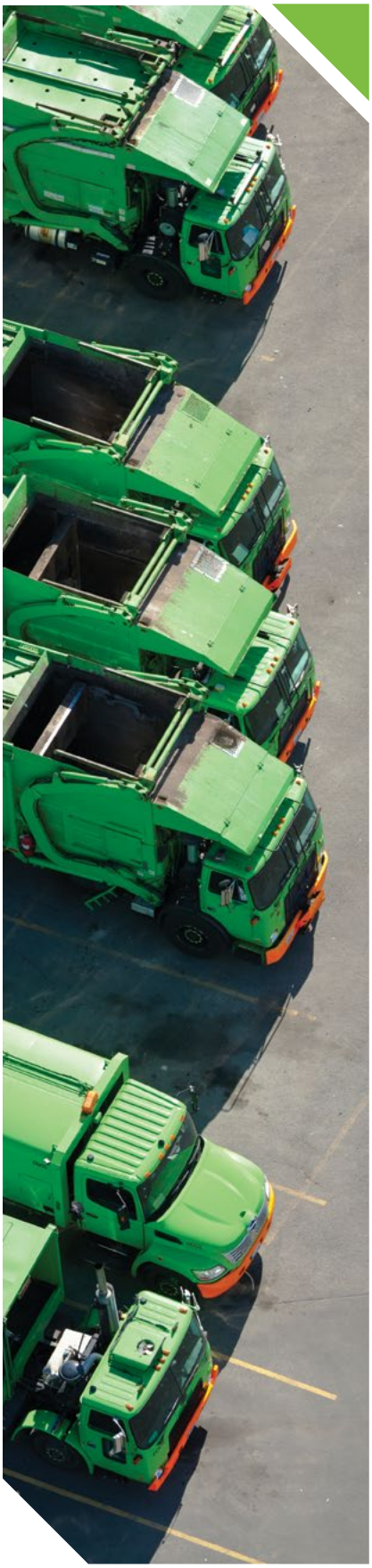
SWANA

SOLID WASTE ASSOCIATION OF NORTH AMERICA

SAFETY TIPS AND TRICKS

KEEPING YOU AND YOUR TEAM SAFE

TABLE OF CONTENTS



INTRODUCTION

SWANA CEO Amy Lestition Burke, MA, FASAE, CAE

Waste and resource management professionals provide vital services to keep our communities clean, sustainable, and livable. As stewards of public health and the environment, you all work hard every day to manage materials in an efficient and responsible manner. This important work has unique safety risks and challenges, leading to unacceptably high injury and fatality rates. From navigating traffic in collection routes and directing traffic at landfills, to operating machinery at a MRF and dealing with high heat, the risks are real—and so are the opportunities to prevent accidents and protect your team.

As I visit SWANA members across North America, I have seen exemplary safety programs and innovative uses of technology and procedures. I have also observed practices in need of improvement. SWANA's goal is to support you in fostering a strong safety culture across your operation and activate safety in your daily work.

This book is designed to provide you with safety reminders for your team throughout the year. Inside, you'll find concise, actionable safety tips organized by key areas of risk. Focusing on areas such as driving safety, safe equipment use, proper use of PPE, and workplace safety culture, these tips are about real-world application and reminders to help safety stick. Many workplace injuries and accidents are preventable, whether it be remembering to slow down in inclement weather, making a quick equipment check, or using the right piece of protective gear.

We believe that safety starts at the top. The way you communicate expectations, model behavior, and respond to challenges directly shapes how seriously your team takes safety. This guide is about helping you lead by example and create an environment where safety is part of the everyday conversation.

SWANA prioritizes safety in our resources, communications, trainings, and advocacy. We encourage you to utilize SWANA's courses, written resources, and international network of members to problem solve across the industry, and help you and your team stay safe, healthy, and ready to return home at the end of every shift. In this industry, safety isn't just good practice—it's the foundation of everything we do.

Regardless of your role, this book is a resource to help you make safety a consistent, practical priority in your work and in your organization. When teams feel physically and mentally safe, they can perform at their best.

We each play a part in improving safety and well-being of our workers, so let's work together to keep safety front and center.

Amy Lestition Burke
CEO, SWANA

1

DRIVING SAFETY

DRIVING SAFETY

1.1 Distracted Driving

Distracted driving leads to thousands of fatalities each year, plus numerous injuries and property damage incidences. Distracted driving is any activity that diverts your attention away from the road. This includes texting or talking on your phone, eating or drinking, interacting with passengers—essentially, anything that takes your focus off driving safely. Waste and recycling workers spend a lot of time behind the wheel and should take steps to ensure safe and focused driving.

- Be aware of inclement weather and traffic conditions. Bad weather requires extra attention.
- Slow down and stay alert in rain, snow, or foggy conditions.
- Review your route, traffic, and weather conditions before getting on the road so you can be prepared.
- Communicate with your team if you have concerns about completing a route safely due to weather or other impacts.
- Stay off your phone. Sending or reading a text takes your eyes off the road for an average of five seconds. At 55 mph, that's like driving the length of a football field with your eyes closed. It only takes a moment of inattention to cause a serious accident. Check your phone before you start driving and wait until you've arrived at your destination to use it again. Cell phone use is one of the most common and dangerous distractions behind the wheel.
- Avoid communication overload. Communication is essential for efficient operations, but messages, calls, and notifications can be overwhelming. Restrict contact while behind the wheel.
- Know your route in advance: Avoid relying heavily on GPS while driving. Review your route before you set off so you can focus fully on the road.
- Understand your vehicle's safety tools and features. Take a moment before driving to review helpful tools like collision warnings, lane assist, or blind spot monitoring.
- Address personal matters off the road. Stress, anxiety, personal problems, and health issues can impair your ability to concentrate and make decisions. Pull over and take care of urgent matters while safely parked.
- Follow policies and procedures. There should be zero tolerance for deliberate risky behavior such as talking on a handheld device or texting while driving. Commit to staying focused.
- Make it personal. Distracted driving can lead to catastrophes. Imagine receiving that heart-wrenching call informing you that a loved one has been involved in a car crash due to distracted driving. Seconds spent glancing at a text message or adjusting the GPS can be life-altering.
- Distracted driving awareness isn't just about avoiding causing an accident—it's also about being prepared to prevent a collision caused by another distracted driver. The ultimate goal is the same for everyone: to return home safely at the end of every shift.

1.2 Safety on Moving Refuse Vehicles

According to the National Institute for Occupational Safety and Health (NIOSH), a division of the Centers for Disease Control and Prevention (CDC), waste and resource management employees face significant risks of injury—and even death—when working near or riding on collection vehicles. March is Brain Injury Awareness Month, an ideal time to take a moment to consider how you can prevent brain-related injuries on the job.

Traumatic brain injuries (TBI) are among the most serious risks, often resulting from falls, motor vehicle crashes, and other incidents. The Brain Injury Association of America reports that five years after sustaining a moderate to severe TBI, more than half of adults who were employed at the time of their injury no longer have a job.

Since many waste and resource management employees work on or near collection vehicles daily, they may become overly comfortable with their routines and vehicle handling. However, even a small oversight can lead to severe injuries or fatalities.

To help ensure the safety of yourself and your coworkers, follow these essential precautions when working near or riding on a collection vehicle:

- Ride only in the vehicle cab or on steps specifically designed for riding.
- Remain inside the vehicle cab until the vehicle has come to a complete stop.
- Never use the riding steps when the vehicle is backing up, traveling faster than 10 miles per hour, or covering a distance greater than 0.2 miles.
- Maintain clear visual contact between the driver and workers on foot when backing up or working near the vehicle.
- Regularly check both side mirrors while backing up.
- Stop the vehicle immediately if visual contact with the spotter is lost.
- Use standard hand signals when backing up.

Experience often leads to confidence, but it should never result in complacency. While the collection of waste and recyclables is an essential role in any community, so too are the employees who carry out the work. Prioritize safety guidelines and ensure that protecting health and well-being remains the top priority for you and your coworkers.

1.3 Arriving at a Destination

Safety is just as critical when a truck reaches its destination as it is on the open road. Whether at a tipping floor, dock, warehouse, or construction site, organizations must prioritize clear communication of operating procedures to ensure worker safety. Keep in mind the following tips for ensuring your safety when arriving at your destination in a heavy truck:

- When possible, park on level ground and as close to the receiving door or site as you can.
- Be aware of the location of other vehicles and workers on foot.
- Make sure the vehicle is fully in park before exiting.
- Place wheel chocks between the tandem wheels of a trailer.
- Never attempt to stop a rolling vehicle.
- Stand clear when unloading to avoid injury from shifting materials.
- When coupling and uncoupling a trailer, set parking brakes and perform a tug test.
- When releasing the fifth wheel or adjusting tandems, maintain firm and stable footing.

By adhering to these safety guidelines, resource management employees can reduce the risk of accidents and ensure the safety of drivers and workers alike. A proactive approach to safety not only protects lives but also fosters a culture of responsibility and care in the workplace.

1.4 Backing Safety

Operating heavy machinery often involves reversing in challenging conditions, such as tight spaces, poor weather, or crowded areas. Pedestrians, loud noise, and limited parking can significantly increase the risks associated with backing up a large vehicle. According to the Occupational Safety and Health Administration (OSHA), dump trucks accounted for the most backover fatalities from 2005 to 2010. Other vehicles involved in fatalities in that time frame included semi-trucks, forklifts, garbage trucks, and pickup trucks.

