

Winter Preparedness

FORWARD
TOGETHER



Winter Work Focus Areas

- **Excavations**

- **Locations:** create plans for excavation locations to avoid double handling stored construction materials
- **Spoil Piles:** should be placed with regard to areas needed for snow storage. Limited ground.
- **Maintenance:** ensure berms are neatly constructed, barricades are placed appropriately, and slopes are cut back. Barricade open holes for future use, and backfill holes that are not needed.

- **Utilities**

- **Mark Permanent Facilities:** Mark the locations of utility lines both above ground and below ground.
- **Protect Temporary Facilities:** Identification and potential relocation if necessary. Cover, raise, heat tape or clad gas and water lines.
- **Plan Winter Access:** to service utilities and facilities.

Winter Work Focus Areas

- **Winter Clothing & Warm-up Exercises**

- Lengthen the time for “Stretch and Flex” in the morning following toolbox, and stretch frequently throughout the day to enhance blood flow to the muscles
- Bring the appropriate winter wear to work and dress for weather conditions. Ensure to warm up at appropriate times after working in the elements
- Dress in layers so that you can adjust the amount of clothing you need as temperatures fluctuate throughout the day

- **Heating Buildings**

- Weatherproof check outlets, panel boxes, electrical cords and connections
- Apply heat tape and insulation to lines and ducts as needed
- Service all furnaces and change filters regularly

- **Working at Heights**

- Reduce slips, trips, and falls at landings by applying sand for traction, and using brooms and shovels to clear paths of travel. Have scrapers available to remove snow and mud from work boots.
- Prepare for snow removal from the tops of buildings and containers. Install restraint lines, tie-off points, and secure access ladders in appropriate locations.
- Determination and implementation of preventive measures

Winter Work Focus Areas

- **Survey all Laydown and Material Storage Areas**
 - Lift materials off ground and stack neatly on dunnage or pallets.
 - Organize and consolidate stock
 - Mark ends with flags or barricades for visibility. Ensure all buried hazards are identified
 - Designate areas between sea cans as either storage areas or walkways to prevent workers from entering areas with hazards buried beneath the snow. Install signs and barricades as necessary
- **Roadways – Maintenance and Upkeep**
 - Smooth out and grade to drain. Ensure sloped areas are sanded to increase traction for vehicles
 - Identify and barricade designated walkways, roadways, and establish traffic patterns. Ensure adequate room for snow removal.
 - Service barricades, open ditches, and establish berms as needed
 - Install flashing construction lights on critical signage
- **Stockpile Winter Gear, Materials and Road Grit**
 - Ensure the above are readily accessible and ordered in sufficient quantities. Store in a dry location to prevent wear and deterioration.
 - Secure delivery sources of materials

Winter Work Focus Areas

- **Environmental**

- Watch for staining beneath equipment, machinery and vehicles during demobilization.
- When fueling, be mindful of small drops of fuels on the ground as they can accumulate to large quantities over time, and are not visible beneath snow
- Ensure all garbage is put in the correct waste bin and not left out to be covered by snow
- Be aware of transient wildlife in the area and report all sightings. Ensure all trailer doors and sea cans are closed when not in use to discourage denning behaviours.

- **Footwear & Traction Control Aids**

- All personnel must wear traction aids on their boots while working outdoors to prevent slips, trips, and falls from icy conditions
- When applicable, traction aids can be removed (ie. indoor locations like e-houses / pump houses, working on bare concrete, and when working on rebar, etc) as long as the hazards associated with not wearing traction aids are documented on all FLHA cards

Materials Storage and Preservation

Reorganize lay down areas to accommodate receiving new materials, equipment, and storing materials needed for future work.



To avoid loss of materials by low exterior temperatures or water damage, ensure that all materials are preserved and stored properly.



Designate laydown areas with hard barricades. Ensure housekeeping practices in these areas are adequately maintained throughout the winter season.



Raise materials off the ground with dunnage to reduce materials becoming frozen to the ground, reduce the need for manual material handling during cold weather, and ease snow clearing.

Sea Can Alley

Designate areas between sea cans as either a footpath or a storage area.



Storage areas between sea cans are not to be used as paths of travel. Ensure these areas are clearly marked and communicated to all personnel.



