The Safety of Our Employees
A Guide to Safety on the Job
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PART I

PURPOSE OF MANUAL & SAFETY STATEMENT
PURPOSE

This booklet is to serve as an educational aid and to be used in conjunction with the personalized safety training provided by your immediate supervisor for the purpose of securing uniformity, avoiding misunderstandings, preventing accidents, and promoting effective safety operations.

SAFETY ATTITUDE

An employee has a proper safety attitude when he/she demonstrates a readiness and willingness to apply safety know-how in all work situations.

There are, of course, other factors that characterize a proper safety attitude. These include: the willingness to report or correct unsafe conditions; self-initiated efforts to contribute to the safety know-how of others; and the submission of suggestions to improve the safety of working procedures. These things all reflect an employee's safety attitude. However, it is important to stress again that the ability and readiness of an employee to apply safety know-how stands out as the core ingredient.

BENEFITS OF SAFETY

The most obvious benefits of working safely include:

♦ Freedom from injury, or even death.
♦ Freedom from temporary or permanent loss of earning power.
♦ Freedom from serious disciplinary action.
♦ Increased productivity and less waste.
♦ And finally, working safely adds to an employee's overall reputation as a good worker who is cooperative, and such a reputation has many advantages.
HEALTH AND SAFETY POLICY STATEMENT

Within the Department of Public Works, our safety objective is to continue, year by year, a reduction in the number of occupational injuries and illnesses. It is therefore our Department's goal to plan and conduct our operations in such a manner as to provide the highest degree of safety for our employees and the public.

The policy of this Department is that the first consideration in the performance of all work shall be the safety of our employees and the public. All reasonable methods, procedures and equipment necessary to achieve this end must be used. There will be no compromise with safety.

We will continue our efforts to equip ourselves with the knowledge of safe methods, and shall train our employees in the safe way of doing each job. We shall see that protective devices, guards, and apparel are readily available and used when necessary, and will continue to maintain high standards of sanitation and housekeeping in all active working areas, for it is only through our ability to improve working conditions that we will be able to maximize productivity while reducing accidents and injuries.

In addition, we will not forget the most important ingredient for safety success. It is your ability, willingness, and readiness to apply your safety know-how in all situations that call for such an application. Good safety practice must be carried out accordingly as an essential part of our everyday work habits. Together as a safety team, we can improve the quality of life for all employees.

_____________________________  _________________
Thomas E. Donatelli, P.E.       Date
Director, Department of Public Works
PART II

SAFETY & HEALTH POLICIES & PROCEDURES
PROGRAM RESPONSIBILITIES

Top Management:

♦ Authorize the necessary resources for accident prevention.
♦ Ensure that all members of management, including supervisors are held accountable for accident prevention activities and managing the safety process.
♦ Set a positive example by following prescribed safe work practices when in the field.
♦ Demonstrate leadership by attending employee safety seminars.
♦ Cooperate with the Safety Officer and Workers’ Compensation Manager in their efforts to prevent accidents and control the associated costs.
♦ Encourage employees to take an active part in maintaining a safe workplace.
♦ Create an avenue for employees to make feasible safety and health suggestions to management.
♦ Create an avenue for employees to report unsafe conditions/behaviors to their supervisor.
♦ Discuss safety processes and improvements regularly during staff meetings.
♦ Annually assess the success of the safety process.
♦ Establish long and short-term safety goals for your department.

Supervision:

♦ Enforce the use of safe-work practices and housekeeping policies.
♦ Constructively correct unsafe behaviors.
♦ Take the appropriate action to correct unsafe conditions in a timely manner.
♦ Conduct regular audits of the workplace to identify unsafe conditions and unsafe behaviors.
♦ Ensure that all employees have been issued the proper personal protective equipment before beginning their job functions.
♦ Ensure that all employees are properly educated on general and specific safe work practices before beginning their job functions.
♦ Hold regular meetings discussing safety and health topics.
♦ Conduct a thorough accident analysis when occupational injuries and illnesses occur and recommend corrective action.
♦ Listen to employee suggestions and concerns regarding safety issues and give feedback in a timely manner.
♦ Communicate feasible safety and health suggestions and concerns to management.
**Employees:**

Each Department employee is expected, as a condition of employment for which he is paid, to work in a manner which will not cause injury to him or to those with whom he works. It is important to the concept of safety that each employee understand that responsibility for his own safety is part of his job requirement.

This Department's total injury prevention program cannot be achieved unless employees are dedicated to the prevention of accidents. All employees play an important part in making the job a safe and healthful place in which to work.

**Department employees should**

- Follow all safe work practices prescribed by the Allegheny County Department of Public works covered during educational sessions, on-the-job training and new employee orientation.
- Actively participate and listen during safety educational sessions.
- Wear and maintain the personal protective equipment provided.
- Use safety equipment provided to perform your job functions.
- Report unsafe conditions and unsafe behaviors immediately to your supervisor.
- Report all accidents to your supervisor by the end of the shift.
- Demonstrate personal safety awareness and concern for the safety of your co-workers.

**Safety Officer / Departmental Safety Coordinator:**

- Demonstrate a commitment to preventing occupational injuries and illnesses.
- Serve as a link between management and employees with the interest of maintaining a safe workplace.
- Assist with the coordination of safety efforts for the Allegheny County Department of Public Works and specific divisions.
- Assist departmental management in justifying the need for specific safety systems and processes.
- Help management and employees identify safety and health training needs.
- Identify and communicate new safety and health requirements.
- Compile injury and illness-related records.
- Track the progress of safety and health-related projects.
- Help supervisors make changes or develop strategies that improve safety processes.
- Work with employees to optimize safe work practices.
- Attend educational seminars to increase expertise in the safety field.
SAFETY WITHIN THE WORK AREA

Most fatal accidents have occurred inside the work areas while employees are in close proximity to moving vehicles and equipment. You must comply with the following instructions:

♦ Never stand behind or in front of vehicles and equipment that are in operation.

♦ Do not stand on running boards or other vehicle parts outside of the cab.

♦ Movement of vehicles or equipment inside the work area should have the supervisor's approval.

♦ **You are forbidden to back up a vehicle without conducting the circle of safety.** This requires the operator to walk a complete circuit of his/her vehicle, looking under the wheels as well as the front and rear of the vehicle, to observe potential hazards before backing up.
GENERAL SAFETY RULES & ENFORCEMENT PROCEDURES

♦ It is the responsibility of Superintendents, Supervisors and Acting Supervisors to enforce all safety rules.
♦ Each employee shall be given a copy of the general safety rules and enforcement procedures by his or her supervisor and be made familiar with all other the policies and procedures applicable to his or her work situation contained in this manual.
♦ All supervisory personnel are required observe the rules set forth and enforce compliance with these policies and procedures by their employees.
♦ Each Public Works employee, whether elected, appointed, permanent, temporary, or seasonal is required and expected to follow Public Works safety policies and procedures.
♦ Employees who violate a safety policy/procedure, or knowingly permit violation, are subject to immediate disciplinary.
♦ If there is a difference of opinion as to the interpretation or applicability of any safety policy/procedure, the Department Director will make the decision.
♦ Employees are required to immediately report any emergency or unsafe situation to their supervisor.
♦ If an employee feels unable to safely complete his/her assigned work duties, the employee must report this information to his/her immediate supervisor.
HOUSEKEEPING

The purpose of good housekeeping is to establish and maintain clean, orderly working conditions to assure maximum safe use of the work area and to eliminate fire hazards. It is essential to good safety performance, and is an excellent indicator of the safety attitude of both you and your supervisor.

Spot checks will be performed by your supervisor to see that the Department’s housekeeping standards are maintained. Superior work/housekeeping habits and a safety attitude will help protect you, other employees, and the public.

Areas that will be inspected periodically include, but are not limited to:

- District Warehouse/Work Areas
- Park Work Areas
- Landscape and Traffic Divisions
- Trade Work Areas
- Garage Work Areas
- Maintenance Satellite Operations throughout the County
DISCIPLINE

Effective discipline is necessary to assure the maintenance of orderly, safe and efficient operations. It is the responsibility of the immediate supervisor to inform the employee of his or her job duties, responsibilities, and appropriate standards of conduct. An employee whose behavior is unacceptable shall be subject to progressive discipline. Disciplinary actions will be fully documented and shall be in accordance with established County, Departmental, Union Contract and Labor Relations practices. Circumstances that involve stealing, fighting, gambling, use/possession of alcohol or illegal drugs on County time and property may warrant immediate dismissal.

For more information relating to progressive discipline, please refer to "The County of Allegheny Progressive Discipline Policy" booklet.

HORSEPLAY

Horseplay, such as scuffling, practical jokes, misuse of Department equipment, throwing objects at another person, putting lighted matches or cigarettes in or on another's clothing, wrestling, blowing air or steam toward another person, removing furniture as a fellow worker sits down, shooting rubber bands or paper clips, etc., are causes of many accidents. Such practices are prohibited and warrant disciplinary action.

SMOKING

Employees will observe all “No Smoking” signs and facility no smoking rules. Smoking is not permitted in areas where flammable/combustible materials are used or stored. Designated smoking areas must be free of, and be at least 30 feet away from flammable/combustible materials. Appropriate receptacles for waste material must be provided in designated smoking areas. Matches, cigarette and cigar butts and pipe ashes shall be discarded into an appropriate receptacle and not be place in a receptacle while still burning.
DEPARTMENT MOTOR VEHICLES AND EQUIPMENT

The drivers of Department vehicles and equipment are expected not only to obey traffic rules and regulations, but also to help make the streets and highways safer by their carefulness and courtesy. All drivers must be properly licensed by the state in which they live, and must have the approval to operate any County vehicle from their supervisor. Only in cases of emergency will other than regularly assigned employees be permitted to drive. Any/all changes in license status (i.e. suspension, etc.) must be immediately reported to your supervisor. You must also remember:

♦ To prevent your feet from slipping off the brake or clutch pedal(s) while driving. Keep your footwear free of mud, grease or snow.

♦ Do not drive if you are ill or fatigued. You are responsible for any accident, which may occur because of these conditions.

♦ Before starting a vehicle, make sure that the wheels are unobstructed, particularly by children, pets or toys.

♦ Allow no more than two other employees in the front seat (excluding vehicles with only two front bucket seats).

♦ Make sure that passengers in both the front and back seats do not expose their arms or legs outside the body of the vehicle, and that the vehicle comes to a complete stop before passengers are permitted to mount or dismount.

♦ Wear seat belts, and instruct your passengers to use them where provided. This pertains to Department vehicles/equipment, as well as personal vehicles while engaged in County business.

♦ Wear the necessary safety belts when working within the bed or body of any moving vehicle.

♦ Vehicles and mobile equipment shall not be left running while unattended.

♦ Only authorized, trained employees are permitted to operate mobile construction vehicles, such as cranes, forklifts and backhoes.

♦ Employees are responsible for inspecting their equipment for defects.

♦ Employees must conduct a pre-operational inspection to verify the vehicle’s condition.
♦ The vehicle should be parked on as level a surface as possible with the parking brake set.

♦ Defective equipment must be tagged out and not used until the defects are corrected or the equipment is replaced.

♦ All persons driving fleet vehicles must have a valid driver’s license. The Fourth Avenue Garage Supervisor will verify that all persons requesting pool cars have a valid license. Fleet Management will verify that all employees driving other fleet vehicles have a valid license.

PREVENTIVE MAINTENANCE

All drivers, through their supervisors, are responsible for ensuring that their vehicles/equipment are in a safe operating condition. It is important to:

♦ Report defective equipment to your supervisor. Do not operate vehicles or equipment with makeshift repairs.

♦ Test your brakes periodically to ensure they are being ready for an emergency. Do not operate any vehicle with faulty brakes. Report this condition to your supervisor.

♦ Give special attention to your vehicle’s windshield, windows, wipers, and lights. Make sure they are always clean and in good working order.

♦ It is the driver’s/operator’s responsibility to check and ensure all fluids meet specified operating levels.

It is the driver’s/operator’s and supervisor’s responsibility to ensure that our programmed inspections, state inspections, upkeep and minor repair of vehicles/equipment are properly utilized to minimize unscheduled downtime.

VEHICLE ACCIDENT POLICY

Each vehicle should carry a Vehicle Accident Report form to be filled out by the driver involved. The state or city report must be completed in any cases required by law. This vehicle accident report form must be completed for any accident involving a vehicle in service, which results in death, personal injury, or property damage, regardless of who was hurt, what property was damaged, or who was responsible. If an employee is injured, an employee injury form must also be completed.
THE DEFENSIVE DRIVING ATTITUDE

Professional drivers have a bigger stake in driving defensively than anyone else. Lapses in attention and mistakes behind the wheel cannot only result in injuries or death, they can also affect your career.

Keep a four-second following distance on dry pavement when all other conditions are also good. Watch the rear bumper of the vehicle just ahead of you pass a stationary marker (a tar strip, sign post, phone pole, etc.) and count “one thousand one, one thousand two, one thousand three, one thousand four.” As you say “four,” your front bumper should reach that marker. If you reach it before you say “four,” reduce your speed by one or two miles per hour and check your distance again. When conditions are not good, increase your following distance to six seconds.

Don’t use controlled substances (i.e. alcoholic beverages, drugs, etc.). Also, keep in mind that other depressants, including most cold remedies, tranquilizers and sleeping pills, will affect your driving skills just as alcohol does.

When you have a bad day, take a few deep breaths before you get behind the wheel and while you are driving. Be especially alert for potential hazards when you are under stress. Always remember that your driving style can be a reflection on our Department. Drive as though your name was on the side of your vehicle.

For further information regarding vehicle safety and accident procedures, please refer to the Department’s “Vehicle Fleet Manual.”
**DRUG-FREE WORKPLACE**

The illegal use of drugs, whether on or off the job, may adversely affect an employee's job performance and jeopardize the safety of others, the public, and the reliability of the Department's operations and/or equipment. Therefore, cooperation of each and every employee is essential to maintain a drug-free working environment.

**Our Drug-Free Workplace Policy Statement is as follows:**

Allegheny County prohibits the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance as listed in Schedules I through V of Section 202 of the Controlled Substances Act (21 U.S.C. 812), whether on or off the job. Violations of such prohibitions on our premises or while conducting County related business will result in the appropriate discipline, up to and including discharge of the employee involved.

1. Possession and use of alcohol and illegal drugs by a Public Works employee during work is prohibited.

2. Employees using prescription medications that could impair their ability to operate machinery, vehicles and other equipment must make their supervisor aware of the situation. This policy is for the safety of all employees.

3. An employee who is suspected to be under the influence of drugs or alcohol on the job, and poses a threat to themselves or other employees will not be permitted to continue their job duties.
REPORTING ACCIDENTS

Reporting On-The-Job Accidents

Employees must immediately report all injuries and/or property damage occurring on the job (regardless of how minor) to their supervisor, and complete and sign the required employee accident or property damage report forms. Failure to do so is in direct violation of the general safety rules.

Reporting Off-The-Job Accidents

Throughout the United States each year, more than 25,000 people are killed in home accidents and more than two million are killed or seriously injured in motor vehicle accidents. Statistics prove that an employee is five times safer on the job than he is off the job. This is true because of the lack of a well-organized effort to prevent "off-the-job" accidents.

Since off-the-job accidents are just as painful and disabling as those occurring at work, and often would involve loss of an employee's service and unnecessary costs, it is expected that each employee will take the safety precautions off-the-job as are required while working. Wherever you are, whatever you are doing...do it safely!

Any injuries or sickness of a severe nature off the job that may involve lost time or physical disability must also be reported. Full and correct information regarding the accident and injury will be given by the employee to the supervisor.

Why Should Injuries and Accidents Be Reported?

Reporting accurate facts about accidents (no matter how minor the injury) will help to make sure that the injured employee receives the prompt medical attention needed. In addition, any reports of unsafe conditions will help assure that a potentially dangerous situation is avoided.

It is important to remember that every accident, no matter how slight, contains a lesson. If it goes unreported, we can be sure that no one, except possibly the individual to whom it happened, learned anything from that accident. At best, only one person learned from the unreported accident. At worst, no one learned. What exactly is bad about this? It means that the cause or causes, whatever their nature, which operated to produce the unreported minor injury are free to operate again to produce more injuries, perhaps even more serious ones. That is why employees are encouraged to report all accidents.
BASIC ACCIDENT TYPES

The first and most common type is the "struck-by" accident. It is always a struck-by accident when an individual has been contacted unexpectedly by a moving object or substance. Being struck by a car, a hammer, a flying fragment, or a falling box are all examples of struck-by accidents.

A second basic type is the "struck-against" accident. This is always the case when an individual is in motion and comes in contact with some object or substance. Contacting a hot pipe, a sharp blade, or a moving pulley belt would all be examples of struck-against accidents.

A third common type of accident is "caught-between," which in reality is the "caught-in, on, or between" kind. Actually, all three are different, although it is common practice to think of them as one basic type.

An example of a caught-in accident is the case of an employee whose shoe caught in a floor grate and resulted in a sprained ankle. An example of a caught-on accident is the case of an employee whose clothing caught on a revolving machine part, resulting in a strained back while attempting to pull free. An example of a caught-between accident is the case of an employee whose finger was caught between meshing gears with the result being traumatic amputation of the finger.

There are, of course, other types of accidents, three of which should be mentioned because they are fairly common:

**Fall From Above** - Many accidents involve falls from a higher level to a lower level. Falls from a ladder, platform, or catwalk are "falls from above" accidents. Also included in this category are cases of falling into excavations, floor openings, sumps, and so forth.

**Fall At Ground Level** - Many accidents involve a fall on the same level. This is usually the case when an individual slips or trips and falls to the floor. Poor housekeeping is a common cause of such accidents.

**Strain/Overexertion** - Many injuries are the result of excessive strain or overexertion. These are particularly common when one tries to do a two-man job

Please refer to the Accident Reporting Packet for more information.

Any questions regarding reporting procedures can be directed to the Department’s Workers’ Compensation Coordinator.
REPORTING UNSAFE CONDITIONS

Employee observations can be extremely important to preventing accidents. Many times, an accident may result from a condition that employees were aware of, but did not report. If an employee notices an unsafe condition in his or her work area, that employee is required to report the information immediately to the supervisor. The attached form may be used for this purpose. Once the condition is reported, the supervisor must take the necessary corrective action. Supervisors should use the attached form to document the action taken.

Reporting Unsafe Conditions and Defective Equipment:

1. Employees must immediately report unsafe conditions, defective equipment or any other situation they judge to be unsafe to their supervisor.
2. The supervisor will investigate these situations and take corrective action if necessary.
3. If the supervisor cannot complete the necessary corrective action unassisted, he or she must go through the proper channels to complete the corrective action.
DEPARTMENT OF PUBLIC WORKS
EMPLOYEE REPORT OF UNSAFE CONDITION

Name: __________________________ Phone: _______________________

Department: _________________ Division: _________________

Date: __________________________

Briefly Describe Condition:

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

Specific Location: _______________________________________________

--------------------------------------------------------------------------------------------

Action Taken
(Completed by Supervisor)

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

Date: ____/____/_____ 

Cc: Department Safety Coordinator
EMPLOYEE SAFETY SUGGESTION PROGRAM

Public Works employees have the opportunity to participate in our safety and health program through our Safety Suggestion Program. Attachment one is the form that employees should complete (anonymously if preferred) and return to their supervisors. Safety Suggestion boxes are stationed at each of our locations for this purpose. Supervisors are required to review these forms on a weekly basis and provide feedback as to why or why not a suggestion can be implemented.

Employees may also contact a member of our Safety and Health Committee to submit a safety suggestion. These suggestions are reviewed during the safety committee meetings. After reviewing these suggestions, the committee will submit a recommendation to management and provide feedback to employees.
DEPARTMENT OF PUBLIC WORKS
EMPLOYEE SAFETY AND HEALTH SUGGESTION FORM

Name: __________________________________________ (optional)

Date: ____ / ____ /____

Department: ______________________________________

Division: _______________________________________

Phone: _________________________________________ (optional)

Briefly Describe Your Suggestion and the Location:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
PART III

SAFETY & HEALTH TRAINING & EMPLOYEE ORIENTATION
SAFETY TRAINING

When an employee does a job, his activities involve him directly with objects which surround him and make up his environment. The job may require him to use tools or to operate equipment. He may have to handle materials or operate a machine. Even when he does not deal with the environment in such direct ways as these, he always has a close physical relationship to what is around him. It is therefore very important that every employee understand the hazards inherent within his working environment and the safe job procedures that will help him avoid these hazards.

Primary data and subject matter will include the teaching of:

**Hazards:** Each employee must understand and be informed about the hazards inherent in the working procedures and in the physical environment. The worker must be reminded continually of these hazards so that he/she is easily able to identify and "red flag" any and all hazardous situations.

**Safety Rules and Regulations:** The employee must know the safety rules and regulations appropriate to the work that is being performed, and be trained to work safely. Compliance is necessary for protection against the hazards. This is why rules are made.

**Recent Accidents:** Each employee must also be kept informed of recent accidents relating to his/her work. This serves to strengthen hazard awareness and to motivate safety know-how.

In addition to these areas, anything that directly or indirectly helps prevent injury is proper subject matter for training.

**Who is responsible for safety training?**

Safety training is the primary responsibility of the supervisor, and for good reasons. The supervisor knows the jobs, the hazards involved, the safety rules and regulations applicable to the work being performed, and the employees who are doing the work.

**Who will be trained?**

It is important that each and every employee receives training in safe job procedures that are essential to the work he/she will be performing. This includes the new or inexperienced worker, as well as the older, more experienced worker.
Inexperienced workers are those who have moved into positions and have not had enough time on the job to learn how to work safely. These individuals are usually unfamiliar with the operations, and not experienced in safe operating procedures or the use of protective safety equipment. Included are situations where an individual has been in a position for an extended period of time, but one of his job requirements is done only once in several months, or once a year or longer. A worker who has not taken part in such jobs can be said to be inexperienced, no matter how long he/she has been in the position. As a rule, the inexperienced worker is one who has had little time performing all of the responsibilities of the position.

The more experienced worker also needs training. You may ask, "If this person is experienced, what's the point of further training?" The answer is because several situations could possibly turn into problems. There could be a tendency to become lax, take shortcuts in work operations, or neglect to use protective safety equipment because of that "safe" feeling brought about by familiarity.

Other examples might include distraction or inattention when an individual is thinking about off-the-job matters, family affairs, money problems, leisure activities, and so on. In these cases, the worker's mind is not on his job. Our challenge in these situations is to move all employees closer toward the idea of 100 percent safety consciousness, because it is in that direction we all must move if accident prevention is to be successful. Continuous safety training, combined with your cooperation, will help us accomplish this key objective.

**PROPER JOB INSTRUCTION**

Your supervisor (or designated representative) will implement the following guidelines when giving you proper job instructions. He/she will:

♦ Explain the importance of doing the task properly, giving step-by-step instruction on how to perform the task and inform you of the personal protective equipment that must be worn.

