

City of Hendersonville North Carolina

Safety Manual

March 14, 2019



City of Hendersonville Safety Manual

The practices contained in this manual are to be followed by the employees of the City of Hendersonville. This manual is to provide basic safety training and reference for employees with the understanding further training will be required for many jobs in the City.

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Introduction

Management Commitment

The City of Hendersonville places a high value on the safety of its employees. We are committed to providing a safe workplace for all employees and have developed this program to involve management, supervisors, and employees in identifying and eliminating hazards that may develop during our work process.

It is the basic safety policy of the City that no task is so important that an employee must violate a safety rule or take a risk of injury or illness in order to get the job done.

Employees are required to comply with all safety rules and are encouraged to actively participate in identifying ways to make this a safer place to work. Failure to follow safety protocol set forth by the City may result in dismissal as per Article IX of the City of Hendersonville Personnel Policy, Unsatisfactory Job Performance and Detrimental Personal Conduct.

Safety is a team effort – let's all work together to keep this a safe and healthy workplace.

Management Responsibilities

1. Insure that a City wide safety committee is formed and is carrying out its responsibilities as described in this program.
2. Insure that sufficient employee time, supervisor support, and funds are budgeted for safety equipment, training and to carry out the safety program.
3. Evaluate supervisors each year to make sure they are carrying out their responsibilities as described in this program.
4. Insure that incidents are fully investigated and corrective action taken to prevent the hazardous conditions or behaviors from happening again.
5. Insure that a record of injuries and illnesses is maintained and posted as described in this program.
6. Set a good example by following established safety rules and attending required training.
7. Report unsafe practices or conditions to the supervisor of the area where the hazard was observed.

Supervisor Responsibilities:

1. Insure that each employee you supervise has received an initial safety orientation before beginning work.
2. Insure that each employee you supervise is competent and receives training on safe operation of equipment or tasks before starting work on that equipment or project.
3. Insure that each employee receives required personal protective equipment (PPE) before starting work on a project requiring PPE.
4. Do a daily walk-around safety-check of the work area. Promptly correct any hazards you find.
5. Observe the employees you supervise working. Promptly correct any unsafe behavior. Provide training and take corrective action as necessary. Document employee evaluations.
6. Set a good example for employees by following safety rules and attending required training.
7. Investigate all incidents in your area and report your findings to management.
8. Talk to management about changes to work practices or equipment that will improve employee safety.

Employee Responsibilities

1. Follow safety rules described in this program, OSHA safety standards and training you receive.
2. Report unsafe conditions or actions to your supervisor or safety committee representative promptly.
3. Report all injuries to your supervisor promptly regardless of how serious.
4. Report all near-miss incidents to your supervisor promptly.
5. Always use personal protective equipment (PPE) in good working condition where it is required.
6. Do not remove or defeat any safety device or safeguard provided for employee protection.
7. Encourage co-workers by your words and example to use safe work practices on the job.
8. Make suggestions to your supervisor, safety committee representative or management about changes you believe will improve employee safety.

Safety Committee

The City of Hendersonville has formed a Safety Committee to help employees and management work together to identify safety issues, develop solutions, review incident reports and evaluate the effectiveness of our safety / health programs – all in accordance with NCGS 95-251 and 252. The HR Programs Coordinator shall facilitate all Safety Committee activities.

Composition

The Safety Committee shall have at least eight rotating members. The HR programs Coordinator will be a permanent member of the committee. The human resources / safety officer may only vote in case of tie vote. The committee members will be made up of management and non-management employees.

Committee member terms will be staggered. The initial rotation of committee members shall be as follows – four members will serve a two year term and four members will serve a one year term. After completing the first rotation, members will serve two-year terms; thus allowing four new members to rotate on to the committee every year thereafter, while leaving four experienced members on the committee at the beginning of each new term.

Meetings

The Committee will regularly meet the first Tuesday of each month. Other meetings may be called. If a member cannot make a meeting, he/she is to have their alternate attend.

Functions

The function of the Safety Committee will be to assist and advise the department heads and employees on all aspects of the safety program. These functions include, but not limited to the following:

1. Review the safety programs upon establishment and at least yearly thereafter.
2. Review incidents involving work-related injuries/illness, near-misses, safety / health complaints and fatalities.
3. Develop and implement procedures for processing safety suggestions and concerns.
4. Conduct inspections at least quarterly; and in response to employee / committee concerns.
5. Review incident investigation reports, near misses reports, inspection reports, employee suggestions and concerns, and incident analysis;
6. Make appropriate recommendations to the department heads for:
 - possible changes in work practices or procedures,
 - need for safety procedures,
 - need for protective devices or equipment and
 - need for training.

Incident Reporting

Incident forms should be completed anytime there is an incident resulting in personal injury, damage to a vehicle or equipment, or damage to property, such as a sign, mailbox, tree, etc.

When in doubt, complete the forms. The incident may not turn out to be a big deal but it's better to document an incident at the time than to try and recall details later. Forms should be completed as soon as possible before memory fades. Attaching photos is a good idea.

- Form 19. To be completed by a supervisor, department head or administrative assistant in the case of personal/bodily injury.
- Form 18. To be completed by the employee if he/she believes a personal injury was not handled correctly by the City
- Employee's Report of Incident. To be completed by the employee for all incidents (personal injury, damage to vehicle/equipment & damage to property).
- Supervisor's Report of Incident. Completed by supervisor/crew chief.
- Incident Witness Statement. Completed by any employee or citizen who witnessed the incident.

All completed forms are to be returned to Human Resources with the department keeping copies for reference. The City of Hendersonville has retained the North Carolina League of Municipalities as our independent claim adjusting firm to handle claims for injured employees.

Bad Weather

1. The City recognizes weather conditions may prevent some employees from reporting to work. The decision to report to work is an employee's option based on their assessment of road conditions. If an employee does not report to work, reports to work late, or leaves early due to weather conditions, they must notify their supervisor.
2. Employees should find out from their supervisor if they are considered essential or non-essential personal. This will decide who is to report to work in case of City closure.
3. Employees are notified through Blackboard notice, City website, text, and local media.



Basic Safety Rules

1. Employees shall be in good physical and mental condition to conduct normal working activities.
2. The possession or use of alcohol and illegal drugs on city property is strictly prohibited. Refer to the Alcohol and Substance Abuse Policy.
3. Fighting or horseplay is strictly prohibited.
4. Smoking is permitted only in designated areas. Tobacco is not permitted in any City building or vehicle.
5. Personal protective equipment (PPE) shall be worn at all times when required by your supervisor or by safety regulations.
6. Good housekeeping practices shall be maintained at all times in City work areas.
7. All employees should learn the location of the nearest fire extinguisher and first aid kit. Notify your supervisor immediately if any of this equipment is missing.
8. Report missing or damaged equipment immediately to your supervisor.
9. Hazardous wastes such as waste oils, hydraulic fluids, cleaning fluids, etc. shall be disposed in a proper manner.
10. All city speed limits and traffic signs shall be observed.
11. Report incidents immediately to your supervisor. Complete the necessary forms when reporting incidents.
12. Report any and all unsafe work situations or concerns to your supervisor.
13. In the event of an evacuation from a building, gather at the designated meeting place. Return to work areas after receiving proper approval from those in authority.
14. Use caution when lifting. Bend knees and keep back straight. Leg muscles, not your back, should do the work. If you are unsure of the weight, do a slight lift to judge the load. For heavy loads, use lifting devices such as forklift, pallet truck, etc. or get help from other employees. Do not lift large objects in high winds.
15. Do not interfere with other employees while they are using power tools, motorized equipment, or when they are working near electrical lines and equipment.
16. Use equipment with safeguards that are adequately designed and intended for normal operations. Never remove a guard from a machine.
17. Wrist watches, metal wrist bands, rings, or other jewelry shall not be worn while working near moving parts of machines or energized circuits.
18. Clean clothes are essential in preventing skin irritations. Clothing saturated with flammable liquids, corrosive substances, toxic materials, irritants, or oxidizing agents shall be removed as soon as possible and shall not be worn until properly cleaned. It is recommended that employees working in areas of high contamination keep an extra set of clothes at work.
19. Surge protectors must be plugged in to the wall directly: never into another surge protector or extension cord. They cannot be permanently mounted - must be easily removable.
20. Only "office and entertainment" may be plugged into a surge protector.
21. Appliances, such as heaters, coffee makers, microwaves, refrigerators, etc., must have a 3-prong plug and go directly in to the wall.
22. Space heaters must have three feet of clearance around them.
23. All extension cords must have the ground pin in place.
24. In closets, there must be 24" of space from the ceiling to the shelf except in a sprinkled building which must have 18".

