a period of 7 to 14 days depending on the amount of recent work in the heat and individual factors. Acclimatization can be lost after seven consecutive days away from working in the heat.

Close Observation – Watching out for heat-related illness symptoms in employees working in outdoor heat conditions can be achieved a few different ways. (1) Regular communication with employees working alone, such as by radio, cellular phone, or lone worker device; (2) a mandatory buddy system where employees are paired up so each employee can be observed by at least one other employee to monitor and report signs and symptoms of heat-related

illness; (3) other effective means of observation. Close observation of employees should be paid extra attention to during acclimatization periods and heat waves.

Heat Wave – Any day in which the predicted high temperature for the day will be at least 80 degrees Fahrenheit for those wearing normal clothing or 52 degrees Fahrenheit for those wearing non-breathing clothes, and the predicted high temperature will be at least 10 degrees higher than the average high daily temperature in the preceding 5 days.

TRAINING

Every King County employee engaged in outdoor shall be provided annual training prior to work assignment.

The employee training will contain the following information:

1. The environmental factors and other work conditions that contribute to the risk of HRI.
2. Personal factors that may increase susceptibility to HRI.
3. King County's procedures for identifying, evaluating, and controlling exposure.
4. The importance of removing personal protective equipment during all breaks.
5. The importance of frequent consumption of small quantities of water or other acceptable beverages.
6. The concept of acclimatization and the importance of:
    a. Frequent cool-down rest periods
    b. Gradual increase of work duration in the heat
    c. Inability to build a tolerance to heat during a heat wave
7. The importance of taking preventative cool-down rest periods.
8. The mandatory cool-down rest periods when the outdoor temperature reaches 90 degrees Fahrenheit or above.
9. King County’s procedure for providing shade or other sufficient means to reduce body temperature.
10. The different types of heat-related illness and their common signs and symptoms.
11. The importance of immediately reporting to the supervisor symptoms or signs of heat illness in themselves or in co-workers.
12. King County’s procedures for responding to symptoms of possible heat-related illness, including how emergency medical services will be provided should they become necessary.
13. The purpose and requirements of the state standard.

The supervisor or lead for these employees will receive the following additional training:

1. The King County HRI Prevention program
2. Implementation procedures for supervisors

3. The importance of considering the use of engineering controls or administrative controls such as air-conditioning and scheduling work during the cooler hours of the day in order to reduce employees' exposure to heat.
4. The procedures the supervisor is to follow to closely observe employees for signs and symptoms of HRI.
5. Supervisor procedures when an employee exhibits signs or symptoms consistent with possible HRI, including emergency response procedures.
6. Procedures for moving an employee to a location accessible by emergency medical service providers
7. How to provide clear and precise directions to emergency medical providers needing to find the worksite.

HEAT-RELATED ILLNESSES AND KING COUNTY PREVENTION ACTIONS

Heat-related illness	***Signs and Symptoms***	***Treatment***	***Prevention***
Heat Rash	- Red, itchy skin - Bumpy skin - Skin infection	- Cool skin - Keep affected area dry - Control itching and infection with medication	Sleep in cool quarters to allow skin to dry between heat exposures
Heat Cramps	- Muscle cramps or spasms - Grasping the affected area - Abnormal body posture	- Drink salted water or sport drinks - Rest, cool down - Massage affected muscle - Get medical evaluation if cramps persist	Adequate salt intake with meals
Heat Exhaustion	- High pulse rate - Extreme sweating - Pale face - Insecure gait - Headache - Clammy and moist skin -Weakness - Fatigue -Dizziness	- Move to shade and loosen clothing - Initiate rapid cooling - Lay flat and elevate feet - Monitor recovery - Drink small amounts of water - Evaluate mental status (ask who? where? when? questions) - Keep at rest until urine volume indicates that water balances have been restored.	Acclimatize workers using breaking in schedule, ample drinking water to be available at all times and taken frequently during work

Heat-related illness	*Signs and Symptoms*	*Treatment*	*Prevention*
		- If no improvement, call 911	
Heat Stroke	- Any of the above but more severe - Hot, dry skin (25-50% of cases) - Altered mental status with confusion or agitation - Can progress to loss of consciousness and seizures. - Can be fatal	- Call 911 - Immediately remove from work - Start rapid cooling - Lay flat and elevate feet - If conscious give sips of water - Monitor airway and breathing – administer CPR if needed	Pre-employment medical screening of workers, selection based on health and physical fitness, acclimatization for 5-7 days by graded work and heat exposure, monitoring employees during sustained work in severe heat

HRI PREVENTION

The supervisor will notify the work group at dispatch of the possibility of heat-related illness (HRI), reiterate the preventative measures to be taken and selected treatments.

This must occur when the following conditions are expected at any time during any day:

- When temperature is expected to be 80°F or greater.
- When temperature is expected to be 52°F degrees or greater and employees are required to wear non-breathing clothes (vapor barriers) such as Tyvek suits.

PRACTICAL FIELD IMPLEMENTATION ACTIONS FOR OUTSIDE WORK

The following actions are required when the program is in effect:

- Leads will add at least one additional rest break during the first and second halves of the work shift and will instruct workers to rest sitting or lying down in shade
- If possible, a worker buddy system will be used to monitor each other
- All workers must be supplied with, or have easy access to, one quart of water per hour
- Workers should be reminded to look out for HRI symptoms in themselves and fellow workers
- Workers shall take their regularly scheduled breaks in a shaded area
- When temperatures reach 90 degrees or above, workers are required to take at minimum a mandatory cool-down rest period of 10 minutes every 2 hours

- When temperatures reach 100 degrees or above, workers are required to take at minimum the mandatory cooldown rest period of 15 minutes every hour
- Hot surfaces, restrictive PPE, and heavy workloads shall be taken into consideration for implementing possible further restrictions

REFERENCES

WAC 296-62-095

Section 23: WORKPLACE VIOLENCE

INTRODUCTION

King County is committed to providing a work environment free from threats or incidents of harmful violence. Violent behavior at work is recognized as a serious occupational hazard, and efforts to control this workplace hazard are shared by safety and health professionals, employees, and management. As part of this ongoing commitment, the Executive Branch implemented the Workplace Violence Prevention Policy providing managers, supervisors, leads, and staff with guidelines for responding to threats, assaults, and other forms of workplace violence.

APPLICABILITY

The Workplace Violence Prevention policy covers all Executive Branch managers and employees.

RESPONSIBILITIES

Managers and supervisors will:

- Take reasonable steps to protect employees and others from acts of violence in county facilities or related to county business.
- Respond to reports of or knowledge of violence.
- Initiate the investigation process when necessary.
- Notify the law enforcement agency having jurisdiction, if appropriate, and take suitable disciplinary action if it is determined that an employee has committed an act of violence.
- Keep records of all violence incident reports.
- Consider using the Alternative Dispute Resolution Program as a resource to mediate disputes in the workplace.
- Develop and make available training on the issues of workplace violence.

All executive branch employees will:

- Report all known threats or acts of physical violence.
- Report concerns regarding any person outside the workplace who might harm them.

TRAINING

As stated above, departments are responsible for developing and making training available on the issues of workplace violence. Such training may include information on:

- Thorough hiring practices to include background checks as necessary.
- Preserving employees' dignity during discipline and termination.
- Improving communication skills of supervisors, with emphasis on proper administration of progressive discipline and dealing with terminations and layoffs.
- Dealing with disgruntled citizens and perceived threats.
- Identifying warning signs of potential violence.
- Personal safety training – how to prepare for and survive acts of workplace violence.
- Stress reduction programs.

Workplace Violence Prevention classes are available from Central Employee Services Division. Additionally, Risk Management offers an on-line class for supervisors.

INCIDENT RESPONSE PROCEDURES

Immediately after a violent incident or threat occurs, a manager in the affected department should first focus on providing for the medical, psychological, and family needs of affected victims. Other immediate steps that a manager should consider taking, where appropriate, include:

- Call 911. Report the incident to the local police department and support law enforcement activities (e.g., crime scene investigation, interviewing witnesses, victims, and others).

- Assist the victim.

- Secure work areas where the disturbance occurred.

- Account for all employees and others, including those who might still remain in the area where the disturbance occurred.

- Complete a security incident report.

- Fill out any additional incident reports and claims forms as required.

Following the event, additional attention to victims' medical and psychological needs should be considered. Employee Assistance Program can be contacted at (206) 263-8733 or HRDEAP@kingcounty.gov.

RESOURCES

The following King County documents offer additional information about workplace violence prevention and can be accessed via the King County Central Employee Services Division website,

http://kingcounty.gov/employees/HumanResources/SafetyClaims/Safety/Policies/WorkplaceViolence.aspx.

King County Workplace Violence Prevention Policy PER-18-8 (AEP)

The policy enumerates examples of prohibited acts and inappropriate conduct. It also lists information that should be gathered should an incident occur. The policy provides information on:

- Examples of prohibited workplace violence actions and conduct
- Prohibited weapons in the Workplace
- Responsibilities of Departments, Managers, and Employees
- Incident Response Procedures
- Investigation practices following an incident

Workplace Violence: Prevention, Intervention, and Response. A Handbook for King County Directors, Managers, Supervisors and Leads.
This 11-page manual covers the County's policy, learning to identify the potential for violence, setting the tone in the workplace, and diffusing threats.

REFERENCES

Executive Policy PER 18-8 (AEP) – Workplace Violence Prevention

Executive Policy PER 18-5 (AEP) – Domestic Violence in the Workplace

Section 24: VEHICLE SAFETY

INTRODUCTION
As a King County employee, there may be a need to drive as part of the job. As a representative of King County on the roads, the safe operation of a motor vehicle is of critical importance.

APPLICABILITY
Driving on King County business requires a valid driver's license.

Drivers of the following vehicles must have Commercial Driver's Licenses (CDLs):

- All single vehicles with manufacturer's weight rating of 26,001 pounds or more.
- All trailers with manufacturer's weight rating of 10,001 pounds or more, and a combined vehicles' gross weight rating of 26,001 pounds or more.
- All vehicles designed to transport 16 or more persons including the driver.
- All school buses regardless of size.
- All vehicles used to transport any material that requires hazardous material placarding or any quantity of a material listed as a select agent or toxin in 42 CFR 73.

All employees driving on county business an average of once per month or more must be trained in defensive driving procedures. The Central Safety office provides training on this topic and it is recommended that employees take the course every three years.

RESPONSIBILITIES
Employees should operate vehicles in a manner that reflects the highest regard for public safety, other King County employees, and property. A few major points to remember when using vehicles are:

- The employee should be familiar with the vehicle before operating it which includes:
    - Locating controls for shifting, braking, lights, heater, windshield, and wipers.
    - Checking to ensure the vehicle is in proper operating condition and reporting any defects to a supervisor and the King County maintenance shop responsible for the vehicle so repairs can be made. No vehicle should be used with known defects.

- When operating any vehicle, the employee is expected to obey all traffic rules and regulations, including wearing seat belts, observing speed limits, and refraining from using hand-held mobile devices. With few exceptions, the employee is responsible for any penalties related to violations of traffic regulations.

- When riding on the road, bicycle riders are expected to observe the same laws and regulations as motor vehicles. If it is necessary to ride on routes used by pedestrians such as sidewalks – the pedestrian has the right of way. When approaching a pedestrian from behind, a bicycle rider should use an audible voice or mechanical signal. Any employee using a bicycle at work must wear a helmet. When not in use, bicycles should be parked in racks or other approved storage areas; they should not be taken into buildings and stored in offices, shops, halls, or other areas of general use.

- Motorcycles, scooters, and similar vehicles are subject to the same rules and regulations as motor vehicles. They are not permitted on paths, sidewalks, in buildings or other areas of general use. Motorcycle riders must wear helmets.

- Accidents involving a King County vehicle and a third party (someone who is not a King County employee or property belonging to such a person, business, or agency) shall be reported to the Office of Risk Management Services (ORMS) as soon as possible using the department or division's procedure for reporting accidents to ORMS. For questions about reporting an accident, contact ORMS directly at 206-263-2250.