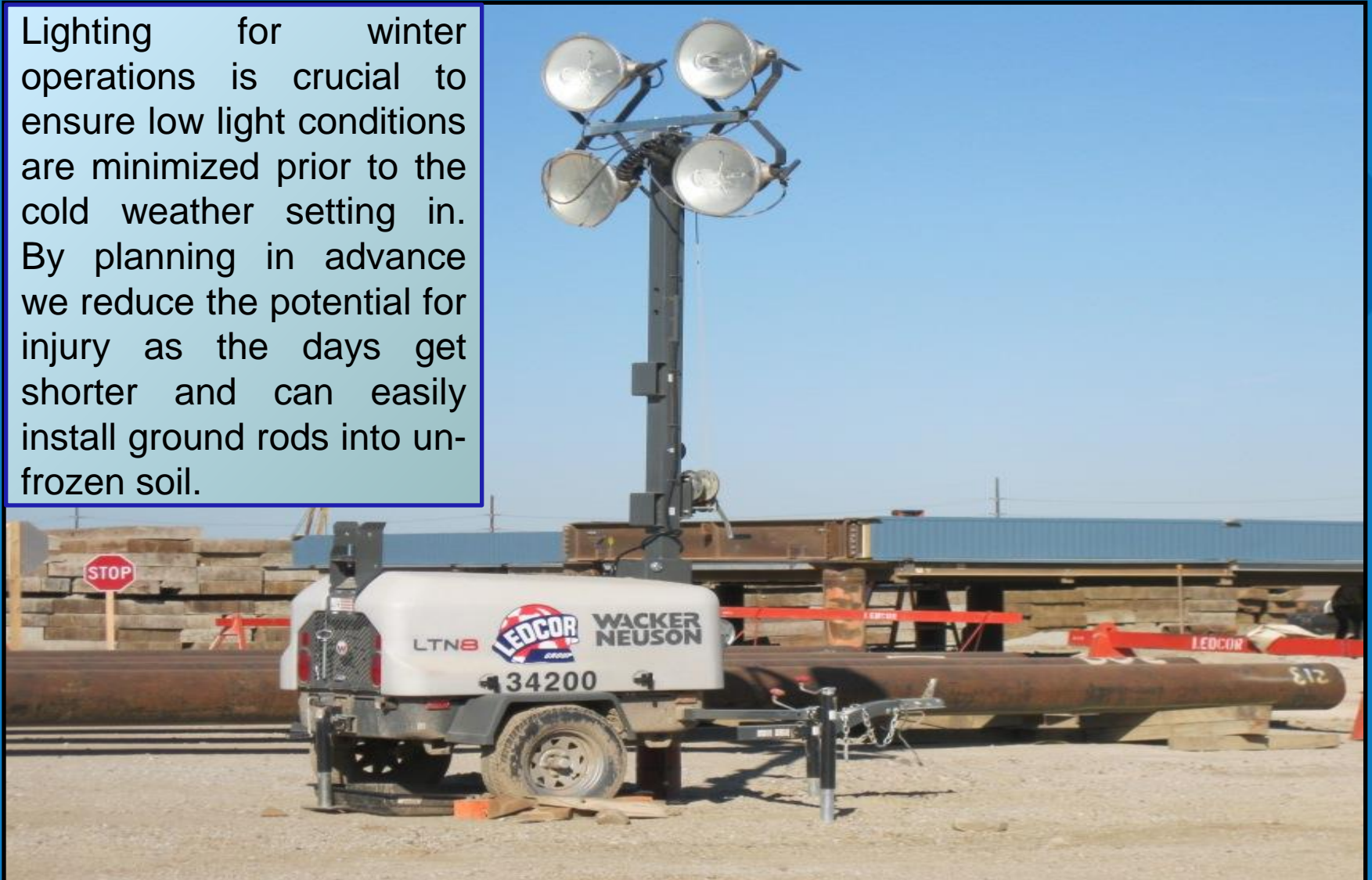
Areas between sea cans that are used as paths of travel must be free of hazards that pose a slip, trip, or fall risk to worker, such as ends of dunnage buried beneath the snow.

Materials between sea cans that may be buried causing a tripping hazard, should be moved and stored in another location prior to the first snowfall.



Portable Lighting

Lighting for winter operations is crucial to ensure low light conditions are minimized prior to the cold weather setting in. By planning in advance we reduce the potential for injury as the days get shorter and can easily install ground rods into unfrozen soil.



Power Sources

Generators and temporary power sources should be installed as needed across the job site. This will assist in eliminating the need for power cords to be run across roadways and access points, which may cause them to become buried in the snow and damaged.



Preserving Utilities: Temporary and Permanent



Snow removal often results in utility strikes because equipment and utilities are unidentified or covered with snow. Manholes, wells, gas service, valves and electrical connections all need to be marked with signs, posted, and flagged.

Critical equipment at a risk of being damaged during snow removal should be flagged, marked, and identified by snow fence or barricades along outer boundaries.



Prepare gas lines by raising them above personnel height or other means of protection like seen in the photo below. Always make sure gas lines and propane tanks are barricaded off and safe from the possibility of vehicle access.



Build exits from trailers to keep employees at grade to reduce slips, trips, and falls



Electrical run neatly, buried, and marked.