To ensure your safety and the safety of those around you, follow these essential tips for backing up heavy machinery:

- **Inspect your vehicle before driving:** Check the brakes, horn, backup lights, four-way flashers, and backup alarm to ensure they are functioning properly.
- **Keep visibility clear:** Make sure windows and mirrors are clean and free of dirt, frost, snow, or condensation.
- **Know your blind spots:** Familiarize yourself with your vehicle's blind spots to avoid unseen hazards.
- **Plan your parking strategically:** Whenever possible, avoid parking in spots that require you to back out. Planning your route in advance can help minimize backing situations.
- **Conduct a pre-backing inspection:** Before reversing, exit your vehicle to check for obstacles such as potholes, debris, pedestrians, or slippery areas in your path.
- **Watch overhead:** Be mindful of awnings, pipes, framing, fire escapes, and wires that may pose a threat to your vehicle's height.
- **Warn others:** Use your horn to alert anyone nearby before you begin to back up.

It's crucial to assess all angles, potential obstacles, and environmental factors when reversing. Even spotters, who assist with guiding vehicles, can be at risk if they are using improper hand signals, losing visual contact with the driver, or not wearing high-visibility Personal Protective Equipment (PPE).

Backing may be a routine task in your job, but it requires careful planning and attention. Always review your surroundings, plan your actions when possible, and ensure that safety conditions are met before proceeding. Taking these precautions can significantly reduce risks and help guarantee a safe departure.

Learn more with **SWANA's Backing Best Management Practices Guide***

1.5 Winter Driving

Winter weather brings unique hazards for drivers, especially those whose primary job involves transporting materials.

Staying safe on the job is critical—proper training, equipment, and vigilance are essential, particularly in winter when snow, ice-covered roads, and limited visibility heighten the risks for heavy machinery.

Follow these tips to reduce the risk of driving accidents this winter:

- Check tires regularly for proper inflation, damage, or uneven wear.
- Install winter windshield wipers, replace wipers when needed.
- Keep windows and mirrors clear of snow, frost, and condensation.
- Ensure your brakes provide even and balanced braking. Report and address any issues with brakes – don't wait.

*https://swana.org/docs/default-source/safety-documents/backing_best_management_practices-final.pdf

- Inspect exhaust systems for leaks, making sure clamps and hangers are secure.
- If you must stop at the side of the road or exit your vehicle, wear a high-visibility vest to remain visible to nearby drivers.

Carry an emergency kit in your vehicle with items like:

- Snow brush
- Windshield ice scraper
- Jumper cables
- A bag of sand to help create traction on icy roads
- Water
- Blankets or a change of clothes

Stay safe and prepared to navigate the challenges of winter driving!

1.6 Overcorrecting

Overcorrection happens when a driver panics, steers too hard, and loses control of the vehicle. A common example is when a truck drifts slightly onto the shoulder and the driver overcorrects to get the vehicle back on the road. This can cause a rollover or send the vehicle across lanes of traffic. Follow these tips to prevent dangerous overcorrection.

- Stay alert and drive at a safe speed at all times
- Keep adequate distance between yourself and other vehicles
- If a sudden event occurs (like a tire goes off the road) don't yank the steering wheel
- Maintain control of the vehicle and gradually slow down
- Bring the vehicle to a controlled stop if need be
- Return to roadway when it can be done safely

1.7 How to Prevent and Handle a Truck Fire

Truck fires are increasingly common on the road and can occur for a variety of reasons, including electrical fires, hot loads in collection vehicles, hydraulic fluid leaks, and issues in the engine compartment. Fires pose serious threats to solid waste and resource management employees, as well as bystanders, so take precautions to prevent the occurrence of fires. Check your vehicle before, during, and after driving for potential leaks, odd odors, hot spots, and damage. In a heavy truck, brakes, exhaust, friction, electrical, and chemical elements all contribute to fires, which means every fleet manager and driver must be diligent about fulfilling safety requirements and checks.

The rise of improper disposal of lithium-ion batteries has increased the risk of fires in waste and recycling loads, so ensure you are taking extra precautions for vehicles that are transporting waste, recycling, and composting materials. Fires may evolve rapidly depending on what you're transporting, so you must have an action plan in place before it happens. If a fire has started, safely park the vehicle as far from traffic and pedestrians as possible. Use a fire extinguisher and call emergency services.

Follow these tips to prevent a truck fire:

- Carefully follow your organization's pre-trip and post-trip safety checks.
- While driving, be alert for odd odors, hot spots on tires, and leaks.
- Respond to flickering lights or gauges and listen for unusual sounds.
- Check that tires are properly inflated.
- Do not stand in front of smoking or burning tires. They can explode, harming you and passersby. Stand behind the vehicle or at a distance.

- Before driving, check for oil leaks.
- Verify the brakes work properly.
- Avoid leaving waste materials loaded in trucks overnight.
- Know the four steps to fire extinguisher use: Pull, Aim, Squeeze, and Sweep (PASS). Ensure your fire extinguisher is up to code and accessible. Consider carrying a fire extinguisher on the vehicle if appropriate.

1.8 Handling Hot Loads

Batteries, flares, hot coals, pool chemicals, and fireworks are just a few of the items that can cause truck fires. Review your hot load policy and consider the following:

- Signs of a hot load include smoke, harsh odors, blistering paint, or hot spots on the truck.
- Move the truck to an isolated area with a flat, paved surface if you suspect a hot load.
- Avoid areas with overhead wires or other objects.
- Immediately call the fire department, and if it's a natural gas truck, let them know.
- You may "pack the load" to cut off oxygen if you smell smoke but see no flames.
- Use a dry chemical fire extinguisher if you are trained and it is safe to do so.
- Eject the load and move the truck away from the waste if it can be done safely.
- Consider high winds and wildfire risk when considering whether to eject the load.
- If it is not safe to eject the load, move away from the truck and wait for the fire department.

1.9 Work Zone Awareness

According to the Federal Motor Carrier Safety Administration (FMCSA), large trucks are disproportionately involved in work zone crashes, accounting for nearly one-third of all fatal work zone incidents. Narrow lanes, sudden stops, changing traffic patterns, and uneven surfaces can all contribute to serious hazards.

National Work Zone Awareness Week takes place April 21–25, 2025 in the United States. This annual campaign highlights the dangers present in work zones—especially for truck drivers.

To help you stay safe while driving through a work zone, follow these tips:

- Slow down and adhere to posted speed limits within work zones.
- Stay alert for workers. Many work areas are located close to travel lanes, so reduce your speed and be extra cautious when workers are present.
- Plan ahead and reroute if possible. Use posted detours or consult traveler information resources to find active work zones and alternative routes.
- Watch for pedestrians and cyclists. Work zones can limit where non-motorized travelers can pass, increasing their risk of injury.
- We all have a role to play in making work zones safer—for workers, truck drivers, and every road user.

1.10 Back to School Driving Safety

School days bring more congestion to roads, bike paths, and sidewalks. Drivers should slow down and pay attention when kids are present — especially before and after school — to prevent accidents and save lives.

School Bus Etiquette

- Allow a greater following distance than if you were driving behind a car.
- It is illegal to pass a school bus that is stopped to load or unload children.
- The area 10 feet around a school bus is most dangerous for children; stop far enough back to allow them space to safely enter and exit the bus.
- Be alert; children often are unpredictable, and they tend to ignore hazards and take risks.

Mind the Bicyclists

- Pass slowly and leave 3 feet between your vehicle and the cyclist.
- Check side mirrors before opening your door.
- Be extra vigilant in school zones and residential neighborhoods and by driveways and parked cars.
- Be especially careful when turning. If a bicyclist is approaching in either direction, let the rider pass, and always use turn signals.

Keep Pedestrians Safe

- Don't block crosswalks.
- Yield to pedestrians, school patrol officers, and crossing guards.
- Take extra care to look for children in school zones, near playgrounds and parks, and in all residential areas.
- Never pass a vehicle stopped for pedestrians.

Source: National Safety Council

1.11 Slow Down to Get Around

Transportation incidents are consistently one of the most frequent types of fatal events.

Slow Down to Get Around® (SDTGA) is a national safety campaign that reminds motorists to drive more carefully when near waste and recycling collection vehicles. Being struck by a motorist is a leading cause of death for waste and recycling collection employees, and with proper awareness, can be preventable.

Since the start of the campaign, at least 30 states have enacted some type of SDTGA law to help protect solid waste workers during collection. Promote safe driving within your community by reminding motorists to drive more carefully and “Slow Down to Get Around” when near waste and recycling collection vehicles. Practicing safe driving is everyone’s responsibility, and together we can decrease the injuries and fatalities resulting from dangerous driving. Everyone deserves to make it home from their job safely at the end of the day.

1.12 Railroad Crossing Safety

Professionals in the solid waste and resource management industry spend a lot of time on the road, which includes navigating through railroad crossings. Ensuring your safety around these crossings is crucial for preventing accidents.

Here are some important safety tips for railroad crossings, whether you’re on foot or in a vehicle:

1. Awareness and Precautions:

- Always approach railroad crossings with caution. Be aware of your surroundings and any signs indicating an upcoming crossing. Realize that some crossings may come up unexpectedly.

- Reduce distractions such as using mobile phones or listening to loud music when approaching and crossing railroad tracks.

2. Obey Warning Signals and Signs:

- Respect all railroad crossing signals, lights, bells, and gates. Never attempt to cross if the signals indicate an approaching train.
- Look for and obey all posted signs indicating the presence of a railroad crossing.

3. Stop, Look, and Listen:

- Before crossing any railroad tracks, CDL truck drivers must slow safely to a complete stop and look both ways along the tracks for any approaching trains.
- Listen carefully for the sound of an approaching train, especially if visibility is limited due to obstacles or weather conditions.

