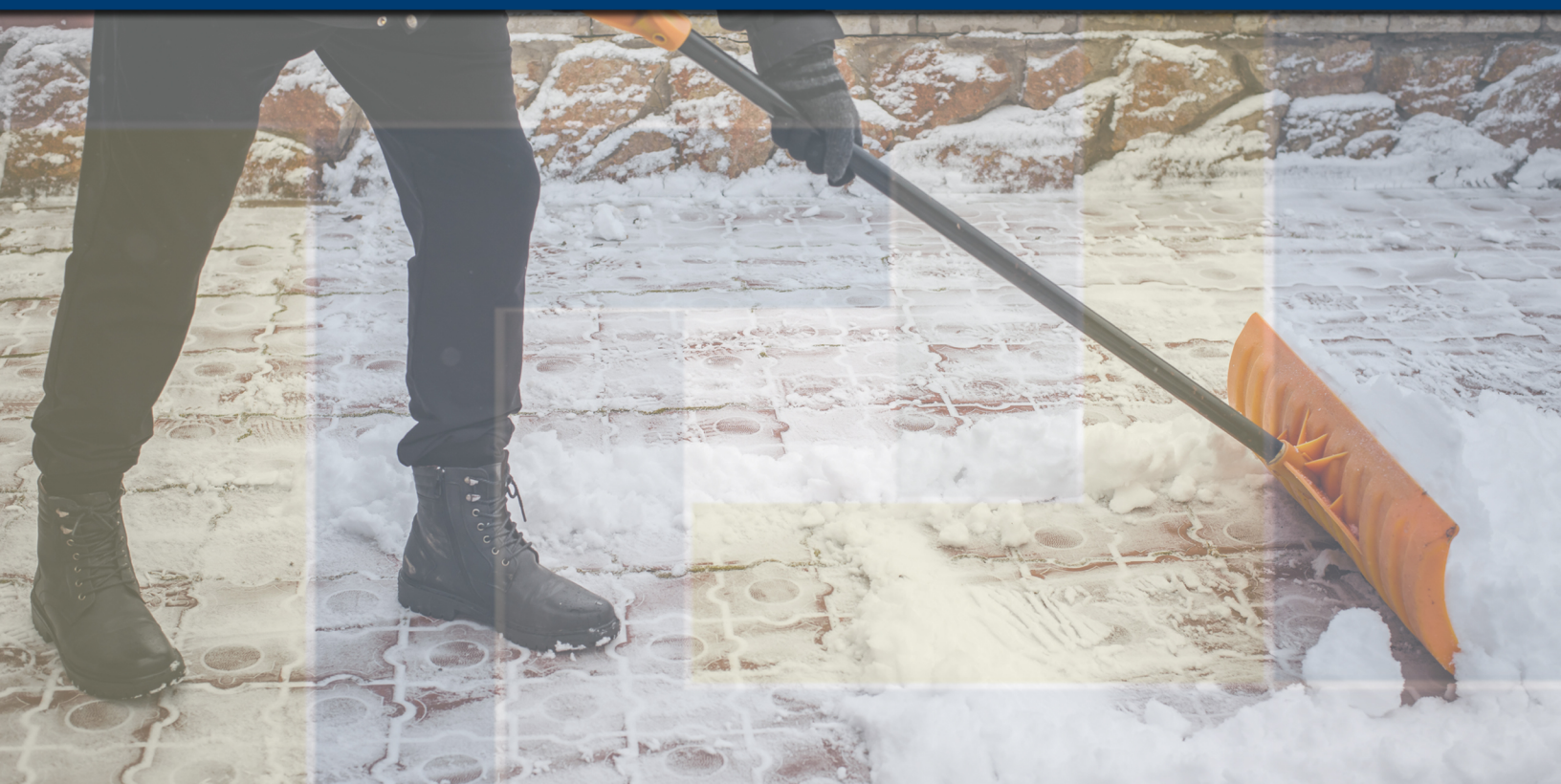
Winter Weather Preparedness

VRSA

Virginia Risk Sharing Association



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What Employers Need To Know

Winter weather exposes workers to many hazards. During the winter season, employers and employees need to be aware of hazards associated with driving, working in cold temperatures, and walking surfaces such as parking lots and sidewalks.