♦ Show you the proper procedures and answer any questions you may have.

♦ Let you perform the task, while watching carefully to correct any procedure done incorrectly.

♦ Check back with you from time to time to see if the job is being done properly, and if you have any questions.

Your supervisor will follow up because it is an excellent opportunity to correct any safety problems before an accident happens.
SAFETY MEETINGS

District/Park/Trade Supervisors must conduct a minimum of two (2) "on the job" or "toolbox" safety meeting per month. A knowledgeable Field Supervisor or Foreman may be utilized as the safety facilitator on an occasional basis. All employees assigned to work at this designated work site must attend. An outlined report containing subject matter, signature of attendees, date, time, and location of meeting shall be maintained and documented on a pertinent work order. A copy should be filed at the district and a copy provided to the Department's Safety Coordinator.

(The average length of a "toolbox" meeting is 5 to 10 minutes in duration. The subject matter for this meeting is provided by the District Supervisor based on current safety needs.)
All department employees are required to participate in scheduled safety meetings. The sign in sheet below will verify attendance. The sign-in sheet is to be kept on file with a copy to the County Safety Officer and the Department’s Safety Coordinator.

<table>
<thead>
<tr>
<th>DATE</th>
<th>SUPERVISOR:</th>
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**EMPLOYEES IN ATTENDANCE WERE:**

| 1.   | 16.        |
| 2.   | 17.        |
| 3.   | 18.        |
| 4.   | 19.        |
| 5.   | 20.        |
| 6.   | 21.        |
| 7.   | 22.        |
| 8.   | 23.        |
| 10.  | 25.        |
| 12.  | 27.        |
| 13.  | 28.        |
| 14.  | 29.        |
| 15.  | 30.        |

Supervisor Signature:  District/Park:

The following topics were discussed:

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________.

(REVISED 3/2002)
DEPARTMENT OF PUBLIC WORKS
SAFETY ORIENTATION CHECKLIST FOR NEW EMPLOYEE

Employee Name__________________________________________

Supervisor _____________________________________________

Department/Division___________________________________________

Job Title________________________________ Date Hired________________

Subjects to be reviewed with employee.

**General Subjects (Applies to all new employees including temporary and seasonal):**

1. Safety and Health Policy Statement
2. General Safety Rules and Enforcement Procedures
3. Safety Suggestions
4. Reporting Unsafe Conditions
5. Substance Abuse Awareness
6. Emergency Action Plan (fire, medical, weather and threats to personnel)
7. Work-Related Accident Reporting Procedures
8. Vehicle Accident Policy
9. Lifting Techniques

**Maintenance Employees:**

1. Safe Operation of Vehicles
2. Housekeeping
3. Material Handling and Storage
4. Personal Protective Equipment
5. Hand Tools and Power Tools
6. Ladders
7. Machine Guarding
8. Power Lines
9. Hazardous Chemicals and Materials
10. Compressed Gases
11. Flammable Liquids
12. Welding and Cutting
13. Digging and Excavations
14. Traffic Safety
15. Winter Operations
16. Confined Spaces
17. Lockout Tagout
18. Electrical Safety
Job Specific Items:

1. Job Specific Hazards
2. Job Specific Safety Precautions and Rules
3. Required PPE

_____________________________   _______________
Employee Signature     Date

_____________________________   _______________
Supervisor Signature     Date

Please forward Copy to Marlane Woodward, Human Resources, to be placed in Personnel File.
PART IV
IDENTIFYING & CONTROLLING HAZARDS
METHODS TO IDENTIFY AND CONTROL HAZARDS

Each Public Works facility must have workplace analysis methods in place to identify and control hazards in their facilities. These methods include safety and health audits for unsafe conditions and unsafe behaviors and job safety analysis.

The purpose of workplace analysis is to recognize existing and potential hazards, identify employees at risk, and to establish control measures. Workplace analysis is a continuous process to recognize, identify, and control workplace hazards. The frequency of analysis activities depends on our specific divisions and the nature of occupational hazards present in each work environment.

Types of Audits:

1. **Scheduled Inspections** – Are required at regular intervals. Certain types of equipment, such as elevators, boilers, cranes and fire extinguishers are required by law to be inspected at certain intervals.
2. **Intermittent Inspections** – Are made at irregular intervals. These inspections include unannounced inspections of a department, equipment or small work area.
3. **Monitoring Inspections** - Involve critical operations or equipment that must be surveyed constantly.
4. **Special Inspections** – Necessary when new equipment is installed or a new process is set up.
5. **Work Procedures or Practices** – Continuous observation of tasks to ensure they are done in the safest manner possible. A major weakness in most safety programs is the lack of observation of unsafe work practices.

Scheduled site safety and health audits are required to be conducted by Supervisors on a quarterly basis, using the Hazardous Condition Inspection Form so that new or unrecognized hazards can be identified. These inspections are in addition to any special inspections specific to your equipment that is required during a shorter time frame.

An inspection should always begin with a discussion with managerial staff, supervisor, employees, and possibly union representatives. During the discussion, the person leading the inspection should explain the purpose of the inspection. Departmental representatives should be able to explain relative processes as well as staff safety and health concerns. This discussion may indicate problems that would not be detected by a visual inspection alone.

The walkthrough is done by walking through the worksite and noting as many hazards as possible. The people conducting the walkthrough should observe work processes, methods, engineering controls and personal protective equipment used.
During the walkthrough, it is useful to speak to employees and staff in the area and ask questions. Some helpful examples of questions to ask include:

- Have safety or health problems been commonly noticed among employees?
- Do any hazards exist that are not on the checklist?
- Do the employees have questions about safety and health?
- Are there any additional safety and health concerns or suggestions?

**Inspecting for Unsafe Conditions:**

A good inspection depends on knowing where to look and what to look for. The following list of hazardous conditions should be used as a guide - Pinch-points, flying objects, falling objects, electricity, compressed gases, heavy objects, chemicals and flammables, heat/cold, radiation, sharp and pointed objects, slippery surfaces, trip and fall hazards. Attachment’s 1 and 2 are inspection checklist that can be used for conducting an inspection. These checklists must be tailored to your work area.

**Inspecting for Unsafe Work Practices:**

The following checklist of questions should be used to identify unsafe behaviors:

- Do employees operate machinery or use tools and equipment without authority?
- Have guards been removed or have safety devices been rendered ineffective?
- Do people use defective tools or equipment instead of marking it out of service?
- Do they overload objects during material handling tasks?
- Do people stand or work under suspended loads or get off equipment while it is moving?
- Do they repair or adjust equipment while it is in motion, under pressure, or electrically charged?
- Do they fail to use personal protective equipment or safety devices?
- Is housekeeping poor or are conditions unsanitary?
- Does anything distract or startle workers?

**How to Conduct an Inspection:**

- Observe all conditions for compliance with checklist.
- Observe all operations for unsafe acts or violations of safety rules.
- Take notes when unsafe practices are observed.
- Follow up with a written report.
♦ Establish a procedure for handling and following up on recommendations.

**Corrective Action:**

If a hazard is identified and corrective action is not promptly taken, the possibility of an accident exists. In those cases where a serious hazard has been identified, make sure that dangerous equipment is taken out of service and dangerous areas are roped off.
ALLEGHENY COUNTY PUBLIC WORKS DEPARTMENT’S SELF-INSPECTION CHECKLIST

Work Place

1. Are all electrical cords strung so they do not hang on pipes, nails, hooks, etc?
   □ OK
   □ Action Needed
2. Is there no evidence of fraying on any electrical cords?
   □ OK
   □ Action Needed
3. Are rubber cords kept free of grease, oil and chemicals?
   □ OK
   □ Action Needed
4. Are all portable electric tools and appliance grounded to double insulated?
   □ OK
   □ Action Needed
5. Are all ground connections clean and tight?
   □ OK
   □ Action Needed
6. Are all fuses and circuit breakers the right type and size for the load on each circuit?
   □ OK
   □ Action Needed
7. Do switches show evidence of overheating?
   □ OK
   □ Action Needed
8. Are switches mounted in clean, tightly closed metal boxes?
   □ OK
   □ Action Needed
9. Are all electrical switches marked to show their purpose?
   □ OK
   □ Action Needed
10. Are motors clean and kept free of excessive grease and oil?
    □ OK
    □ Action Needed
11. Are motors properly maintained and provided with adequate over-current protection?
    □ OK
    □ Action Needed
12. Are portable lights equipped with proper guards?
    □ OK
    □ Action Needed
13. Are all lamps kept free of combustible material?
   □ OK
   □ Action Needed

**Exits and Access**

1. Are all exits visible and unobstructed?
   □ OK
   □ Action Needed
2. Are all exits marked with a readily visible sign that is properly illuminated?
   □ OK
   □ Action Needed
3. Are there sufficient exits to ensure prompt escape in case of an emergency?
   □ OK
   □ Action Needed
4. Do you take special precautions to protect employees during construction and repair operations?
   □ OK
   □ Action Needed

**Fire Protection**

1. Are portable fire extinguishers provided in adequate number and type?
   □ OK
   □ Action Needed
2. Are fire extinguishers inspected monthly for general condition and operability and noted on the inspection tag?
   □ OK
   □ Action Needed
3. Are fire extinguishers recharged regularly and properly noted on the inspection tag?
   □ OK
   □ Action Needed
4. Are fire extinguishers mounted in readily accessible locations?
   □ OK
   □ Action Needed
5. Is the fire alarm system tested at least annually?
   □ OK
   □ Action Needed
6. Are employees periodically instructed in the use of extinguishers and fire protection procedures?
   □ OK
   □ Action Needed
7. Is your local fire department well acquainted with the facility, location and specific hazards?
   □ OK
   □ Action Needed
Housekeeping and General Work Environment

1. Is smoking permitted in designated “safe areas” only?
   □ OK
   □ Action Needed

2. Are NO SMOKING signs prominently posted in areas containing combustibles and flammables?
   □ OK
   □ Action Needed

3. Are covered metal waste cans used only for oily and paint soaked waste?
   □ OK
   □ Action Needed

4. Are waste receptacles provided, and are they emptied regularly?
   □ OK
   □ Action Needed

5. Do the toilet facilities meet the requirements of applicable sanitary codes?
   □ OK
   □ Action Needed

6. Are all areas adequately illuminated?
   □ OK
   □ Action Needed

7. Are floor load capacities posted in second floors and storage areas?
   □ OK
   □ Action Needed

8. Are floor openings provided with toe boards and railings or a floor hole cover?
   □ OK
   □ Action Needed

9. Are portable ladders (wood or metal) adequate for their purpose, in good condition and provided with secure footing?
   □ OK
   □ Action Needed
Machines and Equipment

1. Are all machines or operations that expose operators or other employees to rotating parts, pinch points, flying chips, particles or sparks adequately guarded?
   - OK
   - Action Needed

2. Are mechanical power transmission belts and pinch points guarded?
   - OK
   - Action Needed

3. Are hand tools and other equipment regularly inspected for safe condition?
   - OK
   - Action Needed

4. Is compressed air used for cleaning reduced to less than 30 psi?
   - OK
   - Action Needed

5. Are grinding wheel tool rests set to within 1/8 inch or less of the wheel?
   - OK
   - Action Needed

6. Are safety valves tested regularly and frequently?
   - OK
   - Action Needed

Materials

1. Are approved safety cans or other acceptable containers used for handling and dispensing flammable liquids?
   - OK
   - Action Needed

2. Are all flammable liquids that are kept inside buildings stored in proper storage containers or cabinets?
   - OK
   - Action Needed

3. Do you have an enforced NO SMOKING rule in areas for storage and use of hazardous materials?
   - OK
   - Action Needed

4. Are only trained personnel allowed to operate forklift trucks?
   - OK
   - Action Needed

5. Have appropriate control procedures such as ventilation systems, enclosed operations, safe handling practices, and proper personal protective equipment been instituted for toxic materials?
   - OK
   - Action Needed
Employee Protection

1. Are your first-aid supplies adequate for the type of potential injuries in the facility?
   □ OK
   □ Action Needed

2. Are there quick water flush facilities available where employees are exposed to corrosive materials?
   □ OK
   □ Action Needed

3. Are protective goggles or glasses provided and worn where there is any danger of flying particles or splashing of corrosive material?
   □ OK
   □ Action Needed

4. Are approved respirators provided for regular or emergency use?
   □ OK
   □ Action Needed

5. Is all protective equipment maintained in a sanitary condition and readily available for use?
   □ OK
   □ Action Needed

6. When lunches are eaten on the premises, are they eaten in areas where there is no exposure to toxic materials, and not in toilet facility areas?
   □ OK
   □ Action Needed
Summary of actions needed to correct hazardous conditions

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HAZARD CONTROL METHODS

Once hazards are identified, they must be controlled and or eliminated using hazard controls. Exposure to hazards should be prevented or controlled by using engineering controls wherever feasible and appropriate. When engineering controls are not feasible or appropriate, administrative controls, work practice controls and personal protective equipment must be used.

When new equipment or products are purchased, where safety and health issues are involved, the Purchasing division should also consult with the safety officer to review applicable safety requirements and potential safety problems that could arise from a new process or piece of equipment.

The Department strives to work with Supervisors and Employees to provide appropriate equipment so the assigned tasks can be completed in the safest manner possible. Input and suggestions are welcome from all employees.

Engineering Controls

Engineering controls, if feasible, should be the first consideration for injury prevention. The purpose of an engineering control is to eliminate and or reduce hazards through job re-design. Many engineering controls increase productivity in addition to making the job easier. A few common examples of engineering controls include:

♦ Ventilation systems to eliminate or reduce atmospheric hazards.
♦ Machine guarding to prevent contact with dangerous machine parts.
♦ Ergonomic design controls to eliminate bending and lifting from repetitive job tasks.
♦ Material handling equipment to eliminate manual handling of awkward or heavy materials.
♦ Covering loud equipment with sound dampening material to reduce noise levels at the source.
**Administrative Controls:**

Administrative controls are management-dictated policies to reduce exposures to hazards. Administrative controls are the second line of defense against hazards. Common examples of administrative controls include:

- Scheduling more frequent, shorter rest breaks for repetitive tasks.
- Rotating workers more frequently through physically tiring jobs.
- Broadening or varying work tasks to offset ergonomic risk factors.
- Rotating workers more frequently to reduce exposure time to noise.

**Work Practice Controls:**

Work practice controls reduce the likelihood of exposure to occupational hazards by altering the manner in which a task is performed. Examples of work practice controls are hand washing immediately after wearing latex gloves or handling chemicals. Each Department must have written work practice controls specific to the job tasks performed by employees.

**Personal Protective Equipment:**

Management enforcement and training on proper use of Personal Protective Equipment (PPE) is extremely important. Examples of PPE include safety glasses, face shields or masks, aprons or gowns, gloves and rubber boots. When selecting PPE, ANSI standards are used as acceptable performance guidelines.

Personal protective equipment must be provided in the appropriate size and fit. Employees in the District and Park Areas are responsible to make sure that the equipment is properly maintained, repaired, cleaned and replaced. Personal Protective Equipment is discussed in greater detail later in this manual.
PART V

FIRE PREVENTION & FIRE SAFETY
FIRE PREVENTION

Fires can start easily and spread quickly, causing damage and possibly loss of life. By following a few simple rules, fire can be prevented.

You must obey all rules, regulations, and signs for fire safety. Signs restricting smoking, open flames, and other sources of ignition and those controlling storage, handling and use of flammable liquids are displayed for your protection and that of the workers around you.

All flammable liquids must be contained in approved containers. These containers should be NFPA approved and have automatically closing nozzles. To keep fuel from combining with oxygen and heat, keep covers on flammable liquid containers, especially gasoline and alcohol. To keep heat from combining with fuel and oxygen, be sure no source of ignition is near exposed flammable liquids. Sources of ignition include, but are not limited to: cigarettes, torch flames, welding sparks, static electricity sparks, heat lamps or any other equipment that produces high temperature.

All containers must be labeled with the proper contents at all times. At no time shall flammable or combustible liquids be allowed to be transferred, stored, or used out of any type of glass container. NO EXCEPTIONS!

Fire Prevention Tips

♦ Always dispose of cigarette buts and matches properly. Do not use ashtrays as waste cans and do not use waste cans as ashtrays.
♦ Never smoke in restricted areas or near combustible materials.
♦ Store oily rags in closed airtight containers. Remember oily rags or rags with combustible solvents on them can easily release gases and spontaneously combust.
♦ Remove and clean up spills immediately.
♦ Immediately report any faulty electrical equipment to your supervisor. Faulty equipment could short out and cause a fire.
♦ Always ground all flammable materials to prevent the possibility of static electricity buildup, which could spark and lead to an explosion.
♦ Know the locations and proper use of fire extinguishers. Always keep access to fire extinguishers open and clear of obstructions.
♦ Never use a flammable liquid to clean your hands or clothing. GOOD HOUSEKEEPING will prevent the accumulation of material which often constitutes a serious fire hazard. Keep your work areas and buildings neat and unobstructed.
Flammable materials are used in many applications throughout Public Works. All employees are required to utilize the safe work practices explained below to prevent fires. Departments with operations creating significant fire hazards must have a training program in place, so employees understand the hazards of flammables and how to control them.

Common Causes of Fires:

The most common cause of fires in the workplace is electrical. This includes faulty electrical wiring as well as misuse of electrical equipment. Other causes of workplace fires include lack of hot work procedures, improper disposal of cigarettes and improper handling and storage of flammables and fuels.

What is a Flammable?

A flammable is anything that ignites easily and burns quickly. Flammables such as gasoline, oil, coal and wood are also referred to as fuels because they support combustion by supplying heat. Flammables can be solids, liquids or gases. Other examples of flammables include:

- Paper
- Acetone
- Paint
- Plastic
- Propane
- Acetylene
- Methyl ethyl ketone
- Paint thinner
- Varnish

Fire Triad:

For a fire to start, three things must be present. This equation is referred to as the Fire Triad:

![Fire Triad Diagram]

If these three components do not exist together, a fire cannot start. Most materials need an outside heat source for a fire to start. However, some materials will “spontaneously combust”. This means that when a chemical is mixed with certain materials, heat is produced creating a fire hazard. It is important to read labels and material safety data sheets to know what materials are incompatible with certain substances and whether or not spontaneous combustion could occur.
Housekeeping:
Proper housekeeping is extremely important in preventing fires. Many combustible materials such as wood, paper and gasoline will fuel and fire and make it worse. Proper housekeeping procedures must be followed to control the build-up of combustible materials. Gasoline, oil and grease spills must be cleaned up immediately. Combustible storage areas cannot block fire exits and paths of egress. If a facility is protected with a sprinkler system, materials cannot be stored within 18 inches of the sprinkler heads. This will inhibit the ability of a sprinkler system to control a fire.

Fire Prevention in Office Areas:
In open office environments, smoke from office fires is not contained or isolated as effectively as in less open designs. Open office designs allow smoke to spread quickly and the incorporation of many synthetic and other combustible material in office fixtures (such as furniture, rugs, drapes, plastic wastebaskets, and vinyl covered walls) often makes "smoky" fires. In addition to being smoky, many synthetic materials can emit toxic materials during a fire. For example, cyanide can be emitted from urethane, which is commonly used in upholstery stuffing. Most burning materials can emit carbon monoxide. Inhalation of these toxic materials can severely hamper an office worker’s chances of getting out of a fire in time. This makes it imperative for office workers to recognize the signal to evacuate their work area and know how to exit in an expedient manner.

All employees who work in office environments must observe the following safe work practices for fire prevention:
♦ Heat-producing equipment - copiers, coffee makers and hot plates are often overlooked as a potential fire hazard. Keep them away from anything that might burn.
♦ Electrical malfunctions and misuse are the number one cause of fires in the workplace. Electrical appliances can also be fire hazards. Be sure to turn off all appliances at the end of the day. Use only grounded appliances plugged into grounded outlets (three-prong plug).
♦ If an electrical appliance malfunctions or gives off a strange odor, disconnect it and call the appropriate maintenance personnel. Promptly disconnect and replace cracked, frayed, or broken electrical cords.
♦ Keep extension cords clear of doorways and other areas where they can be stepped on or chafed and never plug one extension cord into another.
♦ Do not allow combustible material (boxes, paper, etc.) to build up in inappropriate storage locations (near sources of ignition).
Fire Prevention in Maintenance Areas:
Due to the nature of work performed in industrial environments, there are many different types of fire hazards. Employees working in maintenance areas must be well aware of the fire hazards associated with their job tasks, in order to prevent fires.

♦ Keep motors and machine tools free of dust and grease.
♦ Don’t let transmissions shafts or bearings overheat.
♦ Dispose of combustible scrap such as oily rags in tight metal containers and empty them daily.
♦ Welding and cutting operations must be conducted in designated areas.
♦ Check chemical labels and Material Safety Data Sheets to make sure you do not store incompatible substances together.
♦ Keep designated aisles and fire doors clear.
♦ Don’t store oxygen cylinders near combustible materials or other flammable liquids.

FIRE AND EXPLOSIVE HAZARDS

Please remember NEVER

♦ Smoke while refueling or handling fuel containers. Always shut off engine and any electrical equipment when fueling. When the fuel tank is directly above the engine, let the engine cool before opening gas cap and refueling. Ground funnel or fuel nozzle against filler neck to avoid sparks when refueling.

♦ Use gasoline or diesel fuel for cleaning parts. Always use a non-flammable solvent. Discard greasy or oily rags in a closed metal container.

♦ Smoke near a battery, or check electrolyte level with a match. Hydrogen gas from the battery may explode and cause severe injury.

♦ Place a metal object across battery terminals. Serious burns and explosion may result.
WORKING WITH FLAMMABLES AND FUELS

Flammables and fuels are widely used in Public Works facilities. Employees must learn about the specific properties of the flammables they work with and how to control hazards.

Definitions:

1. Flammable Liquid Vapors:

The flammable liquid itself will not burn. However, the vapors will. Sometimes, these vapors cannot be seen or smelled. Flammable liquid vapors gather around the surface of the liquid, and are usually released from heat. When flammable liquid vapors escape they tend to sink low to the ground since they are usually heavier than air.

2. Flash Back:

Flash back will occur when vapors spread across a room and find an ignition source. The fire will follow the trail of the vapor back to the flammable liquid source, or “flash back”.

3. Flash Point:

The flash point is the minimum temperature at which an ignitable mixture of air and vapor is produced. When this temperature is reached, vapors will ignite if any source of heat is present. If enough oxygen is present, a serious fire will occur. Flammable liquids have flash points below 100 degrees Fahrenheit. This means that flammable liquid vapors can ignite under typical atmospheric conditions. The lower the flash point, the more dangerous the liquid becomes. Combustible liquids have flash points at or above 100 degrees Fahrenheit. This means that combustible liquid vapors must be heated to ignite. Therefore, combustible liquids are not as hazardous as flammable liquids. However both flammables and combustibles will burn readily and can be explosive.