4. Maintain Safe Clearance:

Keep a safe distance from the tracks when stopped or parked near a railroad crossing. Ensure there is enough room for a train to pass without endangering your vehicle or yourself.

Do not stop your vehicle on the tracks, even momentarily. If traffic is backed up, make sure you do not get stuck on the tracks. If you must wait, do so at a safe distance behind the designated stop line.

5. Cross Tracks Safely:

- When it is safe to cross, proceed across the tracks at a steady speed without stopping. Avoid changing gears or accelerating/decelerating while crossing.
- Never shift gears or change direction while crossing tracks, as this could cause your vehicle to stall or get stuck.

6. Communication and Training:

- Ensure all employees receive thorough training on railroad crossing safety procedures as part of their initial and ongoing safety training.
- Foster open communication among team members to share information about any encountered hazards or safety concerns related to railroad crossings.

7. Emergency Procedures:

- In the event of an emergency near or at a railroad crossing, immediately contact local authorities and follow established emergency procedures.
- If your vehicle becomes stuck on the tracks, evacuate all occupants and move away from the tracks to a safe location.

8. Reporting and Documentation:

- Report any issues or malfunctions with railroad crossing signals or barriers to the appropriate authorities promptly.
- Document all safety incidents, near misses, or observations related to railroad crossings as part of your organization's safety reporting process.

By following these safety tips and incorporating them into your daily routines, you contribute to a safer work environment for yourself and your colleagues. Remember, practicing caution and respect for railroad crossings is not just about compliance — it's about ensuring everyone returns home safely at the end of each workday.

Together, we can make railroad crossings safer for all industry workers.

Source: U.S. Dept. Of Transportation

2

FACILITY SAFETY

FACILITY SAFETY

2.1 Preventing Struck-By Incidents

Struck-by accidents involve a person being struck by a moving object, vehicle, or equipment, resulting in injuries or even fatalities. To prevent struck-by accidents, it is crucial to implement safety measures and promote awareness. Here are six tips to help prevent struck-by accidents:

- **Establish clearly marked walkways.** Clearly define pedestrian walkways separate from vehicle and equipment paths. Use barricades, signs, and floor markings to designate safe zones, guiding both pedestrians and drivers.
- **Implement traffic control measures.** In areas with vehicular traffic, use appropriate traffic control measures, including signs, signals, and barriers. Ensure that drivers and pedestrians understand and adhere to these controls.
- **Secure loads properly.** Ensure that loads on vehicles are properly secured to prevent items from falling and striking nearby individuals. Use appropriate restraints, covers, and tie-downs to secure materials during transport.
- **Use Spotters when moving large equipment or vehicles in areas with limited visibility.** Spotters can provide guidance to operators and warn pedestrians of potential dangers.
- **Wear high-visibility clothing.** Make sure workers wear high-visibility clothing, such as reflective vests, especially in areas with moving vehicles or equipment. This enhances visibility and reduces the risk of being accidentally struck.
- **Encourage situational awareness.** Emphasize the importance of situational awareness among workers and operators. Encourage them to stay vigilant, minimize distractions, and communicate effectively to reduce the risk of accidents.

By implementing these tips and fostering a safety-conscious environment, organizations can significantly reduce the likelihood of struck-by accidents and create a safer workplace for everyone.

2.2 MRFs

Materials Recovery Facilities (MRFs) play a vital role in recycling systems. MRFs are specialized facilities designed to process and sort dry recyclable materials, such as glass, paper, and plastic bottles. In order to keep workers at MRFs safe and healthy, be aware of potential safety risks and follow the tips below. MRFs can pose various safety risks to workers, including exposure to excessive noise, musculoskeletal strain, dust, harmful airborne substances, and physical hazards such as slips and trips. Addressing these risks is essential to ensure a safe working environment in the recycling process.

Follow the tips below to guard your safety while working at an MRF:

- Always wear assigned PPE, making sure it fits properly and is worn correctly.
- When purchasing machinery, noise levels and placement relative to employees should be considered. Noise reduction tools like exhaust silencers and acoustic screens are essential, and hearing protection must be provided for employees.
- Establish and provide training on fire safety protocols at your facility. Lithium-ion batteries create an extra risk of fires starting and make it important for everyone to be aware of fire risks and to know how to respond.
- Be aware of lockout and tagout devices for equipment and always follow lockout/tagout procedures.
- Avoid leaning, stooping over, twisting, or reaching over conveyor belt workstations, or picking stations, to reduce your risk of a musculoskeletal injury.

- The processes that take place in a MRF can create organic dust—use respiratory protective equipment (RPE) and ensure the effective use of general ventilation.
- Pay attention to poor lighting, handrails, and floor markings to help avoid a slip and trip that may result in injury. Ensure you are wearing suitable footwear.
- Take care not to stand next to stacked bales as they can fall over. Never stack more than four bales on top of each other.

Prioritizing these safety measures not only protects workers but also supports the facility's mission to process recyclable materials efficiently and responsibly. We encourage you to take the SWANA Managing Recycling Systems course to gain essential skills for planning, developing, marketing, and managing a successful recycling program. This training is highly recommended for facility owners, operators, manufacturers, supervisors, and anyone involved in the daily operations of an MRF. **Learn more about the training course here:** Managing Recycling Systems.*

2.3 Baler Safety

To manage large quantities of recyclables, many waste and resource management organizations rely on balers to compact recyclable materials. Balers present safety risks, so only trained employees should operate balers.

Follow the safety tips below to protect yourself when using a baler:

- Regularly inspect the baler and arrange for any needed maintenance.
- Never operate the baler if any defects are found during your pre-use inspection.
- Check for locks or tags on the baler. If present, never attempt to bypass them.
- Always remove the key from the baler switch after use to prevent unauthorized operation.
- Do not place unauthorized materials—such as glass or non-recyclables—into the baler.
- Use caution with baling wire: always point the sharp end downward to reduce the risk of injury.
- Keep the baler and surrounding area clean to prevent slips and other hazards.
- Avoid liquids near electrical components to reduce the risk of electric shock or equipment damage.

Operating a baler may become routine for experienced workers, but even seasoned professionals must remain cautious. Serious accidents can happen when safety procedures are ignored.

2.4 Landfill Traffic Control

Proper traffic management at landfills can reduce accidents and improve customer service. Check out tips to improve safety and manage traffic at landfills:

- Minimize cross traffic and remove blind corners.
- Traffic flow should be arranged to maximize right hand turns.
- Place the entrance on one side of the working face and the exit on the other side to prevent traffic congestion.
- One-way roads keep traffic moving and help eliminate congestion.
- Keep heavy equipment away from public and commercial haulers when possible.
- Consider segregating self-haul vehicles from commercial haulers.
- Traffic signage should be visible, in good condition, and in the right location based on current site activities.

*www.swana.org/training-certification/find-a-course/training-course/managing-recycling-systems

- Signage at the working face and tipping area should be checked daily

Interested in learning more? Take SWANA's **Manager of Landfill Operations (MOLO) Course*** and improve safety at your site.

2.5 Leachate & Condensate Safety

Leachate and condensate are liquid byproducts of landfills, containing contaminants from various waste materials. Proper precautions are essential to ensure employee safety.

Check out our tips for working around leachate and condensate:

- **Wear Appropriate PPE:** Always use the necessary Personal Protective Equipment (PPE) to minimize exposure risks.
- **Enhanced PPE for Pump-Pulling:** During pump-pulling, wear additional protection such as Tyvek suits and nitrile gloves, taping gloves around the wrists for a secure seal.
- **Review Well History:** Before starting work, check whether the well is classified as a "hot well" or has a history of geysering.
- **Use Heat-Resistant Gloves:** When handling elevated-temperature liquids, heat-resistant gloves are essential for protection.
- **Ensure Proper Line Isolation:** All lines must be isolated, and discharge lines should have pressure relief valves in place.
  - If a valve is missing, a plastic bag can help redirect liquids downward, reducing exposure to the face and body.
- **Assess the System and Plan Ahead:** Take time to evaluate the system and outline a safe approach before beginning work.

Exposure to leachate and condensate poses serious health risks. Understanding these dangers and taking the proper precautions can prevent harm. Prioritize safety and always minimize contact with these substances.

Source: Daniel Haslam, Safety Specialist at SCS Engineers

2.6 Landfill Gas Operations Safety

There are specific hazards associated with landfill gas (LFG) operations. Follow these tips to ensure safe LFG operations on the job.

Hazards Specific to Landfill Gas

- **Well Drilling:** Maintain a safe distance from boreholes to prevent accidents like cave-ins. Mitigation strategies include using construction cones, safety fences, and safety grates near boreholes post-drilling.
- **Trenching:** Trenches are essential for connecting wells to form a complete gas collection and control system (GCCS). Deep trenches and the presence of hydrogen sulfide (H2S) pose significant risks. Safety measures such as thorough risk assessment and proper ventilation are crucial in trenching operations.
- **Thermal Oxidation Events:** There is an alarming frequency of subsurface fires on landfills, especially during warmer months. With approximately 8,300 landfill fires occurring annually, according to the US Federal Emergency Management Agency (FEMA), preventive measures such as regular monitoring and early detection systems are necessary to maintain a safe work environment.
- **General Operations and Maintenance Hazards:** Daily operations in LFG facilities such as small excavations, well tuning, and surface emissions monitoring entail various risks. Blind spots, heavy machinery accidents, slips, trips, and falls are among the common hazards.