Employees involved in street and road work, construction, utilities, law enforcement, and firefighting are commonly affected. Before winter hits, prepare by providing training on the hazards of the job and the safety measures that will be used to mitigate risk, practice tasks that put employees most at risk, and plan your response.

Understanding Winter Weather

There are numerous ways that winter weather can affect an area and the people who live and work there. Cold temperatures and storms can be deceptive in that injuries and deaths can occur because of indirect exposure. A worker could be injured in an automobile accident due to icy roadways. A maintenance worker could have a heart attack while removing or shoveling snow on a walkway. A road construction worker could suffer frostbite or hypothermia while working outside for a prolonged period. Understanding how winter weather events can affect your workforce is the key to avoiding hazards.

Weather Condition Awareness

Wind: Some winter storms include strong winds that can create blizzard conditions with blinding, wind-driven snow; drifting snow; and dangerous wind chills. These intense winds can bring down trees and poles and can also cause damage to homes and buildings.

Snow: Heavy snow accumulation can immobilize a region and paralyze a city, strand motorists, stop the flow of supplies, and disrupt emergency services. Buildings may collapse, and trees and power lines can be destroyed by heavy snow. In rural regions, homes and farms may be isolated for days, and livestock could be lost.

Ice: Heavy ice accumulations can bring down objects like trees, utility poles and lines, and communication towers. Power can be disrupted or lost for days while utility companies repair the damage. Even a small amount of ice can cause hazardous conditions for motorists and pedestrians.

Cold: Extremely cold temperatures can accompany winter storms and remain after. Infants and the elderly are most susceptible to prolonged exposure to the cold, which can cause potentially life-threatening conditions such as hypothermia and frostbite. Below-freezing temperatures can cause severe damage to citrus fruit crops and other vegetation and cause pipes to freeze and burst inside homes. Exposure to cold can cause frostbite or hypothermia and be life-threatening. What constitutes extreme cold varies in different parts of the country. In the South, near-freezing temperatures are considered extreme cold. In the North, extreme cold means temperatures well below zero.

Wind chill is not the actual temperature, but rather how the wind and cold feel on exposed skin. As the wind increases, heat is carried away from the body at an accelerated rate, driving down the body temperature. Animals are also affected by wind chill; however, cars, plants, and other objects are not.

Preparing Vehicles for Winter

Most employees are exposed to winter weather conditions while driving. A properly maintained vehicle will help to keep drivers and passengers safe by minimizing the risk of mechanical failures during times of cold temperatures. Vehicular breakdowns or accidents can expose the vehicle's occupants to exposure hazards or injuries. Winterizing vehicles can help prevent being stranded in cold or harsh weather and the expense of costly automobile repairs.

Ways to Prepare Vehicles for Winter Weather

- ☐ Check the vehicle's battery and charging system.
- ☐ Clean, flush, and replace antifreeze in the cooling system at least every two years.
- ☐ Check wipers for proper functioning; wiper blades should be replaced every six months.
- ☐ Use cold weather washer fluid.
- ☐ Make sure heaters and defrosters are working properly.
- ☐ Check the tire tread depth.
- ☐ Ensure tire pressure is per the manufacturer's guidelines.
- ☐ Change engine oil and filter at recommended intervals; consider winter-weight oil in a cold climate.
- ☐ Check fuel, air, and transmission filters.
- ☐ Have the vehicle tuned up if one is due as winter can amplify pings, hard starts, or sluggish performance.
- ☐ Test vehicle for carbon monoxide leaks, which can be dangerous during winter when driving with windows closed.
- ☐ Have brakes checked.
- ☐ Make certain that interior and exterior lights are working and properly aimed.

Additional Tips

Always keep the gas tank at least half full to avoid the fuel line freezing.

- Check the pressure in the spare tire.
- Have emergency supplies, including:
  - Snowbrush
  - Jumper cables
  - Flashlight
  - Flares
  - Blanket
  - Extra clothes
  - Candles and matches

Sample Vehicle Supply Checklist

Do You Have?	Yes	No
Properly inflated spare tire with a jack and a lug wrench	☐	☐
Shovel	☐	☐
Jumper cables	☐	☐
Tow chain and tire chains (if appropriate)	☐	☐
Bag of road salt, sand, or cat litter (for tire traction or to melt snow)	☐	☐
Flashlight and fresh batteries	☐	☐
Reflective triangles and/or flares	☐	☐
Ice scraper and snow brush	☐	☐
Extra windshield cleaner	☐	☐
First aid kit, including scissors	☐	☐
Waterproof matches	☐	☐
Battery-powered radio with extra batteries	☐	☐
Blankets, coats, mittens, and hats	☐	☐
Road map and compass	☐	☐
Cell phone and charger	☐	☐
Fluids (to stay hydrated)	☐	☐
Nonperishable high-energy snacks like nuts, dried fruits, and hard candy	☐	☐