Electrical systems well guarded from impact by equipment and pushed snow by using barricades



Air hoses, water hoses, temporary power, and welding services are susceptible to damage by snow removal and freezing into the ground during winter months.



Makeshift wooden style supports may be satisfactory for lighter cables but heavier runs of cable need heavy duty stands to withstand the winter months.



Use cones and tripods to keep electrical wires and hoses up off the ground.

Dedicated Work Area Access

Identify designated walkways and stair access points routinely used by personnel as paths of travel. Avoid using areas that are not designated walkways to. Do not take shortcuts. All walkways must be accompanied by adequate lighting to increase visibility and the use of sand boxes.

Ensure that open holes and ruts where people could fall or twist their body are eliminated.



Place hard barricades around excavations and depressions that are to remain over the winter.

Paths of Travel: Roadways & Walkways



Traffic patterns including roadways and pedestrian walkways must be clearly marked. Place signs and barricades as necessary to designate paths of travel. Allow adequate space for snow removal operations to minimize and reduce the risk to both ground personnel and operators.



Drive to road conditions. Obey all posted traffic signs and site speed limits.

Ensuring roads remain clear of debris will assist in reducing property damage from snow removal, strikes on infrastructure, and waste materials being deposited in snow dump areas.



Buried Hazards



Identify ALL potential buried hazards near pedestrian walkways, roadways, and approved vehicle routes. Ensure they are adequately marked with signage and flags.



Mark openings / holes that will be used throughout the winter. Backfill all holes that will not be in use. Identify excavations with berms, hard barricades, and signs, to prevent unplanned entry by employees and vehicles.



Heating equipment should arrive on site in advance of the cold weather, hang heater hoses to prevent them from freezing into the ground and resulting in a slipping hazard.

Additional equipment required are things like spill pans and fire extinguishers in Orange colour boxes.

Plan appropriately for your needs.



Environmental Preparedness

Spill Remediation

- Manage / clean spills as they happen to prevent snow cover
- Place spill kits upside down in locations that are easy to access
- Check all wash cars and facilities for leaky pipes and working heat trace



Equipment Preparation

- Check all hoses and lines when servicing equipment for winter,
- Replenish spill kits and place in all heavy equipment and trucks
- Clean and reinstall spill containment pans on all portable equipment
- Capture antifreeze and lubricants when changing and adding to reduce spills

Management of Snow Dump

- Remove debris from collected snow before taking snow to dump locations
- Berm dump areas to capture any debris or waste from entering into the spring runoff



Environmental Preparedness

Wildlife

- Secure all waste bins
- Secure openings under trailers to discourage animals from denning behaviors
- Do not feed, approach, or harass the wildlife. Report all sightings on a “Critter Card”.
- Ensure to close all doors to structures to keep out wildlife.



Traction Control / De-icing

- Use treated sand instead of road salt to minimize the risk of slips, trips, and falls due to icy ground conditions
- Exercise caution when walking on sloped access / egress points
- Always wear traction aids when working in winter weather conditions

Ice and Snow Buildup

Heated mods and buildings cause snow to melt and freeze. The result is a buildup of ice, or icicles hanging from edges.



Remove snow and break away ice before it builds up causing a greater hazard and posing a risk to others.



Wind chill Chart

- The wind plays a big part in the temperature outside. The chart below can be used to determine the temperature when both actual air temperature and wind speed are a factor.

		Actual Air Temperature T_{air} (°C)											
		5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50
Wind Speed V_{10m} (km/h)	5	4	-2	-7	-13	-19	-24	-30	-36	-41	-47	-53	-58
	10	3	-3	-9	-15	-21	-27	-33	-39	-45	-51	-57	-63
	15	2	-4	-11	-17	-23	-29	-35	-41	-48	-54	-60	-66
	20	1	-5	-12	-18	-24	-30	-37	-43	-49	-56	-62	-68
	25	1	-6	-12	-19	-25	-32	-38	-44	-51	-57	-64	-70
	30	0	-6	-13	-20	-26	-33	-39	-46	-52	-59	-65	-72
	35	0	-7	-14	-20	-27	-33	-40	-47	-53	-60	-66	-73
	40	-1	-7	-14	-21	-27	-34	-41	-48	-54	-61	-68	-74
	45	-1	-8	-15	-21	-28	-35	-42	-48	-55	-62	-69	-75
	50	-1	-8	-15	-22	-29	-35	-42	-49	-56	-63	-69	-76
	55	-2	-8	-15	-22	-29	-36	-43	-50	-57	-63	-70	-77
	60	-2	-9	-16	-23	-30	-36	-43	-50	-57	-64	-71	-78
	65	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79
	70	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-80
	75	-3	-10	-17	-24	-31	-38	-45	-52	-59	-66	-73	-80
80	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	

Silo Winter Readiness

Are your areas prepared?

Work with your construction managers to assure the areas are ready for winter.