Barricades, Work Area Protection & Flagging

Working in traffic exposes employees to extreme danger. Construction and maintenance work on streets and roadways can result in hazards to workers, motorists, and citizens alike. Since the risk of injury or death in such work is significant, certain safeguards must be instituted to minimize the risks.

All City work zone set-ups must conform to the Manual on Uniform Traffic Control Devices (MUTCD). Published by the Federal Highway Administration, the MUTCD is the standard manual for signs, barricades, lights, and warning devices used to protect work areas under construction in the roadway. Supervisors are responsible for assuring that employees doing job site set-ups are trained in its provisions. Failure to protect a work zone according to MUTCD specifications can cause safety issues.

Before undertaking any construction, planning must be done. As a minimum, consideration must be given to the hazards that passing motorists may pose to workers, and the hazards that the construction may pose to passing motorists. Also, does the work pose any risks to pedestrians or by-standers? How much of the roadway will need to be blocked off? Where should work vehicles and equipment be placed? Will the construction be left open at night? Will flaggers be necessary? Will visibility be a problem to motorists? In answering such questions by referring to the MUTCD, potential risks can be identified and appropriate steps can be taken to control such risks.

1. Signs and barricades shall be erected in such a way as to warn of the existence of a hazard and prevent or minimize entry into hazardous areas as per MUTCD.
2. Barricades with warning tape, signs, flags, cones or other approved devices must be erected to restrict access in an area where hazards to traffic or pedestrians may exist. This could include a underground or overhead hazard.
3. Excavations or open manholes, or the like shall be adequately barricaded.
4. Flaggers must be certified and have their card with them when flagging.
5. Class 3 vests must be worn when flagging at night.



Bloodborne Pathogens

1. Certain jobs within the City may hold the risk of being exposed to human blood and other body fluids of which diseases such as Hepatitis B, Human Immunodeficiency Virus (HIV) and others may be transmitted.
2. For these jobs, the City will offer the employee the Hepatitis B vaccine series.
3. Employees are to use Universal Precautions ever time they come into contact with such fluids. In other words, treat all fluids as they may be hazardous.

Confined Work Space

A confined space is defined as 1. large enough to enter, 2. not designed primarily for human occupancy, and 3. has restricted entry and exit hence.

1. No employee shall enter a confined space without adequate training. Only a certified entrant may enter a Permit Required Confined space.
2. A Confined Space Entry Permit shall be issued before anyone enters a permit-required confined space.
3. All confined space entries will be staffed by an attendant, entrant and supervisor. Each will be trained in the duties as listed in the City Permit Required Confined Space Entry Program.
4. A confined space attendant shall not leave the area when personnel are working inside a confined space or enter the space in case of emergency. The attendant shall never enter the confined space.
5. Personnel entering the confined space will be briefed by their supervisor as to the risks of the operation.
6. The confined space atmosphere shall be monitored on a regular basis. The area should be retested after breaks or lunch periods.
7. Do not enter a confined space unless you are properly attired to do so.
8. Rescue involving a confined space shall not be attempted unless the rescuers are qualified and properly trained and equipped for confined space rescue.
9. Immediately report any confined space incident to your supervisor.

Compressed Gas Cylinders

1. Store all cylinders in upright and fastened positions. (except 1 ton cylinders designed for horizontal storage.)
2. Place the protective cap on cylinders when they are not being used.

3. Keep stored oxygen cylinders at least twenty (20) feet from acetylene cylinders and other flammables.
4. Always check the label or stencil on the cylinder to make certain you have the proper gas.
5. Never use oil or grease as a lubricant on valves or attachments of oxygen cylinders.
6. Do not store cylinders next to heat sources.
7. Always transport cylinders in a secured, upright manner.
8. Tag or label all cylinders that are empty and remove them from the workplace.

Cranes, Hoists, Etc.

1. Inspect the hoist or crane before work begins.
2. Inspect chains, chokers, etc. before securing to load.
3. Fasten chains, chokers, etc. securely to the load.
4. Use tag lines for heavy or awkward loads.
5. Keep all personnel away from the area below the boom or load.
6. Barricade beneath the swing radius of the boom.
7. Only one person shall give directions to the equipment operator.
8. When equipment is left unattended, its block and load shall be secured and the equipment de-energized.
9. Personnel shall be adequately trained in the use of hoists, cranes, etc.
10. Repair and/or maintenance of chains, chokers, hoists, etc. shall be conducted by a qualified individual.
11. Personnel shall not be lifted or lowered with a crane unless proper equipment is utilized. Contact your supervisor for additional instructions.

Disciplinary Action

Article IX of the City Personnel Policy addresses poor job performance and detrimental conduct. Safety concerns such as willful or wanton acts that endanger lives and property are covered by this policy and can lead to disciplinary suspension, job demotion, or immediate dismissal.

Electrical Safety, General

1. Assume that all overhead wires are energized at lethal voltages. Never assume that a wire is safe to touch even if it is down or appears to be insulated.
2. Never touch a fallen overhead power line. Call the electric utility company to report fallen electrical lines.
3. Survey the area before starting work for the presence of overhead wires.
4. If an overhead wire falls across your vehicle while you are driving, stay inside the vehicle and continue to drive away from the line. If the engine stalls, do not leave your vehicle. Warn people not to touch the vehicle or the wire. Call or ask someone to call the local electric utility company and emergency services.
5. Never operate electrical equipment while you are standing in water.
6. Never repair electrical cords or equipment unless qualified and authorized.
7. Have a qualified electrician inspect electrical equipment that has gotten wet before energizing it.
8. When working away from permanent wiring, use a ground-fault circuit interrupter (GFCI).
9. Surge protectors must be plugged directly into the wall.
10. All extension cords must have the ground pin.

Fall Protection

1. All fall protection equipment shall be inspected before use each day to determine that the equipment is in safe working condition. Defective equipment shall be taken out of service and disposed of.
2. All equipment shall be used in a way to prevent cuts or abrasion to it.
3. Fall protection equipment shall be used at locations more than four feet (1.2 m) above the ground.
4. Positioning equipment, consisting of body belt and lanyard may be used by qualified employees on poles, towers or similar structures if other fall protection has not been provided. When using positioning equipment the anchorage must be able to support and limit a potential fall to two feet.
5. While working from any aerial device a full body harness shall be worn and the shock absorbing lanyard shall be attached to the approved anchorage point on the boom or basket. No employee shall attach their lanyard to adjacent poles, structures or equipment while working from an aerial device.

Fire Fighting Equipment

1. Use fire extinguishers for emergencies only, unless otherwise approved for training purposes.
2. Keep fire equipment, routes and exits free from obstructions.
3. To report all fires, call 911.
4. The City shall provide training in the proper use of fire extinguishers.
5. The City shall inspect fire extinguishers and building on a routine basis.
6. An employee's job during an emergency shall be to leave the building. Designated Safety Persons shall be trained in clearing the building when possible.

Forklift Safety

1. Only employees trained on a forklift may drive the forklift.
2. Watch where you place your hands and feet. Be aware of and stay clear of pinch points such as the wheels and lift gears.
3. Stay under the overhead guard. Keep your hands and feet inside the forklift.
4. If your truck starts to tip over, DON'T JUMP! Stay in your seat, grip the wheel and brace yourself with your feet.
5. Always look out for others when moving and operating your forklift.
6. When operating the forklift watch out for pedestrians, blind intersections and drive slowly.
7. When the forks are raised, never walk or stand under them.
8. Do not allow anyone to ride with you on lift unless it is made for more than one person. Forklifts are not elevators. Do not lift anyone unless you are using a special basket.
9. Use your horn when going through doors and anywhere you have limited or blocked vision.
10. Use your seat belt and check that the warning lights and backup alarm work before operating the machine.

