

Hurricane, Flood, and Tornado Recovery and Cleanup Safety Fact Sheet

HS05-042C (07-21)

Natural disasters, such as hurricanes, floods, and tornadoes, create risks for employees assigned to worksite recovery and cleanup. Utility workers, police officers, emergency medical personnel, firefighters, contractors, and others helping with disaster recovery can face severe injury or even death from a variety of hazards, including:

- electrocution;
- falls and lifting;
- water contamination;
- rodents, snakes, and insects;
- carbon monoxide poisoning;
- noise exposure;
- cuts, lacerations, and broken bones;
- chemical exposure; and
- extreme temperatures.

Employers remain responsible for the health and safety of their employees at all times, including during cleanup and recovery after natural disasters. The [Occupational Safety and Health Act of 1970](#) requires employers to provide employees with a safe working environment “free from recognized hazards” at all times. The following steps can help employers prioritize worker safety while getting back to business as soon as possible.



Inspect the Worksite

Listen for Updates and Instructions

Before cleanup and recovery begins, listen to local officials for updates and instructions. Gather information about road closures, downed power lines, flooded areas, or any other issue that may put employees at additional risk when attempting to return to the worksite.

Evaluate the Worksite for Hazards

Inspect the worksites and facilities before allowing employees to enter. Evaluate structures, surfaces, roads, trenches, and excavations for stability. Have a registered professional engineer, architect, or competent safety professional certify the worksite’s safety.

Review Emergency Protocols

Before bringing employees into the facilities or worksites to begin cleanup, establish a plan for contacting emergency personnel if injuries occur during recovery operations. Also, re-evaluate the company's fire evacuation plan and suppression system before cleanup.

Identify Tasks and Hazards

After a natural disaster, workers responding to cleanup and recovery efforts are often exposed to various hazards from fallen trees, downed power lines, mold, and more. Therefore, employers must assess the risks or exposure hazards before beginning any cleanup and recovery task.

In addition, based on the worksite assessment, employers must provide workers with the appropriate **personal protective equipment** (PPE) and **training**. Ensure employees have the needed information to perform the following work safely:

Chemical Concerns

Floodwaters and high winds can move or damage chemical containers. For help safely disposing of toxic or unknown substances or reporting oil and chemical spills and leaks, contact the:

- [Texas Commission on Environmental Quality](#)
800-832-8224 (24-hour hotline) or
- [Environmental Protection Agency's National Response Center](#)
800-424-8802.

Contaminated Floodwater

Floodwater is often contaminated with infectious organisms from raw sewage and toxic substances from flooded industrial and waste sites. In addition to biological hazards, such as dead and living animals, mold and fungi in the air are other common floodwater hazards.

Due to these contaminants, employees must cover any open wounds with waterproof bandages and avoid exposure to floodwaters. If an injury develops redness, swelling, or drainage, seek immediate medical attention.

Use these additional protective measures when working in contaminated floodwaters:

- **Ventilate** enclosed spaces with fresh air.
- **Assume the water is contaminated** unless proven otherwise.
- **Use only trained workers** with the proper PPE to clean up toxic chemicals, other hazardous waste, and mold.
- **Remain up-to-date with a tetanus shot** (within the past 10 years) to help prevent bacterial diseases.
- **Discard water-damaged containers** and visibly contaminated materials.
- **Use waterproof boots, latex, or rubber gloves** and other protective clothing, such as chemical-resistant outer clothing and protective goggles;
- **Use an N-95 disposable respirator**, at minimum, when handling mold-contaminated materials.
- **Keep ample clean water available** for drinking and washing.
- **Wash hands with soap and water** (pre-boiled or disinfected) after contact with floodwater;
- **Clean surfaces touched by floodwater** using soap and warm, clean water. Then, rinse, using a solution of one cup bleach and five gallons water.
- **Sanitize clothing, tools, and equipment with soap and water** (or

the bleach solution above) after contact with contaminated floodwater or chemicals. Allow materials to drain and air dry to help stop mold.

Downed Power Lines, Electricity, and Gas Utilities

Report and keep a safe distance from downed power lines, frayed electric wires, and gas leaks. Contact with energized lines or objects (including tree limbs touching power lines) can result in electrocution, burns, and fires. Exposure to gas leaks can lead to various [physical symptoms](#), carbon monoxide poisoning, fires, and explosions. Take these protective measures when working near electrical or gas hazards following a natural disaster:

- **Assume that all wires and power lines are energized**, especially if an outage occurred, or if there is no information regarding when the utility provider can restore power.
- **Establish and clearly mark a danger zone** around downed power lines and areas near a gas leak.
- **Allow only properly trained and equipped workers to repair** electrical wires and gas leaks.
- **Beware of overhead and underground lines when moving ladders or equipment.** Train equipment operators, spotters, and employees to stay at least **10 feet away** from all downed lines.
- **Turn off electricity to electrical equipment**, follow [lockout/tagout procedures](#), and have a qualified electrician inspect equipment before resuming work.
- **Use a wooden (not metal) pole to inspect floodwaters**, which can be



electrically charged and hide dangerous debris, washed-out ground, and protruding objects.