Note: This checklist is not designed to supersede existing safety inspection checklists; rather, it should be used only as a general guideline to assess your safety program. You are encouraged to customize this list to reflect the regional needs of your fleet. You are encouraged to share this checklist with your employees in preparing their personal vehicles.

Driving Safely in Winter

Driving in winter requires patience and skill. Slick or icy roads can cause a vehicle to lose traction and result in an uncontrolled skid. The main things to remember when driving in winter weather are to SLOW DOWN and OBSERVE SPACE.

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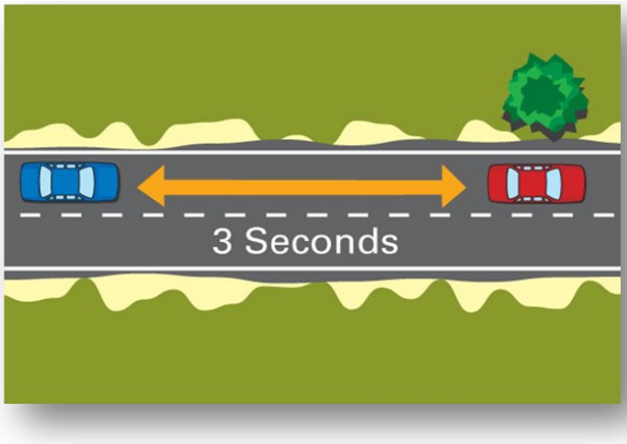

The Three-Second Rule

Choose a landmark such as a road sign.

Once the vehicle in front passes the landmark, count to three seconds.

If you arrive to the landmark in less than three seconds you are too close.

If you arrive after three seconds, you are at a safe distance.

In good driving conditions, maintain a three-second following distance.

- Choose a landmark along the road.
- When the vehicle in front of you passes the landmark, begin counting ("one thousand one, one thousand two, one thousand three").
- If following, using the three-second rule: you should not pass the same landmark until after "one thousand three."

In poor driving conditions (such as snow or ice), maintain a four-or-more-second following distance.

- For each inclement weather condition, add an additional two seconds of following distance. For example, if you have snow and freezing rain, the following distance should be six seconds.

SPACE is the Key!

Driving safely begins with awareness of the vehicle, the conditions of the road, and being alert to other drivers. The most common accidents are rear-end collisions, in intersections, and while backing. The key to preventing accidents is SPACE.

Space: The #1 cause of winter driving accidents is driving too fast. Posted speed limits are for dry conditions; adjust to lower speeds for inclement weather.

Patience: Do your best to keep emotions under control; don't allow other drivers to cause you to act in an unprofessional manner. Aggressive driving will increase your odds of being involved in an accident.

Awareness: Check your mirrors often; about every five seconds. Be aware of sled riders, children playing, and people clearing walkways off the road.

Concentration: Do not get distracted. Avoid activities such as using a mobile phone, reading a map, eating, drinking, or anything that takes your attention away from driving.

Exit: Always leave yourself an "out" by maintaining plenty of room between your vehicle and other vehicles.

Snowplow Safety/Winter Operations

While most people are relaxing at home during a winter snowstorm, municipal snowplow operators take to the roads to clear snow and ice to ensure essential operations such as public safety, as well as public motorists, can travel our communities safely.

Even though we cannot control the weather or other drivers, we can control our internal operations as well as the condition of our vehicle and our driving habits. The following tips will help your organization accomplish the goal of clearing roadways while reducing the risk of a snowplow incident.

- Plow operators cannot be allowed to “learn as they go.” Statistics have shown that snowplow-related accidents involve both new and experienced drivers. All experienced drivers should receive refresher training each year before winter snowplow season begins.