Fuel Dispensing Safety

1. Good housekeeping shall be maintained in the entire service area.
2. Gasoline dispensing pumps shall be properly labeled.
3. Should a fire occur at the unit while the nozzle is still in the tank, shut off the pump. Do not remove the nozzle until the fire has been put out.
4. Report unsafe gasoline nozzle i.e. faulty automatic shut-off.
5. Smoking is not permitted in any fuel dispensing area.
6. Stand in a safe position at the pump. Do not cross in front of moving vehicles.
7. Before delivering gasoline into the fuel tank make certain the engine is off.
8. Good metallic contact shall be made between the nozzle and tank before filling the tank. Use particular care when topping off, so as to avoid spillage of gasoline.
9. Always replace fuel tank cap immediately after delivery.
10. Be sure the hose nozzle is hung securely on the pump after delivery.
11. Keep pump hoses placed within island limits so it will not catch on bumpers or fenders.
12. Keep hose, nozzles, and connections in good condition.
13. Report immediately any leakage near the gasoline pump. Do not use the pump until the leak is fixed. This work shall be done only by a qualified mechanic.
14. Fuel spillage on driveways should be reported immediately. If the spill is large enough to create a risk of the fuel reaching drains immediate measures should be taken to stop the flow of the fuel. Dumping sand on and in the way of the flow is recommended.
15. Remove clothing wet with gasoline immediately and be sure that it is cleaned before it is worn again. Do not go near a heater or open flame wearing gasoline soaked clothing. When the skin has been wet with gasoline, wash the affected part thoroughly with soap and water to prevent skin inflammation.
16. Deliver gasoline into fuel tanks of proper Safety Gas Can. Never deliver gasoline into glass bottles, open containers, or food, drug, or cosmetic containers. The Federal Hazardous Substances Labeling Act requires that any container that is filled with gasoline, kerosene or other hazardous substances must be labeled in an approved manner.
17. Employees shall not siphon gas with a hose or tube, particularly where the mouth is used to create suction.
18. The location of shut-off switch should be clearly marked, and all employees should know where it is and how to use it.
19. Only metal gas cans will be used.

Automatic Nozzles

1. Use only automatic nozzles which have been approved by Underwriters Laboratories, Inc. and the City Fire Department.

2. In situations where the nozzle cannot be secured to prevent it from falling out, remain by the nozzle and fill the tank on manual control.
3. Observe the nozzle frequently while gasoline is being delivered so any mechanical failure will be noticed immediately.
4. Check the automatic nozzle regularly and keep it in good repair.

Receiving and Storing Gasoline

1. Fill pipes of underground tanks shall be plainly marked by color code, tags, or other methods on the installation to show the contents of the tank. Always take precautions to prevent the mixing of products as a result of delivery into the wrong tank.
2. Keep fill caps tight between deliveries to keep water or dirt from entering. The use of grease on threads will aid in keeping fill caps watertight.
3. Gauge tanks with calibrated sticks in gallons or inches, before ordering, and again before receiving deliveries to be sure the quantity being delivered will not overflow. Be sure also that the correct tank chart is used.
4. Clear fill pipe areas of parked cars prior to the time of delivery of gasoline. Do not allow parking in those areas where it will interfere with absentee deliveries. A car parked near or over a fill pipe may be a serious fire hazard.
5. Make sure that gasoline vapor discharged from vent pipes does not enter buildings. Do not strike matches or permit other sources of ignition near vent openings. (It is especially important when tanks are being filled because an equal volume of flammable vapor is being discharged into the air through the vents).
6. Report to the immediate supervisor on duty at once if liquid gasoline should discharge from vents at any time.
7. Only metal gas cans will be used to hold fuels.

Hazard Communication Program

1. Review the Hazard Communication Program of the department or facility before working with any chemicals. Check Safety Data Sheets (SDS) of chemicals prior to use.
2. Wear appropriate personal protective equipment (PPE) as recommended by SDS when working with chemicals.
3. All personnel working with chemicals shall be adequately trained in potential hazards of the chemicals they are using.
4. Report all injuries or incidents immediately.
5. Clean up all minor spills.
6. Evacuate and cordon off the area, call 911, and contact your supervisor if a major spill of hazardous materials should result. DO NOT attempt to clean up a hazardous materials spill alone.
7. Properly store chemicals in such a way that chemical incidents do not result.
8. Properly label all containers containing flammable, poisonous, toxic, or otherwise dangerous materials.
9. Store insecticides, pesticides, herbicides, flammables, and strong acids in storage that is locked from public access.
10. Post signs informing personnel that hazardous chemicals are located in cabinets, lockers, closets, etc.
11. Employees required to wear respiratory equipment must be qualified to do so. This includes but is not limited to training, medical qualifications, and fit testing of respirators.
12. Only approved solvents will be used to clean parts and materials.
13. Gasoline, kerosene and other potentially dangerous materials will not be used as cleaning solvents.
14. Employees shall wear as a minimum gloves and goggles when working with cleaning solvents.
15. Maintain adequate ventilation when working with chemicals.
16. Employees should know the location of the nearest fire extinguisher, first aid kit, emergency eyewash, emergency shower and telephone when working with chemicals.

Hearing Conservation Program

1. Jobs or areas tested to be 85 dBA or higher, shall be part of the Hearing Conservation Program and wear approved hearing protection.
3. When requested by supervisors, employees shall wear approved hearing protectors even if the area is not designated.
4. Employees who are concerned about noise levels should request hearing protection be provided.
5. Personnel will be adequately trained in the use of hearing protection and will be familiar with the hazards related to elevated noise levels.
7. Remember- people do not get accustomed to loud noises - THEY LOSE THEIR HEARING!

Ladders and Scaffolds

1. Ladders shall be in good repair and used in their intended manner.
2. Wooden ladders shall not be painted.
3. Ladders shall be placed so that the base is one (1) foot out for every four (4) feet of height.
4. Ladders shall be properly secured and equipped with shoes at the bottom to prevent slippage.
5. Always climb and descend facing the ladder. Ladders are not to be used as scaffolds.
6. Only one (1) person shall work on a ladder at a time.
7. Metal ladders shall not be used near electrical lines, electrical cabinets, or energized equipment.
8. Labels telling maximum capacity must be clearly legible.
9. Benches, boxes and other materials shall not be used in place of a ladder.
10. Damaged ladders will be repaired or discarded.
11. Ladders should be inspected prior to each use, and repaired or taken out of service if not up to standards.
12. Ladders should not be placed in front of doors unless the doors can be secured.
13. Use caution when materials are carried when ascending and descending a ladder.
14. All scaffolding shall be installed by qualified individuals.
15. All scaffolding shall be constructed of approved materials in an approved manner, per OSHA.
16. Scaffolding shall be equipped with toe boards and guardrails in locations greater than eight (8) feet.
17. Safety belts, lanyards and harnesses shall be used if scaffolding cannot be provided with guardrails.
18. Scaffolding shall be equipped with a ladder to facilitate access.
19. Scaffold boards shall not be painted.
20. Mobile scaffolds shall not be moved while personnel are located on them.
21. Metal scaffolds shall not be used in or near electrical lines or equipment.



Liquid Propane Gas (LPG)

Propane is used in a wide variety of operations, including fueling vehicles, as a heat source for heating or melting materials, weed burning operations, cutting, soldering, and heating buildings or equipment.

Basic Precautions

1. The material is extremely flammable. DO NOT smoke while using LPG.
2. Operate in only well ventilated areas.
3. Never puncture the container.
4. Keep the container away from sources of flame or heat.
5. Never incinerate the container.
6. Keep the container away from exposure to heat sources.
7. When changing propane cylinders, make sure that tank valves are closed before breaking connections. Check for leaks after change is complete using a soapy water solution.
8. Have a fire extinguisher or other firefighting equipment nearby when using propane.
9. Have a first aid kit nearby when using propane.
10. Use chemical goggles and leather gloves and cover extremities when working with propane, especially when lighting a pilot or burner on a propane system or changing system connections. Use of a Face shield is recommended while lighting pilot lights, especially when re-lighting after a pilot light has gone out.
11. Store excess cylinders securely and in a manner that protects the valve assembly from accidental blows.
12. NFPA hazard labels should be placed all cylinders.
13. Never store excess cylinders near walkways, exits, and general path of travel.
14. Never store excess cylinders under stairs, decks, ramps, etc.
15. Never store cylinders together with oxygen sources or strong oxidants.
16. Always secure the valve opening with a cap or similar device when storing excess cylinders.
17. Prior to each use, inspect cylinders for signs of damage and/or wear.
18. Damaged cylinders must be taken out of service and replaced or repaired.