TRAINING

All employees driving on county business an average of once per month or more must be trained in defensive driving. This 4-hour training is conducted by Central Safety. These classes are offered regularly and there is no cost to agencies. Additionally, classes can be arranged for work groups, at their locations, by contacting a Safety Trainer at Central Safety at 206-477-3371 or 206-477-3370.

Section 25: SECURING LOADS

INTRODUCTION

Many county employees engage in work which includes transporting materials and equipment from place to place. County employees who load, secure, or transport materials must take the necessary steps to secure their loads.

The King County Executive codified Washington State code, RCW 46.61.655, and ordered all King County departments to implement Executive Order PER 18-9 (AEO) - King County Employees Required to Secure Loads.

APPLICABILITY

This program applies to all King County employees that load, secure, or transport materials as part of County work.

RESPONSIBILITIES

Safety and health professionals will:

- Where requested, provide and document general training to employees in King County departments, divisions, and agencies whose job duties include loading, securing, or transporting loads.
- Include information on secured load laws and employee responsibilities in the defensive driving course offered to county employees.

Managers and supervisors will:

- Work with safety and health professionals to provide general training for employees, including applicable secured-load laws, employees' responsibilities, and examples of how to secure a load.
- Determine whether employees need additional specific secured-load training beyond the general training and provide it if necessary.
- Document and track all secured-load training received by each employee.
- Inform employees that violation of this Executive Order may lead to discipline, up to and including termination.

All King County agencies that own or operate a fleet of vehicles will:

- Purchase and stock equipment and supplies appropriate for securing loads for all vehicles in their fleet and outfit each vehicle with equipment/supplies to secure loads.
- Ensure that information regarding the responsibility of County employees to secure loads is included with the operating manual for each vehicle.

- Place a secured-load message inside the passenger compartment of each vehicle and with load-securing equipment/supplies, to remind drivers to secure their loads.

Employees will:

- Ensure that the load is secure.
- Inspect vehicles and equipment prior to operating and report any deficiencies potentially affecting the ability to secure the load.
- Follow existing agency procedures to correct any deficiencies found.

TRAINING

King County provides employees with various training opportunities, including a New Employee Safety Orientation (Section 2) and more specific or topical safety training, such as “Secure Your Load” as required for their jobs. The “Secure your Load” training covers:

- Applicable secured load laws.
- Employees’ responsibilities.
- Examples of how to secure a load.

REFERENCES

Executive Order PER 18-9 (AEO)
RCW 46.61.655

Section 26: MATERIAL HANDLING AND PERSONNEL LIFTING EQUIPMENT

INTRODUCTION
Material handling and personnel lifting equipment is specialized equipment that is potentially hazardous. Many hazards are unique to this type of equipment and training specific to the operation of each piece of equipment is required.

APPLICABILITY
This procedure covers all, including forklifts, powered pallet jacks, cranes, articulated boom lifts, scissor lifts and any other equipment used for material handling and lifting of personnel.

RESPONSIBILITIES
The Central Safety office provides regular training in forklift certification and aerial work platform training. Supervisors are responsible to ensuring that all operators and other affected employees operate material handling and personnel lifting equipment in a correct and safe way. Managers and supervisors must also ensure that employees receive adequate training, whether they have prior experience or not.

TRAINING
Training is required before operating any piece of equipment. The training must include all relevant items contained in the specific equipment operator's manual, including inspection, application, and operation. Practical training on the specific equipment or equipment with similar controls is required. The trainer must determine that the trainee can properly operate the equipment.

Trainers must have the knowledge, training, and experience to perform the training and then evaluate the competency of the operator.

Safety and health professionals can assist supervisors with determining the adequacy of training programs, whether in-house or offered through vendors.

FORKLIFTS
WAC 296-863 Safety Standards for Forklifts and Other Powered Industrial Trucks sets forth the Department of Labor and Industries rules regarding the operation of forklifts. This includes the sit-down, counter-balanced type of forklift, as well as the stand-up type, the order-picker (in which the employee is raised along with the forks), and powered pallet jacks.

Training
Training is required before an employee may operate a forklift or other powered industrial truck. This training must include formal instruction, practical training, AND a hands-on performance evaluation. Operator performance must be evaluated at least every three (3) years.

Pre-shift inspection
Forklifts and other powered industrial trucks must be inspected daily or after each shift (if used on a 24-hour basis) before being put into service. Any deficiencies found should be immediately reported to the supervisor.

Forklift operation
Forklifts often operate in tight quarters creating a need to frequently drive in reverse. Operators should look in the direction of travel and must slow down and sound the horn at cross aisles and other locations where vision is obstructed.

Keep a safe distance from the edge of docks or loading platforms. Forklifts differ from automobiles in that they have rear-wheel steering. This provides greater maneuverability, but also results in tail-swing. Steering sharply away from the edge of a dock or platform will cause the rear of the forklift to swing over the edge.

Stability
Forklifts are at their most stable when the load is low and close to the mast. Therefore, the forks must be placed under the load as far as possible, and the mast must be tilted carefully backwards to stabilize the load. Carry the load as low as possible; and do not travel while the load is elevated.

Overloading
Do not overload the forklift. The rated capacity of the forklift will be shown on the capacity plate, typically located in the driver's compartment. The exact weight of the load to be lifted is not always readily available. However, if the rear wheels of the forklift come off the ground when attempting to lift a load, it is certainly beyond the forklift's capacity. Do not add unauthorized counterweight to the forklift. Do not attempt to move a load if it is so heavy that the rear wheels don't maintain full, constant contact with the ground. Remember, the rear wheels are the steering wheels of the forklift – loss of rear wheel contact means loss of steering.

Leaving the Normal Operating Position
When getting off the forklift, lower the forks fully, place the controls in neutral and set the parking brake. The operator must shut off the power any time the forklift will be more than 25 feet away, or any time the forklift cannot be seen by the operator.

AERIAL LIFT PLATFORMS
There are three aerial work platform (AWP) classifications, scissor lifts, boom lifts, and vehicle mounted bucket trucks. They are commonly used by maintenance and construction employees as elevated work platforms. Some equipment is owned by King County departments, however, often equipment is

rented. The requirements of this section apply to both owned and rented equipment.

Training
Employees must be trained before operating an aerial work platform. Training must include:

- General instruction on the operation of aerial lifts.
- Hazards associated with AWP operation.
- Purpose and use of operator's manual including proper storage of the manual in the vehicle when not in use.
- Pre-shift vehicle and workplace inspection procedures.
- Pre-function check of the AWP.
- Factors affecting AWP stability.
- Applicable safety rules and regulations.
- Proper use, selection, and inspection of fall protection equipment.

Employees must operate the aerial lift during training and demonstrate proficiency under the direction of a qualified person.

Training must be provided before an employee operates an aerial lift with which they are not familiar. Experienced, trained operators may review the operator's manual before use if the equipment is like what they have used previously.

Employees must be retrained if they observed operating the AWP incorrectly or in an unsafe manner.

Hazards
The primary hazards are

- Falls from an elevated platform
- The entire lift falling over
- Contact with electrical conductors
- Striking overhead obstacles

Falls from an Elevated Platform
There are three fall protection systems for aerial work platforms, guardrails, position restraint systems, and fall arresting systems.

- Guardrails are the primary means of fall protection for elevating platforms. This system provides fall protection for employees by fully enclosing the platform.
- Position restraint systems consist of a full body harness and a lanyard connected to an approved anchorage point. This system is designed to prevent an employee from falling.
- Fall arresting systems consist of a full body harness, shock absorbing lanyard connected to an approved anchorage point. These systems are designed to slow an operator's fall. Fall arresting systems cannot be used

where the equipment side stability does not meet the fall arrest requirements. See Section 20, Fall Protection, for the training and equipment requirements for using fall protection equipment.

Employees must never climb on the railing. Do not climb out of the platform to another surface (this can only be done under special circumstances where fall protection is always hooked up and the surface is safe). Do not stand on anything higher than the floor of the platform.

Lift Falling Over
Lifts can fall over when operated in a way that exceeds their capabilities. Newer lifts have safety devices that usually will not allow them to be operated if the lift's capabilities are exceeded, but the safety devices can fail.

Larger lifts have extendable axels, or outriggers, that increase the wheelbase. If these are not extended while in use, the platform can tip over. This can happen with a boom extended towards the horizontal, on uneven ground, too much weight in the platform or a combination of these. On equipment without outriggers, the same conditions exist.

Always inspect the ground surface to be traveled. Surface irregularities, such as potholes, slopes or soft soil can cause tip-overs, damage or getting stuck. With an articulated boom lift the platform must always be in the lowered position when traveling. Travel is allowed in most scissor lifts while raised, but only on smooth surfaces that will not cause the elevated platform to sway.

Electrical Hazards
AWPs will not provide adequate protection against power line contact. Employees must never operate lifts near electrical lines. During the worksite inspection, it is imperative to visually locate all overhead wires before operating. Operators must maintain a minimum distance of at least 10 feet from energized lines. In instances where the voltage is greater than 50kV, operators must refer to the minimum safe approach distance (MSAD) for the appropriate clearance.

Overhead Obstacles
Employees should always be aware of their work environment. Any overhead obstacles, such as structures or trees, can be a hazard while raising the platform.

CRANES
Rigorous and very detailed regulations, unique to the State of Washington, apply to cranes. These regulations are from the State of WA Dept. of Labor and Industries, Safety Standards for Construction Work, WAC 296-155, Part L, Cranes, Rigging, and Personnel Lifting.

A few of the major elements of the requirements are:

- State certification of crane operators for types of cranes operated.

- Rigorous qualifications for riggers, signal persons, maintenance and repair.
- Annual crane inspection by State-certified persons.

There are some exemptions for certain types of cranes, such as cranes with a capacity of one ton or less and vehicle tow trucks. These exemptions are listed in WAC 296-155-52900. There are still rules for safe operation of these exempted cranes.

Each County-owned crane covered by these regulations is required to have written safe operating procedures unique to the type of crane. Safe operating procedures may be in the operation manual for the crane. Additional Washington State requirements always apply as well.

Please contact your safety and health professional for advice and assistance regarding material handling and lifting equipment. If the safety and health professional is not known, please contact Central Safety at centralsafety@kingcounty.gov.

REFERENCES

WAC 296-863 Safety Standards for Forklifts and Other Powered Industrial Trucks
WAC 296-869 Safety Standards for Elevating Work Platforms
WAC 296-155, Part L – Cranes, Rigging, and Personnel Lifting

Section 27: ERGONOMICS AND BODY MECHANICS

INTRODUCTION

A goal of ergonomics is to reduce work-related musculoskeletal disorders by adapting the work to fit the person, instead of forcing the person to adapt to the work. This adaptation can involve desks, chairs, and computer terminals in offices, vehicles, tools and equipment, processes, and other aspects of work.

Body mechanics involve positioning, posture, and movement. Body mechanics is important in strenuous activities such as lifting, hammering, shoveling, and climbing, as well as in less-active office work.

Musculoskeletal disorders (MSD) are injuries or compromised conditions of muscles, nerves, tendons, joints, cartilage, and supporting structures of the upper and lower limbs, neck, and lower back that are caused, precipitated, or exacerbated by sudden exertion or prolonged exposure to physical factors such as repetition, force, vibration, contact stress (pressure), awkward (extreme or static) postures, or extreme temperatures. They are also known as cumulative trauma disorders, repetitive trauma disorders, repetitive strain injuries, or repetitive motion disorders. Symptoms of MSD identify or indicate that ergonomic stressors may be present. There may be individual differences in susceptibility and symptoms among employees performing similar tasks. Any symptoms are to be taken seriously. Symptoms include, but are not limited to the following:

- Numbness
- Tightness
- Tingling
- Swelling
- Pain
- Stiffness
- Redness

Prevention of these injuries is possible through use of good ergonomics and body mechanics. This definition specifically excludes those conditions such as fractures, contusions, abrasions, and lacerations resulting from sudden physical contact with objects that might result in an incident.