- Before the first storm, have plow operators drive and inspect your plow route to familiarize yourself with narrow roads, guardrail locations, blind spots, raised manholes or storm drains, protruding curbing, rock walls, mailboxes, signs, raised or loose pavement, holes, tree limbs, etc. These should be removed, repaired, or flagged. Create obstacle courses with cones, barrels, and other obstacles to challenge plow operates fine skill motor controls in a controlled environment.

- Determine emergency shift rotations and schedules to ensure plow operators do not work excessive hours without a rest period. Drowsy driving is dangerous because sleep deprivation can have similar effects on the body as drinking alcohol. Being awake for 18 hours straight is comparable to driving with a .05 percent blood alcohol content.

- Inspect (circle check) your vehicle and equipment before you begin your snow plowing duties and periodically as needed throughout plowing operations. Check tires, fluid levels, lights, breaks and chains, plows and wings, spreaders, etc. Also make sure the vehicle frame and body is free of sand and rocks that might cause damage to following vehicles. It is recommended you document the pre-trip inspection.

- Plow operators must dress for the conditions they expect to encounter. Ensure they have extra layers of clothes and spare gloves and socks.

- Plow operators must wear a class 3 high visibility safety vest outside of their winter wear during low visibility conditions whenever there is any potential for struck-by vehicle

hazards. This includes when operators exit their plows on public roadways or parking lots, as well as base locations such as public works where frequent plow and heavy equipment traffic and equipment swaps occur.

- Always wear your seatbelt when in a moving vehicle or piece of equipment!
- Maintain communications with plow operators: Keep in contact with the base and if appropriate, the local police and/or fire department.
- Stop periodically to clear ice and snow completely from windows and headlights, backlights, and warning lights.
- Follow defensive driving practices. Increase your following distance behind other vehicles. Allow tailgaters to safely pass you. Adjust your driving according to road conditions, traffic, visibility, terrain, and other factors.
- Allow for extra stopping distances on ice and snow. Be especially cautious when entering intersections.
- Avoid unnecessary backing. Back up only when there is no other way to get the job done and the plow operator must visually ensure the area is clear before backing. Ensure the audible backup alarm is properly working.

Winter Weather Personal Protective Equipment

While OSHA does not have a specific standard that covers working in cold environments, we have a responsibility to provide our workers with an environment that is free from winter weather-related hazards that may cause physical harm.

Exposure to cold, wet, and windy conditions can be dangerous. Extreme cold conditions exist when the wind chill temperature is at or below -25° F. When working in cold weather, special precautions should be taken.

Dress Properly for the Cold
Dressing properly is extremely important in preventing cold stress. When cold environments or temperatures cannot be avoided, the following will help protect you from cold stress:

- At least three layers of loose-fitting clothing for better insulation
  - The inner layer should be made of wool, silk, or synthetic (polypropylene) to keep moisture away from the body. These hold more body heat than cotton.
  - The middle layer of wool or synthetic for insulation even when wet.
  - The top layer should be an insulated coat or jacket. In other cases, a water- resistant, waterproof, or wind-resistant top layer that allows some ventilation to prevent overheating may be a better option.
- Knit mask to cover face and mouth (if needed)
- Wear a hat that also covers the ears to reduce the amount of body heat that escapes from your head (if you wear a hard hat, you also need to wear a helmet liner)
- Insulated gloves, water-resistant if needed
- One or two pairs of warm socks, ensuring footwear is not too tight
- Insulated and waterproof boots

PPE Considerations
- Wear all required PPE, including goggles, safety glasses, safety vests, and hard hats.
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- If you are working on icy surfaces, consider attachments for shoes that add traction.
- Breathing in cold weather can cause PPE like goggles and safety glasses to fog or frost. When possible, this protection should be separated from the nose and mouth.
- The sun can create hazards by reflecting off snowy, white environments, so you may need eyewear that provides UV and glare protection, too.

Reminders for Workers Wearing PPE
- If you get warm, unzip your coat or jacket, but do not remove your hat and gloves.
- Tight clothing reduces blood circulation. Warm blood needs to be circulated to the extremities.
- Keep ears covered.
- Have a spare change of clothing so you can change if your clothing gets wet.
- If possible, take breaks in heated areas.
- Stay dry; moisture from sweating can increase the rate of heat loss from the body.
- While winter layers can be bulky, do not wear loose clothing that could get caught in machinery.
- Keep an eye out for each other.