19. Periodically check cylinders to assure that they are inspected and approved for use. This inspection should also be performed each time a cylinder is brought on-site from an outside source.
20. Never attempt to repair a propane cylinder. Refer all repairs to qualified propane service personnel.
21. Never refill a cylinder that has exceeded the certification date. (5 years).
22. Never improperly dispose of cylinders. Return them to an authorized propane dealership for proper disposal.
23. Immediately report unsafe conditions to your Supervisor.

General Safe Work Practices

These work practices shall be observed when using propane fired equipment:

1. All employees using propane equipment must be adequately trained, and must carefully read and understand the Operator's Manual before using the equipment:
 - A. Read the igniting procedure before initiating the firing operation.
 - B. Learn the warning steps if the equipment does not ignite properly
 - C. Be familiar with the specific purge cycles for each pilot light system.
2. Inspect the equipment before use.
3. Be sure that the equipment is adequately maintained.
4. Become familiar with the SDS that applies to propane.
5. Stay alert for the smell of propane.
6. Never work on propane powered equipment near energized electrical equipment.
7. Never refuel or re-charge propane cylinders near flames or excessive heat.
8. If you have problems with a pilot light, immediately shut off the equipment and refer to the operator's manual or contact your Supervisor.
9. Never force any gas controls.
10. If you cannot operate knobs, switches, valves, etc. on a propane system, contact your fleet maintenance or your Supervisor for assistance.
11. Do not tamper and/or alter any controls, valves, switches, etc.
12. Never use tools to turn valves, knobs, switches, etc. on a propane system.
13. Faulty propane equipment must be serviced immediately by qualified service personnel.
14. Be sure that NFPA hazard labels are attached to all cylinders.

Health Considerations

1. Propane can be both a heat and cold hazard to employees. Note that escaping propane gas can cause sudden freezing of exposed skin.
2. Know the basic first aid procedures for coming in contact with propane.
3. Be sure that an SDS on propane is available in the area of operation.
4. Wear chemical goggles when working with propane.

5. Wear leather gloves and other protective clothing to cover extremities when working with propane.
6. Report injuries immediately.
7. Use propane in adequately ventilated work areas.

Personal Protective Equipment (PPE)

1. Wear chemical goggles when working with propane gas.
2. Wear leather gloves when working with propane gas.
3. Cover extremities with long sleeves when working with propane gas.
4. Wear a face shield if re-lighting a unit which has recently gone out.

Emergency Procedures

1. If you smell gas or see escaping propane gas, shut the equipment off and shut off the main fuel supply
2. If you smell gas or see escaping propane gas, never touch electrical switches, light matches or use electrical or electronic equipment.
3. If you smell gas or see escaping propane gas, call 911, secure the area from approach by the public or other workers, and contact your supervisor.
4. If you smell gas or see escaping propane gas, be cautious about creating sparks from static or ferrous metals.

Lockout, Tagout

1. Review the specific Lockout/Tagout Procedure of the particular location before beginning work.
2. All voltages shall be handled properly and safely.
3. Only qualified individuals will work on live or energized equipment.
4. When working on live equipment, work on only one (1) wire at a time and insulate all conductors which may come in contact with the live circuit.
5. Adequate personal protective equipment must be used when working on live circuits.
6. Use only non-conductive ladders and hard hats when working near energized circuits.
7. Treat all electrical equipment as though it was live.
8. Shut off power before removing guards from motor-driven equipment.
9. Keep the work area as dry as possible.
10. Fuses shall be replaced with fuses of the proper capacity.
11. Finger rings, bracelets or metal watch bands shall not be worn when working with electrical equipment.
12. When opening disconnects, wear proper eye protection to shield the eyes from the flash or sparks.
13. When opening disconnects wear approved hand protection, such as linesman gloves.
14. After repairs, replace cover plates on lighting and power cabinets or electrical enclosures.
15. Restrict the number of people in the work area.
16. Inspect all electrical extension cords for signs of wear.
17. Extension cords shall not be used as permanent wiring in any situation.
18. Ground all electrical power tools.
19. Only qualified individuals shall be allowed to repair electrical equipment.
20. Do not pull on the cord to disconnect equipment.
21. All portable equipment shall be grounded by means of a three wire cord and polarized plug or wire leading from the frame of a machine to a good return ground. OSHA approved insulated portable power tools may be used. Grounding plugs shall not be altered.

Material Handling and Storage

1. Store and stack material so that the load is stable. Floors and platforms supporting loads must be properly constructed and labeled to tell load limit.
2. When moving material with lift trucks, make sure the load is balanced and stable.
3. Do not exceed load carrying capacity of vehicles being used.
4. Store and stack material in approved locations. Make sure all aisle widths conform to uniform Fire Code and uniform Building Code.
5. Keep aisles, stairways, exits, fire equipment, water heaters, boilers, electric panels and switch boxes well marked.
6. Do not store materials where exits, fire fighting equipment, emergency equipment, ladders, walkways or roadways may be obstructed.
7. Do not store materials near sources of combustion or electrical equipment.
8. Maintain a clear view when moving loads.
9. Sharp or pointed articles shall be stored as to prevent contact with the sharp edges and points. Remove nails, exposed wire and other hazards associated with packing devices after materials have been stored.
10. Determine that storage areas above offices and store rooms will adequately support the material to be stored.
11. Be sure that flammables are stored a safe distance from occupied or office areas.
12. All volatile, corrosive and flammable substances must be store in the yellow safety cabinets, as per OSHA.

Manual Lifting

1. Inspect the path that must be traveled when lifting. Where possible, remove obstacles from path.
2. Back support belts will be made available to employees and should be used when lifting. In certain situations, belt use is mandatory: consult your supervisor.
3. Use powered equipment whenever possible to avoid unnecessary back strain.
4. When you must lift heavy materials, use the following procedures:
 - A. Separate and place both feet close to the object lifted.
 - B. Bend knees and squat down to the object to be lifted.
 - C. Grip the object with the palms of the hands.
 - D. Position the arms and elbows close to the body.

- E. Draw the chin towards the chest to straighten the back and lift with the back in a vertical position.
 - F. When shifting a load, turn the feet but do not twist the trunk.
5. When two or more individuals are lifting a load, use signals to coordinate the lift so that an injury does not result.

Motor Pool Safety

Radiator Service

Care must be taken when checking the radiator since automotive cooling systems work under pressure. The coolant may be in the boiling range and therefore too hot to check safely. Always observe the following precautions when checking the radiator.

1. Place wiping cloth over cap and turn it 1/4 turn counter-clockwise. This will permit the escape of pressure.
 - Caution:** If a rumbling noise is heard coming from the radiator, or if coolant spews out from under the cap, close the cap immediately because the coolant is too hot and will boil over violently if pressure is released. The coolant will have to cool down before it can be checked safely.
2. Remove the cap by turning it counter-clockwise until stop is reached, and then lift it off.
3. Operate the engine at idle speed when adding water or anti-freeze while the engine is hot. This will allow it to circulate quickly without damage to the engine block. If water is very low or engine is extremely hot, wait for it to cool before adding coolant.

Tire Service

1. Check pressure and inspect tires before inflating them.
2. Protect yourself against blowout when inflating tires. Never squat facing the tire, stand at one side so that the fender is between you and the tire, if possible. Use chuck gauge with clip and extension hose.
3. Never leave jack handles or other tools where they can be a tripping hazard.
4. A protective cage or equivalent protection shall be provided for the inflating of truck tires.

Battery Service

1. Do not smoke or permit open flames or sparks near batteries that are being recharged as they emit hydrogen gas, which is explosive. Recharge batteries only in a well ventilated area.
2. When disconnecting a battery always remove the ground cable first in order to prevent sparks if the wrench is accidentally grounded.
3. When installing a battery always attach the ground cable last.
4. Wash acid and corroded particles from hands immediately after performing battery service. Be sure that clothing is free of acid and corroded particles.
5. Face shields or other eye protection shall be worn when handling batteries. If acid gets into the eye, promptly rinse the eye thoroughly with water until chemical is completely removed. After a thorough rinsing, cover the eye with a sterile gauze compress and take the injured person to a doctor.
6. Use great care in the storing and handling of electrolyte for dry charge batteries.
7. Follow safe lifting practices when handling batteries. Use only an approved carrier. When lifting batteries in and out of under hood mountings, you can sometimes gain additional leverage by resting your elbows on the fenders.