4. Autoignition Temperature:

This is the minimum temperature at which a flammable vapor or gas will spontaneously ignite without a spark or flame. Autoignition is usually only a hazard when containers of flammable liquids are exposed to extremely high temperatures during a fire.

5. Lower and Upper Flammable Limits:

The lower flammable limit (LFL) is the leanest mix of vapor and air that will support combustion. The upper flammable limit (UFL) is the richest mix of vapor and air that will support combustion. Any concentration in between these two values is within the flammable range and will burn. Lower and upper flammable limits differ for specific flammable liquids and gases. This information is found on the Material Safety Data Sheet.
Flammables may be poisonous or may release toxic vapors when burning. Pressure build-up inside containers during a fire can lead to further damage by causing containers to explode. To prevent these situations before they occur, employees must use the following safe practices when handling flammable liquids and gases.

**Before Using a Flammable:**

- Check the Material Safety Data Sheet the specific flammable prior to use.
- Read the label on the flammable container.
- Know the location of fire extinguishers in your facility.
- Pay close attention to the clothing you are wearing.
- Use personal protective equipment.

**Safe Handling and Use:**

- Make sure the area is properly ventilated.
- Use safety cans whenever possible.
- Follow grounding and bonding procedures when transferring flammable liquids to dissipate static electricity.
- Look for signs of damage to containers such as leaking, rust, discoloration and report it immediately so it can be removed.
- Keep heat sources away from flammables.
- Follow hot work permit procedures for welding, cutting and brazing.
- Listen for hissing sounds to detect leaks.
- Use non-sparking tools in the presence of flammables whenever possible.
- Open containers of flammable liquids slowly.

**Safe Storage:**

- ***Handle containers of flammables with care*** – Seal containers tightly after use and return them to the proper storage areas. Flammables should be stored away from sources of heat. For very large quantities of flammable liquids, a flammable storage room should be used.
- ***Use flammable liquid cabinets whenever possible*** – Flammable liquid cabinets offer protection as well as ventilation.
Cleanup and Disposal:

- Never dispose of flammables down a drain.
- Clean up small spills according to the manufacturer’s recommendations on the material safety data sheet.
- Shut off ignition sources and wear safety goggles and gloves when disposing of flammables.
- Dispose of saturated rags and clean-up materials in safety cans.
- Know the locations of emergency showers and eyewash stations.
- Large spills must be contained and cleaned according to the material safety data sheet recommendations. A HazMat team may be necessary to clean up very large spills. Report these incidents immediately and evacuate the area.
- Know whom to contact in case of an emergency.
COMPRESSED GASES

Compressed gas cylinders are color coded by placards for easy identification.

Oxygen.................................................Green
Acetylene............................................Orange
Propane..............................................Silver
Carbon Monoxide...............................Black

The following safety precautions must be followed when using and moving compressed gases:

1) All cylinders must have a protective cap or collar in place when stored or transported. Stored tanks must be secured to a wall or other immovable object. When in use, tanks may be secured to a movable cart or to a fixed object.

2) Oxygen cylinders must be stored a minimum of 20 feet away from any flammable or combustible materials, or separated by a flame proof barrier that is at least 5 feet high and has a ½ hour fire rating.

3) Always keep cylinders in an upright position. This includes empty cylinders that are to be transported for refilling.

4) When lifting or moving cylinders, always use a mechanical device such as a dolly or fork lift. Be sure the cylinders are properly secured to avoid damage to them. When transporting cylinders, always make sure valves are closed, protective caps are on, and they are properly secured.

5) When working with compressed gases, always have a fire extinguisher readily accessible.

6) Always store empty cylinders away from full ones and make sure that the valves are closed.

7) Make sure all cylinders are properly identified.

8) Make sure the threads on the valve are not damaged before connecting hoses or regulators.
WELDING AND CUTTING

Welding and cutting apparatus, equipment, and operations shall be in accordance with the standards and recommendations in the current OSHA 29 CFR 1910.252 and 1010.255.

Welding equipment shall be inspected daily prior to utilization. Defective equipment should be taken out of service and your immediate supervisor notified. The equipment will not be used until proper repairs or replacement has taken place.

Welding shall be done in a designated area whenever possible. When welding has to be done in the field or outside a designated area, the Hot Work Program, included in this manual, should be followed. Precautions should be taken to remove combustible or flammable materials and liquids from the area.

Proper fireguards are to be utilized when the operation requires them. Appropriate fire extinguisher should be accessible when welding or cutting is taking place.

Both the welder and the welder’s helper, if necessary, must have the proper personal protective equipment and be knowledgeable in the use and care of this equipment. Proper ventilation of the area should be considered before welding or cutting begins. Welding can produce smoke quickly and cause a small area to fill up rapidly.

Gas cylinders for torch cutting shall be transported, handled and maintained as illustrated in the compressed gas section of this manual. All cylinders must be identified, inspected, and secured before operation.

Torch valves shall be closed and gas supply shut off when work is suspended. Torch valves should be checked for leaks at the beginning and the end of each job. All oxygen/acetylene gas combinations shall have reverse flow check valves at the inlet side of the torch.
FIRE EMERGENCIES

All fires that occur within a Public Works facility, regardless of size, must be reported immediately to the proper authorities and management upon discovery. Never assume that a fire is not serious, even if you are able to extinguish it yourself. Never assume that you will be disciplined or criticized for reporting unusual smells or the presence of smoke by reporting them as a fire. Never shout the word “fire” or act in a manner that could cause others to panic.

Time is very critical in responding to a fire. Fires can spread in minutes, even seconds in a very short period of time. The earlier a fire is detected and actions are taken to control its spread, the more likely it is that serious damage or personal injury can be avoided.

The fire plan is activated by your facility’s fire alarm system. Certain doors in corridors should automatically close to isolate areas and control the possible spread of smoke. For this reason, it is critical that stairwell doors never be propped open. The fire plan will remain in effect until Building Security gives the “all clear” signal. While the fire plan is in effect, do not open doors without first checking for smoke beyond the door.

Do not go to the fire area unless you are assigned to do so. Unless you are actively engaged in your routinely assigned fire response, moving from your regularly assigned area into the fire area will only make your whereabouts unknown to those who may need you before the end of the alarm, and may further complicate emergency fire operations.

It is critical that all steps outlined by the acronym R.A.C.E. be followed in the event of a fire. This is particularly true with respect to activating the fire alarm system.

RESCUE – Remove persons requiring assistance from immediate, life threatening danger.

ALARM – Locate and activate the nearest manual fire alarm pull station. Contact building security to report the exact fire location.

CONTAIN – Close doors and windows to contain the spread of smoke and fire to as limited of an area as possible.

EXTINGUISH – If the fire is small, attempt to extinguish it with a fire extinguisher. DO NOT attempt this if alone or prior to completing all of the above steps.

In some buildings the alarm system can detect the presence of smoke, heat or the discharge flow from fire sprinkler heads automatically, and initiate the above actions without human interventions, but manual activation could buy additional time.

Emergency Exits:

All emergency exits must be marked with a standard “EXIT” sign that is easily visible. Doors that could be confused for an emergency exit must be marked “Not an Exit”.

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Emergency exits cannot be locked at any time when employees are in the building. Exits that are locked for security reasons must contain panic hardware on the inside entrance. Exit doors in the stairwells cannot be propped open at any time. This practice will create a “smoke stack” effect if a fire were to occur.

**Fire Drills:**

Fire drills are an important part of any fire plan and should be conducted on a regular basis. All drills should be treated as if they were the real thing and should be used as an opportunity for you to review proper fire procedures.

**Personal Safety in the Event of a Fire:**

If your clothing catches fire, smother the flame. Roll on the floor or ground if necessary. **NEVER RUN.**

**How to Evacuate During a Fire:**

1. Stay close to the floor until you are sure there is no smoke. Smoke contains hot and toxic gases.
2. Check each door for heat before opening it. Open the door slowly and check for smoke.
3. Shut your room or office door and all fire doors between you and the fire. This will help prevent smoke and fire from spreading. Do not lock doors, as this will slow the work of firefighters and rescuers.
4. Only take essential personal belongings and medicine if there is time. Attempting to move equipment or other items wastes time and makes evacuating more difficult.
5. Go to the nearest exit. If blocked, proceed to your secondary exit.
6. Use the stairs. Do not use elevators. Power may fail causing elevators to stop between floors or elevator doors may open onto the fire floor. Most elevators become inoperable during a fire, so do not waste time waiting for one.
7. When outside, move away from the building and go to your designated meeting place.
8. Observe all instructions from fire or police authorities.

**If You Can’t Evacuate:**

1. Move to a safe location. In case of fire, try to find a room or office with fire-rated walls, heavy or fire-rated doors and few interior opening.
2. If available, use a phone to notify authorities of your whereabouts and how to locate your. Also, turn on lights and hang a towel or other materials outside a window to mark your location.
3. Wet towels or other materials and place them at the bottom of doors to keep fire and smoke out.
Pre-Fire Responsibilities:

Be alert of signs of fire. If you see or smell smoke, report it immediately by pulling the nearest fire alarm station and contact building security. Early detection means prompt fire control. Form habits of watchful care and be alert at night. Memorize the location of fire alarm pull stations, fire extinguishers and exits. Never tamper with any fire or emergency warning devices. When needed, you’ll want them to work properly. Immediately report deficiencies to facilities management. Know the fire procedures and remember that fire prevention is your responsibility, not only as an employee but also more importantly, as a trustee of human life.

The acronym P.A.S.S. will work for most extinguishers. You can operate most fire extinguishers following four simple steps:

- **Pull** - Stand back and pull the pin.
- **Aim** - Aim the nozzle at the base of the fire.
- **Squeeze** - Squeeze the handle.
- **Sweep** - Sweep the nozzle from side to side at the base of the flames.

Become familiar with all fire extinguishers in your work area. Know where they are located and what type they are (Class A, B, C or multipurpose). Use common sense. Sometimes a small fire-in a corridor trash can, for example-can be put out simple by pouring a glass of water on it or covering it with a blanket. Only attempt to extinguish a fire after instructing another staff member to report it by notifying building security. A fire department representative will determine that it is completely extinguished. Never leave a smoldering fire.

Fire Fighting Equipment:

Fire equipment is to be used only for preventing, controlling, or extinguishing fires. Hand-operated fire equipment, hoses, etc., must be kept fully accessible and unobstructed at all times. Report any obstructions to your supervisor for removal. If you use a fire extinguisher or any other fire equipment, notify your supervisor at once so that it can be immediately restored to workable emergency service. Inspections of this equipment should be done by an outside vendor every six months, and by the supervisor on a weekly basis. Fire equipment located on vehicles and equipment should be inspected by the supervisor or his/her designee on a daily basis.

The following is a brief description of fire classifications and the recommended extinguisher to be used.
CLASS A FIRES: Ordinary combustibles such as rubbish, paper, rags, wood, etc. These are fires that require a cooling agent to extinguish. Recommended extinguishers are water through the use of hose, pump type water cans, pressurized extinguishers and soda-acid extinguishers.

CLASS B FIRES Flammable liquids, oils and grease. These fires require a smothering effect to extinguish. Recommended extinguishers are carbon dioxide, dry chemical and foam.

CLASS C FIRES Electrical equipment fire requires a non-conducting extinguishing agent. Recommended extinguishers are carbon dioxide and dry chemical.

CLASS D FIRES Combustible metals (e.g. magnesium, titanium, etc.). Recommended extinguishers are specially blended sodium chloride based dried powder extinguishing agent.

Probably the best choice of fire extinguisher would be one that is able to extinguish all three of the above classifications (A, B and C), and a second fire extinguisher designed for classification D fires where employees could conceivably come into contact with this type of fire.

Fire Alarm

You shall become familiar with fire alarm signals and the procedure for vacating your building or work area in the event of a fire. Take all reasonable measures that you can to extinguish or control the fire until assistance arrives.
PART VI

EMERGENCY PROCEDURES & BUILDING EVACUATION
WHAT TO DO WHEN SOMEONE IS INJURED

The first rule of first aid is that if you don't know how to give it, don't try to. You may do more harm than good. It's important to know not only what to do, but what NOT to do.

For instance, don't try to move an injured person unless you know that moving him will not worsen the injury. Improper and/or careless moving can increase the severity of an injury and even cause death. In case of a fracture or broken bone, it's often best to let the victim lie where he is until competent help arrives. Remember that fracture cases are not for amateurs. Wait until a person arrives whom is experienced in first aid.

Designated physicians and medical centers are available for emergency treatment in case of accident or sudden illness. Familiarize yourself with proper use of communication devices (e.g. telephone, department radio system, etc.), the locations of the devices, and who to call in case of an emergency before you start your work assignment. Know where the nearest emergency facility is located to your work area. Stay as calm as possible and utilize good common sense when making personal judgments about these situations.

MEDICAL EMERGENCIES

It is Public Work’s policy for employees to call 911 and contact building security when medical emergencies occur. In order to minimize confusion and panic, employees must be made aware of critical information before an emergency occurs, such as who to call and how to care for a victim until professional help arrives.

Due to the close proximity of emergency medical services, most Allegheny County facilities do not have on-site emergency response teams to respond to medical emergencies. As part of our volunteer CPR training program, Allegheny County Community College provides the Heartsaver AED course free of charge to employees during work hours. Contact the Safety Officer for details.

Several Public Works facilities are now equipped with Automated External Defibrillators (AED). An AED is a hand-held device that weighs about six pounds. In the event of a cardiac or respiratory arrest, AEDs can be used by non-medical personnel in conjunction with cardio-pulmonary resuscitation (CPR). If your facility has these devices, an education program and communication system must exist to inform people in the building that these devices are available. Contact your facility manager to find out if your location is equipped with these devices.
WEATHER EMERGENCIES

When weather conditions warrant, a radio in the office area will be tuned to a local weather station to monitor the situation. If a severe weather warning is issued, the senior management officer will evaluate company operations to determine if the operation should be canceled, until the threatening weather has passed. Whenever a tornado watch is issued, the radio will be turned on and monitored. If a tornado warning is issued, all operations will be shut down immediately and employees shall go to the nearest tornado shelter. Employees shall remain in the shelter area until told to return to work by their supervisor. In the event of a tornado without adequate warning, employees must take cover wherever possible, preferably in interior rooms or under heavy equipment. After the tornado has passed, all employees report to the assembly area and the supervisor will take a head count. If the building is damaged, designated maintenance personnel will shut down electricity and gas. EMS and/or the fire department will be notified immediately in case of injury or failure to locate all personnel and visitors.

THREATS TO PERSONNEL

The Department of Public Works will not tolerate any threat of physical violence to another person. If there is the threat of physical violence to an employee or visitor, then that threat must be reported to management. If the threat is determined to be valid, then management will take whatever steps are necessary to ensure that the person issuing the threat is denied access to the building. Management will notify the proper authorities of the threat immediately. If it is another employee who issues the threat, then disciplinary action will be taken. If a violent individual is in the facility, employees should attempt to cooperate with the individual until the police arrive.
BOMB THREATS

If a bomb threat is made to the facility, the person receiving the call will get as much information as possible. When the caller is finished, notify the proper authorities and management of the threat. If there is any doubt as to the validity of the threat, it must be treated as a real threat and the facility must be evacuated. All employees evacuated will remain in their designated meeting area until told to return to the facility by building security and their supervisor.

BIOLOGICAL THREATS

Recently, much more attention has been paid to biological agents such as Anthrax. If you receive a suspicious package or letter or open a package containing a strange substance, the following action should be taken:

♦ Immediately put down the package/letter and notify your supervisor. Do not handle, smell or further inspect the package/letter. Wash your hands, or any other part of your body that came in contact with the package/letter immediately.
♦ The supervisor will evacuate all employees in the area and contact the Police.
♦ Make a list of all the people that were in the area when the package/letter was received.
♦ In accordance with Allegheny County Health Department indications, if it is determined that there was an exposure to anthrax or any other biological agent, arrangements will be made for testing, treatment, etc.

ACCIDENTS WITH HAZARDOUS MATERIALS

When approaching the scene of an accident involving any cargo (not only hazardous materials):

♦ Move and keep people away from the accident scene.
♦ Do not walk into or touch any spilled material.
♦ Avoid inhaling fumes, smoke and vapors even if no hazardous materials are involved.
♦ Do not assume that gases or vapors are harmless because of lack of smell.
BUILDING EVACUATION

When evacuation is announced at any Public Works facility, all employees must immediately leave the building and go to their designated meeting location. It is critical that each location have their own plans in place ahead of time, to minimize confusion and panic during an emergency. These pre-planning elements include the following:

1. Designated meeting places are assigned that are located at least 100 feet away from the building.
2. Employees know when and how to evacuate and are aware of primary and secondary exit routes.
3. Able employees are designated to assist individuals with impairments (*mobility, visual, mental, hearing*) during evacuation.
4. Employees are aware of the location of fire alarm pull stations and fire extinguishers, and how to operate them.
5. Employees are designated to search private restrooms, private offices and other isolated areas during an evacuation.
6. Identify the chain of command so that in an emergency confusion will be minimized and employees will have no doubt about who has authority for making decisions.
7. Identify the method of communication that will be used to alert employees that an evacuation or some other action is required as well as how employees can report emergencies (such as manual pull stations, public address systems, or telephones).
8. Identify the evacuation routes from the building, tornado shelter areas and locations where employees will gather.
9. Regular evacuation drills are conducted at least once per year.

Evacuating Persons with Impairments:

Each location must have a plan to evacuate employees with physical/mental impairments and designate a sufficient number of escorts for each of these individuals. This plan involves designating escorts for employees that require assistance leaving the building during an emergency, and establishing a meeting location so that these employees can be accounted for. Building Security must be given a list of these employees.

Pre-Evacuation Responsibilities:

♦ Assign one escort and one alternate to each employee that is visually, mentally or hearing impaired.
♦ Assign at least four escorts and four alternates to each employee using a wheelchair.
♦ Assign two escorts and two alternates to each employee having other mobility impairments (crutches, walkers, canes, etc.)
Visually Impaired:
♦ Describe the nature of the emergency to the person.
♦ Offer to guide the person and ask if he/she prefers to take your elbow.
♦ Advise the person of the evacuation route.
♦ Take the person to your designated assembly area.

Hearing Impaired:
♦ Never assume a hearing impaired person can read lips.
♦ If the person did not hear the warning or alarm, write down the nature of the emergency.
♦ Offer to walk the person to the exit.
♦ Take the person to your designated assembly area.

Persons using Crutches, Canes or Walkers:
♦ Describe the nature of the emergency.
♦ Offer to guide the person and ask if he/she prefers to take your elbow.
♦ Advise the person of the evacuation route.
♦ Take the person to your designated assembly area.

Persons Using Wheelchairs:
♦ Describe the nature of the emergency.
♦ Ask the person how you can help him/her exit the building.
♦ Always follow the instructions of the wheelchair user.
♦ Do not remove a person from their wheelchair unless he/she agrees to such a procedure.
♦ Some electric wheelchairs weigh up to 400 pounds. Four injury-free, able employees are needed to lift the wheelchair without the battery. Even in an emergency, remember that correct lifting techniques must be used to avoid injury.

Unconscious Person:
♦ Call 911.
♦ Give your name, location and phone number.
♦ Describe the situation and where you will meet emergency personnel.
♦ If you are unable to meet emergency personnel outside, ask someone in your unit to escort emergency personnel to your location.
♦ If immediate evacuation is required, do what is required to exit the building safely.
♦ Follow all instructions from the emergency dispatcher.
PART VII

BASIC PRECAUTIONS FOR JOB TASKS
BASIC SAFETY PRECAUTIONS AND RULES FOR ...
(Not designed to be all-inclusive)

BRUSHING:

♦ Hearing protection, safety vests, full mesh face shields, chaps and gloves should be worn.

♦ Make sure proper guards are on Brush Hogs.

♦ Keep tools sharp.

♦ Bow saws are safest to use on banks.

♦ Avoid snow covered or frozen banks.

♦ Only one person on a crew should feed the chipper.

SHOULDER GRADING AND CUTTING:

♦ Use pilot vehicle if possible to aid in traffic control.

♦ Have protective cab on tractor/broom.

♦ Check mirror system of tractor/broom.

♦ Pay close attention to sign placement.

CRACK AND JOINT SEALING

♦ Use safety vest, leather shoulder-length heat resistant gloves, chaps, and eye/ear protection devices.

♦ Don't use plastic coveralls.

♦ Rubber hose on applicator wand will cut down on the heat.

♦ Fire extinguisher on kettle should be easily accessible.
ROLLER OPERATION

♦ Inspect rollers often to make sure they are in proper operating order. Do not operate if brakes and/or steering are faulty.

♦ Always operate roller at a safe speed. If possible, stop roller and put in low gear before starting downhill.

♦ When possible, roll forward downhill and backward uphill.

♦ Always check for pedestrians and vehicles/equipment before changing directions.

♦ When working on steep hills, caution must be taken to severely restrict vehicles or pedestrians through the area where a runaway roller might pass. Check for a runaway area, and steer the roller toward it.

♦ Try to stay within the paddle controlled area. If you must go outside this area, make sure the roller is equipped with a "slow moving vehicle" sign and wear a safety vest.

♦ Always chock wheels of unattended rollers parked on hills. Utilize a rubber or aluminum (with teeth) chock to help hold the roller steady, and prevent any motion.

♦ Watch for low or soft shoulders that could cause the roller to tip over.
FLAGGERS

At work sites, flaggers are provided to stop traffic when necessitated by the work, or to maintain continuous traffic flow past the work site at reduced speeds. In all cases, the flagger must be clearly visible to approaching traffic for a distance sufficient to permit drivers to properly react to the instructions given. This will be approximately 10 times the posted speed limit (in feet), or 550 feet for a 55-mph posted road.

A flagger should be:

♦ Professional and have a neat, clean appearance, and be alert and properly positioned.

♦ Responsive and able to adjust to changing conditions.

♦ Informed and properly briefed by the supervisor. Know the limits of the work area and the type of traffic that will be encountered.

♦ Decisive and give clear signals that both motorists and the crew will understand and comply with.

♦ Effective and able to efficiently control the flow of traffic by following these rules.
**FLAGGER EQUIPMENT**

All flaggers should be given a "STOP" and "SLOW" paddle. It shall display an 18" minimum sized "Stop" sign on one face and a diamond shaped "Slow" sign on the opposite face. It shall be attached to a 72" staff and be reflectorized if used during hours of darkness.

The **STOP AND SLOW PADDLE** will be used as follows:

- To stop traffic, the flagger shall face traffic and hold the Stop and Slow paddle with the message "STOP" facing oncoming traffic. For emphasis, the other arm should be raised to approximately shoulder level, with the palm toward approaching traffic.