*www.swana.org/training-certification/find-a-course/training-course/manager-of-landfill-operations-(molo)

Prevent common LFG operational risks and injuries by focusing on the following:

- **Personal Protective Equipment (PPE):** Wear appropriate PPE such as hard hats, safety vests, eye protection, gloves, and respiratory protection gear.
- **Training and Courses:** Participate in training programs to gain the knowledge and skills necessary to identify and mitigate hazards.
- **Health and Safety Plans (HASPs):** Develop and follow detailed HASPs that outline protocols for ensuring safety in LFG operations.
- **Standard Operating Procedures (SOPs):** Establish and follow SOPs for each aspect of LFG operations to optimize processes and minimize risks.
- **Pre-Construction Meetings:** Participate in pre-construction meetings to assess potential hazards and establish preventive measures.
- **Daily Safety Meetings:** Hold regular safety meetings to reinforce safety protocols and address any concerns.
- **Use of Spotters:** Employ spotters to prevent accidents, especially in areas with limited visibility.
- **Use of Caution Tape, Cones, and Fences:** Implement physical barriers and warning signs to outline hazardous areas and alert workers to potential dangers

Source: Justin Boswell, Project Engineer at Tetra Tech.

2.7 Battery Disposal

Fire incidents at waste and recycling facilities continue to rise, largely due to the increased popularity of lithium-ion batteries (LIBs). LIBs are found in everyday items such as phones, smart watches, and hearing aids — which appear more frequently in the municipal waste stream and are often incorrectly placed in recycling bins. When damaged, LIBs can instantly catch fire and explode, injuring workers and destroying equipment and facilities, so follow these safety tips.

2.8 Battery Removal

Once identified, inspect and extract batteries from the inbound material stream. Follow these tips to prevent fires:

- Secure the area and idle all rolling stock while removing the battery.
- Inspect the battery for damage. If undamaged:
  - Tape the battery terminals and place it in a dedicated temporary storage container (typically a metal, 5-gallon ash can).
  - Once placed in the can, scoop vermiculite on top of the battery.

Communicate with your local fire department for additional safety best practices and to ensure the emergency response personnel are familiar with your facilities.

2.9 Damaged Battery Protocol

Damaged batteries should not be stored with undamaged batteries.

- Batteries that are swelling, smoking, leaking, or overheating should be treated with extreme caution.
- Immediately place them in an absorbent, non-flammable material in a cool, dry place.
  - Store outdoors in a noncombustible structure away from other structures, vehicles, and equipment.
  - Recommended storage materials include sand or vermiculite.

SWANA has a Lithium-Ion Battery Workgroup focused on best practices for safety procedures, communications, and public policies related to LIBs. Join today!

Source: Guide for Developing Lithium Battery Management Practices at Materials Recovery Facilities

2.10 Forklift Safety

Occupational Safety and Health Administration's (OSHA's) most recent estimates indicate that between 35,000 and 62,000 injuries occur every year involving forklifts.

National Forklift Safety Day is recognized in the United States on June 13, 2024. The following tips can help keep both forklift operators and others working around them safe.

- Only trained workers should operate a forklift.
- Always wear a seatbelt when the forklift has one.
- Conduct a thorough pre-operation inspection of the forklift.
- Perform regular maintenance on the forklift.
- Never exceed the load limit and make sure it is stable and balanced.
- Maintain a safe speed, especially when turning, reversing, or operating on uneven surfaces.
- Keep a safe distance from platforms and ramp edges.
- Do not raise or lower loads when moving and never drive with the forks up.
- Slow down, stop, and sound the horn at intersections, corners, and wherever sight is limited.
- Always look before backing up and use a spotter if necessary.
- Don't let anyone walk or stand under raised forks.
- Don't give rides or use the fork to lift people.
- Park the forklift in designated areas when not in use.
- Familiarize yourself with emergency procedures.

By following these safety tips, forklift operators in the solid waste and resource management industries can help prevent accidents and injuries on the job.

Source: Warehousewiz.com, "OSHA Forklift Accident Statistics & Facts You Need to Know", By Carllaen Joshua Gonzales 12 Jan 2024

2.11 Landfill Spotter Safety

Landfill spotters have the important job of directing and controlling hauler traffic at the landfill tipping face, keeping drivers and landfill employees safe. This role faces serious safety risks from trucks and landfill equipment. The following tips can help spotters stay safe.

- Spotters should be familiar with **site safety procedures**, understand blind spots at the tipping face, and follow best practices to avoid hazards.
- **Communication** is vital. Where possible, radios are the best way to communicate. Otherwise, develop clear and consistent hand signals for communicating with operators.
- **A physical "safe" zone** for the spotter helps provide protection. Examples include concrete barricades or a small structure, known as a mobile spotter station, to house and protect the landfill spotter.
- **High-visibility safety vests** and other personal protective equipment (PPE) should always be worn when spotting.
- **No scavenging!** It poses a serious risk of injury or death and sets a poor example for landfill customers.
- **Providing clear policies** to haulers and landfill employees that they must follow the direction of the landfill spotter helps keep everyone safe.
- Spotters should make certain that **directional signs and barricades** are located properly. The signs should be clean, well-maintained, and easy to read.

For more information on safety practices at landfills, view the SWANA Applied Research Foundation (ARF) report Employee, Commercial Hauler, Self-Hauler Safety at Landfills*. For building comprehensive knowledge and skills on effective landfill management practices, the SWANA Manager of Landfill Operations (MOLO**) course**** is a top choice.

*https://hub.swana.org/hauler-safety
**www.swana.org/training-certification/find-a-course/training-course/manager-of-landfill-operations-(molo)

2.12 Managing Leachate

Leachate management is a critical aspect of waste and resource management. Understanding what leachate is and how to handle it safely is essential for protecting both workers and the environment. In this issue, we'll define leachate, explore its significance, and provide practical tips for its proper handling.

Leachate is a liquid that forms when water passes through waste materials and extracts dissolved or suspended contaminants. Essentially, it's the result of rainwater or other liquids percolating through waste in landfills, picking up various chemicals, pollutants, and toxins along the way. Leachate can contain a wide range of substances, including heavy metals, organic compounds, and pathogens, making it potentially hazardous to both human health and the environment.

Proper management of leachate is crucial for several reasons:

- **Environmental Protection:** Leachate can contaminate soil, groundwater, and surface water if not managed effectively. Uncontrolled release of leachate can lead to pollution of water bodies, posing risks to aquatic ecosystems and public health.
- **Regulatory Compliance:** Many countries have strict regulations governing the handling and disposal of leachate to prevent environmental contamination. Compliance with these regulations is essential to avoid legal repercussions and maintain the integrity of waste management operations.
- **Worker Safety:** Exposure to leachate can pose significant health risks to workers involved in waste management activities. Inhalation, ingestion, or skin contact with leachate can lead to various health problems, including respiratory issues, skin irritation, and gastrointestinal disorders.
- **Tips for Handling Leachate Safely:** To ensure the safe handling of leachate, waste and resource management professionals should adhere to the following guidelines:
- **Personal Protective Equipment (PPE):** Always wear appropriate PPE, including gloves, safety goggles, coveralls, and respiratory protection, when working with leachate. This will help minimize direct contact with potentially harmful substances.
- **Training and Education:** Provide comprehensive training to employees on the risks associated with leachate exposure and the proper procedures for handling it safely. Ensure that workers understand the importance of following protocols and safety measures.
- **Containment and Collection:** Implement effective containment and collection systems to capture and control leachate within landfill facilities. Regularly monitor leachate levels and quality to detect any anomalies or potential issues.
- **Proper Disposal:** Dispose of collected leachate in accordance with local regulations and guidelines. Treatment may be necessary to remove contaminants before discharge to ensure compliance with environmental standards.
- **Emergency Response:** Develop and communicate emergency response procedures for dealing with spills, leaks, or other incidents involving leachate. Ensure that workers know how to respond quickly and effectively to minimize risks and mitigate potential harm.
- **Regular Maintenance:** Conduct routine inspections and maintenance of leachate management infrastructure, including liners, collection systems, and treatment facilities, to prevent failures or malfunctions that could lead to environmental contamination.

Leachate management is a critical aspect of waste and resource management operations, requiring careful attention to safety and environmental protection. By understanding the nature of leachate, implementing proper handling procedures, and prioritizing worker safety, professionals in the industry can effectively mitigate risks and ensure responsible management of this potentially hazardous substance.

3

NATURAL DISASTER AND INCLEMENT WEATHER

NATURAL DISASTER AND INCLEMENT WEATHER

3.1 Tornado Recovery

According to the National Severe Storms Laboratory (NSSL), a branch of the National Oceanic and Atmospheric Administration (NOAA), about 1,200 tornadoes hit the United States each year, and Canada has the second highest number of tornadoes in the world after the United States. "Tornado season" varies by region, occurring at different times throughout the year. After a tornado, waste and resource management teams play a critical role in the cleanup process. Recovery work presents numerous hazards, including slippery or obstructed roadways, falling and airborne debris such as tree limbs or utility poles, and exhaustion from extended work shifts.

To stay safe while working in tornado-affected areas, consider the following tips:

- Wear appropriate protective gear, such as boots and gloves, when walking on or near debris.
- Stay alert for potential incoming storms and have an emergency plan in place.
- Avoid contact with downed power lines or any objects touching them.
- Prevent heat-related illnesses by drinking cool water, taking rest breaks, and seeking shade or a cool area when necessary.
- Watch out for sharp objects, such as nails and broken glass, that may be scattered on the ground.

When assisting with tornado recovery efforts, always wear the proper Personal Protective Equipment (PPE), as some hazards may not be immediately visible to the naked eye. Waste and resource management professionals play a vital role in helping communities rebuild after natural disasters, but personal safety should always remain a top priority.