APPLICABILITY

This program applies to all King County employees, regardless of job duties. Your safety and health professionals provide no-cost ergonomics training, body mechanics training, and individual ergonomics consultations. If the safety and health professional is not known, please contact Central Safety at centralsafety@kingcounty.gov.

Jobs involving awkward postures; high hand force; highly repetitive motion; repeated impact; heavy, frequent, or awkward lifting; or vibration should be evaluated for feasible modifications.

Individual workstation or job evaluations may be requested for employees by Claims Officers, Disability Services, managers, or the employees themselves. If work-related musculoskeletal disorders (repetitive motion injuries) have occurred in a work area, it is especially important to have the area evaluated to determine if changes can be made to prevent future injuries. Training and workstation or job evaluations are available by submitting a request online at Ergonomic evaluation - King County.

When offices are moved or remodeled it is important to incorporate ergonomics into the design. A safety and health professional can provide free ergonomic design consultation services for remodel and new building projects, on request. Safety and health professionals work in conjunction with Project Managers in the Facilities Management Division to design ergonomic workstations that can be adjusted to different users.

RESPONSIBILITIES

Safety and health professionals are responsible for:

- Responding to requests for assistance by providing job and workstation ergonomic evaluations.
- Providing written recommendations for body mechanics and ergonomic improvements.

Managers and supervisors are responsible for:

- Recognizing potential ergonomic issues and requesting assistance
- Referring employees with musculoskeletal injuries to assigned Safety and Health staff
- Enlisting the assistance of safety and health professional when re-locating or remodeling offices

Employees are responsible for:

- Recognizing the symptoms of possible musculoskeletal disorders and seeking medical assistance and advice from their supervisor
- Following body mechanics and ergonomics advice to reduce musculoskeletal symptoms

FIELD/SHOP ERGONOMICS

There is potential for ergonomic and body mechanics hazards in field and shop jobs. Work that involves awkward postures, high hand force, highly repetitive motion, repeated impact, heavy, frequent, or awkward lifting, or vibration should be evaluated to determine if changes can be made to improve ergonomics or body mechanics. If one or more employees in the work group experiences

musculoskeletal injuries from the work, an ergonomic evaluation should be requested by the supervisor, employee, Claims Officer, or Disability Services.

Factors to consider in field and shop ergonomics include the following sources of injury: force, posture (static or awkward), repetition, contact, and vibration; workspace layout; work surfaces; walking and standing surfaces; materials handling/movement; tool size, weight, and balance; handle size and position; power control; and controls and displays. These factors need to be evaluated on a case-by-case basis to determine proper modifications and alternatives.

LIFTING AND MOVING MATERIALS

An employee's work may require lifting and moving materials from one location to another. Improper lifting techniques and overexertion can cause sprains, strains and other injuries to the body. Sprains and strains of the back are one the most common injuries. If the job requires an employee to lift, carry, push, or pull items weighing over 20 pounds, training on proper lifting techniques to help reduce the risk of injury should be provided. Contact a safety and health professional for more information on training classes on proper body mechanics and lifting techniques. If the safety and health professional is not known, please contact Central Safety at centralsafety@kingcounty.gov.

In general, remember to:

- Stay in good physical condition to reduce the chance of soreness, stiffness, and injury, and quick recovery, if an injury occurs.

- Never attempt to move any item by oneself if the size and/or weight is beyond known physical capabilities. Instead, mechanical assistance or help from a co-worker should be requested.

- Think and plan before attempting to move any item, even if it looks like a routine task.

- Use the proper method to make the lift and move, bending from the hips and keeping the back in alignment, keeping knees bent, and lifting with your leg muscles.

- Move the feet to turn, rather than twisting the torso. Haste and improper lifting methods can result in a life-altering injury.

OFFICE ERGONOMICS

An ergonomic office workstation may include various components, depending on the employee's needs. Major factors include work surface (keyboard and mouse) height, monitor height and positioning, and task chair height and positioning. In some cases, adjustments to the existing workstation can be made without buying new equipment. A properly fitted onsite workstation is considered required

equipment. Please contact your Disability Services Specialist, if your doctor requests medical restriction or an ergonomic assessment or accommodation.

Consult the online Do-It-Yourself checklist for proper adjustments of your computer workstation. Please submit an Ergonomic evaluation request for advice and assistance.

Per King County Telecommuting policy (King County Telecommuting policy), Teleworkers are required to purchase their own home office equipmentTeleworkers are required to purchase their own home office equipment

Workstation Design Standards for Offices and Clinics
Building remodels and new construction must include consideration of ergonomics in design and planning. The safety and health professionals are available for ergonomic assistance during all phases of planning and implementation of these projects. Ergonomic review should take place early in design phases of planning.

Employee desks should meet these minimum standards:

- Construction: Adjustable work surface height (sit-stand) are preferable to wall-hung or panel-hung work surfaces. Built-in casework which is not adjustable and does not meet changing needs should be avoided.

- Height: The work surface height (desktop) should be adjustable, with a range of 23 – 48 inches. Wall- or panel-hung work surfaces should be range of 26-32 inches. Each desk should be individually height adjustable.

- Depth: The preferred workstation depth is 30 inches. A minimum depth of 24 inch is required to allow for installation of keyboard holders.

  Transaction Counter/check-in desks should be no more than 28 inches deep and 42 – 43 inches high to avoid excessive reach when passing paper to clients.

- Width: Workstation standard width is 60 inches.

- Shape: If paperwork and writing tasks are involved, an L-shaped workstation is advised.

- Keyboard holders: Design for the addition of keyboard holders. This means including sufficient space under the desk in the proper location to add a keyboard holder arm, sufficient depth (at least 24 inches), sufficient clear width (allow 29-inch width minimum clearance), and sufficient space

behind the desk for the person and chair. If keyboard holders are installed, an extra foot of space is needed for the person and chair.

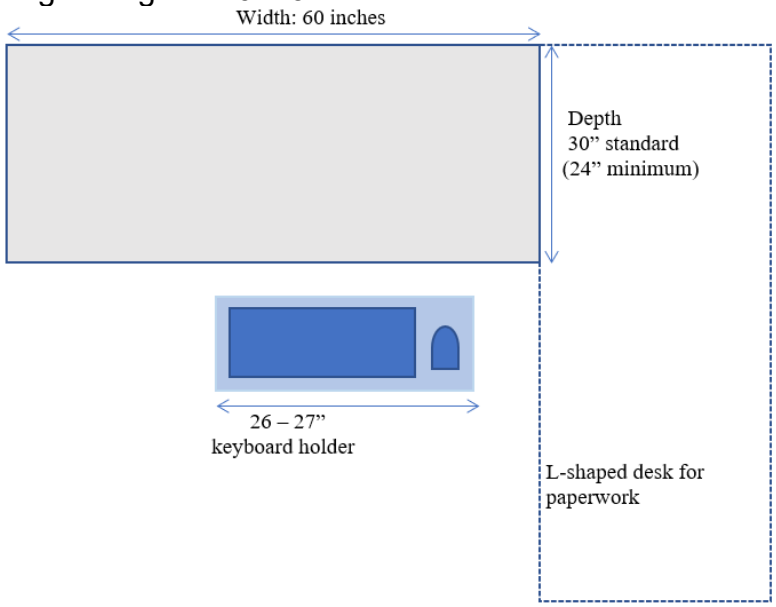
- Drawer pedestals: Mobile drawer pedestals should be 26 inches maximum height. A pencil/box/file or box/file drawer pedestal that fits under many desks is preferable.

- Chair area: A minimum of three feet of depth for the chair and person is needed if no keyboard holder is installed; four feet of depth is needed for each person with a keyboard holder.

- Chair requirements: Chairs need to meet the following minimum task chair standards: Adjustable seat height, seat pan depth, seat angle, backrest, lumbar support, back angle, back tension, and adjustable and removable armrests.

Standard wall- or panel-hung desk:

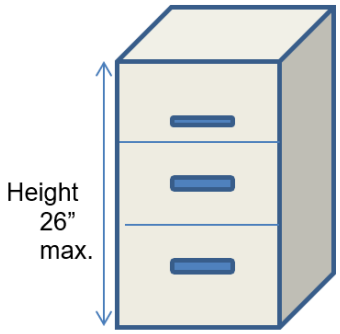
Height range of 26 – 32 inches from the floor



Modular Workstations

Modular workstations (wall-hung or panel-hung) are recommended for their adaptability and height-adjustability. An L-shaped or U-shaped workstation is good for computer and paperwork tasks. Drawer pedestals should be located at the ends of the workstation, so they do not impede leg clearance. The basic pedestal should be 26 inches high or less and should be mobile or hanging to allow for maximum height adjustability of the desktop. A pencil/box/file pedestal configuration works well for all workstation heights. Edges of the desktop should be rounded.

Pencil/Box/File mobile pedestal:



Pens and Writing

Gel pens with a thick, padded grip should be used to reduce the pinch grip required for writing.

Telephones

If the telephone is used while writing or working on the computer, a telephone headset may be appropriate, especially if neck pain is a problem. Cordless telephone headsets are available through KCIT.

Lifting/Reaching/Filing

Lifting with an outstretched arm can cause stress on the elbow, shoulder, and back. The arms should be positioned close to the body.

Task Breaks

Task breaks should be taken at least every half hour. This may include getting up to walk to the printer, making copies, or doing other work. Positions should be changed frequently, and short stretch breaks should be taken often.

Other Equipment

Equipment such as keyboards with integrated pointing devices, document holders, articulating monitor arms, and slant boards may also be desirable.

Section 28: AIR QUALITY

INTRODUCTION

Air quality concerns may occur when employees are involved in activities such as welding, cutting, and construction work. Typical air quality hazards include dusts, fumes, chemicals, solvents, and carbon monoxide. Air quality issues can occur in all types of workplaces and may result from inadequate ventilation or other control measures, water intrusion, or remodeling/painting activities. Usually, there is a way to evaluate and measure these substances to determine the appropriate protective measures to take. Sometimes a specific contaminant or deficiency is not identifiable, even though occupants have symptoms.

APPLICABILITY

This section applies to all King County work areas, including office and field work.

EVALUATION OF AIR QUALITY

Some air contaminants, such as fumes and solvent vapors, have specific regulated allowable exposure limits. Various instruments and analytical methods are available to measure the amount of these contaminants in the air. Typically, compounds found in indoor air environments are not found in concentrations that exceed regulatory limits, though they may nevertheless have an effect on comfort, health, and productivity. Common causes of indoor air quality complaints include inadequate outdoor air supply, odors from indoor or outdoor sources, mold, or chemical use in an adjacent area. Smoking or vaping in unauthorized areas can cause indoor air quality concerns.

An exposure evaluation to determine or reasonably estimate whether an employee is or could be exposed to an airborne contaminant above a permissible exposure limit (PEL) must be conducted when employees are, or could be, exposed to airborne hazards. Employees must be protected from potentially hazardous exposures during the evaluation, using all available resources to determine adequate protective measures. When employee exposures cannot be determined or reasonably estimated, the workplace should conclude that an atmosphere is immediately dangerous to life or health.

Note:

1. Oxygen deficient conditions may occur due to:
    a. Processes such as fermentation or decomposition of organic matter, or combustion of fossil fuels.
    b. Displacement by another gas such as nitrogen or carbon dioxide.
2. Rules for specific substances may contain additional requirements for determining employee exposure.
3. Samples from a representative group or employee may be used for others performing the same work activities, when duration and level of exposure are similar.

EXPOSURE CONTROLS

When the evaluation of air quality indicates an airborne hazard, feasible exposure controls must be used to reduce exposure levels to one of the following:

- A level below the PEL.
- A level that removes the hazard when no PEL is established.
- Or the lowest achievable level when exposure cannot be reduced below the PEL or the airborne hazard cannot be removed.

Note: respirators are not exposure controls but may be used for protection during implementation of controls or when controls do not effectively remove or reduce an airborne hazard.

If there are concerns about workplace air quality, contact a safety and health professional for assistance. If the safety and health professional is not known, please contact Central Safety at centralsafety@kingcounty.gov.