- When it is safe for traffic to proceed, the flagger shall slowly turn the paddle to the message "SLOW" and motion traffic to proceed with the other hand.

- Where it is desired to alert or slow traffic, the flagger shall use the paddle with the message "SLOW". For added emphasis, the flagger may slowly raise and lower the free hand with the palm down.

The use of the **RED FLAG** will be as follows:

- The red flag shall only be used to control one-lane, two-way traffic in emergencies when a STOP and SLOW paddle is not available, or at an intersection where a single flagger is used within the intersection.

- To stop traffic, the flagger shall face the traffic and extend the flag horizontally across the traffic lane in a stationary position, so the full area of the flag is visible below the staff. For added emphasis, the free arm may be raised with the palm open toward approaching traffic.

- When it is safe for traffic to proceed, the flagger shall stand parallel to the traffic movement, and with the flag and arm lowered from the drivers' view, motion traffic ahead with the free arm. Flags shall not be used to signal traffic to proceed.

When flagging, all flaggers shall wear a hard hat and orange vest. During inclement weather, orange or yellow rain gear is permissible. For nighttime operations, similar garments shall have reflectorized striping. A neat, clean appearance helps to promote a professional image, and helps you to be a more effective flagger. When positioning yourself, remember to maintain color contrast between the work area and your garments.
TRAFFIC SIGN REPAIR AND REPLACEMENT

♦ Wear gloves to prevent hand injuries from splintering metal and sharp points.

♦ Watch footing and surroundings for uneven sourfaces, slippery rocks, etc. Ensure proper footing to maintain balance when straightening posts.

♦ Wear proper personal attire (hard hat, gloves, long sleeved shirts, and slacks) to prevent contact with environmental hazards.

♦ When straightening a post, be careful that it does not snap off and strike you.

♦ Watch for pinch points.

♦ When pounding posts, the individual holding the post should ensure that his/her hands will not get hit if post is missed. Be cautious of curious travelers.
WORKING OUTDOORS

Use caution when performing work outdoors, and watch for environmental hazards such as:

♦ Mud slides
♦ Branches or vines hidden in high weeds
♦ Slippery rocks, grass and slopes
♦ Uneven, loose or broken steps
♦ Hidden icy spots
♦ Uneven terrain or holes

All of these environmental hazards can cause slips, tripping, and/or falls which can cause serious injuries. Be sure of your footing and watch for hidden dangers.

PLANT POISONING

Learn to identify poisonous plants and make every effort to avoid them. When working in areas that may contain such plants, sleeves should be rolled down and gloves worn. If you are exposed, wash the exposed parts with soap and water and/or poison ivy wash four or five times, and apply poison ivy lotion. Always report it to your supervisor and get medical attention if deemed necessary.
RIDING MOWERS

♦ Know the controls, and how to stop quickly.

♦ Do not carry passengers.

♦ Clear the work area of objects that might be picked up and thrown.

♦ Disengage all attachment clutches and shift into neutral before attempting to start the engine.

♦ Disengage power to attachment(s), and stop the engine before leaving the operator's position, before making repairs or adjustments, and when transporting or not in use.

♦ Take all possible precautions when leaving the vehicle unattended, such as disengaging the power take-off, lowering the attachment(s), shifting into neutral, setting the parking brake, stopping the engine, and removing the key.

♦ Do not stop or start suddenly when going uphill or downhill. Mow up and down the face of steep slopes.

♦ Reduce speed on slopes and in sharp turns to prevent tipping or loss of control. Exercise extreme caution when changing direction on slopes.

♦ Keep the vehicle and attachments in good operating condition, and keep safety devices in place. Ensure that there is appropriate tread on all tires.

♦ The vehicle and attachments should be stopped and properly inspected for damage after striking a foreign object, and the damage should be repaired before restarting and operating equipment.
**WINTER OPERATIONS**

♦ **Blocking Snow Plows** - Snowplows are to be blocked to the proper height for immediate attachment to vehicles. Care should be taken that the plows hoist chain, shoes and hydraulic attachments are in proper condition and working order. Employees are not permitted to lift snowplows manually.

♦ **Jammed Spreaders** - Turn off power to the augers, open spreader box and clear jam with metal pry bar, then return to cab and activate auger. Employees are not permitted to place their hands in augers, except for required maintenance when the auger is disconnected.

♦ **Getting On and Off Vehicles** - It is important to clear snow and mud from your boots. Use a firm hand grip and place feet securely when climbing on and off of vehicles. Do not jump off vehicles. Use steps and hand grips to dismount, facing the same way you entered.

Perform a dry run of your snow route. Become familiar with any hazards such as low power lines, raised manholes, expansion joints and low bridge clearance.

Check equipment and all fluid levels before each use, look for cracks or damage to the plow, and insure that all controls are working properly.

Before leaving the stockpile, check the anti-skid material for lumps, stones, etc. Make sure the truck has not been overloaded, and do not forget to perform the circle of safety with lights on.

Recommended speed limit for plowing is not to exceed 20 to 25 miles per hour.
HANDLING OF SNOW AND ICE CONTROL MATERIALS

Safety tips for handling snow and ice control materials are as follows:

♦ When removing lumps in snow and ice control materials from the bed of the truck, make sure you have good footing when climbing and descending. Be sure to use handholds.

♦ When covering stockpiles, watch footing for possible sinkholes. To locate sinkholes, probe with a bar or pole in front of you as you climb.

♦ If you must spread snow and ice control materials manually, avoid standing in the bed of a truck whenever possible. If this is unavoidable, a safety harness must be worn. Never stand behind a moving vehicle.

♦ Always wear appropriate personal safety equipment (i.e. proper gloves, footwear, hard hat, etc.) when handling snow and ice control materials.

♦ Ensure limited contact exposure to skin, and remove snow and ice control materials from clothing as soon as possible.

♦ Ensure spreader calibration is properly adjusted to avoid damage to private property and to ensure proper material usage.

♦ Check for lumps and foreign objects before spreading.

♦ When loading snow and ice control materials within an enclosed facility, ensure that proper ventilation exists.
TREE TRIMMING

♦ It is imperative that all necessary barricades and warning devices be placed in appropriate locations to safeguard the public against injury. If it is necessary to divert pedestrians or vehicular traffic, flagmen should be used. Employees should be instructed to work within the designated work area. If this cannot be done, enlarge the work area so that both the employee and the public can be protected from traffic and falling limbs.

♦ Sharp tools in the hands of experts rarely cause injury. Employees cut themselves because they do not know the proper way to use sharp tools. It should be a habit for all employees, under the supervision of their supervisor, to inspect all tools and saws prior to using them on a trimming operation.

♦ Hard hats, gloves, ear protection, safety belts, safety vests, goggles or safety glasses should be worn at all times during trimming operations.

♦ Employees must remain constantly alert to the possible hazards of power lines and falling limbs or branches.

VISITOR PROTECTION

All visitors who enter operational work areas shall wear Department approved safety equipment, if applicable, and follow all safety rules. No visitor should enter County work areas without the approval of the supervisor.
HAND AND POWER TOOL SAFETY

The supervisor should train employees on their specific tools before employees use them on the job. Never assume that a new employee has prior safety training due to job experience. Employees are required to use the right tool for the job, keep tools in good condition, and use tools properly to reduce the risk of serious injury. Horseplay accounts for a significant number of injuries associated with tools. Although tools are simple and familiar instruments, they can still cause injury if one is not careful. By keeping respect for the tools we use, we can prevent many injuries.

Many tools and devices are furnished by the Department for your use. Take care of them and keep them in a safe working order. If any tools wear out, break, or otherwise become dangerous to use, do not use them and report such conditions to your supervisor.

It is important to keep these tools in good condition at all times. Keeping impact tools free from mushroomed heads, replacing cracked hammer handles, and maintaining wrenches in good condition so they will not slip are all good examples of tool safety. Other safety rules pertaining to hand tools include the following:

♦ Tools and materials must not be left in an elevated position or in above-the-head areas, if there is any possibility that they will fall to a lower level.

♦ Do not use tools for any purpose other than those for which they were designed.

♦ Get instructions from your supervisor before using tools with which you are not familiar.

♦ Never drop tools or equipment from one level to another. Raise and lower tools or equipment by hand or in a canvas tool bag.

♦ Do not carry sharp edged tools loosely in clothing; use a sheath or container.

♦ Manufacturer’s suggested safety devices must be properly maintained and utilized. No modifications should be made to any equipment.

Striking Tools – carpenter’s hammers, machinist’s hammers, mallets and sledges:

Striking tools should be cleaned and repaired, if necessary before they are stored. Before using striking tools, make sure the faces are free from oil or other material that would cause them to glance off the object being struck. The heads should be dressed to remove mushroomed or battered edges. Handles must fit tightly into the heads of striking tools. Use the correct hammer to strike hardened steel surfaces, so steel fragments will not break off and injure workers. Appropriate safety eye protection should be worn when using striking tools.
**Turning Tools and Wrenches:**

Wrench types include open-end, box, socket, torque, adjustable, spanner and Allen. It is important to select the proper wrench for the work to be done. Wrench jaws would be clean and oil-free to prevent slipping. One should be especially careful when using adjustable wrenches. They can slip if not adjusted to fit the work surface snugly, causing hand injuries.

**Metal-cutting Tools – snips and shears, bolt cutters, hacksaws, chisels and files:**

Snips and shears should be sharpened, oiled and adjusted to make cutting easier and to produce surfaces free of burrs. When using bolt-cutters, make sure fingers are clear of jaws and hinges. Take precautions to prevent bolt heads or other metal fragments from striking co-workers.

Hacksaws should be used to cut metal that is too heavy for snips or bolt-cutters. A significant risk associated with hacksaw use is injury to the hand if the blade breaks. To avoid severe hand injuries and broken blades, apply only enough pressure to keep the blade in firm contact with the work piece. Exerting excessive force causes the blade to overheat and bind. Likewise, cut on a straight line to avoid twisting the saw blade. Periodically check the blades to ensure tightness within the saw frame.

Chisels are used for chipping or cutting metals and other materials. Make sure that head of the chisel is not mushroomed. Dress damaged heads by removing all excess metal. As a general rule, the chisel should be held so the hand muscles hold the shaft firmly, but not with a “death grip”. If the hammer accidentally hits the hand it will permit the hand to slide down the chisel, lessening the effect of the blow. This technique is not always possible, but when used, it can be effective. Safety eye protection must be worn when using any chisel.

Files should be kept sharp by keeping them wrapped in paper or cloth to protect the teeth. Clean files by using file cards and keep them free of oil and other types of moisture. To prevent hand injuries, use files with handles and employ the proper technique – the cutting stroke smooth and away from the body.

**Wood-cutting Hand Tools – handsaws, planes and wood chisels:**

Handsaws should be kept sharp and free of rust to prevent them from binding or jumping causing injuries. Keep planes sharp and properly adjusted so they cut smoothly with out requiring excessive force. When storing planes, adjust the blades above the bottom of the planes to prevent contact with the blade. Keep wood cutting chisels sharp, and make sure both hands are behind the cutting edges at all times. Never cut toward yourself when using a chisel, and use chisels only for their intended purpose.
Screwdrivers – slotted, Philips, torx and hex:

Screwdrivers are designed to insert and remove screws, not as pry bars, scrapers, chisels or punches. When using a screwdriver it is important to use the proper size so that the blade fits the screw head tightly. This prevents the screw slot from burring, which could lead to serious lacerations. Additional safety tips include keeping screwdrivers away from electrical circuits to avoid shock, and using a vice or other holding device rather than hold work in your hand to prevent serious punctures.

Pliers and Knives:

Do not use pliers to cut hard wire unless they are specifically manufactured for this purpose. Always cut at right angles. Do not use pliers as hammers. Wear safety eye protection when using pliers to cut wire.

Knives can be extremely dangerous. Use cutting instruments only for their intended purpose. Size, blade design and handle configuration are important considerations when choosing safe and effective cutting instruments. Cutting blades must remain sharp to avoid excessive forces, which can cause the blade to be thrust out past the work piece after the cut is made. Always cut away from your body. Store knives with the blade closed or sheathed to prevent accidental contact. Treat knives with care, always protecting the sharp cutting edges.

Power Tools:

Portable power tools present accident hazards also. With power tools however, the magnitude of an accident is often significantly increased. Nearly all power tool accidents are caused by lack of training, improper technique, failure to wear personal protective equipment, or poor maintenance practices.

Use power tools only after becoming thoroughly familiar with their controls, safety requirements and operating procedures. When in doubt re-read the instructions or get information from the supervisor. Inspect all tools before use to see that they are clean and in good repair. Before connecting a power tool to the power source, make sure that the tool switch is turned off. Ensure that all safety guards are installed. Wear safety eye, face, hand and other protective equipment. Disconnect the power source from the tool before adjusting, oiling or changing accessories.

Every electrical portable power tool must be grounded by a third safety-ground pin or have double insulation. Double insulated tools have a two-prong plug and a double insulated plastic housing. Ensure that the integrity of the electrical connection at the plug or motor is intact. Wires pulled loose or frayed insulation must be repaired before use. Splicing electrical cords is not recommended. It is better to replace the cord. When
operating electrical tools in wet locations, ground-fault circuit interruption (GFCI) is necessary to prevent accidental shock.

When operating portable power tools, undivided attention to their operation is required. Check power sources to portable power tools to ensure electrical cords and air hoses are in good repair.

**Select power tools with the following characteristics:**

- Handles long enough to distribute pressure across the entire palm, rather than in one small area,
- Designed to provide the required force for the job,
- Tools that have varied weights, sizes and handle design to accommodate worker differences,
- A handle orientation that allows the wrist to remain straight,
- Tools that minimize repetitive motions and awkward postures.

In addition, provide gloves that are designed for the function and that reduce the hazards. Provide sizes to ensure proper fit. Excessive force applied while using hand tools may result from poorly fitted gloves.
LADDER SAFETY

Serious injuries resulting from falls from ladders and stairs occur frequently in the workplace. Some of these accidents result in death. These injuries often occur because of improper ladder use. Therefore, all Public Works employees are required to use ladders in a safe manner and follow all safe work practices written below.

**Portable Ladders:**

Portable ladders must be the proper selection for the job. Ladders are to be used primarily for climbing and not working from. If an employee needs to work at heights, a scaffold or scissor lift must be used instead of a ladder.

The correct length ladder must be selected for each job. That means the side rails must extend at least three feet above the top-landing surface. For every four feet of ladder, a pitch of one foot is required.

Ladders must also be of a sufficient capacity rating for the job. The duty rating is the maximum safe load capacity of the ladder. This includes the weight of the user, clothing, tools and material. There are five duty ratings for portable ladders:

<table>
<thead>
<tr>
<th>Type</th>
<th>Working Load</th>
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</thead>
<tbody>
<tr>
<td>Light Duty – Type III</td>
<td>200 lbs</td>
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<tr>
<td>Medium Duty – Type II</td>
<td>225 lbs</td>
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<tr>
<td>Heavy Duty – Type I</td>
<td>250 lbs</td>
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<tr>
<td>Extra Heavy Duty – Type IA</td>
<td>300 lbs</td>
</tr>
<tr>
<td>Special Duty – Type IAA</td>
<td>375 lbs</td>
</tr>
</tbody>
</table>

**Ladder Inspection:**

Most ladders, though different in type, have the same safety requirements. Prior to each use, the ladder must be inspected for:

♦ Cracks, splits or deterioration of side rails
♦ Broken or split rungs or cleats
♦ Spreader is in good condition
♦ Automatic locks
♦ Ladder is free of grease, oil and slipping hazards
Safe Use of Ladders:

Excessive paint will cover defects and should not be used on ladders. Ladders in storage should be protected from damage and kept out of high traffic areas.

♦ Ladders must extend three feet above the landing surface. If this is not possible a grab rail must be put in place to assist in mounting and dismounting the ladder.
♦ When erecting a ladder, the base should be out one foot for every four feet in ladder height. Both side rails need to rest securely against the top support.
♦ The ladder must be secured to prevent slippage.
♦ Ladders cannot be used for anything other than their intended purpose and are designed for single-person use.
♦ Metal ladders are not to be used near electricity.
♦ Ladders may never be used in the horizontal position to form a walkway.
♦ Ladders cannot be tied together to provide a greater length.
♦ Ladders must be erected on level, stable surfaces.
♦ Always face the ladder when climbing up or down it and use both hands to hold on.
♦ If a ladder is to be used near a door or traffic area barricades or guards must be put in place.

Fixed Ladders:

Fixed ladders are to be provided when stairways are not available. If the distance is greater than 20 feet, rest platforms need to be installed in increments of 20 feet. Rest platforms must include standard guard railing and toe boards.

Remember, if you are working in close proximity to any type of power line, it is important to take the necessary precautions to protect yourself from electrocution. A metal ladder is an excellent conductor of electricity. Whether at work or home, use ladders safely.
SCAFFOLDS

Although scaffolding often varies in design, there are several safety requirements that apply to all:

♦ Erecting and dismantling of scaffolding must be done under the direct supervision of a competent person.
♦ All components must be free of damage.
♦ Planking must be scaffold grade.
♦ Unless planking is secured, it must extend a minimum of 6 inches overlap but not exceed 12 inches.
♦ Safe access to the scaffold, such as a ladder must be provided.
♦ The scaffold must be kept free of debris or slippery substances.
♦ All cross braces must be in place.
♦ A minimum 18-inch platform width is recommended.
♦ Scaffolding must be kept away from energized or unguarded power lines.
♦ If erected over walkways or traffic areas, 18-guage screen or equivalent must be in place to prevent items from falling below.
GUARD AGAINST PINCH POINTS

In everyday operations there are many pinch points. Sometimes we don’t even think about these hazards. Here are a few to consider:

♦ Closing doors on equipment, car and even office or shed doors.
♦ Closing tailgates and adjusting tailgate chains.
♦ Operating equipment, guarded and unguarded.

Ways of guarding against pinch points include:

♦ Wear gloves which will help to protect the hands and fingers.
♦ Never remove equipment guards. They are there for your protection.
♦ Take your time and make sure hands are clear before shutting doors and tailgates.
♦ Operate equipment in the proper manner, using handholds.

Taking a few extra minutes to check could save you or someone else from severe injury.
**COMPUTER WORKSTATION USE**

The following is a list of guidelines and principles to assist the employees in the proper set up of their computer workstation. By following these guidelines and principles, employees can relieve unneeded stress on the body related to prolonged sitting and typing while at their workstation.

**Keyboard Position**

♦ Upper arms should hang relaxed at side during use.
♦ Elbow joint should be located at about a 90-degree angle.
♦ Hands need to be located in line with forearms during keyboard/mouse use.
♦ Forearms need to be supported while using a keyboard or mouse.

**Monitor**

♦ The top of the screen needs to be located at eye height
♦ Screen viewing distance needs to be between 45cm to 60cm.
♦ The monitor needs to be centered in front of the user during use.

**Seating**

♦ The set pan needs to have an adjustable height ranging from 42-54cm.
♦ The set pan tilt needs to be adjustable from +3 to –4 degrees.
♦ The backrest of an office chair needs to be adjustable from 8-15cm.
♦ The backrest of the chair needs to have a well-formed lumbar support.
♦ Feet need to be flat on the floor with thighs parallel to the floor.

**Desk**

♦ Horizontal knee space needs to be greater than 46cm.
♦ Horizontal toe space needs to be greater than 61cm.

**Document Holder**

♦ A document holder needs to be adjustable.
♦ It must be large enough to hold documents that it will be used for.

**Lighting**

♦ The screen must stay clear of glare spots.
♦ Indirect lighting fixtures should illuminate the office area.
♦ The workers line of sight should be parallel to the plan of the window.
COMPUTER WORKSTATION SETUP GUIDELINES

CHECKLIST for a User-Friendly Workstation

1. Top of screen at eye level; lower for bifocal wearers
2. Screen distance at arm's length (15-32")
3. Document holder adjustable to screen height
4. Chair backrest provides firm lower back support
5. Chair back and seat easily adjustable for height and tilt by user
6. Keyboard height promotes relaxed arms with forearms parallel to floor
7. Wrist straight (neutral)
8. Padded, movable wrist rest, same height as keyboard home row, if needed
9. Thighs parallel to floor
10. Ample legroom under work surface
11. Feet rest firmly on floor or foot rest

Prepared by the Campus Occupational Health Program 1992
OFFICE SAFETY

The following are guidelines for the prevention of injuries at the office. As an employee of Allegheny County, you are required to make your best effort to comply with these guidelines to eliminate the hazards associated with working in the office environment.

Office Furniture, Equipment, Aisles, Floors, Doors, and Stairs

♦ Desks, working areas, aisles, stairways and storage areas should be well lighted.

♦ Make sure that you close all furniture or equipment doors/drawers when not in use.

♦ Store pointed or sharp objects such as scissors, paper cutters, pencils and pens with care.

♦ Use only ladders or stands with non-slip treads when reaching high filing cabinets, shelves or other pieces of elevated equipment.

♦ Do not leave objects lying in aisles or places where they could pose a tripping hazard.

♦ Loose floor tile, holes in tiles or carpeting, or other defective flooring is dangerous.

♦ Corridors and entryways may become slippery when wet. If storm mats of suitable material are not provided, walk with extreme caution.

♦ Use handrails when ascending or descending stairs.

♦ Report wet, cluttered or unclean stair treads or areas to your supervisor.
PART VIII

PPE POLICY
DEPARTMENT OF PUBLIC WORKS
PERSONAL PROTECTIVE EQUIPMENT POLICY

Policy:

As part of this Department’s ongoing commitment to job safety, the Director of Public Works expects all employees to use the personal protective equipment (PPE) provided by this Department in accordance with the attached guidelines. Although PPE is not relied on as the only way to protect against hazards, it is an important element of our overall safety and health program.

Purpose and Scope:

The purpose of the Allegheny County Department of Public Works’ Personal Protective Equipment Program is to minimize the potential for injury by providing and enforcing the use of personal protective equipment (PPE), and documenting efforts to implement the PPE program. PPE devices are not relied on as the only means to provide protection against hazards, but are to be used in conjunction with guards, engineering controls and safe work practices.

This policy pertains to all employees under the Maintenance Division of the Department of Public Works. This policy covers PPE Selection, Hazard Assessments, Responsibilities of Management, Supervisors and Employees, Training, Inspection and Maintenance and Record Keeping.

Types of personal protective equipment covered in this program include:

♦ Eye and Face Protection
♦ Head Protection
♦ Respiratory Protection
♦ Foot Protection
♦ Hearing Protection
♦ Hand Protection
♦ Protective Clothing

(Note: Personal fall arrest systems covered in separate policy)

Revised 7/02
Responsibilities:

Management/Director’s Office:

♦ Authorizing the necessary resources to provide appropriate PPE and training to employees.
♦ Providing support to supervisors for program implementation and enforcement.
♦ Setting the example for employees by wearing PPE when required.