Slip, Trip, and Fall Prevention in Winter

More than 50 percent of all slip, trip, and fall occurrences in the United States can be attributed to the conditions of walking surfaces. Any wet condition can make surfaces slippery. In winter, however, conditions such as rain, frost, snow, and ice can make walking treacherous. Planning can minimize the danger of walking hazards related to winter weather.

Outdoor Preparation

- Develop a snow removal policy.
- Monitor weather forecasts for changing conditions, and initiate snow removal policies.
- If contracting with a snow removal company, set clear expectations for keeping parking and walkways clear of snow and ice.
- If utilizing maintenance staff, ensure all necessary snow and ice removal equipment is accessible and in working order; review expectations of staff for clearing snow and ice from parking and walkways.
- Remove obstructions from walkways.
- Shovel and apply ice-melting chemicals to keep walking surfaces clear and dry.
- Ensure that the parking area and walkways are well-lit.
- Mark areas such as steps and ramps as they may not be visible if covered in snow.
- Monitor areas where ice may form and remove ice promptly.
- Beware of thaw and freeze cycles and treat affected walking surfaces accordingly.

Indoor Preparation

- Utilize high-quality, walk-off floor mats at entrances where water or snow accumulates.
- Change floor mats regularly to ensure they remain dry.
- Replace floor mats that may be worn or have curled edges.
- Use wet floor signage.
- Frequently clean and/or mop wet floors.
- Provide an area to store snow boots, umbrellas, or other items that may be wet.

Employee Preparation

- Employees should wear closed-toe, low-heel footwear that is waterproof, insulated, and slip- resistant. Ice cleats can improve traction for walking on ice and snow. (See Footwear Policy Sample.)
- Instruct employees to use walkways that have been cleared of snow and treated for ice. Discourage the use of “shortcuts.”
- Test walking paths for slickness by sliding the shoe across the area before proceeding.
- When walking on snow or ice, all pedestrians should “walk like a penguin.”

    - Walk flat-footed.
    - Take short steps to help maintain balance.
    - Keep your head up and do not lean forward.
    - Move slowly.
- Encourage employees to remove as much snow and ice from their shoes when entering the building to keep wet, slippery floor conditions to a minimum.
- Request employees to report walkways that may need additional snow or ice removal and spreading of salt, sand, or snow melt chemicals.
- Empower employees to take control of their personal safety during winter weather events and to not take unnecessary risks.

Footwear Policy (Sample)

To prevent and/or minimize incidents and injuries resulting from slips, trips, and falls. Identifying appropriate footwear, the goal is to provide a safer work environment for employees.

Acceptable Footwear
- Well-fitting
- Fully enclosed foot and toes
- Closed heelLow heeled
- Solid covering material
- Sturdy construction
- Slip-resistant soles

Prohibited Footwear
- Flip-flops
- Sandals
- Clogs
- Open-toed/open-backed shoes
- Spiked heels
- Platform shoes

Responsibilities
- Employees
    - Wear proper footwear as outlined in the guidelines.
- Supervisors/Managers
    - Ensure that employees wear proper footwear.
    - Enforce footwear policy.
- Leadership
    - Ensure that the footwear policy is effectively communicated to all employees.
    - Ensure that adequate training is provided.

Inclement Weather Policy (Sample)

In the case of inclement winter weather, we commit to continue to provide excellent service to our clients. We also have a responsibility to ensure the safety of our employees. Inclement winter weather includes blizzards, heavy snow, ice storms, and adds the following risks:

- Driving accidents
- Carbon monoxide poisoning
- Hypothermia and frostbite
- Injuries or heart attacks due to the additional activity of shoveling show
- Slips and falls
- Electrocution from downed power lines
- Injury from falling objects such as ice, tree limbs, and power lines
- Falls from snow removal on roofs
- Roof collapse from the additional weight of snow and ice
- Injuries from incorrectly using snow blowers

Management may decide in cases of severe winter weather to open late, close early, or close for the entire day.

In the event the facility will be closed the entire day or have a late opening, all employees will be notified by [email, text, or phone] at least two hours before the start of the workday.

In the event of an early closing, employees will receive notification via [email, text, or phone] at any time during the day. You are encouraged to leave immediately so further deterioration of conditions does not affect your ability to travel safely.

If the facility is closed for the entire day, you will be compensated [for your full day's wage]. In the event of a late start or an early close, you will also be compensated [for your full day's wage] if you work the scheduled hours.