Section 29: REPORTING WORK-RELATED ACCIDENTS, AND ILLNESSES

INTRODUCTION

This procedure applies to all King County employees, and includes jurors, witnesses, and all reserve Sheriff's Deputies. It outlines the procedure for reporting work-related accidents, injuries, or illnesses, and filing a workers' compensation claim. These requirements are in accordance with applicable county, state and federal law and must be strictly followed. These procedures also apply to individuals not in the payroll system, such as witnesses and jurors, paramedic trainees, and election officials.

EMERGENCY SITUATIONS

For emergencies involving serious injuries or fatalities, call 911 immediately.

Any accident that results in a fatality or probable fatality, or any accident that results in the in-patient hospitalization of an employee, must be reported to **CESD/ Workers' Compensation** immediately, regardless of time or day.

Call 1-206-477-3350 M – F 8:00 a.m. to 4:15 p.m.

For EMERGENCIES during hours other than the office hours above, call Facilities Management Division (FMD) Security, which is open 24 hours a day and will act as an emergency contact. They will notify CESD/Workers' Compensation personnel of any emergencies called in. The emergency number to call is:

FMD Security: 1-206-296-5000

In addition, any accident involving a potential or actual fatality, or any in-patient hospitalization, must be reported to the state Department of Labor and Industries within 8 hours of the accident. The toll-free central reporting telephone number is:

Department of Labor and Industries:
1-800-423-7233

L&I also requires reporting of non-hospitalized loss of eye and non-hospitalized amputations within 24 hours.

DEPARTMENT/DIVISION CONTACTS:

For emergencies involving **DLS Road Services** employees, call the Renton Roads Division emergency number, 206-477-8100.

For emergencies involving **Transit** employees, call the Transit Department Control Center at 206-684-1705.

For all **DNRP Wastewater Treatment Division** emergencies call the WTD Safety Emergency Response Hotline Number 206-263-3744.

For **DNRP Solid Waste Division** emergencies call the supervisor or Operations On-Call Supervisor at 206-455-1572.

When notified of an emergency incident, the appropriate safety and health professional will assess the situation and respond accordingly to assist the supervisor, as requested, with the investigation.

1. Upon arrival and if requested, the safety and health representative will assist the supervisor in conducting the accident investigation. Witnesses and an employee representative (shop steward, employee-elected safety committee member, or other employee-designated representative) will be included in the preliminary investigation.

2. In accidents involving fatality or probable fatality, or any accident that results in the in-patient hospitalization of an employee, equipment or materials must not be moved until released by the State of Washington Department of Labor and Industries or assigned safety professional or the CESD/Workers' Compensation representative, except if victims need to be extricated or to prevent further accident or injury.

3. In the case of vehicle accidents, law enforcement agencies responsible for investigating shall be called as soon as practicable. Investigating police officers shall be in charge.

4. Once the emergency has been resolved, the supervisor will review the contents of the worker's compensation packet with the injured employee(s).

PUBLIC HEALTH EMERGENCIES

Washington State law requires employers with 50 or more employees at a workplace to report to the Department of Labor and Industries when 10 or more of their employees have tested positive for an infectious or contagious disease that is the subject of a public health emergency. Reports are required within 24 hours of confirming 10 positive cases within a 14-day period. The Department/Division must report the positive tests to the Department of Labor

and Industries in a form prescribed by the Department of Labor and Industries. This report must not include employee names or personal identifying information.

If an employer receives notification of potential exposure to the infectious or contagious disease that is subject of the public health emergency, the employer, within one business day of potential exposure provides written notice to all employees, and the employers of subcontracted employees, who were on the premises at the same worksite as the qualifying individual that they may have been exposed to the infectious or contagious disease. Notification of potential exposure means notification from the employee, from a public health official, or through testing protocol of the employer.

Reference Health Emergency Labor Standards Act (HELSA), effective May 11, 2021

REPORTING A WORK-RELATED INJURY OR ILLNESS

1. Employees must report all work-related near misses, injuries, or illnesses to their immediate supervisor.

2. If the injury or illness is not serious or requires simple first aid, the injured or ill worker does not necessarily need to go to a doctor. But in all cases, the worker and supervisor must fill out a Work-Related Illness/Injury Supervisor Report. This report establishes that an injury or illness has occurred, should the injured worker eventually see a doctor and want to file a workers' compensation claim.

3. Employees exposed to bloodborne pathogens should fill out the claim forms and submit a claim to CESD/Workers' Compensation, even if they choose not to seek medical attention. This enters the incident into the claims system for any future illness that may result from the exposure and ensures compliance with state reporting requirements. See Section, 14, Bloodborne Pathogens Exposure Control.

4. If the injured worker wants workers' compensation benefits, a doctor or other health-care professional must be seen for evaluation and treatment.

REPORTING VEHICLE ACCIDENTS

In addition to the above procedures, accidents involving King County vehicles must be reported to the Office of Risk Management (206-263-2250) no later than the end of the next workday.

WORKERS' COMPENSATION (INDUSTRIAL INSURANCE)

Industrial Insurance, more commonly called workers' compensation, is a no-fault insurance program that covers work-related accidents and illnesses. Workers' compensation is designed to cover medical expenses and to partially pay for

wages lost while an employee recovers from a work-related injury or illness.

King County is self-insured, which means that the County, rather than the Department of Labor & Industries, provides workers compensation insurance for King County employees. All claims for work-related injuries or illnesses with King County are filed by employees, which covers the costs of allowed work-related injuries and illnesses.

If an injured employee receives medical treatment, the employee or the immediate supervisor must notify CESD/Workers' Compensation 1-206-477-3350.

HOW TO FILE A WORKERS' COMPENSATION CLAIM

1. If medical treatment is needed, the supervisor gives the injured employee a workers' compensation packet, which is available in most departments or by calling the workers' compensation section at 1-206-477-3350. It's best to provide the packets to the employee before they go to the doctor the first time. The packet contains detailed instructions for the employee, supervisor, and the doctor.

2. The Work-Related Illness/Injury Supervisor Report must be completed by the supervisor and sent to CESD/Workers' Compensation, Mail Stop ADM-ES-0500, or faxed to 1-206-296-0514.

3. The injured employee should take the packet while visiting the treating physician. Inside is a Medical Release - Physical Capacities Evaluation, which must be filled out by the treating physician and the injured worker. It is important to let the treating physician know the illness or injury is work-related and that King County is self-insured. Do not fill out a Department of Labor & Industries State Fund form.

4. The completed Medical Release - Physical Capacities Evaluation needs to be returned, or the information on it relayed, to the injured worker's immediate supervisor within 24 hours after initial medical treatment. The supervisor notifies the CESD/Workers' Compensation office (1-206-477-3350) of the physician's directions, such as whether the injured worker can return to work or has physical restrictions.

5. Two other forms are inside the packet: a Physicians Initial Report, which must be completed by both the physician and injured worker; and a Self-Insurer Accident Report (SIF-2), which needs to be filled out by the injured worker. Return both forms to the CESD/Workers' Compensation Office, Mail Stop ADM-ES-0500. The claim number in the upper right-hand corner of the SIF-2 form is very important when referencing the workers' compensation claim.

6. If the employee does not have a workers compensation packet, the physician may have the Physician's Initial Report form in their office. Be sure that the physician sends the completed forms to: King County CESD/Workers' Compensation, 500 4th Avenue, Suite 500, Seattle WA 98104.

7. If the initial treating physician refers the injured employee to another doctor, duplicates of the forms described above should not be filled out. The new treating physician should be advised that all forms have been processed.

TIME LOSS RESULTING FROM WORK-RELATED INJURY OR ILLNESS

1. It is the responsibility of injured employees to notify their immediate supervisor of physician-directed days away from work resulting from a work-related injury or illness. Employees must seek medical treatment if the inability to work is due to a work-related illness or injury. The time off work must be authorized by a physician for worker compensation wage replacement benefits to be paid.

2. Injured employees need to contact their payroll clerk to determine what type of medical leave is appropriate.

3. The immediate supervisor must notify CESD/Workers' Compensation (1-206-477-3350) if the injured employee is absent from work due to a work-related illness or injury.

RESTRICTED DUTY

1. On the initial visit, the injured worker's doctor indicates on a Medical Release – Activities Prescription Form (APF) if the injured worker can return to work with full duties, modified duties, or if they need to remain off work. This form goes to the injured worker's supervisor and the work status of the injured worker is reported to CESD/Workers' Compensation.

2. If the doctor says the injured worker can go back to work, but with some restrictions, the injured worker takes a doctor's note that identifies restrictions to their supervisor and asks if the restrictions can be accommodated within 24 hours. This same note goes to CESD/Workers' Compensation, and a coordinated effort is made between the claims section, the injured worker's supervisor, and doctor on any available light duties.

3. If the doctor says the injured worker cannot continue in their usual occupation because of physical limitations, the injured worker may be eligible for the King County Disability Accommodation program or vocational rehabilitation services.

RETURN TO WORK

1. Prior to returning to work, injured employees must have a written work

release from their attending physician. The release is to be given to the injured employee's immediate supervisor.

2. The immediate supervisor forwards a copy of the release, or otherwise notifies CESD/Workers' Compensation.

Section 30: ACCIDENT STATISTICS, INVESTIGATION AND REVIEW

INTRODUCTION
Despite accident prevention efforts, accidents and injuries may still occur. Investigation and analysis of accidents can provide insight for preventing future accidents.

APPLICABILITY
Supervisors, managers, and directors all have a role in accident investigation and review. It is important for management to be aware of the accidents that occur and the recommendations for prevention of future accidents.

Central Safety can assist division and department management by providing accident statistics and analyses, responding to serious accidents, and making recommendations for injury prevention.

ACCIDENT STATISTICS
The regular compilation of accident statistics aids in measuring the effectiveness of King County's accident prevention programs and helps to efficiently direct resources to identified problem areas. A record of King County's occupational injuries and illnesses (OSHA 300 log) is maintained by Central Safety. A summary of this record is to be posted from February 1st until April 30th of each year at county work locations. Central Safety sends the OSHA 300 summary to specified locations. If a summary is not received, notify Central Safety at centralsafety@kingcounty.gov.

Accident statistics are available at Central Safety upon request. Department and division leadership is encouraged to request accident statistics at any time and by working with their respective safety administrator.

In addition, Central Safety conducts an annual analysis of each department’s illness and injury experience and develop recommendations for illness and injury reduction.

ACCIDENT INVESTIGATIONS
Conducting accident investigations is a primary responsibility of all supervisors. To be effective, accident investigation must be thorough and coupled with mitigation to ensure prevention of similar accidents from occurring in the future, thus, saving time and expense. Training is available to assist supervisors and management leadership teams in developing accident investigation skills. See Section 4 – "Employee Safety Training."

Any incident that results in a loss of any kind (injury, illness, or property damage) should be immediately and properly investigated. Many parties are interested in the evaluation of accidents, including legal departments, insurance companies,

employees, management, government agencies and even the media. A thorough investigation provides answers to questions from any source.

Supervisor actions after an injury or accident are critical. There are four distinct phases or responses to guide a supervisor during the investigation:

- Response
- Fact Finding
- Analysis
- Recommendations

Response

Employees need to report accidents and injuries repercussions for reporting. Supervisors can only investigate known incidents and the investigation must begin immediately. It is important that Supervisors create a culture that encourages the reporting or accidents and injuries.

The first two actions at the scene of an accident are to provide first aid for any victims and to eliminate hazards. The next step is securing the area. Equipment and evidence must be preserved so it can be examined, sketched, or photographed. Finally, interview witnesses at the site to gather information while it is fresh in minds.

If the accident results in a fatality or the hospitalization of any employees, the Department of Labor and Industries must be notified within eight (8) hours of the incident. The OSHA reporting hotline number is 1-800-423-7233. A citation may be issued to the County if the reporting time exceeds eight (8) hours.

Fact Finding

The focus is to identify facts, critical information, root causes and systemic problems, not just immediately visible symptoms. Conduct on-site interviews, and gather equipment and materials involved for possible testing and reenactment. Inspect the site and document observations. Take photographs for documentation.