Supervisors/Superintendents:

♦ Providing all required PPE to the employees working under them.
♦ Enforcing the PPE Policy in accordance with departmental guidelines.
♦ Using disciplinary action in accordance with departmental guidelines when deemed necessary.
♦ Setting the example for employees by wearing PPE when required.
♦ Ensuring employees are trained on the proper use, care, and cleaning of PPE.
♦ Maintaining records on PPE inventory and training.
♦ Notifying the Director’s Office when new hazards are introduced or when processes are added or changed.
♦ Ensuring defective or damaged equipment is immediately replaced.

Employees:

♦ Wearing PPE as required.
♦ Attending required training sessions.
♦ Caring for, cleaning, and maintaining PPE in accordance with the attached guidelines.
♦ Informing the supervisor of the need to repair or replace PPE.
♦ Showing up for work in proper attire, including work boots and jeans or work pants.
♦ Must wear tops with sleeves and long-legged pants. If issued shirts or other work related clothing, you are expected to wear these items. Sleeveless tops, tank tops, halters, tube tops, see-through shirts/blouses, and shorts of any type are not permitted.
Safety Officer:

♦ Conducting workplace hazard assessments to determine the presence of hazards that necessitate the use of PPE.
♦ Conducting periodic workplace reassessments of the program.
♦ Providing training and technical assistance to supervisors on the proper use, care, and cleaning of PPE.
♦ Providing guidance to supervisors and purchasing division in PPE selection.
♦ Reviewing, updating and evaluating the overall effectiveness of the PPE Program.

Selection:

The PPE required for each job is selected based on the findings during hazard assessments of jobs and the recommendations of the Safety Officer. All PPE provided by the Department of Public Works is approved by the appropriate governing agencies, based on technical data and research.

Hazard Assessments:

The purpose of conducting hazard assessments of jobs is to identify all potential hazards where PPE is expected to minimize the potential for injuries among our employees. Consideration is given to the following basic categories during hazard assessments:

♦ Impact
♦ Penetration
♦ Compression
♦ Chemical
♦ Heat
♦ Harmful Dust, Fumes and Vapors
♦ Light Radiation
♦ Noise

Cleaning and Maintenance:

It is our policy that each employee keeps his/her assigned PPE clean and properly maintained. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision. PPE is to be inspected, cleaned and maintained by employees as part of their normal job duties. Supervisors are responsible for ensuring compliance of this policy. It is the responsibility of the employee to report the need for repair or replacement of any PPE assigned to him/her.
Training:

All employees will be trained on the hazards of their jobs and the required PPE, as part of their new employee orientation, by their supervisor. This training includes:

♦ The hazards of their specific job and the PPE that must be used.
♦ Enforcement of the PPE policy.
♦ Proper use, care and maintenance of the PPE assigned to them.
♦ Procedures to replace lost, stolen or damaged PPE.

Supervisors will also provide training to their employees via safety meetings, toolbox talks, and periodic discussions.

Recordkeeping:

Supervisors must keep records of the following:

♦ All training conducted relevant to PPE (new employee orientation and safety meetings).
♦ Inventories of PPE assignments to their employees.

The Directors Office and Safety Officer will keep records of all hazard assessments, program updates and periodic re-evaluations.

Enforcement:

This Department will make every effort to reinforce the use of personal protective equipment on the job through employee education and positive reinforcement. However, it is the Supervisors duty to use disciplinary action when necessary to enforce our PPE policy. If a Supervisor determines disciplinary action is warranted, the County’s Progressive Discipline Policy will be followed.

General Guidelines:  (See Hazard Assessments Section for information on specific jobs.)

I. Eye and Face Protection

This Department provides the following types of eye and face protection:

♦ Safety Glasses with Side Shields
♦ Goggles
♦ Face Shields (shaded and standard)
Employees are required to wear eye protection when the following obvious eye hazards are present:

- Dusts, powders, fumes, and mists that could get in the eyes
- Flying objects and particles
- Glare
- Splashing chemicals
- UV Rays (Welding, Cutting, Brazing)
- Mechanical irritants
- Any combination of the hazards mentioned above

Safety glasses must be equipped with side protection and are required to protect against flying objects/particles. Employees who wear prescription eyewear must wear appropriate safety glasses with side shields. Safety glasses that fit over eyeglasses are provided by Public Works. Supervisors must approve all prescription safety glasses.

Safety goggles are required when working with corrosive chemicals or during processes where splashing of chemicals is a concern. A face shield is required to be when using a grinder (portable or stationary).

Eye and face protection of the proper shade is required during welding, cutting and brazing operations to protect against harmful UV rays.

**Proper use, Cleaning and Maintenance of Eye and Face Protection:**

Contact lenses usually do not pose a problem when worn with eye protection. If contacts are bothering a worker, he or she should remove them immediately.

Pitted, cracked, scratched, broken or dirty lenses impair vision of the wearer. Lenses must be cleaned daily using water or a mild cleaning solution. Damaged lenses must be reported to the supervisor for replacement immediately. Employees are not permitted to wear damaged eye protection.

**II. Hand Protection**

This Department provides the following types of hand protection:

- Cotton Gloves
- Rubber Gloves
- Leather Gloves
- Latex Gloves

Employees are required to wear gloves to protect against the following hazards:
♦ Mechanical injuries (cuts, punctures, crushing and scrapes) when operating or setting up machinery and equipment.
♦ Extreme heat or cold
♦ Electrical shock or burns
♦ Skin irritation from corrosive chemicals and solvents
♦ Exposure to bloodborne pathogens

**Proper use, Cleaning and Maintenance of Gloves:**

The following procedures apply to general use, removal and disposal of gloves:

♦ Inspect gloves for defects like holes, cracks and other signs of wear before each use.
♦ Powder hands to make it easier to put gloves on and take them off.
♦ Wash or rinse reusable gloves according to specified cleaning procedures after each use.
♦ Hold the cuff and pull the glove so it turns inside out to remove a glove. Do not pull on the fingers.
♦ Store reusable gloves away from hot areas because they may stiffen, shrink or crack.
♦ Dispose of gloves containing human fluids according to bloodborne pathogen control procedures.
♦ Gloves should never be worn around pinch points or rotating parts where use of the glove could expose the wearer to an amputation or crushing hazard.

Good hygiene can also help prevent injury to workers’ hands and fingers. Hands must be washed before and after using any type of chemical, even if gloves are worn.

**III. Protective Clothing**

This Department provides the following protective clothing:

1. Safety Vests
2. Tyvex Suits
3. Rubber Boots
4. Rain Suits
5. Chainsaw Chaps

**Safety Vests:**

All District Maintenance employees are required to wear a safety vest during their job duties. All Parks Maintenance and Parks Trades employees are required to wear a safety vest during their job duties. All non-maintenance employees working in public right of ways are required to wear a reflective safety vest. Drivers are required to wear a safety
vest immediately upon exiting their vehicles while on the worksite. Orange or lime green safety incentive shirts are permitted in place of vests during daylight hours.

**IV. Head Protection**

This Department provides the following types of head protection:

- Hard hats (non-conductive type)
- Bump caps

Employees are **required** to wear head protection when the following hazards are present:

- Overhead struck by hazards
- Flying objects
- Falling objects
- Strike against hazards in confined areas
- Vehicle traffic struck by hazards

District Maintenance is required to wear a hard hat during all job duties. In addition, all non-district maintenance employees are **required** to wear hard hats during the following job tasks.

- Road work
- Bridge work
- Tree cutting and trimming
- Building construction sites
- Working below scaffolding

Parks Maintenance and Parks Trades are required to wear a bump cap during all job duties.

Drivers are required to wear appropriate head protection dependent on the job site as identified above upon exiting their vehicles.

**Proper Use, Cleaning and Maintenance of Hard Hats:**

Fit - Headbands are adjustable in 1/8 size increments. When the headband is adjusted to the right size, it provides sufficient clearance between the shell and the headband. The removable or replaceable type Sweatband should cover at least the forehead portion of the headband. The shell should be of one-piece seamless construction and designed to resist the impact of a blow from falling material. The internal cradle of the headband and sweatband forms the suspension. Any part that comes into contact with the wearer’s head must not be irritating to normal skin.
A common method of cleaning shells is dipping them in hot water (approximately 140F) containing a good detergent for at least a minute. Shells should then be scrubbed and rinsed in clear hot water. After rinsing the shell should be carefully inspected for any signs of damage.

All components, shells, suspensions, headbands, sweatbands, and any accessories should be visually inspected daily for signs of dents, cracks, penetration or any other damage that might reduce the degree of safety originally provided.

Users are cautioned that if unusual conditions occur (such as higher or lower extreme temperatures than described in the standards), or if there are signs of abuse or mutilation of the helmet or any component, the margin of safety may be reduced. If damage is suspected, helmets should be replaced. Hard hats should not be stored or carried on the rear-window shelf of an automobile, since sunlight and extreme heat may adversely affect the degree of protection.

V. Foot Protection

Employees are required to supply their own safe work shoe. All maintenance employees are required to wear appropriate work boots. Shoes other than work boots will only be worn with your supervisor’s approval. Employees shall not work barefooted, or wear sandals, and sneakers/tennis shoes.

VI. Respiratory Protection

This Department provides the following types of respiratory protection:

- ♦ Dust Masks
- ♦ Half and Full Face Piece Air Purifying Respirators
- ♦ Supplied Air Respirators

Employees are required to wear respiratory protection when hazardous chemicals enter their breathing zone at levels above permissible exposure limits or at unknown concentrations. Dust masks may only be worn to protect against nuisance dusts. For air purifying respirators, the proper type of cartridge must be used to protect against specific types of hazardous chemicals.

Areas where respiratory protection is required are identified through air monitoring results and review of Material Safety Data Sheets of the specific substances being used. Employees are not permitted to wear a respirator (except dust masks) without completing an initial medical history questionnaire and being fit tested (See Respiratory Protection Section for more information).
Proper Use, Cleaning and Maintenance of Respiratory Protection:

Respiratory protection must be cleaned after each use using soap and water or a disinfectant wipe. When not in use, respirators must be stored in a plastic bag to keep it clean.

Respirators must be inspected for cracking and other signs of damage.

When a respirator is donned, the user must complete a positive and negative pressure test to ensure proper fit before each use. Employees with facial hair are not permitted to wear respiratory protection.

VII. Hearing Protection

This department provides the following hearing protectors:

♦ Ear Plugs
♦ Ear Muffs

Hearing protection is required to be worn when employees are exposed to noise levels at or above 90dbA. Hearing protection is optional when employees are exposed to noise levels between 85dbA and 89dbA. Exposure levels will be determined by conducting noise surveys of potentially hazardous areas using a noise dosimeter.

The type of hearing protection selected depends on the preference of the employee. All hearing protection provided by this department has a noise reduction rating (NRR) of 31dBA, offering the highest level of hearing protection.

IX. Jewelry

The potential for catching, snagging, pulling, and tearing exist in and around most maintenance operations. Because of this, controls must be exercised over wearing rings, watches, bracelets, necklaces, and other items of jewelry. All such items of jewelry must be removed before entering the work area. To protect your hands and fingers, employees shall not wear jewelry on the job.
Hazard Assessments of Jobs Tasks and Required Personal Protective Equipment

(List not all-inclusive)

All District Maintenance and Parks Maintenance/Trades employees must wear appropriate head protection as identified on pages 7 and 8, and a safety vest during all job tasks.

1. Road and Bridge Work:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle traffic, equipment, falling/flying objects and materials</td>
<td>Struck by</td>
<td>Hard hat</td>
</tr>
<tr>
<td>Public right of way</td>
<td>Struck by</td>
<td>Safety vest</td>
</tr>
<tr>
<td>Flying particles from tools and equipment</td>
<td>Particle in eye(s)</td>
<td>Safety glasses</td>
</tr>
<tr>
<td>Noise (from tools and equipment)</td>
<td>Hearing damage</td>
<td>Hearing protection</td>
</tr>
</tbody>
</table>

2. Building Construction Sites:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Falling/flying objects, low ceilings, entryways, pipes</td>
<td>Struck by, strike against head injury</td>
<td>Hard hat</td>
</tr>
<tr>
<td>Flying objects and particles</td>
<td>Eye injury</td>
<td>Safety glasses</td>
</tr>
<tr>
<td>Noise (from tools and equipment)</td>
<td>Hearing damage</td>
<td>Hearing Protection</td>
</tr>
</tbody>
</table>

3. Paving Crew:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle traffic, falling/flying objects</td>
<td>Struck by</td>
<td>Safety vest</td>
</tr>
<tr>
<td>Public right of way</td>
<td>Struck by</td>
<td>Hard hat</td>
</tr>
<tr>
<td>Hot Asphalt</td>
<td>Burns</td>
<td>Heat resistant gloves</td>
</tr>
</tbody>
</table>

4. Flagging:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle traffic, falling/flying objects</td>
<td>Struck by</td>
<td>Hard hat</td>
</tr>
<tr>
<td>Public right of way</td>
<td>Struck by</td>
<td>Safety vest</td>
</tr>
</tbody>
</table>

5. Drivers:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outside of vehicle on work site</td>
<td>See #1</td>
<td>See #1</td>
</tr>
<tr>
<td>Assisting with chipper</td>
<td>See #7</td>
<td>See #7</td>
</tr>
<tr>
<td>Assisting w/ snowplow setup</td>
<td>See #13</td>
<td>See #13</td>
</tr>
</tbody>
</table>
### 6. Tree Trimming and Cutting:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Falling tree limbs</td>
<td>Struck by – head injury</td>
<td>Hard hat</td>
</tr>
<tr>
<td>Flying particles</td>
<td>Particle in eye(s)</td>
<td>Safety glasses</td>
</tr>
<tr>
<td>Chainsaw blade</td>
<td>Leg, arm lacerations</td>
<td>Chainsaw chaps</td>
</tr>
<tr>
<td>Noise</td>
<td>Hearing damage</td>
<td>Hearing protection</td>
</tr>
</tbody>
</table>

### 7. Chipper Operation:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flying tree branches</td>
<td>Struck by – head laceration, contusion</td>
<td>Hard hat</td>
</tr>
<tr>
<td>Flying wood chips</td>
<td>Particle in eye(s)</td>
<td>Safety glasses</td>
</tr>
</tbody>
</table>

### 8. Weed Whacking:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flying particles</td>
<td>Particle in eye(s)</td>
<td>Safety glasses</td>
</tr>
<tr>
<td>Flying Objects</td>
<td>Struck by</td>
<td>Bump cap</td>
</tr>
<tr>
<td>Sharp branches/thorns</td>
<td>Hand laceration</td>
<td>Gloves</td>
</tr>
<tr>
<td>Noise</td>
<td>Hearing damage</td>
<td>Hearing protection</td>
</tr>
</tbody>
</table>

### 9. Lawn Mowing:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Tree Branches</td>
<td>Strike against – head laceration, contusion</td>
<td>Bump cap</td>
</tr>
<tr>
<td>Stones kicked up from ground</td>
<td>Particle in eye(s)</td>
<td>Safety glasses</td>
</tr>
<tr>
<td>Noise</td>
<td>Hearing damage</td>
<td>Hearing protection</td>
</tr>
</tbody>
</table>

### 10. Using Power Tools and Hand Tools:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flying chips, dust, metal</td>
<td>Particles in eye(s)</td>
<td>Safety glasses</td>
</tr>
</tbody>
</table>

### 11. Golf Course Maintenance:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flying golf balls</td>
<td>Struck by – head injury</td>
<td>Bump cap</td>
</tr>
<tr>
<td>Employees not visible to golfers</td>
<td>Struck by</td>
<td>Safety vest</td>
</tr>
</tbody>
</table>

### 12. Emptying Garbage:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential bloodborne pathogen contaminated materials</td>
<td>Infectious disease</td>
<td>Rubber gloves</td>
</tr>
<tr>
<td>Flying objects/particles</td>
<td>Struck by</td>
<td>Bump cap</td>
</tr>
</tbody>
</table>
13. Snow Plow Setup:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharp edges</td>
<td>Hand laceration</td>
<td>Gloves</td>
</tr>
</tbody>
</table>

14. Working with Chemicals (general):

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin absorption</td>
<td>Dermatitis</td>
<td>Gloves (refer to MSDS)</td>
</tr>
<tr>
<td>Inhalation in poorly ventilated areas</td>
<td>Illness</td>
<td>Respiratory protection (Refer to MSDS)</td>
</tr>
<tr>
<td>Chemical splashing</td>
<td>Chemical in eye(s)</td>
<td>Safety goggles</td>
</tr>
</tbody>
</table>

Note: Refer to Hazard Control Section of Material Safety Data Sheet for specific information on hazards and recommended PPE.

15. Changing Chlorine Gas Cylinders – Stationary Engineers:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential leak or cylinder rupture, unknown concentration of chlorine gas</td>
<td>Illness, respiratory arrest</td>
<td>SCBA</td>
</tr>
</tbody>
</table>

16. Liquid Chlorine:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical splashing</td>
<td>Chemical in eye(s)</td>
<td>Safety goggles</td>
</tr>
<tr>
<td>Breathing chemical vapors</td>
<td>Illness</td>
<td>Cartridge-type air purifying respirator</td>
</tr>
<tr>
<td>Skin absorption</td>
<td>Dermatitis</td>
<td>Rubber gloves, boots</td>
</tr>
</tbody>
</table>

17. Working in Chlorine Pump Rooms – Stationary Engineers:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise</td>
<td>Hearing damage</td>
<td>Hearing protection</td>
</tr>
</tbody>
</table>

18. Spraying Pesticides:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical vapors blown into breathing zone</td>
<td>Illness</td>
<td>Cartridge-type air purifying respirator</td>
</tr>
<tr>
<td>Chemical vapors blown into eyes</td>
<td>Chemical in eye(s)</td>
<td>Safety goggles</td>
</tr>
<tr>
<td>Skin absorption</td>
<td>Dermatitis</td>
<td>Rubber gloves</td>
</tr>
</tbody>
</table>

19. Working in Confined Areas:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low ceilings, entryways, pipes</td>
<td>Strike against – head laceration, contusion</td>
<td>Hard hat</td>
</tr>
<tr>
<td>20. Handling Glass:</td>
<td>Hazards</td>
<td>Type of Injury</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------</td>
<td>----------------</td>
</tr>
<tr>
<td>Sharp edges</td>
<td>Laceration</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>21. Welding, Cutting and Brazing:</th>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>UV Light</td>
<td>Eye injury</td>
<td>Eye protection</td>
<td></td>
</tr>
<tr>
<td>Hazardous fumes and smoke in poorly ventilated areas</td>
<td>Illness</td>
<td>Respiratory protection</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>22. Woodworking Equipment:</th>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flying wood chips, dust</td>
<td>Particle in eye(s)</td>
<td>Safety glasses</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>23. Spray Finishing in Paint Shop:</th>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breathing vapors</td>
<td>Illness</td>
<td>Air purifying respirator</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>24. Grinding:</th>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flying Objects (piece of wheel)</td>
<td>Struck by – eye, face injury</td>
<td>Face shield</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>25. Nail Gun:</th>
<th>Hazards</th>
<th>Type of Injury</th>
<th>PPE Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flying Objects (nails)</td>
<td>Struck by – eye injury</td>
<td>Safety glasses</td>
<td></td>
</tr>
</tbody>
</table>
EMPLOYEE PERSONAL PROTECTIVE EQUIPMENT INVENTORY LIST

Name: ___________________________________

Supervisor__________________________

Work Location: __________________________

I certify that I have been issued the following safety equipment. I acknowledge that this equipment must be used to perform my job functions. I also acknowledge that I am responsible for the proper care and storage of these items.

<table>
<thead>
<tr>
<th>Initials</th>
<th>Date</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>________</td>
<td><em><strong>/</strong></em></td>
<td>Safety Glasses</td>
</tr>
<tr>
<td>________</td>
<td><em><strong>/</strong></em></td>
<td>Face Shield</td>
</tr>
<tr>
<td>________</td>
<td><em><strong>/</strong></em></td>
<td>Gloves</td>
</tr>
<tr>
<td>________</td>
<td><em><strong>/</strong></em></td>
<td>Hard Hat</td>
</tr>
<tr>
<td>________</td>
<td><em><strong>/</strong></em></td>
<td>Respirator</td>
</tr>
<tr>
<td>________</td>
<td><em><strong>/</strong></em></td>
<td>Vest</td>
</tr>
<tr>
<td>________</td>
<td><em><strong>/</strong></em></td>
<td>Tyvex Suit</td>
</tr>
<tr>
<td>________</td>
<td><em><strong>/</strong></em></td>
<td>Hearing Protection</td>
</tr>
</tbody>
</table>

Other Equipment (Supervisor should list all other equipment here.)

<table>
<thead>
<tr>
<th>Initials</th>
<th>Date</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>________</td>
<td><em><strong>/</strong></em></td>
<td>__________________</td>
</tr>
<tr>
<td>________</td>
<td><em><strong>/</strong></em></td>
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<td>________</td>
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<td>__________________</td>
</tr>
<tr>
<td>________</td>
<td><em><strong>/</strong></em></td>
<td>__________________</td>
</tr>
</tbody>
</table>

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Attachment 1
PERSONAL PROTECTIVE EQUIPMENT HAZARD ASSESSMENT
DESCRIPTION OF HAZARDS

Job Task: _______________________________ Date: ____/____/____

Sources of Motion:
1. 
2. 
3. 

Sources of High Temperatures:
1. 
2. 
3. 

Sources of Light Radiation:
1. 
2. 
3. 

Types of Chemical/ Flammable Liquid Exposures:
1. 
2. 
3. 

Sources of Sharp Objects:
1. 
2. 
3. 

Sources of Rolling or Pinching Objects:
1. 
2. 
3. 

Layout of Workplace and Location of Co-Workers:
1. 
2. 
3. 

Sources of Noise:
1. 
2. 
3.
### Department of Public Works
#### Personal Protective Equipment Assessment Chart

<table>
<thead>
<tr>
<th>Division:</th>
<th>Location:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job:</td>
<td>Date:</td>
</tr>
</tbody>
</table>

**Type of Hazard** | **Required Personal Protective Equipment**
--- | ---
Impact | Hand Protection | Type: 
Penetration | Head Protection | Type: 
Compression | Foot Protection | Type: 
Temp. Extremes | Protective Clothing | Type: 
Dusts, Fumes, Vapors | Respiratory Protection | Type: 
Light Radiation | Eye Protection | Type: 
Noise | Hearing Protection | Type: 
Other | Other | Type: 
Other | Other | Type: 

**ADDITIONAL COMMENTS:**

![Comment Section](image-url)
PPE POLICY ACKNOWLEDGEMENT

I hereby acknowledge that I have received a copy of the Department of Public Works Personal Protective Equipment Policy.