Individual circumstances may impact your ability to come to work. In the event you are not able to work those hours, you may make arrangements with your immediate supervisor to [work from home or take vacation time].

If a form of communication is unavailable because of the weather, so that management is unable to notify employees of the closure, employees are asked to use their best judgment to assess the safety and practicality of the situation. In a regional power outage, for

example, employees will know that the company is likely to have no power.

Winter Weather Terms

The National Oceanic and Atmospheric Administration's (NOAA) National Weather Service urges residents to keep abreast of local forecasts and warnings and to familiarize themselves with key weather terminology.

Blizzard Warning: Issued for sustained or gusty winds of 35 mph or more and falling or blowing snow creating visibilities at or below ¼ mile; these conditions should persist for at least three hours.

Blowing Snow: Wind-driven snow that reduces visibility and causes significant drifting. Blowing snow may be snow that is falling and/or loose snow on the ground picked up by the wind.

Dense Fog Advisory: Issued when fog will reduce visibility to ¼ mile or less over a widespread area.

Freezing Rain: Rain that falls onto a surface with a temperature below freezing. This causes the rain to freeze on surfaces, such as trees, cars, and roads, forming a coating or glazing of ice. Even small accumulations of ice can cause a significant hazard.

Sleet: Raindrops that freeze into ice pellets before reaching the ground. Sleet usually bounces when hitting a surface and does not stick to objects. However, it can accumulate like snow and cause a hazard to motorists.

Snow Flurries: Light snow falling for short durations. No accumulation or light dusting is all that is expected.

Snow Showers: Snow falling at varying intensities for brief periods. Some accumulation is possible.

Snow Squalls: Brief, intense snow showers accompanied by strong, gusty winds. Accumulation may be significant. Snow squalls are best known in the Great Lakes region.

Wind Chill Advisory: Issued when wind chill temperatures are expected to be a significant inconvenience to life with prolonged exposure, and, if caution is not exercised, could lead to hazardous exposure.

Wind Chill Warning: Issued when wind chill temperatures are expected to be hazardous to life within several minutes of exposure.

Winter Storm Warning: Issued when hazardous winter weather in the form of heavy snow, heavy freezing rain, or heavy sleet is imminent or occurring. Winter Storm Warnings are usually issued 12 to 24 hours before the event is expected to begin.

Winter Storm Watch: Alerts the public to the possibility of a blizzard, heavy snow, heavy freezing rain, or heavy sleet. Winter Storm Watches are usually issued 12 to 48 hours before the beginning of a Winter Storm.

Winter Weather Advisories: Issued for accumulations of snow, freezing rain, freezing drizzle, and sleet that will cause significant inconveniences and, if caution is not exercised, could lead to life- threatening situations.

VRSA Resources

Your safety consultants are available to assist with the development of a Fleet Management program that includes sample policies, confidence course materials, and defensive driver training.

VRSA Online University

VRSA provides free and unlimited training through the VRSA Online University. Courses include:

- Tailgate Topics – Winter Driving, *10 minutes*
- Vehicle Care and Maintenance, *10 minutes*
- Winter Driving Safety, *1 hour*
- Winter Driving: Braking and Special Considerations, *15 minutes*
- Winter Driving Comprehensive, *1 hour*
- Winter Driving: Trapped or Stranded Vehicles, *15 minutes*
- Winter Driving: Travel Planning and Techniques, *15 minutes*
- Winter Driving: Weather Conditions & Preparations, *15 minutes*
- Snow Plow Safety, *20 minutes*
- Liability While Driving Government-Owned Vehicles, *15 minutes*
- Defensive Driving, *1 hour*
- Space and Time Management, *15 minutes*
- Tailgate Topics – Drowsy Driving, *10 minutes*
- Tailgate Topics – Hang Up and Drive: Cell Phones + Driving, *10 minutes*
- Emergency Prep & Response: Winter Storms, *15 minutes*
- Preventing Slips, Trips, and Falls, *45 minutes*
- Slips, Trips, and Falls, *20 minutes*

Other Resources

- Special Considerations for Winter, link
- OSHA's Winter Weather Hazards, link
- OSHA Safe Winter Driving, link
- OSHA Cold Stress Guide: Cold Stress Guide, link
- National Weather Service: Winter Preparedness, link
- Dressing for Winter Weather, link
- Be Prepared for Winter Driving, link