Analysis

Review testing results, interviews, and physical evidence. Outline the sequence of events leading up to and determine the cause(s) of the accident. Assigning blame should be avoided, although human error may be a contributor to the accident. Often more than one cause is at the root of the accident. Basic causes of accidents include:

- People/Procedures
- Equipment/Tools
- Materials
- Environment

Recommendations
Once the true causes have been identified, mitigation recommendations can be made following the hierarchy of control:

1) Elimination—physically removing the hazard
2) Substitution—replacing the hazard
3) Engineering controls—isolating employees from the hazard
4) Administrative controls—changing the way work is performed
5) Personal Protective equipment (PPE)—protect employee with PPE

Possible solutions may involve

- Personnel actions (training, accountability measures, work practices, management involvement).
- Equipment purchases, modifications, or maintenance programs.
- Material changes or storage and handling methods updated.
- Changes to the work environment that could include lighting, signs/placards, safety devices, or procedural improvements.

Recommendations should be specific, written, and effectively communicated. The recommendations must address the root causes of the accident and/or injury to prevent future injuries. Once completed, the investigation and recommendations should go through a departmental review process. Steps can then be taken towards implementing the recommendations.

ACCIDENT REVIEWS
Accident review is a required function of each division and department's safety committee. In addition, departments are encouraged to develop a departmental Accident Review Board to provide a central forum for investigating serious and high-cost accidents, determining causation, and recommending corrective actions.

Large departments may have a two-tiered format, individual divisional Accident Review Boards and a Departmental Accident Review Board, which reviews only accidents involving serious injury or high-cost damage to property.

Accident Review Boards should meet monthly, or as required in response to serious accidents. Information reviewed should include the "Work Related Illness/Injury Supervisor Report" and/or "Property or Equipment Damage Report." The supervisor and the involved employees may be present and may present additional information to the Board. Accidents may be evaluated as to their preventability by employee actions.

Appropriate representation from Central Safety is required for review of accidents involving fatalities, serious injuries, or major losses. Central Safety must be notified at (206) 477-3350 of any Accident Review Board meetings where these types of accident will be reviewed.

Since the primary objective of the Accident Review Board is to prevent a recurrence of similar accidents, the Board should determine contributing causes. When an accident is found to involve a deficiency in department operating standards, appropriate steps should be taken to correct the deficiency within a specified period. Corrective actions may be recommended for employee behavior as well, especially if safety rules were violated.

Attachment 1 is a sample form to be used for accident review.

Attachment 30-1

KING COUNTY ACCIDENT REVIEW

DEPARTMENT _____DIVISION _____

NAME _____

OCCUPATION _____

DATE OF ACCIDENT _____ DATE OF REVIEW _____

REVIEW BOARD'S CONCLUSIONS: _____

_____

_____

_____

_____

_____

PREVENTABLE ____ NOT PREVENTABLE ____

RECOMMENDATIONS: _____

_____

_____

_____

_____

BOARD MEMBERS: _____ _____

_____ _____

_____ _____

_____ _____

SUPERVISOR: DO YOU CONCUR WITH THE BOARD'S FINDINGS? _____

REFERRED? _____ (yes or no) DATE _____

SUPERVISOR'S SIGNATURE _____

Distribution: Original w/ attachments – file

Section 31: FIRE EXTINGUISHER INSPECTION AND SERVICE

INTRODUCTION

In each work area, each office, and most vehicles, King County has provided one or more portable fire extinguishers. They should be permanently placed in readily accessible, conspicuous locations. When hung on a wall or column, the top should be no more than five feet above the floor and clearly marked with an extinguisher marker sign, approximately 8 feet above the floor. In long hallways or areas where the sign may be difficult to see, the sign should be mounted perpendicular to the wall or column.

USE OF FIRE EXTINGUISHERS

Portable fire extinguishers are used to perform one function only, to put out a small fire. If the fire cannot be extinguished with a small fire extinguisher, retreat from the area and report the fire by calling 911.

Employees must be trained in the general principles of fire extinguisher use when first hired and then annually. Contact your safety and health professional to schedule a training offered by Central Safety or to locate safety training videos or online courses. If the safety and health professional is not known, please contact Central Safety at centralsafety@kingcounty.gov.

To use a fire extinguisher:

1. Remove the extinguisher (note that extinguishers are heavier than expected for their size)
2. Hold the extinguisher upright
3. Twist and pull ring pin
4. Stand back approximately eight feet from the fire
5. Aim at base of fire
6. Squeeze lever and sweep side to side

Extinguishers are classified as follows:

A	Combustibles, such as wood and paper (stainless steel water extinguishers)
B	Flammable liquids
C	Electrical
A, B, C	All types of fires (dry chemical extinguishers)

FIRE EXTINGUISHER INSPECTIONS

To make sure extinguishers are maintained in usable condition, annual and monthly inspections are required.

1. The annual inspection is administered by the Facilities Maintenance Division. Please send your request to customercareservices.fmd@kingcounty.gov. Facilities Maintenance uses a

vendor to make scheduled rounds of King County properties, checking, hydro testing, refilling, and re-tagging extinguishers as necessary.

2. The monthly inspection of fire extinguishers is performed by a person in the work unit. This person may be a security officer, an organization's safety committee member, a safety coordinator, or someone specifically assigned to do this task. Fire extinguishers located in motor pool vehicles shall be inspected by the motor pool, and those located in assigned vehicles shall be inspected by the operator and/or the organization's Safety Committee member, safety coordinator, or assigned individual. Inspections are required monthly and consists of:

    a) Determining that the annual inspection has been done per paragraph one above.

    b) Removing the extinguisher from its resting place (if practicable).

    c) Checking the seal on the latch pin.

    d) Checking the dial indicator. If the indicator is in the green area, the extinguisher charge is OK.

    e) For dry chemical extinguishers (ABC or BC) turning the extinguisher upside down and shake to loosen the powdered substance inside.

    f) Replacing the extinguisher in its proper location.

If any part of the inspection fails, the extinguisher must be repaired or replaced and the employee should follow the work unit's procedure for accomplishing the inspection. Some organizations have a centralized location where unusable extinguishers can be exchanged for recharged and certified extinguishers, while others must directly notify customercareservices.fmd@kingcounty.gov. Supervisors should be consulted for the procedures in the work area.

REFERENCES

WAC 296-800-300 Portable Fire Extinguishers
NFPA 10 Standard for Portable Fire Extinguishers

Section 32: Diving Safety

INTRODUCTION

This section details the basic requirements and procedures for safe diving by King County employees. These requirements apply to employees whose job tasks require working in water using "underwater apparatus which supplies compressed breathing gas at the ambient pressure." The section is intended to comply with applicable sections of WAC 296-37 for surface-supplied air diving of no more than 30 feet deep (no decompression), in a very slow to still waterway, with shore access.

RESPONSIBILITIES

Safety and health professionals will support managers and supervisors by assisting them in meeting the medical clearance requirements of WAC 296-37.

Managers and supervisors are responsible for:

- Ensuring that employees receive
  - initial medical examinations
  - annual medical examinations
  - medical examinations following an injury or illness requiring in-patient hospitalization
- Ensuring that employees are properly trained in dive-planning and use of diving equipment.
- Ensuring proper sanitation and maintenance of all diving equipment.
- Ensuring that this written Diving Safety Program is tailored to the needs of department employees as necessary.
- Revising and updating the hazard evaluation as needed and any time work process changes may affect employee exposure.

Employees are responsible for:

- Using required safe diving equipment in compliance with this program.
- Notifying management of equipment malfunction or job circumstances where safe diving protocol might need to be reviewed.
- Ensuring the care and maintenance of their assigned diving equipment.
- Notifying management of medical status changes which requires an updated medical evaluation for safe diving.
- Documenting any injury associated with a dive event.
- Attending all required training.

MEDICAL EVALUATION

The medical certification of diving employees is required by WAC 296-37-525 to reasonably assure that divers are both mentally and physically qualified to do the assigned task safely.

An initial medical evaluation is required to determine if employees have any physical condition that may limit or restrict their qualification for diving. The medical examinations shall consist of:

(i) Medical history

(ii) Diving-related work history

(iii) Basic physical examination

(iv) The tests below:

Test	Initial Examination	Annual Re-examination
Chest x ray	x	
Visual acuity	x	x
Color blindness	x	
EKG: Standard 12L[1]	x	
Hearing test	x	x
Hematocrit or hemoglobin	x	x
Sickle cell index	x	
White blood count	x	x
Urinalysis	x	x

[1] To be given to the employee once, at age 35 or over.

Additional tests such as stress electrocardiogram, oxygen sensitivity, carotid sinus sensitivities, electroencephalography, and special blood studies may be conducted at the discretion of the physician.

Medical examinations conducted after an injury or illness requiring in-patient hospitalization shall be appropriate to the nature and extent of the injury or illness as determined by the examining physician.

Employees medically determined to have certain ailments or conditions on initial examination are automatically disqualified from diving under this program, including:

- History of epileptic disease or syncopal attacks
- Cystic or cavitary disease of the lungs or obstructive disease of the lungs or recurrent pneumothorax
- Chronic inability to equalize sinus and middle ear pressure
- Significant central nervous system (CNS) disease or impairment

- Certain cardiac abnormalities, e.g.: Pathological heart block, valvular disease, interventricular central defects
- Certain joint disorder about the shoulder, hip, or knee
- Chronic alcoholism
- Psychotic disorders
- Drug addiction
- Significant hemoglobinopathies
- Significant malignancies
- Pregnancy
- Significant osteonecrosis

On initial examination, an employee may be disqualified from diving for conditions that the medical provider believes may put them at risk, including but not limited to:

- Diabetes
- Morbid obesity
- Perforation of tympanic membrane
- History of neurological decompression sickness
- Grossly impaired hearing
- History of severe motion sickness
- Seriously impaired pulmonary function
- Pulmonary fibrosis
- Peptic ulcer
- Chronic hepatitis
- Sickle cell trait
- Disabilities (or chronic conditions) requiring continuous control by medication

An employee may be temporarily disqualified on an initial examination for the following reasons:

- Acute alcoholism
- Drug intoxication
- Acute gastrointestinal syndrome
- Acute infection: skin, upper respiratory, ear, etc.
- Recent incident of serious decompression sickness

RECORD KEEPING

The physician shall furnish written reports of the medical examination to Workers' Compensation and Safety's Pre-employment Physical program.

1. The results of the medical examination
2. The examining physician's opinion of the employee's fitness to be exposed to hyperbaric conditions, including any recommended restrictions or limitations to such exposure (see WAC 296-37-525).

The employee shall be provided a copy of the physician's written report. King County shall not lift any restrictions placed on an employee without the consent of the attending physician.

Workers' Compensation and Safety will maintain records of all medical evaluations.

TRAINING

Members of the dive team must receive formal technical diving training and be certified prior to initial diving. Such training shall include the following elements:

- Basic diving principles
- Surface diving equipment
- Decompression procedures (when applicable)
- Planning dive operation
- Specific equipment training
- Standard hand signals
- First Aid/CPR

Maintenance of Qualifications

Each diver or attendant must complete an annual review of the training elements unless they have 30 or more field diving days in the prior two-year period. Maintenance of qualification must be verified by field experience as documented by:

- Employment records
- Field operations records
- Training review records
- Written statement from previous employers verifying diving activities (new employees)
- Written statement from diving officers or commanding officers (new employees)

Divers must be proficient in the skills required to perform the primary task necessitating diving. For instance, divers diving for the purpose of inspecting bridge foundations must be licensed or certified to inspect bridge structures by appropriate authorities.

DIVING PROCEDURES

Composition of a Dive Team

The dive team shall consist of the following positions:

1. **Designated person in charge (DPIC) or Dive Supervisor**
   The DPIC is responsible for the safe and efficient conduct of the entire project. S/he will plan and institute a site specific safety briefing prior to each dive with all crew members and associated personnel in attendance.

The briefing shall include the description of the pending operation: dive team assignments; location, depth and planned bottom time for the dive; review of pertinent drawings and/or photos; discussion of equipment, tools and materials that may be required during the operation; discussion of job hazard analysis (JHA); review of the emergency procedures; and assignment of specific responsibilities to each dive team member.