Lubrication and Maintenance Service

1. To prevent slipping, promptly clean up oil and grease from floors. Never discharge a high pressure grease gun at any part of the body, as grease may penetrate the skin, causing injury.
2. Do not rock cars while they are on a twin post or free wheel lift, as movement may cause enough shifting of the car on the supports to fall off the lift.
3. Do not stand in front of a vehicle when guiding onto a lift or pit. If you do, you may be injured if it does not stop in time.
4. When using floor lift jacks, be sure they are resting on a firm base and made good contact with the car. When chain hoists or jacks are used, vehicles shall be securely blocked before employees go under them.
5. Do not allow anyone to remain in a vehicle being raised on a lift.
6. Do not overload the lift.
7. Keep your hand on the control valve when the lift is being raised or lowered. Do not prop it open.



8. Do not allow anyone to walk under the lift when it is being raised or lowered.
9. Report immediately to your supervisor any faulty operation of the lift. Do not use the lift until the defect has been corrected. A jumpy lift usually means low oil -- have it filled or repaired. Tag lift until repaired to warn others.
10. When using the lift, observe the following precautions:
 - A. Center the vehicle over the lift.
 - B. Adjust the adapters to make proper contact with the vehicle.
 - C. Raise the lift slightly off the floor almost making contact with the vehicle.
 - D. Look under the vehicle, making sure parts of the car will not be damaged by contact with the lift.
 - E. Raise the lift until contact is made and vehicle begins to rise slightly.
 - F. Look under the vehicle again, checking that proper contact is being made, and if satisfactory, continue raising the lift to the proper height.
 - G. When fully raised, inspect contact points to make certain that the vehicle is firmly positioned.
 - H. Do not open the doors of vehicle that is raised on a frame contact lift.
 - I. After lowering, check to insure that there is adequate clearance under the vehicle before moving it off the lift.
 - J. When not in use, the lift shall be lowered completely to avoid Incidents.
 - K. Lift areas shall be cleared of objects from prior jobs. Oil absorbent material shall be used to remove excess oil and grease before a new job is started.
11. Vehicles shall be properly positioned and automatic chocks shall be operative on all lifts.
12. Safety legs or pins shall be operative to prevent dropping of lifts in event of pressure failure.
13. Do not work under vehicles or other equipment supported by jacks or chain hoists without protective blocking or stands that will prevent injury if jacks or hoists should fail.
14. Hoods, dump sections of dump trucks and similar movable parts shall be blocked to keep them stationary during repairs. (See the Lockout/Tagout Section of this Safety Manual.)

Air Compressors

1. Turn off the main switch before oiling, wiping, or working on the air compressor.
2. Test safety valve weekly to be sure that it operates properly.
3. Never tamper with the safety valve or controls. All adjustments and repairs should be made by qualified mechanics.
4. Do not pile objects near the compressor, nor hang them above it in such a way that they could fall into the mechanism.

Special Fire Prevention - Protection

1. No petroleum products or solutions containing petroleum shall be poured into any drain or sewer.
2. Never use gasoline for cleaning purposes.
3. Put all oily waste in covered metal containers. Approved and properly marked storage containers shall be provided for waste, oily rags, etc. Empty them frequently to prevent spontaneous combustion.
4. Welding and brazing shall be done away from flammable or explosive substances. Appropriate fire extinguisher shall be located nearby.
5. Smoking shall not be permitted in any maintenance shop area in the vicinity of flammables.
6. The correct type, proper size and adequate number of clearly marked and easily accessible extinguisher shall be provided.
7. Fire exits shall be properly marked and kept clear at all times. During working hours all exit doors must be kept unlocked.
8. Employees shall be instructed in the safe handling of flammables. (See Hazard Communication Section)
9. Only metal and properly marked cans shall be used for flammable liquids.
10. Employees shall be instructed in evacuation procedures.
11. Permit nothing to be in front or below an extinguisher.

Closing the Garage

1. Turn off air compressor at main control switch and air valves at the tanks.
2. Check control setting of heating equipment, and be sure it is working properly.
3. Lock all windows and doors.

4. Disconnect all coffee makers and appliances except refrigerators.

Office Safety

1. Practice good housekeeping at all times in office areas.
2. Keep cords/wiring covered so they do not become tripping hazards.
3. Surge protectors must be plugged directly into the wall: never into an extension cord or another surge protector.
4. Surge protectors may not be permanently fixed to an object.
5. Do not block stairs, steps or doorways.
6. Clean up all spills immediately.
7. Use the proper ladder or stool for reaching high places. Do not stand on chairs or furniture.
8. Follow proper lifting techniques when carrying large or awkward materials.
9. Appliances, such as heaters, coffee makers, microwaves, refrigerators, etc., must be plugged directly into the wall.
10. Keep jewelry, clothing and hair out of moving parts.
11. Report unsafe situations, incidents and injuries immediately.
12. Know the Evacuation Plan for your particular office area.
13. Know the location of the nearest fire extinguisher, fire alarm, and first aid kit.
14. Keep aisles and passageways clear and accessible.
15. Maintain all storage areas in a clean and organized manner. Remove all packing material after products have been adequately stored.

Personal Protective Equipment

1. Personnel shall wear personal protective equipment that is consistent with the type of work conducted. This may include but is not limited to eye protection, hand protection, head protection, skin protection, hearing protection or respiratory protection. Use Safety Data Sheets to determine what personal protective equipment is required.
2. Approved clothing appropriate for the work being done shall be worn and maintained in good repair. Loose sleeves, tails, ties, lapels, cuffs, or other loose clothing which can become entangled shall not be worn around moving machinery parts. Working without shirts shall not be permitted.
3. Employees will wear hearing protection when working in areas marked with appropriate warning signs or upon instructions to do so by their supervisor.
4. Welders and their assistants shall wear approved eye protection during cutting, welding or brazing operations.
5. Respirators shall be worn as necessary. Departments shall ensure that employees are properly fitted and trained in the use of respiratory equipment.
6. Employees working in elevated work locations (greater than eight feet) shall wear safety belts, harnesses or lanyards.
7. Approved safety vests and/or clothing shall be worn by all personnel while working on or near traveled right of ways. The object is to make workers as visible as possible to motorists, especially if work is required at night.
8. Footwear shall be of substantial construction and the use of steel shank and safety toe shoes may be required as directed by supervisor.
10. Gloves shall be worn while collecting refuse and as directed by supervisor.
11. All personal protective equipment shall be kept clean, in good repair, and ready for use.
12. A hard hat should be worn whenever there is exposure from overhead work to impact, or from falling or flying objects, or to electrical shock and burns.
13. Other personal protective equipment may be required depending on the type of work being done.
14. Supervisors shall review PPE assessments annually.

Refuse Collection

1. Drive your vehicle on the right hand side of street unless operating on one-way streets or specifically directed otherwise by supervisor.
2. Never activate packing mechanism on rear loaders unless turn-buckles are properly fastened, except when unloading packer.
3. Collection crews shall haul only the type of refuse they have been assigned.
4. Crew members shall handle refuse in such a manner as not to increase the hazard to themselves from broken or flying glass.
5. Never manipulate anything in or near the hopper while packer is in operation.

6. Do not manually push refuse into hopper while packer is in motion.
7. Never put any part of your body in the hopper area while the packer blade is in motion.
8. Never activate packing controls while any portion of the body is in the hopper area.
9. Make sure there are no objects on the edge of the hopper, such as lumber or pieces of glass, which would fly out and injure someone when packer is in motion.
10. No one will ride in the hopper. Ride only in prescribed locations and when allowed based on speed and direction. At no time shall any part of the body extend into the hopper.
11. Never put refuse in hopper when truck is full.
12. Use caution when moving heavy wheeled containers.
13. Each rear load truck should carry a broom and shovel to clean up rubbish spills.
14. Containers shall be replaced where they do not pose an obstacle to pedestrians or vehicles.

Unloading Operations

1. All refuse collected shall be delivered to the designated disposal point where the complete load must be discharged.
2. Directions of disposal site attendants shall be followed except when they would result in personal injury or damage to the vehicle.
3. Be alert at the disposal site and watch out for sharp objects and wire that may puncture tires or tangle drive line.
4. Wait until vehicle is completely stopped at the disposal area before unfastening turnbuckles or latches.
5. Use caution when opening manually operated rear doors on trucks.
6. Employees not operating the dumping controls shall stand clear of the vehicle until the load is completely discharged.
7. Never raise the tail gate or operate the push plate in a jerking manner.
8. When tailgate is in raised position, never have any part of body between vehicle body and raised tailgate unless proper blockage is installed.
9. Stop all engines and remove the key before getting into the packer body to clean it.
10. While at the disposal site, the area in front of push-out type packer blades shall be cleaned of refuse.
11. Drivers shall inspect their vehicles for cracks, broken welds, etc., while at the disposal site.
12. Employees shall not remain at the disposal site any longer than necessary.