________________________________________________________________________   __________
Employee (PRINT)                                                      Date

________________________________________________________________________   __________
Employee Signature                                                    Work Location

________________________________________________________________________   __________
Supervisor/Witness                                                   Date
PART IX

CONFINED SPACE ENTRY
PERMIT REQUIRED CONFINED SPACE PROGRAM

**Purpose:** The purpose of this Permit Required Confined Space program is to establish guidelines for a permit system. It is also for controlling the safe operating procedures for entering a confined space and regulating employee entry into confined spaces.

**Policy:** It is the policy of the Department of Public Works to safeguard against any unauthorized entry into a confined space by the implementation of this permitting system. Also disciplinary action will be taken for any unauthorized entry into permit required confined spaces.

**Scope:** This program contains the requirements for the procedures to protect employees from the hazards of entry into permit required confined spaces.

**Definitions:**
- **Attendant** - an individual stationed outside one or more permit spaces who monitors the entry into confined spaces and who performs all attendants duties prescribed in this program.
- **Authorized entrant** - an employee who is authorized by the department to enter a permit space.
- **Confined Space** - a space that:
  1) Is large enough and so configured that an employee’s body can enter and perform assigned work.
  2) Has limited or restricted means of entry or exit (i.e.: communications vaults, storm sewers, sanitary sewers, fueling pits, fuel storage tanks, electrical vault, manholes).
  3) Is not designed for continuous employee occupancy.
- **Emergency** - any occurrence or event internal or external that could endanger the entrants.
- **Entry** - the action by which an employee passes through an opening into a permit required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as the entrant’s body breaks the plane of an opening into that space.
- **Entry permit** - the written or printed document that is provided by the employer to allow and control entry into a confined space.
- **Entry supervisor** - the person designated responsible for determining if acceptable entry conditions are present for authorizing entry and overseeing entry operations, and for terminating entry at any time. (An entry supervisor may also serve as an attendant or as an authorized entrant, as long as that person is trained and equipped for the role he or she fills.)
**Hazardous atmosphere** - an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self rescue, injury, or acute illness from one or more of the following causes:

1) Flammable gas, vapor, or mist in excess of 10 percent of its lower flammability limit (LFL).
2) Airborne combustible dust at a concentration that meets or exceeds its LFL;
3) Atmospheric oxygen concentration below 19.5% or above 23.5%
4) Any atmosphere that is immediately dangerous to life or health
5) An atmospheric concentration of any substance for which a dose or PEL/TLV (permissible exposure limit/threshold limit value) is published and could result in employee exposure in excess of its dose or PEL/TLV.

**Immediately Dangerous to Life or Health (IDLH)** - any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or would interfere with an employees ability to escape unaided from a permit space.

**Non-permit confined space** - a confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious injury.

**Oxygen deficient atmosphere** - an atmosphere containing less than 19.5% oxygen by volume

**Oxygen enriched atmosphere** - an atmosphere containing more than 23.5% oxygen by volume.

**Permit Required Confined Space** - a space that has one or more of the following:
1) Contains or has a potential to contain a hazardous atmosphere.
2) Contains a material that has potential to engulf an entrant.
3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor, which slopes downward and tapers to a smaller cross section.

**General requirements:**

1) The Department Supervisor will evaluate its properties to determine if the workplace contains any confined spaces. The Allegheny County Bureau of Fire has already identified the following commonly entered areas as permit required confined spaces: communications vault, electrical vault, fueling pits(valve & control vaults), fuel storage tanks, sanitary sewers, storm sewers, etc.

2) If confined spaces are found, then it will be determined if the spaces are non-permit-requiring confined spaces or permit requiring confined spaces. When in doubt supervisors shall treat all confined spaces as permit required.
3) If these spaces are not to be entered, then measures must be taken to deny access to any individual with out proper authority. Locks, signs, barriers, gates, and fences are acceptable methods of denying access to these spaces

4) Entry into confined spaces shall be controlled. Only trained, authorized individuals shall enter a confined space. Signs shall be posted in the immediate area of the confined space. “DO NOT ENTER-PERMIT REQUIRED CONFINED SPACE”

5) This written program must be available for inspection by all employees.

6) When entrance covers are removed to gain access to the confined space, the opening shall be promptly guarded by a railing, temporary cover, or some other temporary barrier that will prevent an accidental fall through the opening.

7) Before an employee enters the space, testing must be done to ensure that there is no hazardous atmosphere present. The following conditions should be monitored for oxygen deficient atmosphere, oxygen enriched atmosphere, flammable gases and vapors, and potential toxic air contaminants (such as carbon monoxide (CO), hydrogen sulfide (H2S), etc.) Acceptable levels are included on the entry permit.

8) Periodic monitoring within the breathing zone of the entrant must be done while in the confined space to ensure that no hazardous condition arises while the entrant occupies the space.

9) If a hazardous atmosphere is detected during the time an entrant is in the confined space then:
   
   1) Each employee shall exit the confined space
   
   2) The space shall be evaluated to determine how the hazardous atmosphere developed.

   3) Measures must be taken to ensure that the hazardous atmosphere is under control before any reentry to that space is attempted. Mechanical ventilation can be used to dilute the hazardous atmosphere. A Self-Contained Breathing Apparatus (SCBA) must worn in the event that it is absolutely necessary to enter the space even though the hazardous atmosphere cannot be controlled. However, SCBA’s are only to be worn by qualified personnel.

10) Communication must be maintained between the entrant and the attendant during the duration of entry in the confined space. If necessary, two-way radios shall be used.
Permit Required Confined Space Procedure:

1. Before any work is done in a confined space, the Allegheny County Bureau of Fire must be contacted. The Bureau of Fire is the primary rescue team and must be notified prior to any entry into a confined space. The atmosphere of the confined space must be tested prior to any entry to ensure that a safe atmosphere exists. The designated work crew may perform the initial monitoring provided that all participants are fully aware of their duties under this program, knowledgeable on the use of the monitoring equipment and the hazards associated with confined spaces. If the designated work crew does not have monitoring equipment or would like another opinion, the Fire Department must do the initial monitoring to determine if the confined space is safe to enter. It is then the responsibility of the designated working crew to continuously monitor the space while the work is being performed.

2. Any unauthorized entry into a permit required confined space shall result in disciplinary action.

3. Certain space areas will be designated as permit required confined spaces. These spaces must be protected from unintentional entry. Signs, barriers, yellow caution tape, and locks are acceptable methods to prevent unauthorized entry. Any space that is designated with any type of confined space sign is a predetermined confined space. Areas that are not marked with appropriate signs and are of any question shall be evaluated to determine if a permit is needed to enter that space. When in doubt, supervisors shall treat all confined spaces as permit required.

4. Entry into a confined space is only permitted after atmospheric testing is done to ensure a safe atmosphere. Monitoring shall be conducted by a qualified individual who has been trained in the use of the monitoring equipment. The testing will include monitoring of oxygen deficient or oxygen enriched atmosphere. This means the oxygen levels shall be above 19.5 % and below 23.5% oxygen by volume. Also to be tested are flammable gases and vapors. The levels of any flammable gas or vapors that are present shall not exceed 10% of its lower flammable limit (LFL). Also any concentration of any substance that is listed in the American Conference of Governmental Industrial Hygienists (ACGIH) handbook or 29CFR 1910.subpart Z (Toxic and Hazardous Substances) table Z-1 thru Z-3 shall not exceed its listed Threshold Limit Value (TLV) or it’s Permissible Exposure Limit (PEL). No entry shall be allowed if an atmosphere is determined to be Immediately Dangerous to Life and Health (IDLH).

5. If the atmosphere in the confined space needs to be ventilated to gain acceptable limits then no entry shall be granted until proper ventilation is set up and the atmosphere is re-tested and determined acceptable. Ventilation shall continue throughout the duration of scheduled work or until all entrants are out of the confined space. Continuous monitoring by the attendant shall be done while any
entrant is in the confined space. The entrant shall be alerted and removed from the confined space if at any time the monitoring reveals a hazardous atmosphere.

6. The entry supervisor shall also assure that all provisions of the lockout/tagout program are followed.

7. Once the confined space is tested and entry is acceptable, the permit must be then signed by the entry supervisor, the authorized attendant, and the authorized entrant. Once entry is granted the space must be protected from any surrounding employees or protected so that the authorized entrant is in no danger of being struck by falling objects or any other external hazards.

8. If the space is deeper than 5 feet from the surface, the entrant shall wear a full body harness with “D” ring attached to a rescue tri-pod. A hard hat shall also be worn by all entrants to prevent against possible head injuries from falling objects and/or bumps in close quarters.

9. After work is completed, the permit must be signed off by the entry supervisor to show that all work is complete and that no further entry is needed. All tooling and equipment that was used to complete the task must be removed. The confined space must then be protected from unauthorized entry to that space once all attendants and entrants have completed their assigned duties.

10. The Supervisor must receive a copy of the cancelled permit within 48 hours, which is to be kept on record for a period of one year. All cancelled permits are permitted to be reviewed by employees.

The Confined Space Permit:

The confined space permit shall include the following:

1. The space that is to be entered or the location of the space.
2. The purpose of the entry (why entry is needed).
3. The date and the authorized duration that the permit is valid.
4. The authorized entrant(s) by name so the attendant can quickly and accurately determine who has entered the space.
5. The employee’s name who is serving as the attendant.
6. The individual, by name, who is serving as the entry supervisor.
7. The hazards of the space that is to be entered.
8. The measures used to isolate the hazards while entry is conducted
9. The acceptable entry conditions (oxygen, flammable gases and vapors, etc.)
10. The results of initial and periodic testing of the space. This must be accompanied by the individual's name who did the testing and when it was performed.
11. The number of the rescue services that must be called and a list of the equipment that is used in case of an emergency.
12. The type of equipment that is needed for entry into the confined space (i.e. Ventilation equipment, rescue equipment, respiratory protection equipment, head protection, hearing protection, rain suits, boots, gloves, radio equipment, lighting equipment, etc.).

Duties of the Authorized Entrant:

All authorized entrants shall:
1) Know the hazards that may be faced during entry, including signs or symptoms and consequences of the exposure.
2) Properly use protective equipment to maintain safe working conditions.
3) Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space, if necessary.
4) Alert the attendant if any warning sign or symptom of exposure to a dangerous situation is recognized, or when a prohibited condition is detected.
5) Exit from the permit space as quickly as possible if an order to evacuate is given by the attendant or entry supervisor; if the entrant recognizes a warning sign or symptom of a dangerous situation; the entrant detects a prohibited condition, or if the evacuation alarm on the monitoring equipment is activated.

Duties of the Attendant:

All authorized attendants shall:
1) Know the hazards that may be faced during entry, including information on the mode, signs, or symptoms and consequences of the exposure.
2) Be aware of the possible behavioral effects of hazard exposure to authorized entrants.
3) Continuously maintain an accurate count of authorized entrants in the space and assures that the means used to identify who is in the space accurately identifies that person.
4) Remain outside the entry space 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 of the space to determine if it is safe for entrants to remain in the space and order the authorized entrants to evacuate the permit space under any of the following conditions: if the attendant detects a prohibited condition; if the attendant detects any behavioral effects in the entrant(s); or if the attendant cannot safely perform any of the duties described in this section.
7) Summon rescue and other emergency services as soon as the attendant determines that the authorized entrant needs additional assistance to escape from the confined space. The attendant shall NOT enter the space to perform rescues, but wait for emergency services to arrive who are equipped with SCBA’s and other rescue equipment.
8) Take the following action when unauthorized persons approach or enter a confined space while entry is underway: warn the unauthorized person that they must stay away from the permit space; advise the person that they must exit immediately if they have entered a permit space; inform the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space.

9) Perform no duties that may interfere with the attendant’s primary duty to monitor and protect the authorized entrants.

**Duties of the Supervisor:**

All supervisors shall:

1) Know the hazards that may be faced during entry, including information on the mode, signs and symptoms, and consequences of exposure.

2) Verify by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and necessary equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.

3) Verify that all entrants and attendants are knowledgeable of their duties and responsibilities to perform the entry in accordance with this procedure.

4) Terminate the entry and cancel the permit when the work on the permit is completed or if a situation arises that is dangerous to the authorized entrant(s).

5) Verify that the rescue services are available and that the means for summoning them are operable.

**Training**

Training must be given to all employees whose work will require them to perform tasks within a confined space. Training shall be provided to each affected employee:

1) Before the employee is first assigned duties of an entrant, attendant, or an entry supervisor;

2) Whenever there is a change in the assigned duties;

3) Whenever there is a change in permit space operations that presents a hazard about which an employee has not previously been trained;

4) Whenever the supervisor has reason to believe either that there are deviations from the permit space entry procedures or that there are inadequacies in the employee’s knowledge or use of these procedures.
Employees shall be trained in the following areas:

1) Educate all affected employees on which potential work areas are permit required spaces, and that entry into such spaces requires an entry permit.

2) Educate all affected employees on the recognition, evaluation, and control of hazardous atmospheres in confined spaces. Affected employees will be trained to recognize the hazards that they may encounter, what to do when a hazardous situation arises, and how to control the area to gain an acceptable entry condition.

3) Designated employees will be trained on how to use the monitoring equipment in order to recognize the difference between hazardous and acceptable atmospheres, and have proper training in the care of the equipment.

4) Designated employees may be trained on the proper use of a SCBA. These individuals will follow strict guidelines pursuant to (29 CFR 1910.134/Respirator Protection Program) when using such equipment.

5) Training will be conducted on the use of rescue equipment that is required for entrants to have when entering a confined space. Also training will be conducted on the use of communication equipment that will be used between attendants and entrants.

6) Employees will be trained how to properly fill out a confined space permit. All the information on the permit will be explained so that the employee filling out the permit understands the purpose of the permit.

7) Employees will be trained that once the work is completed, the permit needs to be cancelled, and the confined space needs to be protected from unauthorized entry.
PART X

ELECTRICAL SAFETY
ELECTRICAL SAFETY

As part of their everyday activities, almost all Public Works employees are exposed to electrical hazards to some degree on a regular basis. Employees must respect the potential hazards of electricity, by following the safe work practices listed below when using or working around electrical equipment. Only authorized, trained Public Works employees are permitted to work on live electrical equipment.

Basic Principals of Electricity:

Electrical equipment is potentially hazardous and can cause serious shock and burn injuries if improperly used or maintained. Electricity travels through electrical conductor that may be in the form of wires or parts of the human body. Most metals and moist skin offer very little resistance to the flow of electrical current and can easily conduct electricity. Other substances such as dry wood, porcelain, or pottery offer a high resistance and can be used to prevent the flow of electrical current. If a part of the body comes in contact with the electrical circuit, a shock will occur.

The electrical current will enter the body at one point and leave at another. The passage of electricity through the body can cause great pain, burns, destruction of tissue, nerves, and muscles and even death. Factors influencing the effects of electrical shock include the type of current, voltage, resistance, amperage, pathway through body, and the duration of contact.

The longer the current flows through the body, the more serious the injury. Injuries are less severe when the current does not pass through or near nerve centers and vital organs. Electrical accidents usually occur as a result of faulty or defective equipment, unsafe installation, or misuse of equipment on the part of workers.

Electrical Hazards:

♦ **Ungrounded Equipment** - Grounding is a method of protecting employees from electric shock. By grounding an electrical system, a low-resistance path to earth through a ground connection is intentionally created. When properly done, this path offers sufficiently low resistance and has sufficient current-carrying capacity to prevent the build-up of hazardous voltages. Most fixed equipment such as large, stationary machines must be grounded. Cord and plug connected equipment must be grounded if it is located in hazardous or wet locations, if operated at more than 150 volts to ground, or if it is of a certain type of equipment. Smaller office equipment, such as typewriters and coffee pots, would generally not fall into these categories and therefore would not have to be grounded. In such cases, the equipment must be used in accordance with the manufacturer’s instructions. Never remove the third (grounding) prong from any three-prong piece of equipment.
♦ **Overloaded Outlets** - Insufficient or overloading of electrical outlets is not allowed. A sufficient number of outlets will eliminate the need for extension cords. Overloading electrical circuits and extension cords can result in a fire. Floor mounted outlets must be carefully placed to prevent tripping hazards.

♦ **Unsafe/Non-Approved Equipment** - The use of poorly maintained or unsafe, poor quality, non-approved equipment, including office equipment and appliances (often provided by or used by employees) is not allowed. Such equipment can develop electrical shorts creating fire and/or shock hazards. Equipment and cords should be inspected regularly, and a qualified individual should make repairs.

♦ **Defective, frayed or improperly installed cords** - When the outer jacket of a cord is damaged, the cord may no longer be water-resistant. The insulation can absorb moisture, which may then result in a short circuit or excessive current leakage to ground. If wires are exposed, they may cause a shock to a worker who contacts them. These cords must be repaired or replaced. Electric cords should be examined on a routine basis for fraying and exposed wiring. Damaged cords must be reported to the supervisor, put out of use and repaired/replaced.

♦ **Improper Placement of Cords** - A cord cannot be pulled or dragged over nails, hooks, or other sharp objects that may cause cuts in the insulation. In addition, cords should never be placed on radiators, steam pipes, walls, and windows. Particular attention must be placed on connections behind furniture, since files and bookcases may be pushed tightly against electric outlets, severely bending the cord at the plug.

♦ **Electrical Cords across Walkways and Work Areas** - An adequate number of outlet sockets should be provided. Extension cords should only be used in situations where fixed wiring is not feasible. However, if it is necessary to use an extension cord, never run it across walkways or aisles due to the potential tripping hazard. If you must run a cord across a walkway, either tape it down or purchase a cord runner.

♦ **Live Parts Unguarded** - Wall receptacles should be designed and installed so that no current-carrying parts will be exposed, and outlet plates should be kept tight to eliminate the possibility of shock.

♦ **Pulling of Plugs to Shut Off Power** - Switches to turn on and off equipment should be provided, either in the equipment or in the cords, so that it is not necessary to pull the plugs to shut off the power. To remove a plug from an outlet, take a firm grip on and pull the plug itself. Never pull a plug out by the cord.
♦ **Working on "Live Equipment"** - Disconnect electrical machines before cleaning, adjusting, or applying flammable solutions. For equipment other than cord and plug, lockout tagout practices must be used. If a guard is removed to clean or repair parts, replace it before testing the equipment and returning the machine to service.

♦ **Blocking Electrical Panel Doors** - If an electrical malfunction should occur, the panel door, and anything else in front of the door will become very hot. Electrical panel doors should always be kept closed, to prevent "electrical flashover" in the event of an electrical malfunction.
PART XI

MATERIAL HANDLING & STORAGE
MATERIAL HANDLING AND STORAGE POLICY

All Public Works employees must follow safe work practices for lifting and material handling designated below. When lifting assists are provided, employees must use the equipment available. The purpose of establishing these procedures are to prevent common injuries associated with material handling, including strains, struck by and slips/falls.

SAFE LIFTING GUIDELINES

♦ Take a balanced stance with your feet placed shoulder-width apart. When lifting something from the floor, squat close to the load.

♦ Keep your back in its neutral or straight position. Tuck in your chin so your head and neck continue the straight back line.

♦ Grip the object with your whole hand, rather than only with your fingers. Draw the object close to you, holding your elbows close to your body to keep the load and your body weight centered.

♦ Lift by straightening your legs. Let your leg muscles, not your back muscles, do the work. Tighten your stomach muscles to help support your back. Maintain your neutral back position as you lift.

♦ Never twist when lifting. When you must turn with a load, turn your whole body, feet first.

♦ Never carry a load that blocks your vision.

♦ To set something down, use the same body mechanics designed for lifting.

LIFTING FROM A SEATED POSITION

Bending from a seated position places tremendous strain on your back. Also, your chair could be unstable and slip out from under you. Instead, stand and move your chair out of the way. Squat and stand whenever you have to retrieve something from the floor.
ERGONOMIC SOLUTIONS

Ergonomic controls are the most effective method of reducing strain injuries from lifting and material handling. The following basic ergonomic principals must be considered in addition to enforcing the use of safe work practices:

♦ If you are doing a lot of twisting while lifting, try to rearrange the space. People who have to twist under a load are more likely to suffer back injury.

♦ Rotate through tasks so periods of standing alternate with moving or sitting. Ask for stools or footrests for stationary jobs.

♦ Store materials at knee level whenever possible instead of on the floor. Make shelves shallower (12-18") so one does not have to reach forward to lift the object. Break up loads so each weighs less.

♦ If your must carry a heavy object some distance, consider storing it closer, request a table to rest it on, or try to use a hand truck or cart to transport it.

MATERIAL STORAGE

Materials that are improperly stored can lead to objects falling on workers, poor visibility, and create a fire hazard. A good housekeeping program will reduce or eliminate hazards associated with improper storage of materials. Examples of improper storage include - disorderly piling, piling materials too high, and obstructing doors, aisles, fire exits and fire-fighting equipment. The following are good storage practices:

Boxes, papers, and other materials should not be stored on top of lockers or file cabinets because they can cause landslide problems. Boxes and cartons should all be of uniform size in any pile or stack. Always stack material in such a way that it will not fall over.

♦ Store heavy objects on lower shelves.

♦ Try to store materials inside cabinets, files, and lockers.

♦ Office equipment such as typewriters, index files, lights or calculators should not be placed on the edges of a desk, filing cabinet, or table.

♦ Aisles, corners, and passageways must remain unobstructed. There should be no stacking of materials in these areas.

♦ Storage areas should be designated and used only for that purpose. Store heavy materials so you do not have to reach across something to retrieve them.
Fire equipment, extinguishers, fire door exits, and sprinkler heads should remain unobstructed. Materials should be at least 18 inches minimum away from sprinkler heads.

The following safety guidelines should be followed when storing material:

♦ When using a lift truck, always adjust forks to proper width.

♦ Round objects like pipe should be blocked and chained, if necessary, to prevent rolling.

♦ Materials in bags should be stacked by varying each layer in direction, so that each bag rests on two bags in the layer below.

♦ Large cans and kegs should be banded or chained together on each layer.

♦ Lumber should be stacked with cross-tie pieces to steady the pile and prevent shifting. This also provides ventilation.
FORKLIFT SAFETY

Only trained, authorized employees are permitted to operate forklifts. Employees must receive detailed training before operating a forklift including: forklift types, uses, designs, limitations, parts, and inspection procedures, safe loading, unloading, operation parking and refueling procedures.

Incorrect or careless forklift operation can cause serious accidents. Forklifts often steer with the rear wheels and can tip easily. Operators or nearby workers can be injured or killed if a forklift tips over, falls off a loading dock, collides with or drops a load on equipment, a vehicle or another person. Other forklift hazards include operator injuries caused by jumping on or off a forklift and fires caused by improper refueling or recharging.