2. **Diver**
   The diver is a certified employee working in water using underwater apparatus which supplies compressed breathing gas at the ambient pressure. The diver is under the direction of the DPIC/Dive Supervisor and shall perform all tasks as required and directed by DPIC/Dive Supervisor.

3. **Standby Diver**
   The standby diver at the dive location must be properly equipped and available to assist a diver in the water. A standby diver is required on all dive teams. A standby diver must be ready to reach the primary diver within five minutes of an emergency. When two divers are in water together, they can be considered as standing by for each other if one can reach the other within three minutes.

4. **Tender**
   The tender tends the diver's umbilical -- the composite hose bundle between a dive location and a diver which supplies the diver with breathing gas and includes a safety line between the diver and the dive location. The tender assists the diver in and out of water and operates deck equipment as required or directed by the DPIC. The tender is also the timekeeper and responsible for monitoring bottom time.

In certain situations, such as entry into wreck, tunnels, other confined spaces, a second diver tending the primary diver at the point of entry will be required.

All diving personnel must be qualified and current in their certification. Each diver shall be continuously tended while in the water by a separate dive team member. Note that the DPIC/Dive Supervisor can perform the tender's tasks on a two-person dive team.

Equipment and Clothing

- All equipment used in diving operations must be in excellent operation condition and systematically tested prior to use.
- Equipment must be inspected and determined to be in good operating condition prior to each dive and continually maintained in such condition throughout the operation.
- All hoses leading to and from the diver which are exposed to potential damage because of falling objects, personnel, traffic, etc. must be protected.

- All surface-supplied diving must be performed with the diver wearing a harness where the hose is attached by a quick release mechanism that cannot be accidentally released.
- Dive team members must wear appropriate PPE.
- Divers must wear protective clothing whenever barnacles, marine growth, marine life or other sharp or abrasive surfaces present a potential hazard.
- Provision must be made to control body heat loss during the dive.
- Divers must always carry a sharp knife while in water to free themselves from any life-threatening entanglements.
- All pressure gauges should be checked periodically during a dive to assure their accuracy.

Pre-Dive Check List shall include:

☐ Emergency aid contacts: A list shall be kept at the dive location of the telephone or call numbers of accessible hospitals and available physicians.

☐ An operational decompression chamber (if not at the dive location) when required.

☐ Available means of transportation, for instance, aid car from the Fire Department.

☐ The nearest U.S. Coast Guard Rescue Coordination Center.

☐ First-aid supplies.

☐ An American Red Cross standard first-aid handbook or equivalent, and a bag-type manual resuscitator with transparent mask and tubing available at the dive location.

☐ An assessment of the safety and health aspects of the following:
  - Diving mode
  - Surface and underwater conditions and hazards
  - Breathing gas supply (including reserves)
  - Thermal protection
  - Diving equipment and systems
  - Dive team assignments and physical fitness of dive team members (including any impairment known to the employer)
  - Repetitive dive designation
  - Decompression and treatment procedures (including altitude corrections)
  - Emergency procedures

☐ Coordination with other activities in the vicinity which are likely to interfere with the diving operation.

- ☐ Employee briefing.
- ☐ Dive team member be briefing on:
  - Tasks to be undertaken
  - Safety procedures for the diving mode
  - Any unusual hazards or environmental conditions likely to affect the safety of the diving operation
  - Any modifications to operating procedures necessitated by the specific diving operation
  - Inquiry into the dive team member's current state of physical fitness
  - Discussion with the dive team member of procedure for reporting of physical problems or adverse physiological effects during and after the dive
  - Confirmation of Equipment inspection
    - Compressor intake located in an area free from contamination
  - Placement of warning signal when diving from surfaces other than vessels in areas capable of supporting marine traffic.
- ☐ Accurate and positive determination of depth of dive.
- ☐ Absence of overhead work while diving is in progress.

Water Entry
A safe means of ingress and egress from the water shall be provided for diving personnel and a means of rescuing surface personnel in the event of a fall into the water.

Diving Operation
Having met the pre-dive planning, equipment and personnel checks, the actual diving operation may be undertaken.

Post-dive procedures
- ☐ After the completion of any dive, the DPIC/Diving Supervisor shall:
  - Check the physical condition of the diver(s).
  - Instruct the diver(s) to report any physical problems or adverse physiological effects including symptoms of decompression sickness.
  - Advise the diver(s) of the location of a decompression chamber which is ready for use.
  - Alert the diver to the potential hazards of flying after diving.
- ☐ Complete a record of dive (sample attached)
  The DPIC/Diving Supervisor shall record and maintain the following information for each diving operation:
  - Names of dive team members including designated person-in-charge
  - Date, time, and location.
  - Diving modes used.
  - General nature of work performed.
  - Approximate underwater and surface conditions (visibility, water temperature and current).
  - Maximum depth and bottom time for each diver.

FORM 32-1: RECORD OF DIVE

Diver: _____Date: _____Time: _____

Project: _____Work Order # _____

Location: _____Platform/Vessel: _____

Dive Supervisor/DPIC: _____Standby Diver: _____

Diver Tender: _____Standby Tender: _____

Air Temp. _____ Water Temp. _____ Underwater Visibility ____ Current_____

Diving Mode: _____

☐ Primary Compressor_____

☐ Back-Up Compressor_____

Maximum Depth _____

Bottom Time _____

Description of work performed:
_____
_____
_____

Dive Supervisor/DPIC Signature: _____ Date _____ Time: _____

Diver Signature: _____ Date _____ Time: _____

FORM 32-2: Record of Site-Specific Safety Meeting

Project: _____ Date: _____Time: _____

Location: _____Work Order: _____

Description of work plan:

_____

_____

_____

_____

Job Hazard Analysis Performed:

_____

_____

_____

_____Job Hazards

Discussed: _____

_____

_____

Dive Team (Crew) Suggestions/Action Taken:

_____

_____

_____

_____

Nearest Emergency Facility:

Hospital/clinic: _____ Phone #: _____

Address:

_____

Attendees:

Print Name	Signature
_____	_____
_____	_____
_____	_____

Meeting Conducted by _____ Signature: _____

DPIC: _____ Signature: _____

Section 33: MARINE SAFETY

INTRODUCTION

Each department or division is required to develop specific procedures and requirements tailored to its work. This section is particularly pertinent to the Marine Division of the Department of Transportation, due to the unique nature of its work and multiple regulatory jurisdictions. The Washington State Department of Labor and Industries has jurisdiction when employees are on land and the Coast Guard and the Federal Occupational Safety and Health Administration have jurisdictions when work is on navigable water.

APPLICABILITY

This section applies to the Department of Transportation Marine Division's Water Taxi operations only.

RESPONSIBILITIES

Safety and health professionals will:

- Provide technical assistance to the division in implementing the pertinent provisions of the Operations and Maintenance Manuals (KC Water Taxi program).
- Assist the division in program evaluation as requested.
- Assist the supervisors with training as requested.

Marine Division management (managers and supervisors) are responsible for:

- The overall development, implementation, and enforcement of the King County Water Taxi Safety and Health program.
- Developing and updating the Vessel Operations & Maintenance Manuals, which contain King County Water Taxi's specific safety and health program.
- Training each employee on the contents of the Vessel Operations & Maintenance Manuals.
- Training the division's employees tasked with operating and maintaining each vessel on the peculiarities of each vessel.

Employees are responsible for:

- Complying with management directives with respect to training and working around vessels and the maintenance shop.
- Notifying management of any unsafe conditions.
- Timely reporting all work-related injuries and illnesses.
- Maintaining all required certifications for their jobs.

Section 34: LIGHTNING

INTRODUCTION

King County employees perform many types of outdoor work and may experience inclement weather, which includes lightning. This section of the King County Accident Prevention Program deals with safety precautions to manage a lightning event.

APPLICABILITY

This program applies to all King County employees required to work outside (e.g., sports fields, open water, open vehicles, tractors without cabs, under trees or other tall, isolated objects, etc.) and may be exposed to weather conditions involving lightning.

RESPONSIBILITIES

Safety and health professionals will:

- When requested, assist supervisors in providing awareness training to employees.

Managers and supervisors will:

- Provide awareness level training for employees on lightning.
- Ensure that employees follow the provisions of this policy.

Employees are responsible for:

- Following the lightning safety protocol in the event of a lightning event.

TRAINING

King County provides employees with various training opportunities, including a New Employee Safety Orientation (Section 2) and more specific or topical safety training, such as “Lightning” as required for jobs. The “Lightning” training covers:

- The 30/30 rule.
- Specific practices to avoid direct encounter or mitigate impact of a lightning event.

PROCEDURE

Prior to start of work and as part of site safety, identify possible lightning shelters. Avoid UNSAFE SHELTER AREAS including all outdoor metal objects, like power poles, fences and gates, high mast light poles, solitary trees, water, open fields, and high ground.

The **30-30 rule**:
The ‘30-30 rule’ offers the best lightning safety guidance for the public.
When lightning is observed, count the seconds until thunder is heard. **If 30 seconds or less, the thunderstorm is close enough to be dangerous**.

- Stop all outdoor activities.
- Seek shelter immediately in one of the following:
  - Inside finished building (with full electric and plumbing).
  - Inside of a fully enclosed vehicle (hard-topped car, bus, van, truck, etc., with windows rolled up).
  - The lowest point on the ground (a ditch).
  - If no shelter is available, curl up into the lightning-safe position with only your feet touching the ground (last resort).

- **Remain in shelter for 30 minutes** or more following the lightning flash before leaving shelter and resuming the activity.

If no shelter is available and hair stands on end, skin tingles, or crackling noises are heard, crouch on the ground immediately, with feet together, placing hands on knees and bending forward as these are signs that you may be in danger of being struck by lightning. Crouching, in this manner, is the lightning-safe position**. DO NOT LIE FLAT.**

Behavior to avoid:
- Do not use the telephone (corded or cell) or hand-held radios.
- Do not use electrical appliances, including computers.
- Do not shelter in dugout picnic shelter or metal shed.
- Do not touch pipes or other metal objects.
- Do not lie flat on the ground.
- Do not shelter under solitary objects.
- Do not form in a close group if caught in the open – spread out and assume the lightning-safe position.

Care for Lightning Strike Victim
Lightning strike victims do not carry a charge and are safe to assess. Provide appropriate First Aid/CPR in accordance with protocols.

REFERENCES
National Weather Service, Lightning Safety. Retrieved on 4/6/21 from Lightning-Brochure18.pdf (weather.gov)

Lightning safety: Here's how to stay safe during a thunderstorm | wtsp.com

Lightning Surge Technologies, Lightning Safety Procedures. Retrieved on 4/6/21 from Lightning & Surge Technologies - Safety Procedures (lightningman.com.au)

Section 35: Wildfire Smoke and Outdoor Air Quality

Introduction
Wildfire smoke affects the King County region during some summer months and may cause an increased likelihood of illness and injury to employees working outdoors. This program is established to address the hazards associated with wildfire smoke.

Definitions
$PM_{2.5}$: The concentration of solid particles and liquid droplets suspended in air – known as particulate matter – with a diameter or 2.5 micrometers or smaller, measured in Micrograms per cubic meter ($\mu g/m^3$).

Air Quality Index (AQI): The method used by the US Environmental Protection Agency (EPA) to determine air quality ratings using color-coded categories.

Washington Air Quality Advisory (WAQA): The method used by the Washington state Department of Ecology (DOE) determines air quality using color-coded categories.

A wildfire smoke event is defined as a $PM_{2.5}$, 20.5 $\mu g/m^3$, WAQA 101, or AQI 69 or greater.

Applicability
This section applies to all outdoor work performed by King County employees during wildfire smoke events.

Responsibilities
Safety and Health Professionals will:
- Assist in developing specific wildfire smoke work plans.
- Aid with employee training when requested.