Hazardous Materials

If refuse personnel come in contact with or identify suspected hazardous material, contact your supervisor or Admin Assistant. Advise them of your location and situation. If possible, do not touch, handle or remove the material from the original location where it was found.

Vehicle Breakdowns

1. Call your supervisor or Public Works to report a breakdown. Give truck number, location and description of trouble.
2. If vehicle stalls on roadway, warning triangles (reflectors) are to be placed in a manner conforming to D.O.T. vehicle code.
3. Stalled vehicles are not to be left unattended.

Injuries

1. Report all injuries, regardless of how minor, on the same day they occur.
2. Any serious injury shall be reported to supervisor immediately.
3. Any employee, witnessing an Incident, shall immediately assist the injured and arrange for medical treatment if required.
4. In the event a man is caught in hopper or packer, stop operation of vehicle packer immediately. Check extent of injury. If help cannot be administered, summon help.
5. Approved forms shall be made out for all personal injuries.

Vehicle Fires

1. For fires in the packer body of the truck, call 911 and your supervisor.



Advise them of the fire and location of truck. Attempt to locate an isolated but accessible area to dump the load. Move truck away from burning refuse pile, and maintain radio contact if possible.

2. For fires in the engine or cab compartments, call 911 and your supervisor. Advise them of the fire and location of the truck. Move truck away from any structures. Attempt to put out the fire with the fire extinguisher, if possible to do so without endangering yourself. Maintain radio contact if possible.

Respiratory Protection Program

Any employees required to wear a half or full face respirator, must follow the City's Respiratory Program. This would include an annual physical. Fire employees follow a different program . NIOSH N-95 dust filters are available to employees on a voluntary basis.

Tools

1. Select the proper tool for the work intended.
2. Use tools that are in good repair. Replace any damaged tools immediately.
3. Powered electrical tools are required to have a grounding plug or be double insulated.
4. Tools should be inspected before each use.
5. Secure tools when transporting them in vehicles.
6. Carefully read instructions before using power tools.
7. Ground all tools before using them and do not alter three prong grounding plugs.
9. Do not disconnect tools by pulling on the cord.
10. Do not use equipment with frayed or damaged cords.
11. Avoid using power tools in wet situations whenever possible.
12. Do not change bits, blades, etc. when the tool is energized. Unplug the tool before making changes.
13. Do not operate power tools without guards.
14. Wear eye protection when using power tools.
15. Fuses and other over current protection shall be maintained in all circuits. Circuits on which power tools are used shall not exceed 20 amperes rating unless otherwise approved in the City-County Electrical Code.
16. Extension cords shall not be used as a substitute for fixed wiring of a structure or building. Electrical outlets should be installed where needed.
17. Do not leave the cords of portable electric tools where cars or trucks will run over them.

Tree Trimming Operations

Tools and Equipment

1. All tools and equipment shall be properly maintained.
2. Employees shall make daily inspections of all equipment, tools, etc. before using them.
3. Hand saws shall be kept sharp and properly set so they will not jump out of the cut and cause injury.
4. Ramp boards (used to load equipment into trucks) shall be kept smooth sanded and varnished to prevent splintering of boards. (Hinged ramps are recommended.)
5. Proper care of safety lines shall be taken at all times. Safety line shall be protected against wetting or dampness. Should it become wet, dry completely before storing. Safety lines and hand lines shall be kept in a clean box by themselves. Do not store lines and tools together. All ropes and lines shall be kept coiled when not in use and hung in a clean, dry, dark, well ventilated area.
6. Chipper blades shall be kept sharp. Dull blades cause extra strain on the engine and may cause chippings to clog in the chute.
7. First aid kits are required to be on hand.
8. Pruner poles must be made of non-conductive material and have a non-conductive pull line between the lever arm and the handle. This is a safeguard against electrical shock.

Fuels

1. Fuels shall be dispensed and stored safely.
2. Stop gasoline powered equipment before fueling and wipe away spills before starting it.
3. Fuels shall be stored in metal containers only.
4. Fuel containers shall never be stored or carried in crew compartments.

Using a Chainsaw

1. Required PPE are chaps, hard hat, eye/face protection, hearing protection and sturdy boots. Gloves are optional.
2. Before Starting the Saw
 - Put on PPE.
 - Check controls, chain tension, and all bolts and handles to ensure they are functioning properly and adjusted according to the manufacturer's instructions.
 - Fuel the saw at least 10 feet from sources of ignition.
 - Start the saw at least 10 feet from fueling area, with chain brake engaged, and with the chainsaw on the ground or otherwise firmly supported using the leg lock. Do not drop start.
 - Fuel container must be metal.
 - Clear away dirt, debris, small tree limbs and rocks from the area and path.
 - Look for nails, spikes or other metal in the tree before cutting.
3. While Running the Saw
 - Clear the area of obstacles that might interfere with cutting the tree or using the retreat path.
 - Keep hands on the handles with thumb wrapped around top handle and maintain secure footing while operating the chainsaw.
 - Do not cut above shoulder height.
 - Shut off or engage chain brake prior to retreating.
 - Shut off or engage chain brake when carried, especially on hazardous terrain.
 - Maintain control of the cutting area. Watch for other employees and bystanders.
4. Before chainsaw cutting, employees will use the 5 Cutting Rules:
 1. Look for Hazards.
 2. Determine binds and reactive forces.
 3. Determine escape route at least 8 feet from the object.
 4. Determine cuts required.
 5. Determine cutting plan based on the above rules.
5. Before felling a tree, employees will use the 5 Felling Rules.
 1. Look for hazards, look up.
 2. Determine lean.
 3. Determine escape plan.
 4. Determine hinge, length & width.
 5. Determine cutting plan on the above rules.

Using a chipper

1. Only one person shall feed a chipper at a time. If other employees are available - they should prepare the bush for the person feeding the chipper. Stand to the side when feeding the chipper.
2. No loose clothing or gloves with holes shall be worn when chipping or stump grinding.
3. The bush shall be cut small enough so that, if it is drawn into the chipper, it will not cause injury to the operator.
4. Under no circumstances shall tools such as scoops or forks be used to push brush and debris into the chipper. Such practice is extremely dangerous to the operator and the machine.
5. Pneumatic tools must be handled with care so that they will not be activated unexpectedly. Disconnect a pneumatic tool from the air hose before handing it to another person and before leaving it unattended.
6. When edging, a safety shield shall be worn by the operator to prevent rocks from striking him/her in the face. A face shield and shin guards shall always be worn when operating a lawn renovator.
7. Safety goggles or a face shield shall be worn when operating the stump cutter.

Trenching and Shoring Operations

All City trenching and shoring operations are to be conducted according to OSHA standard 29 CFR part 1926.650 - .652 Subpart P.

Responsibilities for trenching and excavations

1. Competent Persons - A "competent person" is a certified City employee (or contractor employee) who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary,

hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. At least one competent person shall be on-site during all trenching or excavation operations. The competent person is responsible for but not limited to the following:



- A. Locating and protecting underground installations.
 - B. Recognizing, testing and controlling potentially hazardous atmospheres.
 - C. Removing or supporting hazardous surface encumbrances.
 - D. Monitoring the equipment and operation of water removal.
 - E. Protecting employees from loose rocks or soils.
 - F. Conducting daily inspections of excavations, adjacent areas and protective systems.
 - G. Determining the impact of distress and/or surcharge loads and adjust the protective systems accordingly.
 - H. Training employees to perform their jobs in a safe manner.
 - I. Removing employees from hazardous conditions until the necessary precautions have been taken to ensure their safety.
 - J. Shutting down the job site if needed.
3. Employees - All employees have a responsibility to themselves and their fellow employees for the prevention of Incidents by following all safety procedures and performing assigned work without injury. Employees are expected to perform all trenching and excavation work according to the procedures set forth in this program. As each employee is the person most concerned with his or her safety, he or she must assume certain duties and responsibilities to assure on-the job safety, including recognizing the hazards of trenching and excavation work and taking precautions to ensure the safety of themselves and co-workers.