3.2 Wildfire Recovery

When working in a region impacted by a recent wildfire, be aware of potential hazards. Wildfire smoke contains harmful chemicals, gases, and fine particles, and risks remain even after the fire is extinguished and cleanup begins. Always wear proper personal protective equipment (PPE) to safeguard yourself during recovery efforts.

Follow these safety tips to protect your health:

- Wear appropriate PPE, including long-sleeved shirts, pants, hard hats, safety glasses, leather gloves, and steel-toed boots.
- Leave immediately if a nearby structure shifts or makes unusual noises, as this may signal a possible collapse.
- Take frequent breaks to prevent exhaustion.
- Treat all nearby power lines and cables as energized until confirmed otherwise.
- Ensure that hazardous materials are handled in accordance with local and state laws.
- Be cautious of chemicals, propane tanks, and other dangerous materials.
- Stay hydrated and rest in shaded areas to prevent heat-related illness.
- Avoid awkward postures that could cause musculoskeletal strain, particularly when fatigued.
- Administer first aid promptly for smoke exposure and burns, even minor ones.

As waste and resource management professionals, we play a crucial role in disaster recovery and debris management. Prioritize your safety to ensure a successful and secure cleanup process.

3.3 Hurricane Prep Tips for Drivers

In areas prone to hurricanes and other types of severe weather, it is critical for drivers to plan for emergencies, prioritize safety, and protect their vehicles — especially as this Atlantic hurricane season is forecast to be especially active. The following checklist can help.

- **Develop a plan.** Outline the actions you'll need to take before, during, and after a storm. The plan should include emergency contact information as well as evacuation procedures.
- **Fuel up.** Hurricanes typically increase fuel demand and disrupt supply, leading to shortages. Ensure vehicles have a full tank of gas and electric vehicles are fully charged before the storm. To combat prolonged power outages, consider having an emergency fueling or charging solution ready before demand peaks.
- **Move vehicles.** Vehicles parked outside or in low-lying, flood-prone areas are at significant risk during hurricanes. Move vehicles to higher ground or indoor locations to protect them from flood damage and falling debris.
- **Have an emergency roadside kit.** Essential items should include road flares or safety triangles, jumper cables, a first-aid kit, a flashlight, a can of tire inflator, basic tools, bottled water, and a blanket.
- **Protect important vehicle items.** Make copies of essential documents such as registration and insurance cards. Store them in a safe place in a sealable plastic bag along with spare keys.
- **Take photos.** Take photos of the vehicle's interior and exterior as proof of its condition prior to the storm in case they are needed for insurance purposes.

Source: Holman

3.4 Disaster Debris Management

Disaster debris can overwhelm solid waste and resource management systems and create unsafe situations, such as flooded roads, decreased visibility, and blocked access to necessary infrastructure.

National Preparedness Month is an annual campaign in the US each September to raise awareness of the importance of disaster and emergency preparedness. While some natural events such as hurricanes and winter storms offer a window of preparation, others can begin suddenly, like fires and tornadoes. To decrease the risk of an inefficient response, ensure you're prepared before disaster strikes.

Advanced planning for debris management keeps communities safe and functional. Review these tips to facilitate quick and efficient disaster response:

- Inform residents of the methods that will be used to collect debris (e.g., curbside collection, community drop-off bins).
- Have a disaster debris plan in place for your team members and make sure that all stakeholders are aware of their roles and responsibilities.
- Address how debris will be managed if there is a lack of landfill capacity.
- Sort construction and demolition waste prior to collection to increase potential for reuse and recycling.
- Evaluate reuse and recycling programs to determine if they can handle disaster-related waste.
- Know the assigned locations for debris staging, temporary storage, and decontamination.
- Address health and safety issues, such as handling animal carcasses and asbestos-containing materials.

3.5 Major Storms

Major storms such as hurricanes can generate significant amounts of waste, posing environmental and public health risks. Proper preparedness is crucial for resilience and recovery efforts.

Having emergency and disaster debris plans in place is important for the safety of workers and the public. Here are some tips to prepare for major storms:

- **Plan and Train:** Create and review emergency response plans with the team and staff.
- **Designate Safe Shelter Spaces:** Make sure the team and staff are aware of and can get to the predetermined safe location(s) before the storm hits.
- **Stock Supplies:** Prepare facilities with sandbags and other safety essentials such as first aid kits.
- **Secure Storage:** Properly secure and store hazardous waste and other materials that could cause further harm if spread or leaked.
- **Share Updates and Information:** Communicate with residents about changes to collection days, facility closures, and encourage them to stay off the roads and keep any waste and recycling carts secure. Make sure they know who to call with questions about waste and debris.
- **Make Post-Storm Preparations:** Develop a plan for cleaning up after the storm including partnering with other local agencies. Review the community's disaster debris management plan if one exists.

Planning and communication are the most important things to consider for keeping everyone safe. Team members should know what to do to protect themselves and their colleagues. In addition, safety planning should be in place to protect the facilities if a storm is approaching.

SWANA stands ready to support communities in safeguarding against the impacts of these powerful storms.

4 HEAT SAFETY

HEAT SAFETY

4.1 General Heat Safety

According to the National Oceanic and Atmospheric Administration (NOAA), global temperatures were above normal this past April. As we head into the warmer months, it's crucial to keep heat safety top of mind—especially for professionals who work outdoors or in hot indoor settings.

The human body typically cools itself through sweating, but excessive heat can overwhelm the body. Heat exhaustion and heat stroke can develop quickly, so it's important to take preventive measures. Follow the tips below to stay safe and healthy while working in the heat this summer:

- **Stay hydrated.** Drink water or other clear fluids regularly—don't wait until you're thirsty.
- **Watch out for others.** Be alert for signs of heat exhaustion in coworkers, such as paleness, muscle cramps, fatigue, nausea, or a rapid heartbeat.
- **Take breaks often.** Rest in shaded areas or, ideally, in air-conditioned buildings to cool down.
- **Use sunscreen.** Sunburn reduces the body's ability to regulate temperature.
- **Dress lightly.** While still wearing required protective equipment, opt for loose-fitting, lightweight clothing and a hat to help stay cool.

Heat-related illnesses can significantly affect both workers and employers, leading to reduced performance, lost productivity, serious illness, and even death. The best defense is simple: water, shade, rest, and prevention.

4.2 Preventing Heat Stress

According to an estimate by the Centers for Disease Control and Prevention (CDC), there are approximately 702 deaths, 67,512 emergency room visits, and 9,235 individuals hospitalized per year due to environmental heat exposure.

As temperatures rise so does the risk of heat stress for solid waste and resource management professionals. These dedicated individuals work tirelessly to keep our communities clean and sustainable, often under the scorching sun or in hot environments.

Recognizing and preventing heat stress is essential for the wellbeing of industry workers and for the efficiency and safety of operations. Explore the risks of heat stress in the solid waste industry and provide practical tips to mitigate them.

Understanding Heat Stress

Heat stress occurs when the body's internal temperature regulation mechanisms are overwhelmed by external heat. In solid waste management, workers are exposed to various factors that can contribute to heat stress, including high temperatures, humidity, radiant heat from the sun, heavy protective clothing, and physical exertion. Prolonged exposure to these conditions can lead to heat-related illnesses such as heat exhaustion, heat cramps, and severe heat stroke.

Recognizing the Signs

It's crucial for both workers and supervisors to recognize the early signs of heat stress. Symptoms may include excessive sweating, dizziness, nausea, headache, rapid heartbeat, weakness, and confusion. Ignoring these signs can lead to serious health consequences and even fatalities. Therefore, swift action is necessary at the first indication of heat-related discomfort.

Preventative Measures
Preventing heat stress requires a proactive approach that addresses both environmental and individual factors.

Here are some strategies that solid waste and resource management professionals can implement:

- **Hydration:** Encourage workers to drink plenty of water throughout the day, even if they don't feel thirsty. Provide access to cool drinking water on-site and remind employees to take regular breaks for hydration.
- **Clothing and Personal Protective Equipment (PPE):** Choose lightweight, breathable clothing that allows for ventilation and moisture wicking. Consider using cooling vests or other PPE designed to reduce heat stress while providing necessary protection.
- **Work Schedule:** Schedule demanding tasks during cooler parts of the day, such as early morning or late afternoon. Rotate workers to minimize prolonged exposure to heat and provide shaded rest areas for breaks.
- **Training and Awareness:** Educate workers about the risks of heat stress and how to recognize its symptoms. Train supervisors to monitor conditions and respond appropriately to signs of distress.
- **Acclimatization:** Allow new employees or those returning from extended leave to gradually acclimate to working in hot environments. Start with shorter shifts and gradually increase exposure over time.
- **Environmental Controls:** Implement engineering controls such as shade structures, fans, or misting systems to reduce ambient temperatures in work areas. Whenever possible, automate or mechanize tasks to minimize physical exertion in hot conditions.
- **Emergency Preparedness:** Have protocols in place for responding to heat-related emergencies, including access to first aid supplies and procedures for seeking medical assistance if needed.

New Workers and Heat Stress
The majority of heat-related deaths occur during a worker's first week. New employees need 1 to 2 weeks to adapt to working in hot conditions. Acclimatation is a key component to heat safety.

- Schedule new workers for shorter periods in hot weather.
- Make sure new workers take more frequent rest breaks.
- New workers should be trained in heat stress, symptoms of heat-related illness, and the importance of rest and water.
- Supervisors and co-workers should monitor new workers closely for heat illness symptoms.