All King County agencies whose employees work outdoors are to:

- Modify this program to meet worksite needs.
- Institute mechanisms to actively monitor levels of wildfire smoke where each workgroup operates.
- Monitor forecasts for upcoming smoke events and notify staff appropriately.
- Review the Department of Ecology (DOE) or Environmental Protection Agency (EPA) for worksite air quality ratings.
- Ensure employees notify supervisors of worsening conditions.
- Determine what work-related tasks should be modified, postponed, or canceled at varying air quality levels.

Managers and supervisors have responsibility to ensure:

- Employees are informed about the hazards of wildfire smoke.
- Employees are informed about which tasks will be performed during a smoke event.
- Alternative indoor tasks are made available to staff in sensitive groups.
- Employees are encouraged to limit non-essential outdoor physical activities. Additionally, indoor locations must be available for frequent breaks.
- Adequate supply of respirators for voluntary use are provided to employees.
- Training associated with wildfire smoke events and that Appendix B is provided to employees who choose to wear a respirator during these events.

Employees have responsibility to:

- Attend all required training.
- Wear voluntary respirators appropriately.
- Notify supervisors if they have increased sensitivities to wildfire smoke.
- Follow agency procedures to mitigate impact of wildfire smoke.
- Notify supervisors of worsening conditions during wildfire event.

Hazards of Wildfire Smoke

Wildfire smoke can cause a range of health problems, from burning eyes and a runny nose to wheezing and difficulty breathing. Wildfire smoke can also exacerbate pre-existing health conditions for those in sensitive groups. Examples of sensitive groups are those who are pregnant, age 65 and older, and/or those with one or more of the following conditions:

- Lung diseases such as asthma and chronic obstructive pulmonary disease (COPD)
- Respiratory infections such as pneumonia, bronchitis, colds, flu, and/or recovering from COVID-19
- Heart or circulatory problems
- Diabetes

Employee Information and Training

Employees working outdoors and that may be exposed to smoke events will receive training before exposure to a smoke event and annually thereafter.

Training will include:

- The health effects of wildfire smoke, including pre-existing medical conditions that can cause increased likelihood of health complications.
- Information on where to find current and forecasted air quality levels.

- Details of the wildfire smoke program for respective departments and divisions.
- Information on voluntary respirator use, including the importance, limitations, and benefits of respirator usage during smoke events.
- Proper use and maintenance of respirators.
- Protective measures to reduce wildfire smoke exposure.
- Signs of injury or illness and when to seek medical treatment.
- A copy of Appendix B of Washington Administrative Code (WAC) 296-62-08540.

Respiratory Protection

When the air quality index (AQI) is reported as 69 or greater (which is equivalent to fine particulates ($PM_{2.5}$) concentration of 20.5µg/m^3 (micrograms per cubic meter) or greater, supervisors are encouraged to offer National Institute for Occupational Safety and Health (NIOSH) approved filtering facepieces such as N95s for voluntary use.

When the AQI is 151 or greater ($PM_{2.5}$ is 55.5µg/m^3) or greater, supervisors must ensure an adequate supply of NIOSH approved filtering facepieces are available to all employees for voluntary use.

Employees who voluntarily use respirators during smoke events shall properly wear and maintain their respirators and review the information in Appendix 35-1 embedded herein.

Hazard Communication

During wildfire events, supervisors must remind employees about wildfire smoke hazards at tailgate or dispatch meetings and/or include written notices of smoke hazards as part of employee daily dispatch communications. Information discussed or distributed shall include:

- Notification when the AQI is 69 or greater.
- Protective measures available to employees to reduce wildfire smoke exposures.
- Requirement to notify supervisor of worsening air quality.
- Requirement to notify supervisor of any adverse symptoms such as asthma attacks, difficulty breathing, and chest pain that may be the result of wildfire smoke exposure.

Exposure Controls

The following administrative controls will be implemented whenever feasible to reduce employee exposure to poor air quality exceeding AQI 151.

- Relocate work to a location with a lower AQI or that is protected from smoke exposure, such as indoors.
- Change work schedules to a time when the AQI is less than 151.
- Reduce work intensity.

- Provide additional rest periods.

Exposure Symptom Response
First aid assistance to determine whether medical attention is necessary shall be provided to employees displaying adverse symptoms of wildfire smoke exposure. The first aid provider shall rely on their training in caring for their patient.

Appendix 35-1: Protection from Wildfire Smoke Information to Be Provided to Employees (Mandatory).

296-62-085 WAC

(1) The health effects of wildfire smoke. Although there are many hazardous chemicals in wildfire smoke, the main harmful pollutant for people who are not very close to the fire is “particulate matter,” the tiny particles suspended in the air. Particulate matter can irritate the lungs and cause persistent coughing, phlegm, wheezing, or difficulty breathing. Particulate matter can also cause more serious problems, such as reduced lung function, bronchitis, worsening of asthma, heart failure, and early death. Sensitive Groups. People with pre-existing health conditions and those who are sensitive to air pollution who are among those most likely to experience health problems from exposure to wildfire smoke. Examples of sensitive groups include:

- People with lung diseases such as asthma or chronic obstructive pulmonary disease (COPD), including bronchitis and emphysema, and those who smoke.
- People with respiratory infections, such as pneumonia, acute bronchitis, bronchiolitis, colds, flu, or those with, or recovering from COVID-19;
- People with existing heart or circulatory problems, such as irregular heartbeat, congestive heart failure, coronary artery disease, angina, and those who have had a heart attack or stroke.
- Children under 18 years old, and adults over age 65.
- Pregnant women.
- People with diabetes.
- People with other medical or health conditions which can be exacerbated by exposure to wildfire smoke as determined by a physician.

(2) The right to obtain medical treatment without fear of reprisal. Employers must allow employees who show signs of injury or illness due to wildfire smoke exposure to seek medical treatment and may not punish affected employees for seeking such treatment. Employers must also have effective provisions made in advance for prompt medical treatment of employees in the event of serious injury or illness caused by wildfire smoke exposure.

(3) How employees can obtain the current concentration of PM2.5 in the air. Various government agencies monitor the air at locations throughout Washington and report the current concentration of PM2.5 for those places. Both the Washington Air Quality Advisory (WAQA) and the Air Quality Index (AQI) use the air quality data from these regulatory monitors. While both the WAQA and AQI

use the same data to provide an indicator of how unhealthy the current air quality is, the WAQA uses lower thresholds for reporting the health hazard. Although the government monitoring stations may measure several pollutants, this chapter only uses PM2.5. The easiest way to find the current and forecasted PM2.5 is to go to enviwa.ecology.wa.gov and find the nearest sensor on the map, or https://www.airnow.gov/ and enter the zip code of the location where you will be working. The current PM2.5 is also available from the U.S. Forest Service at tools.airfire.org. Employees who do not have access to the internet can contact their employer for the current PM2.5. The EPA website http://www.enviroflash.info can transmit daily and forecasted air quality by text or email for particular cities or zip codes. If you choose to use an index such as WAQA or AQI, use following table to find the equivalent WAQA or AQI for PM2.5. PM2.5 in Micrograms per Cubic Meter (µg/m3) Washington Air Quality Advisory (WAQA) Air Quality Index (AQI) 20.5µg/m3 101 69 http://www.enviroflash.info can transmit daily and forecasted air quality by text or email for particular cities or zip codes. If you choose to use an index such as WAQA or AQI, use following table to find the equivalent WAQA or AQI for PM2.5. PM2.5 in Micrograms per Cubic Meter (µg/m3) Washington Air Quality Advisory (WAQA) Air Quality Index (AQI) 20.5µg/m3 101 69

(4) The requirements of WAC 296-62-085 wildfire smoke rule. If employees may be exposed to wildfire smoke, then the employer is required to: (a) Check the current PM2.5 before and periodically during each shift. (b) Provide training to employees. (c) Implement a two-way communication system. (d) If feasible, provide engineering and administrative controls when the current PM2.5 is 20.5µg/m3 (WAQA 101, AQI 69) or more. (e) Provide respirators and encourage their use when the current PM2.5 is 20.5µg/m3 (WAQA 101, AQI 69) or more. Employers shall alert employees when the air quality is 20.5µg/m3 (WAQA 101, AQI 69) or more, and what protective measures are available to employees. Employers shall encourage employees to inform their employers if they notice the air quality is getting worse, or if they are suffering from any symptoms due to the air quality, without fear of reprisal. The employer's communication system is:

_____

_____

(5) The employer's methods to protect employees from wildfire smoke. Employers must take action to protect employees from wildfire smoke when the current PM2.5 is 20.5µg/m3 (WAQA 101, AQI 69) or more. Examples of protective methods include: (a) Locating work in enclosed structures or vehicles where the air is filtered. (b) Changing procedures such as moving workers to a place with a lower PM2.5. (c) Reducing work time in areas with unfiltered air. (d) Increasing rest time and frequency and providing a rest area with filtered air. (e) Reducing the physical intensity of the work to help lower the breathing and heart rates. The employer's control system at this worksite is:

(6) The importance, limitations, and benefits of using a respirator when exposed to wildfire smoke. Respirators can be an effective way to protect employee health by reducing exposure to wildfire smoke when they are properly selected and worn. Respirator use can be beneficial even when the PM2.5 is less than 20.5µg/m3, to provide additional protection. When the current PM2.5 is 20.5µg/m3 (WAQA 101, AQI 69) or more, employers must make proper respirators available to workers for voluntary use. A respirator should be used properly and kept clean. The following precautions must be taken:

(a) Employers shall select respirators certified for protection against the specific air contaminants at the workplace. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Center for Disease Control and Prevention certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will list what the respirator is designed for (particulates, for example). KN95 respirators may also be used if adequate supply of NIOSH approved respirators is not available. Surgical masks or items worn over the nose and mouth such as scarves, T-shirts, and bandannas will not provide protection against wildfire smoke. An N95 filtering facepiece respirator, shown in the image below, is the minimum level of protection for wildfire smoke.

(b) Read and follow the manufacturer's instructions on the respirator's use, maintenance, cleaning, and care, along with any warnings regarding the respirator's limitations. The manufacturer's instructions for medical evaluations, fit testing, and shaving should also be followed to ensure the best protection against wildfire smoke, although doing so is not required for voluntary use of filtering facepiece respirators.

(c) Do not wear respirators in areas where the air contains contaminants for which the respirator is not designed. A respirator designed to filter particles will not protect workers against gases or vapors, and it will not supply oxygen.

(d) Employees should keep track of their respirator so that they do not mistakenly use someone else's respirator.

(e) Employees who have a heart or lung problem should ask their doctor before using a respirator.

(7) How to properly put on, use, and maintain the respirators provided by the employer. To get the most protection from a respirator, there must be a tight seal around the face. A respirator will provide much less protection if facial hair interferes with the seal. Loose-fitting powered air purifying respirators may be worn by people with facial hair since they do not have seals that are affected by facial hair. The proper way to put on a respirator depends on the type and model

of the respirator. For those who use an N95 or other filtering facepiece respirator mask that is made of filter material:

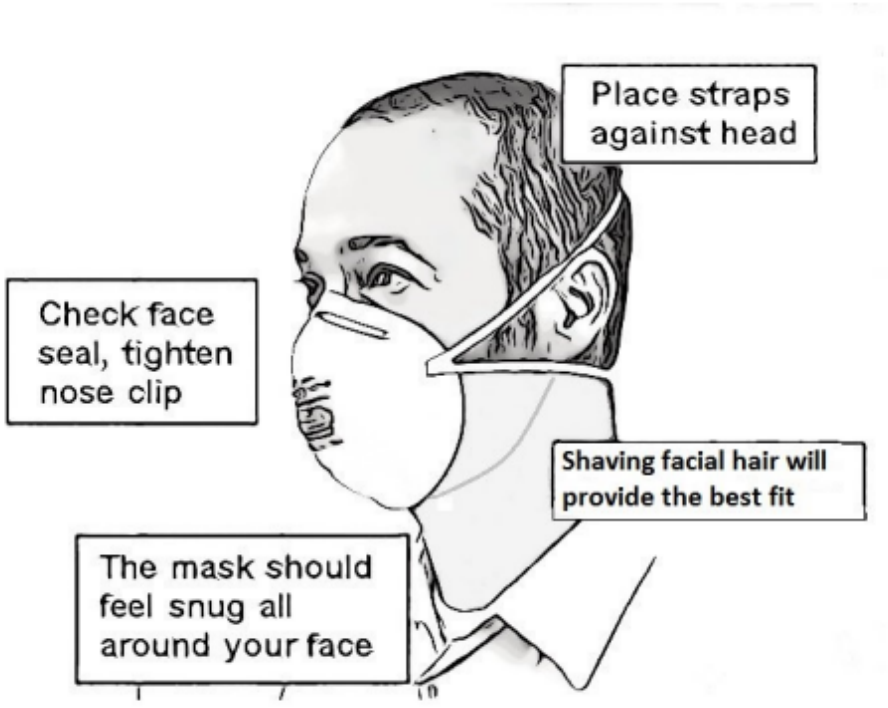
(a) Place the mask over the nose and under the chin, with one strap placed below the ears and one strap above.