It is the Department of Public Works policy that forklift operators and those working around forklifts follow the guidelines written below:

♦ Forklifts must be inspected – tires, brakes, steering, horn, forks etc., before use each day or shift.
♦ The forklift operator must wear a seatbelt.
♦ Horseplay during forklift operation is prohibited.
♦ Keep arms, hands and legs inside the truck
♦ Beware of surface holes, uneven patches and overhead clearances.
♦ Don’t drive up to a person standing in front of a bench or any fixed object.
♦ Obey speed limits.
♦ Drive in the assigned lane or on the right.
♦ Yield the right of way to pedestrians.
♦ Sound the horn at intersections.
♦ Stay at least three truck lengths behind the vehicle in front of you.
♦ Slow down for turns.
♦ Stop before going in reverse.
♦ Don’t pass at intersections or blind spots.
♦ No one is permitted to ride directly on the truck’s forks.
EXCAVATIONS AND PROTECTIVE SYSTEMS POLICY

It is The Department of Public Works Policy that an acceptable protective system be provided when employees must perform work in a trench that is 5 feet or more in depth. A competent trained person must be on site to supervise the job site at all times. All Supervisors and Superintendents have been trained and are designated as Competent Persons. If the potential for atmospheric hazards exist in a trench, air monitoring must be conducted and mechanical ventilation must be used.

No matter how many trenching, shoring, and backfilling jobs have been performed in the past, each job should be planned carefully. It is important to make certain you will be able to protect yourself, other employees, the public, and property.

Adequate information about the job site should be available. Considerations in planning this type of operation may include traffic, nearness of structures and their conditions, soil, ground water, water table, overhead utilities, and weather. In addition, there should be a mechanism in place for informing all involved parties. Individuals performing these operations should be knowledgeable about all underground installations, including sanitary systems, storm water facilities, water, fuel, telephone, gas, and traffic loop control lines, etc., that may be encountered in the digging process.

Soil Classifications:

The soil classification will dictate the type of protective system used and sloping ratios. Competent persons must be trained to be able to identify the different types of soils.

- **Stable Rock** – can be excavated with vertical sides and remain intact while exposed.
- **Type A Soil** – the highest compressive strength (except for stable rock) including different types of clays. No soil can be classified as Type A if it is fissured, subject to vibration from traffic and equipment, or part of a sloped, layered system.
- **Type B Soil** – clays, gravels, silts and loams with a less compressive strength than Type A soil.
- **Type C Soil** – soils such a gravel and sand, submerged soil, unstable submerged rock, or soil from which water is freely seeping.

Types of Protective Systems:

The following are acceptable types of protective systems to prevent cave-ins. Departments are responsible for determining which system will best fit their situation:

- **Sloping and Benching** - Sloping or benching is one option to protect against cave-ins when trenches are less than 20 feet deep. If the soil classification cannot be identified,
the sides of the excavation must be sloped to an angle not steeper than $1^{1/2} \text{H : V}$. If the soil type can be identified, the following maximum allowable slopes must be used:

- Stable Rock – Vertical 90 degrees
- Type A Soil – 3/4H : 1V
- Type B Soil – 1H : 1V
- Type C Soil – 1$^{1/2}$ : 1V

**Shielding** - Shielding is a structure that is able to withstand the forces imposed on it by a cave-in, sometimes referred to as a trench box. Shields can be permanent structures or designed to be portable and moved along as work progresses. Shields can be pre-manufactured or built for a particular job.

**Shoring** - A structure such as metal hydraulic, mechanical or timber shoring system that supports the sides of an excavation.

**Entry and Exit:**

A sufficient number of ladders must be provided for safe entry into and exit out of a trench. The number of ladders depends on the size of the trench. As a general rule, one ladder must be provided every 20 feet.

**Barricades and Warning Signs:**

All open trenches must have barricades and signage in place to warn employees in the area to keep out. Open trenches that are left over night must be covered to prevent injury to the public. Wood planking or metal coverings are sufficient.

**REMEMBER - CALL BEFORE YOU DIG - 1-800-242-1776**
PART XIII

UTILITY LINE SAFETY
UTILITY LINE SAFETY POLICY

The purpose of the Department of Public Works Utility Line Safety Policy is to prevent employee injury and property damage by avoiding contact with underground and overhead live utility lines.

During excavation or digging, area utilities must be contacted during the planning stage for assistance in locating their underground service lines in and around the job site. If work is to be performed near overhead power lines, the lines must be de-energized and grounded by the owner or operator of the lines. If a utility line is accidentally contacted, it must be reported to the utility company immediately.

Underground Utility Services:

Underground utility services constitute many hazards when damaged. Rupture of gas service lines presents an immediate danger to workers. Planning in advance can prevent such accidents.

Before work is started, supervisors and superintendents should do the following:

♦ Check plans and local utilities having service in the area. Additional information on underground services may be obtained by calling 1-800-242-1776, at least 48 hours before digging.
♦ Inspect the job area to identify what signs, post markers and overhead electrical lines may be seen.
♦ Obtain emergency service and repair telephone numbers of all utilities having service in the area.

Natural Gas Service:

♦ Inform all crewmembers of the location and depth of buried pipelines.
♦ Consult the local gas utility for closely paralleling or crossing buried pipelines.
♦ Specifically instruct equipment operators to avoid contact with buried lines. Use only hand digging when in close proximity to buried pipelines.
♦ Do not use mechanical compaction equipment when back filling over buried pipelines.
**Damaged Gas Pipeline:**

- Immediately call the gas utility repair service and report the damage.
- Shut off all motors in the area.
- Remove all flares, lanterns or open flames.
- Enforce no smoking in the area.
- Do not operate gas valves.
- Do not cover-up damaged pipeline.
- Check buildings in the immediate area for gas odors.
- Request nearby occupants to evacuate the area if gas odors are detected.
- Re-route vehicle traffic from the immediate area.
- Stay near the area until relieved by police, fire or gas company personnel.
- If ignition of the escaping gas occurs, clear and barricade the area. Do not attempt to extinguish burning gas.

**Electrical Transmission Service:**

- Contact the local electric power utility if work is to be done near electrical lines. Accurately locate any buried service lines.

**Overhead Power Lines:**

Contact with live overhead power lines may result in electrocution. Employees working around overhead lines must observe the following work practices to prevent accidents:

- Unqualified employees and mechanical equipment must stay at least 10 feet away from overhead power lines. If voltage is over 50,000 volts, the clearance must be increased by 4 inches for each additional 10,000 volts.

- When mechanical equipment is being operated near overhead lines, employees standing on the ground may not contact the equipment unless it is located so that the required clearance cannot be violated even at the maximum reach of the equipment.

- Use insulated protective equipment such as rubber-insulated gloves, hoods, sleeves, matting, blankets, line hose and hard hats.

- If mobile equipment accidentally becomes energized stay in your vehicle if possible. If you must exit the vehicle, hop instead of walking or running to avoid becoming the path to ground.
PART XIV

FALL PROTECTION
FALL PROTECTION POLICY

All Public Works Employees working at unprotected heights at or above six feet must be protected by a fall protection system. The purpose of fall protection systems is to prevent employees from falling off, onto, or through working levels and to protect employees from being struck by falling objects. Areas where fall hazards exist must be identified and evaluated. Training must be specific to the hazards identified.

Activities where fall protection is needed include:

♦ Ramps, runways and other walkways
♦ Excavations
♦ Hoist areas
♦ Holes
♦ Formwork and reinforcing steel
♦ Leading edge work
♦ Unprotected sides and edges
♦ Overhand bricklaying and related work
♦ Roofing work
♦ Precast concrete erection
♦ Wall openings
♦ Residential construction
♦ Hazard of falling into dangerous equipment

Fall protection can be provided through the use of guardrail systems, safety net systems, personal fall arrest systems, positioning device systems, and warning line systems.

Controlled Access Zones:

A controlled access zone is a work area designated and clearly marked in which certain types of work may take place without the use of conventional fall protection systems – guardrail, personal arrest, or safety net. Controlled access zones are used to keep out workers other than those authorized to enter work areas from which guardrails have been removed.

Controlled access zones must be defined by a control line or by any other means that restricts access. Control lines shall consist of ropes, wires, tapes or equivalent materials, and supporting stanchions, and each must be:

♦ Flagged or clearly marked at not more than 6 foot intervals.
♦ Rigged and supported in such a way that the lowest point, including sag is not less than 39 inches from the walking/working surface and the highest point is not more than 45 inches.
♦ Strong enough to sustain stress of at least 200 pounds.
♦ Control lines must be connected on each side to a guardrail system or wall.
Roofing:

♦ **Low Sloped Roofs** – employees working on low-sloped roofs with unprotected sides and edges of 6 feet or more shall be protected by a guardrail, safety net, personal fall arrest system, or combination of a warning line and guardrail, warning line and safety net, warning line and personal fall arrest system, or warning line and safety monitoring system.

♦ **Steep Roofs** – employees working on steep roofs with unprotected sides and edges 6 feet or more must be protected from falling by a guardrail system, safety net system or a personal fall arrest system.

**Working in Arial Lifts:**

Public Works employees perform many jobs in arial lifts, including tree trimming and electrical work. Employees are required to tie off to the bucket when performing this work and make sure the wheels are chocked.

**Fall Protection System Criteria:**

1. **Standard Guardrail Systems:**

Toprails and midrails or guardrail systems must be at least ¼ inch thick to prevent cuts and lacerations. If wire rope is used for toprails, it must be flagged at 6-foot intervals. Steel and plastic banding cannot be used as toprails or midrails. Manila, plastic, or synthetic rope used for toprails or midrails must be inspected for strength and stability. The following specs are required for guardrail systems: (1) Toprail – 42 inches above working/walking level, (2) Midrail – 21 inches or middle distance between toprail and working surface, (3) Capable of withstanding 200 pounds of force in any direction

2. **Personal Fall Arrest Systems:**

Employees are required to wear personal fall protection when working at unprotected heights of 6 feet or more, when a guardrail or safety net system is not provided. The components of a personal fall arrest system include a full body harness, lanyard and anchorage point. Tie off points must be of sufficient strength the hold the maximum amount of force that could be exerted during a fall. Light fixtures and conduit are not acceptable anchorage points. These consist of an anchorage, connectors, and a body harness and may include a deceleration device, lifeline, or suitable combinations. If a personal fall arrest system is used for fall protection, it must do the following:

♦ Limit maximum arresting force on an employee to 900 pounds when used with a body belt
Limit maximum arresting force on an employee to 1,800 pounds when used with a body harness.

Be rigged so that an employee can neither free fall more than 6 feet nor contact any lower level.

Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet (1.07 meters); and

Have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of 6 feet or the free fall distance permitted by the system, whichever is less.

Personal fall arrest systems must be inspected prior to each use for wear damage, and other deterioration. Defective components must be removed from service. Dee-rings and snap hooks must have a minimum tensile strength of 5,000 pounds. Dee-rings and snap hooks shall be proof tested to a minimum tensile load of 3,600 pounds without cracking, breaking, or suffering permanent deformation. Snap hooks shall be sized to be compatible with the member to which they will be connected, or shall be of a locking configuration. Unless the snap hook is a locking type and designed for the following connections, they shall not be engaged (a) directly to webbing, rope, or wire rope; (b) to each other; (c) to a d-ring to which another snap hook or other connector is attached; (d) to a horizontal lifeline; or (e) to any object incompatible in shape or dimension relative to the snap hook, thereby causing the connected object to depress the snap hook keeper and release unintentionally.

3. Position Devices:

Body belts are not permitted to be used as personal fall arrest systems, but may be used for positioning. Body belts or body harnesses used for positioning are set up so the worker cannot free-fall more than 2 feet. They shall be secured to an anchorage capable of supporting at least twice the potential impact load or 3000 pounds, whichever is greater.

4. Safety Monitoring Systems:

When no other alternative fall protection has been implemented, a safety monitoring system shall be used. A competent person must monitor the safety or workers. The safety monitor must: be able to recognize fall hazards, warn workers of fall hazard dangers, be able to see the worker(s) and be able to orally communicate with workers.

Only workers engaged in roofing operations are allowed in the monitored area. Mechanical equipment shall not be used or stored in areas where safety monitoring systems are being used.
5. Safety Net Systems:

Safety nets must be installed as close as practicable under the walking/working surface and never more than 30 feet below such levels. Defective nets shall not be used. Safety nets shall be inspected at least once a week for wear, damage, and other deterioration. Each safety net mesh shall not exceed 36 square inches nor be longer than 6 inches on any side and the openings of mesh ropes or webbing shall not exceed 6 inches. Each safety net shall have a border rope for webbing with a minimum breaking strength of 5000 pounds.

Safety nets must be installed with sufficient clearance underneath to prevent contact with the surface below. When net are used on bridges, the potential fall area from the walking/working surface to the net shall be unobstructed.

Safety nets must extend outward from the outermost protection of the work surface as follows:

<table>
<thead>
<tr>
<th>Vertical distance from working level to horizontal plane of net</th>
<th>Minimum required horizontal distance of outer edge of net from the edge of the working surface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 5 feet</td>
<td>8 feet</td>
</tr>
<tr>
<td>More than 5 feet up to 10 feet</td>
<td>10 feet</td>
</tr>
<tr>
<td>More than 10 feet</td>
<td>13 feet</td>
</tr>
</tbody>
</table>

Safety nets shall be capable of absorbing an impact force of a drop test consisting of a 400-pound bag of sand 30 inches in diameter, dropped from the highest working point.

6. Warning Line Systems:

Warning line systems consist of ropes, wires, or chains and supporting stanchions and are set up as follows:

♦ Flagged at 6-foot intervals
♦ Rigged and supported so that the lowest point is not less than 34 inches from the surface and its highest point is no more than 39 inches from the surface
♦ Stanchions after being rigged with warning lines, shall resist a force of at least 16 pounds, 30 inches above the surface, perpendicular to the warning line and in the direction of the floor, roof, or platform edge.
♦ The rope, wire or chain shall have a minimum tensile strength of 500 pounds and after being attached to stanchions, must support without breaking
♦ Shall be attached to each stanchion in such a way that pulling on one section of the line will not result in slack being taken up in the adjacent section before the stanchion tips over.
Covers:

Covers located in roadways and vehicular aisles must be able to support at least twice the maximum axle load or the largest vehicle to which the cover might be subjected. To prevent accidental displacement from wind, equipment or workers, all covers must be secured. All covers shall be marked “HOLE” or “COVER”.

Protection from Falling Objects:

When guardrail systems are used to prevent materials from falling from one level to another, any openings must be small enough to prevent passage of falling objects.

1. Canopies – when used as protection from falling objects, canopies must be strong enough to prevent collapse and penetration by any objects that may fall onto them.

2. Toeboards – toeboards must be erected along the edges of the overhead working surface to protect persons below. Toeboards must be at least 3.5 inches high and have no more clearance than .25 inches above the working surface.

Training:

Employees must be trained to recognize fall hazards and how to minimize them. Employees must be trained in the following areas: (1) the nature of fall hazards in the work area, (2) procedures for erecting, maintaining, disassembling, inspecting fall protection systems, (3) use and operation of controlled access zones and fall protection systems, (4) role of each employee in safety monitoring system, (5) limitations on use of mechanical equipment during work on low-sloped roofs, (6) correct procedures for equipment and erection of overhead protection and (7) employees’ roles in fall protection plans.
PART XV

HAZARDOUS CHEMICALS & RIGHT TO KNOW
HAZARDOUS MATERIALS

There are thousands of useful chemicals that are essential in our jobs and at home. Many can be hazardous to health and safety IF they are not treated with respect and handled properly.

Typically, a material is hazardous if it can cause harm to people or the environment. It can be classified as corrosive, explosive, flammable, radioactive, reactive, or toxic. The three routes by which exposure to hazardous materials can take place are through the skin, inhalation, and ingestion or swallowing.

The most effective way to avoid any potential problems with hazardous materials is to know what the chemical is, why it is hazardous, and how to work with it safely. Guidelines to follow before using any hazardous material include:

1. Removing things that could burn, explode, or react dangerously with nearby materials.

2. Removing food, cigarettes, and street clothing from the area so they do not get contaminated.

3. Knowing where the emergency shower and eye wash stations are located.

4. Making sure the correct type of fire safety equipment is nearby and ready for use.

5. Check for adequate ventilation.

6. Knowing who to contact in case of an emergency.

7. Having someone nearby who knows where you are and what you are doing at all times.

8. Assembling the protective clothing and equipment that will be needed for the job.

9. Getting the final ok from the supervisor to proceed.

Always follow all appropriate Departmental and MSDS safety procedures before, during, and after the job. Be careful not to contaminate clean areas or other people, and follow the proper instructions for disposing of all chemicals, contaminated rags, throwaway containers, work clothes, brushes, utensils, etc.

It is important to note that hazardous materials DO NOT have to be dangerous if you handle them properly.
HAZARDOUS CHEMICALS AND MATERIALS POLICY

The purpose of the Hazardous Chemicals and Materials Policy is to satisfy the requirements of PA Title 34 - Worker and Community Right to Know Act, to prevent employee injury or illness from the improper use of hazardous chemicals and materials and to provide employees with information on the chemicals and materials they use on the job. It is the policy of the Department of Public Works that all worksites develop safe work procedures and provide employee training specific to the hazardous chemicals and materials they use. Locations identified as using, storing or disposing of hazardous chemicals and materials must follow the provisions of PA Title 34 - Worker and Community Right to Know Act described below (Copy available through Safety Officer).

Definitions:
A hazardous material is defined as any substance that has the potential to cause harm including:

♦ Toxic substances/materials
♦ Flammable substances
♦ Reactive Substances
♦ Corrosives
♦ Radioactive substances
♦ Hazardous waste or bi-products

Required Posting:
The supervisor at each work location where hazardous chemicals and materials are used and/or stored must post the Employee Work Place Notice in a common area where employees can view it. This posting should be displayed at each physical work site where hazardous chemicals and materials are used.

Hazardous Substance Survey Form:
Each Supervisor must keep a Hazardous Substance Survey Form, which is a list of hazardous chemicals used at each of their facilities. This survey must be updated annually and must be posted in a common area at each facility.
Container Labeling:

Once the chemical is in the individual facility, it is the responsibility of the Supervisor to maintain the correct labeling of the material container. All hazardous material containers must be marked with specific information. This information includes the name of the material, hazard warnings and name and address of the manufacturer or distributor. All labels must be legible, prominently displayed on the container. Any chemical that is transferred from a labeled bulk container to a portable container must be labeled with the same information as the bulk container. There are no size limitations to this rule. Material that is taken from a labeled container may be transferred into an unlabeled container as long as the person who transfers the material remains in control of the chemical and intends to use it immediately and within the same shift.

The NFPA has a fire diamond that is divided into four sections. Each section is assigned a color indicating a specific type of hazard. The four section and associated colors are:

- Blue – Health
- Red – Flammability
- Yellow – Reactivity
- White – Special Hazards

Each colored section is marked numerically to include the severity of each type of hazard:

- Zero – Special Hazard
- One – Minor Hazard
- Two – Slight Hazard
- Three – Moderate Hazard
- Four – High Hazard

Material Safety Data Sheets:

Material Safety Data Sheets (MSDS) are sent by the manufacturer with any hazardous chemicals or materials that are ordered. Sometimes these sheets are sent automatically, but it is up to the person ordering the product to request material safety data sheets. These sheets contain important information on the specific hazards and properties of a material and how to control exposures. Each facility must keep a book of material safety data sheets on-site in a location easily accessible to employees. The following information should be contained on MSDS

- The identity used on the container label.
- Physical and chemical characteristics (vapor pressure, boiling point, etc.)
- Physical hazards (potential for fire or explosion, reactivity)
♦ Chemical health hazards (signs, symptoms, or medical conditions due to exposure)
♦ Primary routes of entry (Inhalation, Ingestion, Absorption)
♦ OSHA Permissible Exposure Limit or ACGIH Threshold Limit Value
♦ Whether it is potentially a carcinogen
♦ Any general safe handling practices
♦ Any general control measures (engineering controls, administrative controls, PPE)
♦ Emergency and first aid procedures
♦ Date of MSDS
♦ Name, address and telephone number of manufacturer

**MSDS Updating Procedures:**

When a new chemical is purchased, the manufacturer must also include a material safety data sheet. The supervisor must update the MSDS book whenever a new chemical is used. If an MSDS is not sent with the new chemical then the purchasing agent or supervisor must request a copy from the manufacturer or distributor immediately. The MSDS book and chemical list shall be reviewed and updated annually to remove any MSDS of chemicals that are no longer used. Old MSDS are not to be discarded; they are to be kept in a separate book.

**Employee Information and Training:**

Training should be conducted for:

♦ Any operations in work areas where hazardous chemicals are present.
♦ Location and availability of the hazard communication program, including the list of chemicals and the corresponding MSDS.
♦ Methods used to detect the presence or release of a hazardous material (monitoring devices, visual appearance, and odor)
♦ Physical and health hazards of the materials.
♦ Measures to prevent exposure to those hazards (safe work practices, engineering controls, and use of PPE).
♦ An explanation of the labeling system and our hazard communication program.
♦ How to read and understand MSDS.

Training should also be given when there is a non-routine task assigned to an employee. A non-routine task includes a task for which an employee has not had previous training or a task that has a limited duration. Employees must be notified of any hazards related to the material they will be dealing with. Employees must also be made aware of any precautions that must be taken to ensure safe handling, the use of protective equipment, and safe work procedures.
**Disposal:**

All hazardous materials must be disposed of according to the manufacturer’s recommendations. Employees are not permitted to pour chemical down sink and sewer drains without checking the MSDS first. Work locations that deal with hazardous waste disposal must understand and follow all applicable standards, including those set forth by local, state and federal government.
PART XVI

HEARING CONSERVATION
HEARING CONSERVATION PROGRAM

This hearing conservation program is intended to monitor for noise levels, and to ensure adequate engineering, administrative and hearing protection controls are implemented for exposed employees. The program applies to all employees who are exposed to noise levels at or above the action level of 85 dBA on an 8-hour time-weighted average (“TWA”).

Noise Monitoring

Sampling Requirements - Noise monitoring by representative personal samples will be undertaken for all areas where information indicates that exposure may exceed the action level. A consultant will be used to ensure the appropriate sound levels are included, the instruments properly calibrated and the test room meets OSHA requirements. Monitoring will be repeated whenever a change in production, process, equipment or controls increases noise that exposes employees to levels at or above the action level or the hearing protection provided is no longer sufficient. Employees will be notified of the test results and will be given an opportunity to observe the monitoring.

Employee Training

Employees will receive training in the selection, fitting, use, care and purpose of hearing protection as well as the advantages, disadvantages and attenuation of various types. Employees will be trained in the purpose of audiometric testing and the test procedures will be explained. Employees will be trained in the effects of noise on hearing. Employees covered by this program will receive training annually.

Access to Information

This policy, as well as all training materials used, shall be available to employees. In addition, employees will receive information on their noise exposure and hearing test results.