If new workers talk about or show any symptoms, allow them to stop working. Initiate first aid. **Never leave someone alone who is experiencing symptoms!**

Heat stress is a serious occupational hazard that affects solid waste and resource management professionals, especially during the summer months. By prioritizing the health and safety of workers and implementing preventive measures, organizations can reduce the risk of heat-related illnesses and injuries. SWANA encourages its members to remain vigilant and proactive in addressing heat stress to ensure a safe and productive work environment for all. Together, we can beat the heat and continue to serve our communities with dedication and resilience.

SWANA is committed to promoting practices that prioritize the health and safety of industry professionals.

4.3 Proper Hydration

In solid waste and resource management, professionals are often faced with physically demanding tasks, long hours outdoors, and exposure to varying weather conditions. Amidst these challenges, staying hydrated is not only crucial for maintaining optimal performance but also for ensuring overall well-being and safety on the job. Here are some essential tips to help stay hydrated while on the job.

- **Start early and stay consistent.** Hydration should begin before the workday starts. Make it a habit to drink water first thing in the morning and continue to hydrate consistently throughout the day. Aim to sip water regularly rather than waiting until you feel thirsty, as thirst is often a sign that dehydration has already begun.
- **Know your fluid needs.** Understand the level of hydration required for your specific job duties and environmental conditions. Factors such as temperature, humidity, and physical exertion can influence your fluid requirements. In hot and humid conditions, you may need to increase your fluid intake significantly to compensate for fluid loss through sweat.
- **Carry an adequate supply of water.** Ensure that you have access to an adequate supply of clean drinking water throughout your work shift. Carry a reusable water bottle or hydration pack with you and make use of designated hydration stations or rest areas to refill your water container as needed.
- **Avoid excessive caffeine and sugary drinks.** While it may be tempting to reach for caffeinated beverages or sugary drinks for a quick energy boost, they can contribute to dehydration. Limit consumption of caffeinated and sugary beverages, as they can have diuretic effects and increase fluid loss.
- **Take breaks in shaded areas.** When possible, take regular breaks in shaded areas to rest and hydrate. Avoid prolonged exposure to direct sunlight, especially during the hottest parts of the day. Use this time to rehydrate, replenish electrolytes if necessary, and cool down before returning to work.
- **Wear breathable clothing as appropriate.** Choose lightweight, breathable clothing that allows sweat to evaporate and helps regulate body temperature. Proper ventilation and moisture-wicking fabrics can enhance comfort and reduce the risk of overheating and dehydration.
- **Be mindful of signs of dehydration.** Familiarize yourself with the signs and symptoms of dehydration, which may include thirst, dry mouth, fatigue, dizziness, headache, and dark urine. If you experience any of these symptoms, prioritize rehydration and consider taking a break to rest and recuperate.
- **Educate and support each other.** Foster a culture of hydration safety within your team or organization by educating and supporting fellow workers. Encourage open communication about the importance of hydration and look out for signs of dehydration among colleagues. Offer assistance and encouragement to ensure that everyone stays properly hydrated on the job.
- **Prioritize self-care.** Finally, remember that hydration is just one aspect of overall health and well-being. Prioritize self-care by getting an adequate amount of rest, maintaining a balanced diet, and incorporating regular physical activity into your routine. By taking care of your body, you'll be better equipped to handle the demands of your job effectively and safely.

As professionals in the solid waste and resource management industry, prioritizing hydration is essential for maintaining health, safety, and productivity on the job. By following these tips and making hydration a priority, you can help ensure a safer and more comfortable work environment for yourself and your colleagues. Stay hydrated, stay safe, and continue to make a positive impact in your field.

4.4 Signs of Dehydration

As solid waste and resource management professionals, you're no stranger to the challenges of the job – from long hours in the sun to physically demanding tasks. However, amidst the hustle and bustle of your daily responsibilities, it's crucial to prioritize your health and safety, particularly when it comes to staying hydrated.

Dehydration can sneak up on you, leading to serious health complications if left unchecked. To help you stay safe and healthy on the job, here are some essential signs of dehydration to watch out for:

- **Thirst:** One of the most obvious signs of dehydration is feeling thirsty. By the time you feel thirsty, your body is already in the early stages of dehydration. Make it a habit to drink water regularly throughout the day.
- **Dry mouth and lips:** Pay attention to your mouth and lips – if they feel dry or sticky, it's a sign that you need to drink more water. Keep a reusable water bottle with you and take sips frequently, especially during hot weather or intense physical activity.
- **Fatigue and weakness:** Dehydration can cause you to feel tired and weak, impacting your ability to perform your job safely and effectively. If you notice a sudden drop in energy levels, it could be a sign that you need to rehydrate.
- **Dark urine:** The color of your urine can indicate your hydration levels. Dark yellow or amber-colored urine is a common sign of dehydration. Aim for pale yellow or clear urine as a sign that you're adequately hydrated.
- **Dizziness or lightheadedness:** Feeling dizzy or lightheaded, especially when standing up quickly, can indicate dehydration. Take a break, find shade, and drink water to replenish lost fluids.
- **Headaches:** Dehydration can trigger headaches or migraines, making it difficult to focus on your tasks. If you experience frequent headaches while on the job, it's essential to rehydrate and take preventive measures to avoid dehydration.
- **Muscle cramps:** Dehydration can lead to muscle cramps, particularly in hot and humid conditions or during strenuous physical activity. Proper hydration helps prevent cramping and supports muscle function.
- **Decreased sweating:** Sweating is your body's natural mechanism for cooling down, but severe dehydration can reduce sweating, leading to overheating and heat-related illnesses. If you notice a decrease in sweating despite high temperatures, seek shade and rehydrate immediately.
- **Confusion or irritability:** Dehydration can affect cognitive function, causing confusion, irritability, or difficulty concentrating. Stay alert and aware of your mental state and prioritize hydration to maintain optimal performance on the job.
- **Rapid heart rate:** Dehydration can elevate your heart rate as your body works harder to circulate blood and oxygen. If you experience a rapid or irregular heartbeat, it could be a sign of dehydration – take a break, hydrate, and seek medical attention if necessary.

Remember, staying hydrated is not just a matter of comfort – it's essential for your health, safety, and overall well-being. Make it a priority to drink water consistently throughout the day, especially in hot or humid conditions.

By recognizing the signs of dehydration and taking proactive measures to stay hydrated, you can protect yourself from unnecessary risks and ensure that you're able to perform your job to the best of your ability. Stay safe, stay hydrated, and take care of yourselves out there!

5

THE IMPORTANCE OF PPE

THE IMPORTANCE OF PPE

5.1 Noise Exposure

Employees in waste and resource management, especially those who work at materials recovery facilities (MRFs) and around heavy vehicles, may face hazardous noise exposure that can impact their hearing. Fortunately, there are several effective ways to control and reduce workplace noise exposure, ranging from equipment modifications to administrative controls.

Here are some practical tips to help minimize noise exposure in your workplace:

- Require the use of hearing protection such as ear plugs, ear muffs, or both.
- Regularly maintain and lubricate machinery and equipment.
- Use barriers, such as sound walls or curtains, to shield employees from noise sources.
- Enclose or isolate noisy equipment when possible.
- Limit the time employees spend near loud machinery.
- Provide designated quiet areas where workers can take breaks from hazardous noise.
- Increase the distance between employees and noise sources whenever possible—doubling the distance reduces noise levels by approximately six A-weighted decibels (dBA).

Employers are required to measure workplace noise levels and provide free hearing exams and protection for workers. Since noise is one of the most common occupational health hazards, implementing these safety measures is essential to prevent temporary or permanent hearing loss.

5.2 Personal Protective Equipment (PPE)

Hazards exist in every workplace, from sharp edges and loud noise to chemical exposure. Personal Protective Equipment (PPE) is the gear we wear to minimize these risks. Common PPE includes gloves, eye protection, high visibility clothing, hard hats, and more. It is crucial to understand which PPE is appropriate for a given task and what training is required for its proper use. Additionally, employers must comply with regulations that set specific standards for different types of PPE use.

All employees should attend PPE training sessions, learn how to properly care for and maintain their equipment, and promptly inform a supervisor when PPE needs repair or replacement.

Follow these key guidelines to ensure PPE is used effectively:

- **Proper Fit:** PPE should always fit correctly. If multiple types of PPE are worn together, ensure they are compatible. Improperly worn PPE can leave you dangerously exposed.
- **Glove Protection:** Choose gloves based on the task and the material they are made of, considering their physical properties and protection level.
- **Eye Protection:** Safety glasses or goggles shield against flying particles, dust, and potentially infectious materials. Regular prescription glasses are not considered PPE—your eye protection should either include your prescription or fit securely over your lenses.
- **Head Protection:** Hard hats or helmets must fit properly and be adjusted to a secure fit in order to be effective.
- **Hand & Arm Protection:** Options include finger guards, arm coverings, and elbow-length gloves. Consider factors like grip requirements, size, comfort, and the type of contact with potentially hazardous materials (handling, sorting, or immersion).

PPE and proper training go hand in hand, forming the foundation of a strong workplace safety system. Regularly review your training and always ensure you have the right PPE before starting work.

5.3 Eye Protection

Save Your Vision Month is recognized each March to raise awareness about eye health and advocate for measures that prevent eye strain in the workplace. Eye injuries on the job are common, but safety experts and eye doctors agree that proper eye protection can prevent up to 90% of these injuries.

To effectively safeguard your eyes at work, protective eyewear should:

- Be comfortable to wear.
- Not restrict your movement.
- Be durable and long-lasting.
- Be easy to clean and disinfect.