(b) Pinch the metal part (if there is one) of the respirator over the top of the nose so it fits securely.

(c) Perform a seal check:

(i) Cover the respirator with both hands and exhale. If air leaks where the respirator seals against the face, readjust the respirator and nosepiece and try again. When a proper fit is achieved, the respirator should bulge from the face and not leak around the seal.

(ii) Cover the respirator with both hands and inhale. If air leaks where the respirator seals against the face, readjust the respirator and nosepiece and try again. When a proper fit is achieved, the respirator should collapse slightly and not leak around the seal.



Section 36: Hot Work Program

Introduction

This program has been established to prevent fires and subsequent injury from temporary operations involving open flames, heat, sparks, or slag. Hot work such as cutting, welding, grinding, and similar activities present a significant fire risk, and should be avoided when practical.

Applicability

This program applies to all King County operations, including maintenance, construction, and any operations performing hot work at designated stations or in the field.

Responsibilities

Safety and Health Professionals

- Coordinate with supervisors and leads to plan, schedule, and implement training required according to this program.
- Provide technical assistance as requested to managers, supervisors, and crew leads for complex hot work operations.

Management

Department directors, division managers and section managers oversee compliance, including providing adequate funding for training and equipment required by this program.

Supervisors and Leads

- Consult with the assigned Safety and Health Professional for technical assistance to establish designated hot work areas.
- Coordinate with a Safety and Health Professional to arrange for required training for employees who may conduct hot work operations. If the safety officer is unknown, contact CESD Central Safety at centralsafety@kingcounty.gov.
- Maintain copies of training completion records.
- Provide and coordinate refresher training when there is a change in procedures, regulations, designated hot work area location, and when any deficiencies are noted.
- Require that a hot work permit is completed for each operation.

Employees

- Follow the provisions of this program.
- Daily inspection of assigned equipment prior to use at each job site.
- Wear appropriate hot work Personal Protective Equipment (PPE).

- Complete a hot work permit before conducting any operations.

Definitions

Combustible Materials: Any material that will ignite, burn, or add heat to an ambient fire. Examples: untreated wood, gypsum, cardboard, etc.

Designated Hot Work Area: A location designed or approved for hot work activities. These designated areas are free of combustible and flammable contents and are segregated from adjacent areas.

Fire Watch: Trained personnel who are in attendance during the entire hot work operation and are immediately available to extinguish a fire or take other effective action if needed.

Hot Work: Any activity such as cutting, soldering, welding, or grinding that creates open flames, heat, molten slag, or sparks.

Hot Work Permit: A written plan that identifies the steps and procedures necessary to ensure safe hot work is conducted. See Appendix 2

Hot Work Procedures

Where practical, all combustibles shall be relocated at least 35 feet from the worksite. Where relocation is impractical, combustibles shall be protected with flame proof covers, shielded with metal, guards, curtains, or wet down material to help prevent ignition of material.

Ducts, conveyor systems, and augers that might carry sparks to distant combustibles shall be protected or shut down.

Where cutting or welding is done near walls, partitions, ceilings, or a roof of combustible construction, fire-resistant shields or guards shall be provided to prevent ignition.

If welding is to be done on a metal wall, partition, ceiling, or roof, precautions shall be taken to prevent ignition of combustibles on the other side, due to conduction or radiation of heat. Where combustibles cannot be relocated on the opposite side of the work, a fire watch person shall be provided on the opposite side of the work.

Welding shall not be attempted on a metal partition, wall, ceiling, or roof having a covering nor on walls having combustible sandwich panel construction.

General mechanical ventilation or local exhaust systems must be used when the hot work operations are not in an outdoor or open-air environment.

Fire watch staff and a fire extinguisher must be readily available throughout the hot work operation and one hour after the work has been conducted.

Personal Protective Equipment (PPE)
All employees must wear required PPE while performing any hot work operations, including helmets, face shields, hand shields or gloves, and protective clothing.

Face shields and filter lenses for protection against ultraviolet light and radiation should be used according to the operation conducted. See Table G-1.

Training
Supervisors and leads will coordinate with the assigned Safety and Health Professionals to provide training for employees who conduct hot work operations. If the Safety and Health Professional is not known, contact CESD Central Safety at centralsafety@kingcounty.gov. Supervisors and leads shall maintain records of training.

Hot work training shall include instructions on the following topics:

- Types of hazards in hot work operations.
- Appropriate selection and use of PPE.
- Hot work procedures and best practices.
- Operation of specific hot work equipment being used.
- Fire extinguisher operation for the fire watch and the employee performing the hot work.

Record Keeping
Copies of all hot work permits and training records shall be kept by supervisors or leads for at least three years.

Attachment 36-1: Lens filter shades for welding

TABLE G-1 - FILTER LENSES FOR PROTECTION AGAINST RADIANT ENERGY

Operation	Shade No.
Soldering	2.
Torch Brazing	3 or 4.
Light cutting, up to 1 inch	3 or 4.
Medium cutting, 1-6 inches	4 or 5.
Heavy cutting, over 6 inches	5 or 6.
Light gas welding, up to 1/8 inch.	4 or 5.
Medium gas welding, 1/8 - 1/2 inch.	5 or 6.
Heavy gas welding, over 1/2 inch.	6 or 8.
Shielded Metal-Arc Welding 1/16 to 5/32 - inch electrodes.	10.
Inert-gas Metal-Arc Welding (Non-ferrous) 1/16 - to 5/32 - inch electrodes.	11.
Shielded Metal-Arc Welding:	
3/16 to 1/4 - inch electrodes	12.
5/16 - and 3/8 - inch electrodes	14.

Attachment 36-2: Example Hot Work Permit

HOT WORK PERMIT

Seek an alternative/safer method if possible!

Before initiating hot work, ensure precautions are in place as required by NFPA 51B and ANSI Z49.1.
Make sure an appropriate fire extinguisher is readily available.

This Hot Work Permit is required for any operation involving open flame or producing heat and/or sparks. This work includes, but is not limited to, welding, brazing, cutting, grinding, soldering, thawing pipe, torch-applied roofing, or chemical welding.

Date	Hot work by ❑ employee ❑ contractor
Location/Building and floor _____	Name (print) and signature of person doing hot work
Work to be done _____	I verify that the above location has been examined, the precautions marked on the checklist below have been taken, and permission is granted for this work.
Time started _____ Time completed _____	Name (print) and signature of permit-authorizing individual (PAI)
THIS PERMIT IS GOOD FOR ONE DAY ONLY	

❑ Available sprinklers, hose streams, and extinguishers are in service and operable.

❑ Hot work equipment is in good working condition in accordance with manufacturer's specifications.

❑ Special permission obtained to conduct hot work on metal vessels or piping lined with rubber or plastic.

Requirements within 35 ft (11 m) of hot work

❑ Flammable liquid, dust, lint, and oily deposits removed.
❑ Explosive atmosphere in area eliminated.
❑ Floors swept clean and trash removed.
❑ Combustible floors wet down or covered with damp sand or fire-resistive/noncombustible materials or equivalent.
❑ Personnel protected from electrical shock when floors are wet.
❑ Other combustible storage material removed or covered with listed or approved materials (welding pads, blankets, or curtains; fire-resistive tarpaulins), metal shields, or noncombustible materials.
❑ All wall and floor openings covered.
❑ Ducts and conveyors that might carry sparks to distant combustible material covered, protected, or shut down.

Requirements for hot work on walls, ceilings, or roofs

❑ Construction is noncombustible and without combustible coverings or insulation.
❑ Combustible material on other side of walls, ceilings, or roofs is moved away.

Requirements for hot work on enclosed equipment

❑ Enclosed equipment is cleaned of all combustibles.
❑ Containers are purged of flammable liquid/vapor.
❑ Pressurized vessels, piping, and equipment removed from service, isolated, and vented.

Requirements for hot work fire watch and fire monitoring

❑ Fire watch is provided during and for a minimum of 1 hour after hot work, including any break activity.
❑ Fire watch is provided with suitable extinguishers and, where practical, a charged small hose.
❑ Fire watch is trained in use of equipment and in sounding alarm.
❑ Fire watch can be required in adjoining areas, above and below.
❑ Yes ❑ No Per the PAI/fire watch, monitoring of hot work area has been extended beyond 1 hour.

 NFPA 51B

Section 37: Animal Handling

INTRODUCTION

This program has been established to prevent injury and illness as a result of handling animals in the workplace. Animal handling presents a series of potential hazards that must be mitigated through implementation of the below responsibilities, training, and safe practices.

APPLICABILITY

This program applies to all employees of the Regional Animal Services of King County (RASKC).

RESPONSIBILITIES

Safety professionals will

- Provide technical assistance in implementation of safe working procedures and programs as requested.
- Assist the division in program evaluation as requested.
- Assist the supervisors with training as requested.

Managers and supervisors will

- Develop, implement, and enforce healthy and safe policies and procedures.
- Ensure employees complete required trainings to be safe on the job.
- Consult with Central Safety health and safety professionals as needed.

Employees will

- Adhere to the requirements of this program and any other site-specific health and safety procedures.
- Follow guidance presented in job safety trainings.

TRAINING

Managers and supervisors will coordinate required trainings for employees prior to the start of potentially hazardous work. Central Safety Health and Safety Professionals are available for assistance with training programs as requested. Managers and supervisors will keep records of trainings for the duration of an employee's employment with the section.

Refer to RASKC Animal Care Technician Training Plan for details on the required trainings for Animal Care Technicians.

SAFE ANIMAL HANDLING PROCEDURES

Below are some of the most common potentially hazardous tasks and associated controls that an Animal Care Technician will face. Employees, supervisors, and managers should refer to the rest of the King County Accident Prevention Program for any other potential hazards that may arise.

TASK	POTENTIAL HAZARDS	CONTROLS
Euthanasia of animals	Exposure to legend drug (see SDS), sharps, and potentially aggressive/injured animals	• Certified staff only to perform injection. • PPE nitrile gloves. Dispose of sharps in red labeled sharps containers. Follow all requirements in Accident Prevention Program Section 14. • Animal should be sedated by veterinary staff when possible (oral sedation via feed is preferred method). • Catch pole / control stick and muzzle may be used to safely control the animal and avoid bite risk.
Ringworm treatment	Transfer of ringworm spores	• PPE nitrile gloves, gowns, facial/surgical mask, booties, and hair protection.
Mixing rescue disinfectant	Chemical splash in face/eyes (see SDS)	• PPE nitrile gloves and eye protection.
Using bleach	Splash in face/eyes, contact with skin (see SDS)	• PPE eye protection and gloves.
Exposure to infectious animals or zoonotic risk animals	Transfer of disease to human / transfer of disease between animals	• Follow specific directive of veterinary staff for precautions. • PPE nitrile gloves, gowns, and N95 mask when directed.
Handling aggressive animals	Bite or other injury	• Use catch pole/control stick to control the movement of the animal. • Assistance from a second employee.

RESOURCES

Section 2: NEW EMPLOYEE SAFETY ORIENTATION
Section 9: HAZARD COMMUNICATION AND THE GLOBALLY HARMONIZED SYSTEM (GHS)
Section 14: BLOODBORNE PATHOGENS EXPOSURE CONTROL