Causes Of Cave-Ins

1. Soil Type - Loose-grained sandy soils have little cohesive strength and tend to cave-in easily if they are unsupported.
2. Recent Excavations - Soil that has never been disturbed is stronger than soil that has been previously excavated. The more recently the soil has been disturbed, the weaker it will be.
3. Moisture - Water has a decided effect on the cohesiveness of soil. Too much water affects the ability of soil particles to stick together, allowing them to slide and move more easily. This can be especially critical when repairing water or sewer line breaks. Conversely, too little water results in drying which can cause soil to crack and collapse.
4. Freezing and Thawing - When water freezes, it expands, and when ice thaws, it contracts. Movement resulting from expansion and contraction during freeze-thaw cycles can affect both shoring materials and soil stability. A cave-in can occur without warning as a mid-morning sun thaws the excavation's face.
5. Surcharged Loads - Construction materials, heavy equipment and the weight of the spoil piles all contribute to the downward force on soil. The greater the surcharged load (excessive load), the less stable the soil will be and more likely it will fail.
6. Shock and Vibration - Moving trains, highway traffic, pile driving and blasting are all sources of vibration which can affect the cohesiveness of soil and weaken excavation walls.
7. Intersecting Trenches - The point formed by the intersection of two trenches is quite vulnerable to collapse.

General Rules

1. Trenching Numbers

- 18" is the slope back overhangs and trench box/shoring must extend above the trench.
 - 2' is the distance the excavated soil (spoils) must be from the edge of the trench (further if possible).
 - 3' is the distance the ladder must extend above the trench lip at the top.
 - 4' is when egress, such as ladders, steps, ramps, or other safe means of exit for employees, must be supplied. These devices must be located within 25 feet (7.6 meters) of all workers.
 - 4' is when atmosphere must be monitored.
 - 5' is when a protective system must be provided.
 - 20' is when the trench must be designed by a professional engineer.
2. Keep heavy equipment away from trench edges.

3. Know where underground utilities are located before digging.
4. Inspect trenches at the start of each shift.
5. Inspect trenches following a rainstorm or other water intrusion.
6. Never work under suspended or raised loads and materials.
7. Inspect trenches after any occurrence that could have changed conditions in the trench.
8. Ensure that personnel wear high visibility or other suitable clothing when exposed to vehicular traffic.
9. A Protective System is required for trenches 5 feet deep or great. Designing a protective system can be complex because you must consider many factors: soil classification, depth of cut, water content of soil, changes caused by weather or climate, surcharge loads (e.g., spoil, other materials to be used in the trench) and other operations in the vicinity.
Appropriate Protective Systems include:
 - Sloping** involves cutting back the trench wall at an angle inclined away from the excavation.
 - Shoring** installs aluminum hydraulic or other types of supports to prevent soil movement and cave-ins.
 - Shielding** protects workers by using trench boxes or other types of supports to prevent soil cave-ins.
15. Use good housekeeping at all construction sites to eliminate slips, trips and falls.
16. Ladders must be tied off.
17. If the trench is to sloped, for every one foot of vertical drop the slope must one and a half feet.

Truck and Heavy Equipment Operation

1. Vehicles shall be loaded properly. The driver's view shall not be obstructed. Loads shall be properly fastened with ropes or binders.
2. Vehicles shall be kept free from accumulation of materials that constitute hazards from tripping, obstructions, or fire. Sufficient clearance shall be allowed for access to material and tools. All surfaces shall be kept free from protruding nails or bolts, splinters, loose boards, and unnecessary holes or openings.
3. Good housekeeping shall be maintained at frequent and regular intervals. All sweepings, solid or liquid waste, refuse and garbage shall be removed and disposed of in proper receptacles as often as necessary or appropriate to maintain equipment in a sanitary condition.
4. When winches on trucks or tractors are used to raise or lower poles or material, pull in wire, etc., the operator shall not leave the controls while the winch is in operation or is being used to hold a load. Another employee should act as observer for the winch operator.
5. Moving of trucks and other vehicles equipped with booms or derricks, truck mounted ladders, mechanical or hydraulic lifts, hole diggers, or similar equipment in an elevated or partially elevated position is prohibited unless the equipment is so designed.
6. Proper precautions shall be taken at all times to prevent contact with overhead lines, trees, or structures.
7. Safety chains will be used on all trailer equipment except semi-trailers coupled with a standard fifth-wheel.
8. Whenever the equipment is parked, the parking brake shall be set. Equipment parked on inclines shall have the wheels chocked and the parking brake set.
9. Heavy machinery, equipment or parts thereof, which are suspended or held aloft by use of slings, hoists, or jacks shall be substantially blocked or cribbed to prevent falling or shifting before employees are permitted to work under or between them. Bulldozer and scraper blades, end-loader buckets, dump bodies, and similar equipment shall be either fully lowered or locked when being repaired or when not in use. All controls shall be in a neutral position with the motors stopped and brakes set, unless work being performed requires otherwise, and then only when other suitable precautions are instituted.
10. A safety tire rack, cage, or equivalent protection shall be provided and used when inflating, mounting, or dismounting tires installed on split rims, or rims equipped with locking rings or similar devices.

Vehicle Operations

Backing

1. Four major backing precautions
 - A. Before you start backing, make sure you can see where you are going. See that the way is clear. Get out and inspect the area immediately behind your vehicle.
 - B. After seeing that the way is clear, then back very slowly. Never back in a hurry.
 - C. Alert other drivers or pedestrians who may be in, or about to cross your path of travel by blowing your horn. Be careful, though. They may not understand your intentions. Extraordinary precautions shall be taken when

driving motor vehicles near children.

- D. All bi-directional machines, such as hoists, front end loaders, trenchers, and similar equipment shall have in operation a reverse signal alarm distinguishable from the surrounding noise level.
- E. If you have a loader or helper working on your crew, always have the helper direct you in the backing up operation. Have one person designated to directing from the back of the vehicle.



2. Helper's position

- A. The helper's body must face in the direction of the driver at all times when signaling.
- B. The helper must be in a position where the driver can see him directly or in either of the rear view mirrors.
- C. The helper must be on the ground in a position that gives him an unobstructed view of the ground over which the truck is about to be moved.
- D. Wherever possible, the helper should station himself at the point where the backing maneuver is to end, so that he avoids the hazards of walking backward over the surfaces he does not see.
- E. The helper must position himself to observe the most immediate hazard to the truck. This may require stopping the truck and changing positions one or more times.

3. Suggested backing signals by loader or helper

- A. Stop--Raise the right hand above the shoulder with open palm facing the driver.
- B. Back--With the right hand raised above the head with the palm of the hand turned inward, roll the arm and hand in a slow circular motion counter--clockwise (toward the body).
- C. Go forward--Raise the right hand above the shoulder and with the index finger pointing ahead, repeatedly move the hand in a forward motion.
- D. Move to the right--Raise the right hand above the shoulder and with the thumb pointing to the right, make the repeated motions to the right.
- E. Move to the left--Raise your right hand above the shoulder and with the index finger extended to the left, make repeated motions to the left with your hand.

Note: Even though there is someone directing, drivers are not relieved of their responsibility. It is still up to them to see that the backing operation is done safely.

Final Note: Equipment operators should remember that bad weather can reduce visibility or cause a road surface to become slippery from rain, snow, or ice, presenting a greater hazard in backing operations.

Cell Phone Use

It is important both for safety and for the image of City drivers that common sense and courtesy be followed in using cellular phones while in City vehicles.

- 1. It is against the law in North Carolina to text while driving.
- 2. Whenever possible, use your cellular phone when parked or have a passenger use the phone.
- 3. If your position requires frequent cell phone use in a vehicle, you should have voice mail service and hands-free equipment for your phone, and use both to avoid distractions.
- 4. If your phone rings when you are driving – especially during hazardous conditions -- let your cellular voice mail service take the call and listen to the message later when you are parked or pull over before answering, if traffic conditions permit.
- 5. Place your cellular phone where you can reach it without removing your eyes from the road.
- 6. Suspend conversations during hazardous driving conditions or situations.
- 7. Let the person you are speaking to know you are driving and that the call may need to be suspended at any time.
- 8. Do not take notes or look up phone numbers while driving. As a driver, your first responsibility is to pay attention to the road.
- 9. Attempt to dial and place all calls when you are not moving.
- 10. Learn and use the pre-programmed number dial features of your phone. Practice using this feature for commonly dialed numbers before driving so you are familiar with the procedures.