The type of eye protection you choose to wear depends on the nature and the extent of the hazard, the type of exposure, personal vision needs, and other protective equipment being used. There are a variety of different eye protection equipment, such as goggles, face shields, safety glasses, and full-face respirators. Safety glasses, for example, protect against dust, debris, and flying particles in the workplace. Their coverage can be enhanced with slide-on or clip-on side shields or by opting for wraparound-style frames.

If you experience an eye injury, seek medical attention immediately—especially if you have eye pain, blurred vision, or vision loss. Taking proactive steps to protect your vision at work can help prevent serious injuries and ensure long-term eye health.

5.4 Respiratory Protection

May is Clean Air Month. Air quality plays a critical role in workplace safety—whether you're working indoors or outdoors. One common and harmful pollutant is ozone, also known as smog. According to the American Lung Association (ALA), smog is one of the least well-controlled pollutants in the US and also among the most dangerous.

To help protect yourself from the health effects of air pollution, follow these safety tips:

- **Monitor the Air Quality Index (AQI):** The AQI is a tool that tracks levels of smog, particle pollution, and other airborne pollutants. It provides guidance on safe levels of outdoor activity based on current air conditions in your area. Be sure to check the AQI regularly, especially before starting work outdoors.
- **Use Proper Protective Equipment:** When working in environments with poor air quality, it’s essential to wear appropriate respiratory protection. Respirators or face masks are required in areas affected by dust, fog, vapors, and other airborne hazards. The type of respirator needed depends on the specific conditions. Always consult your supervisor to ensure you're using the correct equipment for the job.

In the waste and resource management industry, many professionals spend significant time outdoors, potentially in conditions where air pollution is a concern. Staying informed and properly equipped is key to protecting your health on the job.

5.5 Reflective Gear & High Visibility Workwear

High visibility safety vests and uniforms are essential in certain professions to ensure the safety of workers. These come in various reflective and fluorescent bright colors for use during the day and at night.

It is vital to choose the appropriate clothing that best suits the job environment and conditions. What are the benefits of wearing high visibility clothing at work?

- Helps ensure your employees remain visible at all times.
- Easier for drivers to see workers.
- Creates a safer working environment.
- Reduces the likelihood of accidents.

There is a variety of high visibility clothing to choose from, from safety vests to button-up shirts, that ensures that there is a suitable option for every role and every working condition.

It is essential to carefully consider the specific needs of each worker when selecting the right high visibility clothing for them. Learn more by reading the *Occupational Health & Safety Magazine*.

6

MENTAL HEALTH AND WORKPLACE CULTURE

MENTAL HEALTH AND WORKPLACE CULTURE

6.1 Workplace Violence

Assault ranks as the third leading cause of workplace fatalities, according to the US Occupational Safety and Health Administration (OSHA), with 525 assault-related deaths reported in 2022. Women face a particularly high risk of workplace violence, yet every organization—regardless of gender diversity—should establish policies to safeguard against such threats. Workplace violence encompasses any act or threat of physical violence, harassment, intimidation, or other harmful behaviors that occur within the work setting.

To foster a safer environment, management should provide employees with training on emergency action plans and conduct practice drills, ideally in collaboration with local law enforcement. Additional safety measures, such as panic buttons and security cameras, can further help prevent and manage violent situations. One of the strongest safeguards an employer can offer is a zero-tolerance policy toward violence. Such a policy should extend to all individuals within the workplace, including workers, clients, visitors, contractors, and any others who may interact with employees.

Follow the tips below for additional strategies to protect yourself against workplace violence.

- Attend personal safety training sessions to learn how to recognize, avoid, and de-escalate potentially unsafe situations.
- Participate in workplace hazard assessments to help identify and mitigate risks in your environment.
- Report concerns promptly by informing your supervisor or manager and document all incidents in writing as soon as possible.
- Avoid traveling alone whenever possible, especially in unfamiliar areas or situations.
- Limit the cash and identification you carry to essentials only.
- Inform your employer of any disputes or conflicts before they escalate, to ensure timely support and intervention.

If you experience workplace violence, reach out to a trusted manager or coworker for support. Through proactive staff education and regular training exercises, workplaces can more effectively prevent and respond to incidents, fostering a culture of safety for all. Everyone—regardless of gender, position, age, or race—is entitled to a healthy work environment and deserves to return home safely at the end of each day.

6.2 Workplace Stress

According to the Canadian Centre for Occupational Health and Safety (CCOHS), workplace stress is a harmful physical and emotional response that occurs when job demands exceed an employee's ability to manage them. It can stem from a single event, heavy workloads, shiftwork, employee conflicts, and more. While some stress can be motivating, excessive stress can leave individuals feeling overwhelmed and unable to cope.

Common symptoms of workplace stress include headaches, fatigue, insomnia, digestive issues, and irritability. Fortunately, there are several strategies to help manage stress both at work and in daily life:

- Consider using noise protection, such as earmuffs, in loud environments.
- Ensure your workspace is ergonomically comfortable to prevent physical strain.
- If job expectations are unclear, communicate with management for clarity.
- Seek counseling if you feel your stress is too difficult to manage; there is no shame in improving your well-being.

- Be mindful and supportive if you or your colleagues show signs of stress.

Additionally, engaging in fulfilling activities outside of work—such as starting a hobby or making social plans—can provide a positive balance. Although making the above adjustments can help alleviate stress, some factors may remain beyond your control. In these cases, maintaining healthy habits—such as seeking counseling, taking regular walks, or practicing mindfulness—can support mental well-being and resilience.

6.3 Building a Safety Culture Starts with You

A safety culture is simply the attitudes and behaviors that employers and employees have about safety. But what does that look like?

- Nothing at work is more important than safety – EVER
- Every individual is responsible, no matter their position
- Everyone looks for and shares ways to improve safety on the job
- Management demonstrates safety is the top priority in words and actions
- Stopping work for safety concerns is never frowned upon or punished

6.4 Mental Health

Mental health is important in the waste and resource management industries. This sector plays a fundamental role in maintaining the cleanliness and sustainability of our communities. The nature of the work in this industry can be physically and mentally demanding, emotionally taxing, and often underappreciated. From waste collection and recycling to landfill management and environmental conservation, employees in this field face unique challenges that can impact their mental health. When individuals are experiencing mental health challenges, that can impact their physical safety, particularly when distracted or stressed.

May is Mental Health Awareness Month—an important time to shine a spotlight on the often-overlooked aspect of mental well-being. Mental Health Awareness Month serves as an opportunity to initiate meaningful conversations and implement supportive measures within the solid waste and resource management industry. Here are some steps that can be taken to prioritize mental well-being in the workplace.

- **Education and Training:** Employers can provide mental health awareness training to employees, equipping them with the knowledge and skills to recognize signs of distress in themselves and their colleagues. This can help reduce stigma and encourage open communication about mental health concerns.
- **Access to Support Services:** Companies should ensure that employees have access to confidential counseling services, employee assistance programs (EAPs), and other mental health resources. Creating a supportive environment where individuals feel comfortable seeking help is essential for promoting overall well-being.
- **Workplace Safety Measures:** Implementing robust safety protocols and providing appropriate protective gear can help mitigate physical risks and alleviate some of the stress associated with hazardous working conditions. Prioritizing employee safety sends a clear message that their well-being is valued.
- **Promoting Work-Life Balance:** Encouraging work-life balance through flexible scheduling, paid time off, and wellness initiatives such as access to employee assistance programs can help prevent burnout and improve overall job satisfaction. Recognizing the importance of downtime and relaxation is key to supporting mental health.

- **Fostering a Positive Work Culture:** Cultivating a culture of appreciation, respect, and camaraderie can boost morale and create a sense of belonging among employees. Recognizing and celebrating their contributions can instill a sense of pride and motivation in their work.

By prioritizing mental health and implementing supportive measures, we can create a healthier and more resilient workforce, ensuring that they can continue to perform their vital roles in building sustainable communities for generations to come.

7

REVENTING SLIPS, TRIPS, FALLS, AND STRAINS

PREVENTING SLIPS, TRIPS, FALLS, AND STRAINS

7.1 Ladders and Stairs

Most stairway falls result from a loss of balance, often due to failing to use handrails, according to the Canadian Centre for Occupational Health and Safety (CCOHS). Similarly, the National Association of Safety Professionals (NASP) reports that falls from ladders are a leading cause of workplace fatalities. March is National Ladder Safety Month in the US, a timely reminder of the importance of safe practices when using ladders and stairways at work. Follow these guidelines to reduce the risk of accidents.

Ladder Safety:

- Select the right ladder for the job: use a step ladder for lower heights and an extension ladder for higher areas.
- Check the ladder's duty rating (Light-Duty, Medium-Duty, Heavy-Duty, etc.) and ensure it exceeds the combined weight of the employee, tools, and materials.
- Inspect the ladder before use for visible defects such as missing rungs, worn safety feet, or frayed ropes.
- Maintain three points of contact with the ladder when climbing up or descending down, using two hands and one foot or two feet and one hand.
- Avoid overreaching. Instead, descend and reposition the ladder closer to your work area.
- Be mindful of slippery surfaces when using a ladder.

Stairway Safety:

- Use handrails whenever available.
- When using stairs, avoid carrying objects with both hands.
- Avoid distractions when using stairs, such as using a phone or reading documents.
- Ensure proper lighting in stairwells and report any broken or malfunctioning lights immediately.
- Be cautious of weather changes that can affect outdoor stairways.
- Spills, wet spots, or debris should be immediately cleaned or removed on or near stairs.
- Do not carry bulky items that obstruct your view while using stairs.

While ladders and stairs may seem low-risk—especially for employees who use them regularly—minor oversights can lead to serious injuries. Whether climbing to great heights or stepping down just a few stairs, always prioritize safety first.