- **Never use generators indoors.** Exhaust from an electric generator is toxic. Always put generators outdoors and away from doors, windows, and vents.

Tree Trimming and Removal

Every year, millions of trees are destroyed by hurricanes, floods, and tornados. Removal of damaged branches and trees is costly and dangerous. Hazards include:

- **electrocution** from tree limbs coming into contact with power lines;
- **struck or crushed** by falling tree limbs;
- **injuries and amputations** from equipment, such as chainsaws and chippers; and
- **strains and sprains** from lifting or moving tree limbs and other debris.

These protective measures can help keep employees in charge of tree removal and debris safe:

- **Contact the utility company to de-energize and ground or shield power lines.** Use only trained arborists for tree trimming and removal within 10 feet of a power line.
- **Establish and clearly mark a danger zone** to prevent tree debris from falling onto workers. Stay alert at all times.
- **Use PPE**, including work gloves, a hard hat, work boots, hearing protection, and eye and face protection. Wear chaps when using a chainsaw.
- **Watch out for chainsaw kickback.** Do not cut with the saw tip.
- **Stay back from a chipper.** Never get too close or reach into an operating chipper.
- **Use mechanical equipment to lift heavy objects.** If not possible, use extra people and proper lifting techniques.

Debris Management

Debris management -- the clearing and disposal of waste generated by disasters -- often gets overlooked in hurricane recovery planning. However, the safe collection, sorting, storage, and recycling of rubble and other materials that disasters produce is vital for employee safety.

- **Inform employees of hazards** they might encounter during recovery efforts.
- **Develop and use a site plan for debris collection.** Be aware that typical recycling and solid waste disposal often do not apply to disaster

debris. Visit www.epa.gov for details on debris disposal, renovation, and rebuilding.

- **Provide traffic flow details** and train employees to stay clear of all motorized equipment. Explain to employees the importance of never positioning themselves between mechanical equipment, blind spots, and fixed objects.
- **Provide all employees with high-visibility reflective vests** that equipment operators and emergency vehicles can easily spot.
- **Provide radio equipment and extra batteries** to all spotters and equipment operators so that they can communicate warnings.
- **Post warning signs along roadways** to protect employees exposed to vehicular traffic during the cleanup operations. In addition, warn drivers of work in progress by using flaggers, traffic cones, and highway channeling devices to steer traffic away from employees working along the roadway.



- **Require the use of seat belts and rollover protection** for all equipment where tip-over hazards are present.
- **Ensure all motorized equipment has working backup alarms** so that nearby employees are aware of the equipment's movements.



or other gear to protect skin from chemicals, bodily fluids, and other contaminants.

- **Wear chaps when using chainsaws.**
- **Wear snake boots or gaiters** to protect legs against snakebites.
- **Provide insect repellent containing DEET or picaridin** to prevent insect bites.
- **Provide earplugs or other hearing protection devices** if employees must shout to be heard over equipment. Equipment that may require hearing protection includes chainsaws, backhoes, tractors, pavement breakers, blowers, and dryers, among others.

In addition, to help employers continue making worker safety a priority, the Texas Department of Insurance, Division of Workers' Compensation (DWC)-Workplace Safety provides a free, confidential, [on-site consultation program](#) to help small to medium-sized employers identify and fix hazards following a storm. For more information, visit www.txoshcon.com or contact a DWC [Occupational Safety and Health Consultation](#) (OSHCON) professional at 800-252-7031, option 2, or OSHCON@tdi.texas.gov.

Illness & Injury Prevention

Natural disasters bring people in closer contact with various hazards, from wildlife to bacteria and toxic mold. These safety precautions can help prevent illness and injury following a hurricane, flood, or tornado:

- **Provide first-aid kits** to care for minor cuts and scrapes. If employees cut themselves on sharp debris, provide first aid but quickly seek medical attention if there are signs of infection.
- **Take frequent rest breaks**, especially when lifting heavy, water-laden objects.
- **Practice proper lifting techniques** to avoid overexertion and back injuries.
- **Stay hydrated.**

Personal Protective Equipment

Preparing for natural disaster cleanup and recovery requires that employers and workers have the necessary equipment to keep themselves safe:

- **Provide all employees with PPE**, including hard hats, safety glasses, heavy-duty leather gloves, and waterproof work boots with steel toes and insoles.
- **Provide life vests to those working in deep floodwaters. Also include waterproof gloves, boots, waders,**



www.txsafetyatwork.com

1-800-252-7031, Option 2

*The Texas Department of Insurance,
Division of Workers' Compensation (DWC)-Workplace Safety
P.O. Box 12050
Austin, TX 78711-2050*

Disclaimer: Unless otherwise noted, this document was produced by the Texas Department of Insurance, Division of Workers' Compensation using information from staff subject specialists, government entities, or other authoritative sources. Information contained in this fact sheet is considered accurate at the time of publication. For more free publications and other occupational safety and health resources, visit www.txsafetyatwork.com, call 800-252-7031, option 2, or email resourcecenter@tdi.texas.gov.