Record Keeping

Noise Exposure Records must be retained for two year. Audiometric Test Records must be kept for the duration of the test. Employee’s employment records will include the name and job classification of the employee, the date of the audiogram, the examiner’s name, the date of the last calibration of the audiometer, the most recent noise exposure for that employee, and measurements of the background sound pressure levels in the audiometric test rooms.
Control of Noise Exposure

**Engineering Controls** - Whenever noise levels are at or above 90 dBA TWA, all feasible engineering controls will be explored and implemented to reduce such levels to below 90 dBA TWA.

**Administrative Controls** - Where reduction in noise levels may not be accomplished by engineering controls, all feasible administrative controls, such as job rotation, will be explored and implemented in order to reduce individual employee exposure to noise.

**Hearing Protection - When Hearing Protection is Required** - All employees exposed to noise levels at or above 90 dBA TWA and all employees exposed to noise levels at or above 85 dBA who either have not yet had a baseline audiogram or who have had a STS must wear hearing protection. Employees will be provided with proper hearing protection to sufficiently reduce the noise exposure below 85 dBA TWA for those employees who have had an STS and below 90 dBA TWA for all other employees covered by this program. The hearing protection will be reevaluated if noise exposures increase so that the protection provided may no longer be adequate. Proper fitting of the hearing protection must also be ensured.
PART XVII

RESPIRATORY PROTECTION
RESPIRATORY PROTECTION POLICY

The purpose of the Department of Public Works Respiratory Protection Policy is to prevent occupational illness related to overexposure to hazardous chemicals and materials where the use of a respirator is required.

Employees are required to wear a respirator when hazardous chemicals, such as chlorine or pesticides, can enter his or her breathing zone, causing an exposure. Employees with facial hair are not permitted to be fit tested or wear a respirator. If there is question as to whether or not respiratory protection should be used, the Safety Officer should be consulted.

Selection Procedures:

These procedures apply to supplied air respirators and air purifying respirators. Respirators must be selected on the basis of respiratory hazards to which the worker is exposed. Refer to the Material Safety Data Sheet of the hazardous substance(s) present to determine the correct respirator for the job. All respirators issued by the Department of Public Works must be certified by NIOSH.

Employees exposed to atmospheres that are Immediately Dangerous to Life and Health (IDLH), including chlorine gas, must wear a Self Contained Breathing Apparatus (SCBA). An additional trained employee (also equipped with SCBA) must stand by outside the IDLH area for rescue.

Fit Testing:

Before an employee dons a respirator, that employee must be fit tested to ensure a proper seal. There are two basic types of fit tests.

♦ Qualitative Fit Test – this test involves the introduction of a gas, vapor or aerosol test agent into an area around the head of the respirator user. If the user can detect the presence of the agent through subjective means, such as odor, taste or irritation, the respirator fit is inadequate. A qualitative fit test must be conducted annually for each respirator user.

♦ Positive and Negative Pressure Test - this procedure tests the adequacy of the respirator fit by measuring the amount of leakage into the respirator. To perform this test, the user must cover the cartridge openings with his or her hands and breathe in and out. If the mask collapses and inflates the fit is adequate. The user must complete this test each time a respirator is donned.
Medical Evaluations:

Employees required to wear respirators must be evaluated before wearing a respirator. Certain employees may have respiratory or heart conditions that affect their ability to breathe properly. The medical evaluation is necessary to determine the employee’s ability to wear a respirator without physical impairment. Each employee required to wear a respirator must first complete the medical questionnaire. A qualified health care provider must review the medical questionnaire. Based on the medical questionnaire, the health care provider will determine if:

♦ The person is fit to wear a respirator.
♦ A medical exam, pulmonary function test, or chest x-ray is necessary for more information.
♦ The person is un-fit to wear a respirator.
PART XVIII
BLOODBORNE PATHOGENS
BLOODBORNE PATHOGEN EXPOSURE CONTROL PLAN

Bloodborne Pathogens are organisms transferred through body fluids that can cause disease in people. Examples of these diseases are HIV and Hepatitis B. The purpose of the Department of Public Works Bloodborne Pathogen Exposure Control Plan is to ensure that affected employees are provided with training and use universal precautions, exposure control procedures and proper cleanup procedures when dealing with human body fluids. It is the policy of the Department of Public Works for employees to treat all human fluids as potentially infected. These procedures are known as Universal Precautions and include the following:

♦ Wearing protective equipment such as gloves, barrier mask, etc., when handling contaminated materials or administering emergency care.
♦ Regular hand washing after handling any materials contaminated with human fluids.

At-Risk Job Tasks:

There are job tasks within our workplace where employees are at risk of exposure to bloodborne pathogens. These jobs include:

1. Cleaning restrooms,
2. Cleaning up blood or body fluids
3. Emptying trash containers
4. Repairing broken plumbing
5. Performing first aid or CPR

Anytime there is blood-to-blood contact with infected blood or body fluids, there is a slight potential for transmission. Unbroken skin forms an impervious barrier against bloodborne pathogens. Infected blood can enter your system through open sores, cuts, abrasions, acne or any sort of damaged or broken skin such as sunburn or blisters. In an emergency situation involving blood or potentially infectious materials, you should always use Universal Precautions and try to minimize your exposure by wearing gloves, splash goggles, pocket mouth-to-mouth resuscitation masks, and other barrier devices.

Clean-Up Procedures:

Clean up is a top priority and should begin as soon as possible after the incident. Universal Precautions must be followed at all times to prevent contact with blood or bodily fluids.

♦ Wear protective gloves.
♦ Pick up any broken glass with a dustpan and brush, tongs, etc., not by hand.
♦ Do not use a mop and bucket unless specifically directed to do so. This can spread the contamination.
♦ Clean soiled area.
♦ Use scoop to pick up any contaminated material.
♦ With paper towels, wipe up remaining soil. Disinfect area using a fresh mixture of one cup of bleach to ½ gallon of water. Allow area to remain wet for ten minutes.
♦ Place soiled paper towels and disposable contaminated equipment in closed bag.
♦ Sanitize hands each time gloves are removed. Scrub exposed skin thoroughly with soap and water and change soiled clothing before returning to work.
♦ Contaminated instruments that are not thrown away must be disinfected and washed with soap and water.

Disposal of Contaminated Items:

♦ Non-sharps waste (bandages, swabs, dressings) that does not meet the criteria of regulated wastes will be disposed of into domestic waste.
♦ Non-sharps waste considered regulated waste is placed in red biohazard bags.
♦ Place contaminated laundry in bags and marked as biohazard. Do not presoak or wash laundry by hand.

Exposure Procedures:

♦ Wash the exposed area thoroughly with soap and running water. Use non-abrasive, antibacterial soap if possible.
♦ If blood is splashed in the eye or mucous membrane, flush the affected area with running water for at least 15 minutes.
♦ Report the exposure to your supervisor immediately. An Employee Accident Report should be completed by the Supervisor.

Post Exposure Procedures:

♦ Document the route of exposure and exposure event circumstances.
♦ Identify and document the source individual.
♦ Contact the source individual. His/her blood must be tested for HBV and HIV immediately.
♦ Send exposed employee to have his/her blood tested.

Training:

Affected employees must be trained in bloodborne pathogen exposure and control procedures. Training must review universal precautions, protective equipment, and cleaning procedures.
PART XIX

HOT WORK PERMIT
HOT WORK PERMIT PROGRAM

General

The purpose of a hot work permit is to ensure the elimination or control of fire hazards before any flame or spark producing work (hot work) is conducted. This document explains the requirements for hot work permit issuance and the applicable rules and regulations. Training requirements and responsibilities are also documented herein.

Scope

This program is to be implemented in all facilities where welding operations are conducted. The program requirements also apply to hot work conducted in the field by all County of Allegheny departments.

Requirements

Before welding or cutting, the welder must obtain a blank permit from the area supervisor. This permit must be completed with all applicable boxes checked in regard to the pre-work inspection. The permit is authorized (signed by the supervisor) only after it indicates that all fire hazards have been eliminated and the supervisor verifies that the requirements have been met by personally inspecting the area. The supervisor and welder or other person completing the inspection and permit must sign the permit.

Requirements/Considerations for conduction of pre-hot work inspection and permit completion.

♦ If the object to be cut/welded cannot be moved to an area that is free of flammable or combustible materials, all movable flammables or combustibles must be moved 35 feet away to a safe location.
♦ Any flammable or readily combustible materials that are not movable from the site must be guarded with fire resistant material or metal guards for protection against heat, slag or sparks.
♦ Floor openings, cracks in the floor and duct-work must be covered or guarded to ensure that combustibles below will not be exposed to falling sparks or slag.
♦ Broken windows, doorways and holes in walls must also be guarded to protect any adjacent combustibles from falling sparks of slag.
♦ A fire extinguisher must be conveniently positioned for use in the event of fire caused by the hot work.
♦ Floors must be swept 35 feet in all directions of the hot work to ensure that all
combustible waste/dust (wood shavings, etc.) are removed.

♦ Hot work may not be conducted in buildings with sprinkler systems if the system is not functioning properly.

♦ Cutting or welding on pipes or other metal in contact with roofs, walls, partitions or other combustible materials must not be conducted if the work is close enough to the combustibles to cause ignition by heat conduction.

♦ The welding or cutting of containers is prohibited until they have been thoroughly cleaned. Drums, barrels and tanks must be completely free of any flammable material such as tar, oil, grease or acid.

♦ All hollow spaces, cavities, or containers must be vented to permit the escape of air or gases prior to welding.

♦ Confined spaces must be checked for hazardous atmospheres (oxygen deficiency, toxic or flammable vapors) prior to entry with a gas monitor or electronic “sniffer.”

♦ Combustible floors must be kept wet or covered with wet sand (except wood over concrete).

♦ All equipment and tools must be inspected and determined to be free from any and all defects.
  1) All oxygen/acetylene gas combinations shall have reverse-flow check valves at the inlet side of the torch.
  2) All arc-welder power circuits must be properly installed.
  3) Worn, spliced or repaired welding cables must be replaced with new ones.
  4) Torch valves should be checked for leaks at the beginning of each shift by applying soapsuds with a brush. Hoses may be inspected for leaks by submerging them in water.

♦ Torch valves must be closed and gas supply shut off when work is suspended. Friction lighters, not matches, may be used for lighting torches.

♦ If the above requirements cannot be met, the permit is not to be authorized and hot work may not be conducted.

♦ An issued permit is valid for one day.
Fire Watch

♦ An individual must be designated to monitor the area for fire (fire watch) if:

1) The area possesses materials such that a major fire could result. Combustibles (in the form of building structure or materials) are present within 35 feet of the point of operation.
2) Materials 35-40 feet away are easily ignitable.
3) Adjacent areas (includes levels below) have been exposed to slag or sparks through openings in floors and walls of any kind.
4) Adjacent materials may have received a substantial amount of heat through conduction from pipes or metal walls.

If sparks are falling to an area that the welder cannot see, then an additional person must be instructed to monitor those areas until the welder can see all areas exposed to sparks or slag.

The fire watch must last for 30 minutes after the completion of hot work to ensure that no smoldering fires develop.

Fire watchers must have extinguishers ready for use and be trained in its use. The fire watcher must use the extinguisher only for small fires and be familiar with the location of the fire alarm if a large fire develops.

Responsibilities

Management (Division Superintendent)

1) Must recognize his/her responsibility for the safe use of cutting and welding equipment at facilities under his/her control.
2) Establish approved areas for welding at all facilities and/or recognize a procedure for approving hot work elsewhere.
3) Designate an individual responsible for authorizing hot work. At Allegheny County operations, the individual responsible to authorize is the supervisor or the supervisor of each department.
4) Hire only contractors with suitable trained personnel.
5) Ensure that supervisors and welders have been trained in safe operation of equipment and emergency procedures in the event of a fire. Training must also meet the requirements set forth in section 4.6 of this document. All training must be verified in document form, including the signature of the trainee as proof of training.
6) Must hold supervisors accountable for properly orchestrating the hot work permit program through annual audits. Annual audits will confirm the presence of previously issued permits kept on file by the supervisor.
7) Annual audits will confirm the presence of previously issued permits kept on file by the supervisor.
8) Must provide workers with safe, high quality tools and equipment as well as any safety equipment such as fire resistant tarpaulins, protective clothing, etc.
Supervisors in all departments where hot work is conducted

1) Must ensure that welders seek his/her approval (authorization) before hot work begins.
2) Shall ensure that hazards are eliminated (i.e. have combustibles moved or guarded) so that the requirements of the permit can be met.
3) Shall ensure that fire extinguishers are properly located throughout the facility and at hot work areas.
4) Shall ensure that the hot work permit is completed and that its requirements are met before work begins.
5) Must ensure that workers have been trained properly as required by section 4.62 of this document.
6) Shall facilitate the fire watch process by designating an individual (may be the welder who completes hot work) to monitor the hot work area for fire.
7) When a fire watch is not required, the supervisor must make a walk-through inspection of the work area ½ hour after work stoppage.
8) Insist that contractors comply with the requirements of the County of Allegheny Hot Work Permit Program.
9) Must keep all expired permits on file for one year after issuance.
10) Shall discipline workers for any hot work conducted in violation of the hot work permit program.

Training Requirements

Training for supervisors and welders shall be conducted upon hot work permit program implementation and initially upon employment. Records must be kept verifying all employee training. Trainees must sign training documentation indicating that they have been trained.

Supervisors

Training criteria for supervisors consists of the following:

1) The requirements of OSHA 1910.252
2) The requirements of NFPA Code 51B
3) Fire extinguisher principles and use
4) Must be given a copy of the County of Allegheny Hot Work Permit Program

Welders

Training criteria for welders consists of the following:

1) Fire extinguisher principles and use
2) The requirements of the County of Allegheny Hot Work Permit Program
3) Safe cutting and welding procedure
DEPARTMENT OF PUBLIC WORKS  
Hot Work Permit

A hot work permit is required any time welding or torch cutting is to be performed outside of areas authorized as designated hot work areas. Designated hot work areas may be determined by the supervisor. Designated hot work areas must meet the requirements of the County of Allegheny hot work permit program. A permit is valid for one workday only.

Location of hot work authorization: ____________________________ Date: ________________

Purpose: _____________________________________________________________________________

1) No cutting/welding is to be done where sprinklers are impaired. Sprinklers checked? Y  Not Applicable

2) No cutting of welding is permitted in the presence of flammable dust, vapors, liquids, or unpurged tanks, lines, other containers, or equipment previously containing flammable materials.
   A. Tanks, lines, other containers vented, cleaned and purged?  Y  Not applicable

3) If welding is to be done in a confined space, has atmospheric testing been conducted using a gas monitor to ensure that air is not toxic, flammable or oxygen-deficient?  Y  Not applicable

4) Before hot work begins, the following areas must be checked:
   A. Area swept clean for 35 ft. in all directions, floor wet down if of combustible construction?  Y
   B. All combustibles moved 35 feet from operator, or covered with flameproof tarpaulins or metal?  Y
   C. Are all floors or wall openings within 35 feet of the welder covered?  Y
   D. Has a fire watch been organized so that all areas exposed to slag and sparks will be monitored during and ½ hour after welding stops?  Y
   E. Is a functional fire extinguisher ready at the work area?  Y

5) Are all hot work tools and equipment free from any type of defect?  Y

I certify that the above hot work location has been personally examined. The requirements for authorization have been met and are documented on this form. Hot work is authorized in the above location for the duration of this workday provided that no hazards develop.

Signature________________________________  Supervisor

Signature________________________________  Supervisor

I have been properly instructed for safe cutting and welding and understand my duties.

Welder______________________________  Welder______________________________

Fire Watch________________________  Fire Watch________________________

Recommendations:

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PART
XX
LOCK OUT
TAG OUT
LOCKOUT TAGOUT POLICY

The purpose of the Department of Public Works Lockout Tagout Program is to protect all employees during machine and equipment servicing and maintenance where the unexpected start up or release of stored energy could occur and cause injury. Authorized Department of Public Works employees must lock and tag out all hazardous energy sources at the main disconnect prior to beginning repairs or maintenance.

Definitions:

**Authorized employee** - a person who locks out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee’s duties include performing servicing or maintenance that exposes him/her to potentially hazardous energy.

**Affected employee** - an employee whose job requires him/her to operate/use a machine or equipment or work in an area in which servicing or maintenance is being performed under lockout.

**Energy isolating device** - a mechanical device that physically prevents the transmission or release of energy.

Requirements:

- Locks, chains, wedges, or other hardware shall be provided.
- Lockout devices shall be singularly identified. They shall be the only devices used for controlling energy and shall not be used for other purposes.
- The lockout devices shall indicate the identity of the employee applying the devices.
- All machines/equipment shall be locked out to protect against accidental or inadvertent operation when such operation could cause injury to personnel. Lockout will also apply when working on or near exposed de-energized electrical circuits / parts.
- No employee shall attempt to operate any switch, valve, or other energy-isolating device that is locked out.
- Only the employee who applied the lockout device shall remove each lockout device.
- Lockout procedures must be written for each piece of equipment requiring lockout tagout. These procedures must identify the type(s) of energy to be locked out and the method(s) used and the magnitude of energy to which employees are exposed (See Attachment 1).
Preparation for Shutdown:

♦ In preparation for lockout, an initial survey must be made to locate and identify all energy isolating devices to be certain which switch, valve, or other energy isolating devices apply to the machine / equipment to be locked out. More than one energy source may be involved.
♦ Before an authorized or affected employee turns off a machine or piece of equipment, the authorized employee must have knowledge of the type and magnitude of the energy to be controlled, and the methods or means to control the energy.

Machine or Equipment Shutdown and Isolation:

♦ All affected employees shall be notified that a lockout system is going to be utilized and the reason for it, before the controls are applied.
♦ If the machine or equipment is operating, shut it down by normal stopping procedure.
♦ Physically locate and operate the switch, valve, or other energy isolating devices so that the equipment is isolated from its energy sources and apply adequate hardware.

Lockout Device Application:

♦ Authorized employees shall lockout the energy isolating devices with their assigned individual locks.
♦ Lockout devices shall be applied so that they will hold the energy isolating devices in a “Neutral” or “Off” position.

Stored Energy:

All stored or residual energy in rams, flywheels, springs, pneumatic, or hydraulic systems, etc. shall be blocked or dissipated. If there is a possibility of re accumulation of stored energy, verification of isolation must be continued until servicing or maintenance is completed.

Verification of Isolation:

Prior to starting work on machines or equipment that have been locked and after ensuring that no personnel are exposed, the authorized employee shall operate the push button or normal operating controls to verify that the appropriate equipment or machine has been de-energized and make certain it will not operate. Return Operating Controls to the “Neutral” or “Off” Position After the Test.
Removal of Lockout Devices:

After the servicing and / or maintenance, the lockout devices are removed and energy is restored by the authorized employee only. The authorized employee will notify the affected employees that the devices were removed.

Every effort must be made to contact the authorized employee if he/she accidentally leaves a lockout device on a machine. If the authorized employee who applied the lock is not available, the supervisor takes the following steps:

♦ Clear the machine or equipment of tools and materials
♦ Remove employees from the machine or equipment.
♦ Remove the lockout device.
♦ Energize and proceed with testing or positioning.
♦ Energize all systems and reapply energy Notify the authorized employee that the lockout device was removed control measures.

Additional Requirements:

In the preceding steps, if more than one individual is required to lockout machines, the following procedures shall be implemented to provide protection to all employees.

♦ Each authorized employee will place his/her own personal lockout device on the energy isolating device(s).
♦ When an energy-isolating device cannot accept multiple locks, a multiple lockout system must be used.

Shift or Personnel Changes:

If a lockout procedure will extend into the following shift, the authorized employee who originally placed the lock will remove it and it will immediately be replaced with the lock of the new authorized employee for the following shift.

Cord and Plug Connected Equipment:

If servicing or maintenance is performed on cord and plug connected equipment the following procedure shall be performed to protect employees.

♦ Unplug equipment from its electrical socket.
♦ Place a lockable cover over the plug and a lock on the plug cover during machine/equipment servicing or maintenance.
Outside Contractors:

If outside contractors perform servicing or maintenance that requires lockout, responsible person for contractor safety shall take the following steps.

♦ Inform the outside contractor of our company’s lockout procedures and supply them with a copy.
♦ Obtain and review a copy of the outside contractor’s lockout procedures.
♦ Ensure that our employees understand and comply with the responsibilities and prohibitions of the outside contractor’s lockout procedure.

Training:

All lockout tagout training must be documented and kept on file. (See Attachment 2). Authorized Employees must be trained in the following:

♦ Recognition of hazardous energy sources.
♦ Types and magnitude of hazardous energy in the workplace.
♦ Methods, devices, and procedures used to lockout, verify lockout, and otherwise control hazardous energy on all pieces or types of equipment (including cord and plug connected equipment).
♦ Procedures for removing locks and returning a machine or piece of equipment to operation.
♦ Transfer of lockout responsibilities.
♦ Group lockout procedures.

Affected Employees must be training in the following:

♦ Recognize when energy control procedures are being implemented, and
♦ Understanding the purpose of the procedures and the importance of not attempting to start up or use the machine / equipment that has been locked out.

Enforcement of Lockout Tagout:

Accidents involving lack of lockout/tagout procedures have resulted in serious injuries, amputation and deaths. Therefore management must strictly enforce these practices. Failure to use identified lockout/tagout practices will result in disciplinary action.
ATTACHMENT 1
Department of Public Works

Lockout Tagout Energy Source Evaluation

Date: ______________  Conducted by: _____________________________

Location: ________________________________________________

Equipment Name:__________________________________ Procedure#:________

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<thead>
<tr>
<th>ENERGY SOURCE \ MAGNITUDE</th>
<th>LOCATION OF ISOLATING DEVICE</th>
<th>MEANS OF ISOLATION</th>
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PROCEDURE FOR CONTROLLING HAZARDOUS ENERGY:

1. Notify affected employees that the machine is about to be shut down and locked out.
   Specific Instructions:

2. Shut down the machine using normal stopping procedures.
   Specific Instructions:

3. Isolate all energy sources listed above.
   Specific Instructions:

4. Apply locks to all isolation devices operated in step four.
   Specific Instructions:

5. If a tag is used in lieu of a lock when the energy-isolating device is incapable of lockout the following additional safety precaution(s) shall be taken:

6. Block or dissipate all stored energy in rams, flywheels, springs, pneumatic or hydraulic systems, etc.
   Specific Instructions:

7. Verify that the machine is locked out by testing the machine operating controls. RETURN ALL CONTROLS TO THE “NEUTRAL” OR “OFF” POSITION AFTER TESTING.
   Specific Instructions:
ATTACHMENT 2
Department of Public Works
Lockout Tagout Training Record

Department / Division:______________________________________________

Job Title / Work Location:__________________________________________

Date:__________________________

Authorized Employees

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Affected Employees

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