7.2 Electrical Safety

Working around live electricity can be a serious hazard, regardless of whether you work with electricity directly or indirectly. May is National Electrical Safety Month, an ideal time to raise awareness of electrical safety and to access additional resources.

There are four primary types of electrical injuries: electrocution, electric shock, burns, and falls. These injuries can result from direct contact with exposed conductors or circuit parts, flame burns caused by materials catching fire, contact burns from electric shocks, and more.

Generators
Generators are commonly used as a replacement source of electricity when electrical power is lost. Most generators are gasoline or diesel powered with internal combustion engines, which turn an alternator to produce electricity. One of the hazards from gasoline or diesel-powered engines is carbon monoxide (CO). Carbon monoxide is a colorless, odorless gas produced

during the operation of gasoline-powered generators. When inhaled, the gas reduces your ability to transport oxygen. Symptoms of carbon monoxide poisoning include headache, nausea and fatigue that can lead to unconsciousness and ultimately prove fatal. The following list contains best practices to identify hazards when operating around power lines and electrical equipment.

- Do not operate generators indoors. Place them outside where exhaust gases cannot enter a home or building.
- Be sure the main circuit breaker is off and locked out prior to starting any generator.
- Turn off generators and let them cool prior to refueling.

Power Lines

Overhead and buried power lines are especially hazardous because they carry dangerously high voltage. Fatal electrocution is the main risk but burns and falls are also hazards.

- Look for overhead power lines and buried power line indicators.
- Stay at least 10 feet away from overhead power lines, and assume they are energized.
- De-energize and ground lines when working near them.
- Use non-conductive wood or fiberglass ladders when working near power lines.

Extension Cords

Worn cords can expose the wires within or loosen the connections on the plug end. Extension cords that are not three-wire type, not designed for hard-usage, or that have been modified are not as durable. These conditions can increase the risk of electric shock.

- Use equipment that is approved by a nationally recognized testing laboratory.
- Do not modify cords or use them incorrectly.
- Use approved wire covers or tape to secure extension cords to walls or floors. Do not use staples or nails.
- Regularly check for damage and do not use cords with exposed wiring.
- Remove cords from receptacles by pulling on the plugs, not the cords.
- Watch for unusually hot or warm outlets, which may indicate unsafe wiring. Consult a qualified electrician if this occurs.

Equipment

Due to the dynamic, rugged nature of construction work, normal use of electrical equipment causes wear and tear that results in insulation breaks, short-circuits, and exposed wires. If there is no ground-fault protection, it can cause a ground-fault that sends current through a worker's body.

Use ground-fault circuit interrupters (GFCIs) on all 120-volt, single-phase, 15- and 20-ampere receptacles that are not on an existing building's permanent wiring or have an assured equipment grounding conductor program (AEGCP).

- Use double-insulated tools and equipment that is distinctively marked.
- Visually inspect all electrical equipment before use. Remove from service any equipment with frayed cords, missing ground prongs, cracked tool casings, etc.

Electrical Incidents

If the power supply to the electrical equipment is not grounded or the path has been broken, fault current may travel through a worker's body, causing electrical burns or death. Visually inspect electrical equipment before use. Take any defective equipment out of service.

- Ground all power supply systems, electrical circuits, and electrical equipment.

- Frequently inspect electrical systems to ensure that the path to ground is continuous.
- Do not remove ground prongs from cord- and plug-connected equipment or extension cords.
- Use double-insulated tools and ground all exposed metal parts of equipment.
- Avoid standing in wet areas when using portable electrical power tools.

7.3 Stretching at Work

Throughout the course of your day, remaining in the same position or engaging in strenuous activity can lead to muscle pain and strain. For drivers, prolonged sitting without movement can cause similar discomfort. Incorporating stretches into your workday can help alleviate tension, improve mobility, and enhance flexibility.

Simple stretches take only a few minutes and are easy to perform during breaks, before re-entering your vehicle, or at the start and end of your shift. Some can even be done while seated in a parked vehicle.

Use our tips below to incorporate stretching into your workday:

- **Start Slow:** Begin stretches at a gentle pace to avoid overstraining tired muscles.
- **Shoulder Shrugs:** Raise your shoulders toward your ears until you feel tension in your neck and shoulders. Hold for 3–5 seconds, then relax your shoulders back to their natural position. Repeat 2–3 times.
- **Neck Relaxer:** Slowly tilt your head to the left, aiming to bring your left ear to your shoulder. Repeat on the right side. Then, drop your chin toward your chest, and gently turn your head from left to right.
- **Back/Side Stretch:** Interlace your fingers and lift your arms overhead, keeping your elbows straight. Lean to the left, then to the right. Alternatively, interlock your fingers behind your back and repeat the motions for a deeper side stretch.

Prioritizing your body's health includes ensuring comfort throughout the day. Persistent tension and discomfort can lead to musculoskeletal issues or chronic pain. Stretching is a simple yet effective way to reduce strain and maintain your flexibility and mobility, whether you're driving long distances, standing for extended periods, or a mix of both. Stay proactive about your well-being and keep your body in motion!

7.4 Sleep & Shiftwork

Sleep is an overlooked but vital component in safety. Proper sleep enables you to be more aware and responsive, keeping you and those around you safe. Shift workers face unique challenges as they must function on a schedule that disrupts the natural 24-hour body cycle. Working long shifts or night shifts can lead to sleep deprivation, exacerbate existing health conditions, and negatively impact personal and family life.

To promote a healthy sleep schedule and reduce fatigue-related hazards, consider the following tips:

- **Maintain regular eating patterns** as much as possible.
- Limit your intake of salt, caffeine, and alcohol, and **focus on a balanced diet** that includes vegetables, lean proteins, whole grains, and fruits. Avoid eating greasy food at night.
- Experiment with work and sleep patterns to **identify a schedule that suits your body's needs.**
- Create an environment conducive to deep sleep by **ensuring your sleeping space is comfortable, dark, and quiet**, especially if you must rest in the daytime.
- **Relax before bed** with calming activities like breathing exercises, reading, or mindfulness. If you struggle to fall asleep, prioritize napping or sleeping later in the day.

By adopting healthy habits and prioritizing restful sleep, you can make the most of your sleep schedule. Small adjustments can significantly improve overall well-being and reduce the risks associated with fatigue. Remember, taking proactive steps to care for your body and mind not only enhances your work performance but also supports your personal and family life. Stay mindful of your health needs and make sleep a priority, no matter your schedule.

7.5 Proper Lifting Techniques

Assess the Load: Before lifting any object, assess its weight and shape. If the load is too heavy or awkwardly shaped, ask for assistance or use mechanical aids like dollies or forklifts.

- **Warm Up:** Before starting your shift or engaging in any lifting activities, warm up your muscles with some light stretching exercises. This will help prepare your body for the physical demands of the job.
- **Use Proper Lifting Posture:** When lifting objects, remember to bend at your knees and not at your waist. Keep your back straight, tighten your core muscles, and lift the object with your legs. This technique reduces the strain on your back and minimizes the risk of injury.
- **Get a Good Grip:** Ensure you have a secure grip on the object before lifting it. Use both hands whenever possible and keep the object close to your body to maintain better control.
- **Avoid Twisting:** While carrying a heavy object, avoid twisting your body. Instead, pivot your feet to change direction and face the way you want to go. Twisting motions can strain your back and lead to injuries.
- **Take Breaks:** If you need to lift objects repeatedly throughout the day, take regular breaks to rest and stretch your muscles. Overexerting yourself increases the risk of injury, so listen to your body and pace yourself accordingly.
- **Stay Hydrated and Maintain a Healthy Lifestyle:** Proper hydration and a healthy lifestyle contribute to your overall physical well-being. Drinking plenty of water and maintaining a balanced diet can help prevent muscle cramps and fatigue.
- **Proper Footwear:** Wear appropriate footwear with good traction to prevent slips and falls while lifting objects. Non-slip shoes or boots can provide stability and reduce the risk of accidents. Steel-toed boots can protect your feet from falling items.
- **Seek Training and Education:** If your employer offers training programs on safe lifting techniques, make sure to participate. These programs can provide valuable insights and tips to help you lift objects safely and prevent injuries.
- **Speak Up:** If you encounter objects that are too heavy or difficult to lift safely on your own, don't hesitate to ask for help. It's important to prioritize your safety and well-being in the workplace.

By following these safe lifting techniques, solid waste management professionals can reduce the risk of injuries and create a safer work environment. Remember, taking care of your body and using proper lifting techniques are essential for staying healthy and productive in your line of work.

7.6 Fall Prevention

Fall prevention applies all the time, not only when working at high heights. Many fatalities occur due to falls at ground level.

Preventing falls at solid waste and resource management sites requires situational awareness, planning, and communication. Workers are at serious risk of injury and even death when at heights of six feet and greater. Follow these tips to improve your chances of preventing a dangerous fall:

- Scan your work areas, including indoor and outdoor sites, and vehicles, for potential trip and slip hazards. Determine how to mitigate those risks.
- Before starting a job, review exactly how it will be done and what safety equipment may be needed.
- Take extra precautions when working in inclement weather, especially when there is risk of ice, wet surfaces, or limited visibility issues.
- Ensure you have the right equipment for the job, such as job-appropriate ladders and scaffolds in good condition.
- Always use personal protection equipment (PPE) and other safety equipment, and ensure you've been trained to use it correctly.
- Examine stair railings, handrails, guard rails, toe-boards, and other fall protection safeguards regularly to ensure they are in good condition.
- Keep floors and other surfaces clean and dry. Post caution signs when floors are wet or slippery.

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