12. Do not engage in stressful or emotional conversations while driving as it can be distracting and potentially dangerous. If necessary, suspend the phone conversation.
13. Use your cellular phone to call for help or to help others in emergencies. Your cellular phone lets you be a “good Samaritan” in the community. If you see an auto accident, crime in progress or other serious emergency where lives are in danger, call 911 and give the exact location and information to fire, police or ambulance personnel.

General Operations

1. Employees operating vehicles will carry a current driver’s license that is valid for the type of vehicle driven.
2. Personnel operating motorized equipment will be adequately trained in its use and operation.
3. Employees are required to practice defensive driving at all times. Avoid accidents by anticipating that someone may step from between parked cars, that a car may pull out from the curb without warning, or that the driver ahead may turn or stop suddenly. Be alert; concentrate on safe driving.
4. Employees shall drive courteously at all times and shall yield the right-of-way to other vehicles if there is any question as to which vehicle has the right-of-way.
5. No driver shall drive a company vehicle while their physical condition might impair their ability or judgment.
6. Only City employees may drive city equipment.
7. Equipment operators shall obey all speed limit and warning signs, drive their equipment at reasonable and proper speeds with due regard for weather and traffic conditions, intersections, and type of equipment driven.
8. Tank trucks, semi-trucks or the like will be chocked, braked and the engine turned off during loading or unloading operations unless otherwise required for specific equipment operation.
9. Vehicles provided with tail gates shall not proceed until the tail gate is secured.
10. Except for where specifically allowed by supervisors, employees will have their entire body inside the moving equipment at all times, and shall not enter or exit from moving vehicles or equipment.
11. Employees will not ride in buckets, lift baskets, forks (of lift trucks), etc., not designed to transport personnel while the vehicle is in motion.
12. Employee drivers shall not permit boarding or alighting from vehicles which are in motion.
13. Seat belts will be used in all vehicles, except as permitted by North Carolina law for emergency vehicles, sanitation vehicles, and for meter reading operations. The belt shall be fastened before moving the vehicle.
14. Loads shall be properly secured and protected before proceeding. All loads should be checked to prevent spill-off due to overloading.
15. The driver shall inspect his or her footwear before driving a vehicle and see that his or her footwear is free of mud, excessive water, oil or grease, to prevent a slippery contact with brake and clutch pedals.
16. Vehicles shall not be operated with dirty or damaged windshields and mirrors, inadequate brakes, faulty steering gear, horn or lights.
17. The brakes and other safety systems shall be tested by the operator before leaving on the first trip of the day and any deficiencies noted and corrected. When required, DOT inspection logs shall be properly filled out and kept in the vehicle.
18. Operators of mobile equipment, forklifts, motor vehicles, golf carts and similar equipment shall not be permitted to use headphones while operating equipment. Portable or vehicle mounted music devices shall not be played so loud as to interfere with similar warning sounds.
19. The severe application of brakes, especially booster brakes, shall be avoided except in an emergency. The operator must at all times have the vehicle under control so as to be able to bring it to a complete stop within the assured clear distance ahead.
20. No vehicle shall be parked on a hill or grade unless the front wheels are turned into the curb or the wheels securely chocked.
21. The number of employees in a vehicle is limited to the number of seatbelts.
22. All employees will wear seatbelts.
23. All tools and equipment shall be properly guarded, stowed, and securely fastened when transported. All doors of cabinets and lockers must be latched before moving truck.
24. When possible do not load and unload a vehicle from the street side of the load.
25. Special regulations and instructions governing the loading and unloading of poles, pipes, etc., shall be strictly observed in every case.

Welding, Cutting or Brazing

1. Inspect the area to assure that flammable or combustible materials are not present.
2. Inspect the equipment to be worked upon before the work begins. Drums, barrels or small containers shall be thoroughly cleaned before the work begins.
3. All storage tanks or vessels must be clean, gas free, and blinded before the work begins. Mechanical ventilation shall be provided in any space less than 10 cubic feet per welder or any other confined space where natural cross ventilation is restricted. Ventilation shall be at a rate of at least 2,000 cubic feet per minute.
4. When working inside a vessel, welding gases which are not in current use shall be turned off both at the nozzles and the cylinders to prevent leakage and gas buildup.
5. Test the area for flammable or combustible materials before re-entering after taking any breaks.
6. Test the area for flammable or combustible materials at the beginning of each shift if work is going on continuously.
7. A fire watch shall be assigned to all cutting or welding operations that are conducted outdoors or in the vicinity of any flammables.
8. A fire extinguishers shall be made readily available during all cutting or welding operations. The fire watch and employees doing welding or cutting shall be familiar with the operation of a fire extinguisher.
9. Report any fire that results during a cutting or welding operation.
10. Welding shields shall be used if the work is conducted in a high activity area, for protection of passersby. When working in welding areas, employee shall avoid looking at an electric arc without eye protection. Serious eye injury could result.
11. Personnel will wear appropriate eye and skin protection, including gloves, and approved helmet or goggles for the type of operation performed.
12. Welding and/or cutting cylinders will be operated in a standing position, with cylinders properly secured.
13. Keep grease and oil away from oxygen cylinders. Never let grease or oil, even on your hands get near oxygen cylinder controls; the combination forms a highly explosive mixture.
14. Open valves on welding and/or cutting cylinders slowly. Before connecting a regulator to a cylinder valve, the valve should be opened slightly and closed immediately. (This is termed "cracking" and is done to purge the valve of dust or dirt that might enter the regulator.) Stand to one side of the outlet, not in front of it, when cracking the valve.
15. When an oxygen cylinder is in use, valves shall always be opened completely. Valves shall be turned "OFF" when not in use.
16. Replace caps and properly store empty welding and/or cutting cylinders. Oxygen cylinders in storage shall be separated from fuel gas cylinders (and other combustibles) by at least 20 feet or separated by a 30 minute fire resistive barrier of at least 5 feet high.
17. Practice good housekeeping techniques at all times in welding and cutting areas.
18. Properly ventilate any welding area. Check ventilation equipment annually to make sure air flow is adequate.
19. Use Acetylene only at pressures below 15 pounds per square inch. At higher pressures the gas is unstable and may explode.
20. Do not use copper tubing to repair acetylene hose. Acetylene will attack pure, unalloyed copper, forming a very explosive powder, copper acetylide.
21. Never strike an arc on, or tap an electrode against, a cylinder.
22. Always use a spark lighter to light a torch. Never use matches.
23. Never use oxygen to dust off clothing and the work area. Use fuel gases only for intended purpose.
24. All arc welding ground connections shall be mechanically strong and adequate for the required current.
25. When not in use, electrode holders shall be placed so that they cannot make electrical contact with persons, objects, fuel or compressed gas tanks.
26. Cables with splices within 10 feet of electrodes are prohibited from being used.
27. Cables with damaged insulation or exposed bare conductors shall be replaced.
28. The welder shall not coil or loop the electrode cable around parts of his body. Do not leave welding rod stubs on the ground or floor where they may cause an Incident.

Working Overhead

1. When working overhead, take precautions to protect personnel working below. Loose materials, tools and the like must not be left in places where they can be knocked, blown or vibrated off-balance and fall.
2. Rope off or barricade the area below the overhead work to prevent access to nonworking personnel.
3. Do not drop or throw material, tools or supplies from overhead work areas.

4. Use a tag line to lift heavy or awkward loads.

Workplace Violence

All employees have the right to feel safe while at work. Workplace violence includes physical assaults, beatings, stabbings, shootings, rapes, attempting to cause physical harm, i.e., striking, pushing, or other aggressive acts against another person. Workplace violence can also be disorderly conduct, shouting, pushing or throwing objects, punching walls, or slamming doors; verbal threats to inflict bodily harm, including vague or overt threats; fascination with guns or weapons demonstrated by discussions or bringing weapons to workplace. City employees must know how to recognize the signs and immediately report these to Supervision.

1. Report any violence by strangers, customers, clients, co-workers or personal relationships to your Supervisor.
2. Limit work where employees must work alone or at night.
3. Keep walkways and corridors adequately lit at night.

All employees shall undergo the Active Shooter Response Training at least once during their employment.

