Cold Stress Exposure Control Plan

January 2025

School District 81 Fort Nelson

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Updated: January 2026

1. Introduction

As per BC's Occupational Health and Safety (OHS) Regulation 7.33 – 7.34, the District has conducted an initial broad cold stress assessment and developed a cold stress exposure control plan in order to mitigate the risk of cold stress, injury, hypothermia, and frostbite for employees working outdoors in cold weather.

To inform the development of this Exposure Control Plan, an initial worksite assessment was undertaken in the fall of 2024 to assess the potential risks of cold exposure for staff in different job classifications; this data is contained in *Appendix B, Initial Workplace Assessment.*

This document will be reviewed with outdoor workers annually at each work site; provided to any new staff who perform outdoor work; and reviewed annually and updated as necessary by the District, in consultation with the District's Occupational Health and Safety Committee.

2. Purpose

This program is designed to reduce cold stress whenever practicable and to eliminate the risk of the effects of cold stress to outdoor workers when performing tasks through the institution of risk controls as defined by Worksafe BC, in the following priority order: elimination/substitution, engineering, administrative, and personal protective equipment (PPE).

3. Scope

This program applies to all workers, supervisors, contractors and other personnel who may be exposed to conditions that can cause hypothermia or a cold-related injury to exposed skin. School District 81 does not have any artificially cooled work environments that pose a risk of cold stress injury; as such, this plan and controls apply specifically to outdoor work in cold weather.

4. Definitions

Accidental Exposure	Exposure to cold conditions as a result of an unplanned event.
Artificial Cold Workplace	Indoor work area where the thermal environment is affected by artificially cold means e.g. cold storage rooms, ice arenas.
Cold-Related Injuries	Examples of injuries include frostbite and frostnip.
Cold Stress	Condition affecting the human body caused by conditions that cause the core body temperature to fall below 36°C (96.8°F) or that cause cold-related injury to exposed skin.

Conduction	Transfer of heat through direct contact. Water conducts heat away from the body faster than air because it has a greater density, therefore greater heat capacity. Steel conducts heat away faster than water.
Convection	Heat loss from the surface of the body to moving air or water.
Dry Bulb Temperature	Temperature measured by a thermal sensor, such as an ordinary mercury-in-glass thermometer, that is shielded from direct radiant energy sources.
Heat Evaporation	Heat loss through sweating and breathing. Evaporative heat loss accounts for 20% of the body's normal total heat loss.
Hypothermia	A decrease in the core body temperature to a level at which normal muscular and cerebral functions are impaired. This process begins when the core body temperature drops below 36°C (96.8°F).
Radiation	The transfer of infrared, or heat radiation, from a hot object to a cold object without direct contact. In winter, with a normal body temperature of 37°C (98°F), we lose heat to the environment through radiation.
Wind-Chill Index	An index measurement of the actual rate at which heat is lost because of the effect of the wind. Values for wind-chill are expressed in watts per m2. Also known as the wind-chill factor.
Wind-Chill Temperature	A temperature index that tells you how cold the temperature of the air feels because of the wind; it is the ambient air temperature plus the "wind chill factor" or "wind chill index." Also known as equivalent chill temperature or wind chill temperature. ***Unless otherwise specified, temperatures referred to in this document are not the ambient air temperature, but rather the wind-chill temperature.***
Vibration White Finger (VWF) Disease	Prolonged exposure to vibrations (e.g. chainsaw or jackhammer) in cold conditions accelerates the onset of this vascular disease, which can cause numbness, loss of mobility, weakness, and pain in the extremities. It is a secondary form of Raynaud's Disease/ Phenomenon.

5. Responsibilities

5.1 Employer (Secretary Treasurer or Designate)

- Identify and assess areas, tasks, and occupations where there is potential for cold stress.
- Implement and/or provide controls (engineering, administrative, or personal protective equipment) to minimize cold stress.
- Provide training and education regarding cold stress, including early signs and symptoms of cold stress disorders.
- Maintain records of the cold stress assessments and worker training.
- Ensure that there is adequate first aid coverage and establish emergency procedures to deal with serious conditions such as hypothermia.
- Ensure that a cold stress assessment is performed if a worker is exposed, or may be exposed, to conditions that could cause hypothermia or cold-related injuries.
- Provide administrative controls to reduce exposure to the risk of hypothermia or cold-related injuries when engineering controls are not practicable.
- Ensure that workers who are at risk of cold-related disorders are adequately educated and trained. Training must include recognition of signs and symptoms of cold-related disorders, rewarming procedures and first aid treatment, proper use of clothing, proper eating and drinking practices and safe work practices appropriate to the work that is to be performed.

5.2 Supervisors

- Ensure that workers under their direct supervision are made aware of all known or reasonably foreseeable cold hazards in the area in which the task is to be performed.
- Ensure the health and safety of all workers under his/her direct supervision.
- Ensure that workers use safe work practices in relation to working in a cold environment.
- Increase the frequency of person-check intervals for any crews working in isolated areas at temperatures of less than -30°C.
- Provide protective clothing for workers as required by collective agreements and applicable provincial regulations.
- Provide a heated shelter or heated vehicle for workers when work is required to be performed in an equivalent chill temperature less than -7°C.

5.3 Workers

- Adhere to all control measures or work procedures that have been designed and implemented to reduce exposure to cold stress.
- Follow instructions to enter a heated shelter or heated vehicle if they exhibits signs and symptoms of impending hypothermia.
- Provide and wear adequately insulated outer clothing.
- Take precautions to avoid getting wet in winter.
- Wear eye protection if work takes place outdoors in snow or ice covered terrain and if there is excessive ultraviolet light, glare or blowing ice crystals that present a risk of injury to the eyes.
- Wear protective gloves, mittens, footwear, head covering and/or face covering appropriate to the hazard if there is a danger of frostbite to the extremities.

5.4 OHS Committee and Staff Safety Representatives

- Advise the employer on procedures and effective systems to correct unsafe situations due to cold.
- Evaluate workplace conditions with workers and supervisors to determine the appropriate personal protective equipment required, as applicable.
- Deal with worker complaints regarding hazardous cold conditions.
- Cooperate in incident investigations and worksite inspections.

6. Cold Stress Injuries

There are four main ways in which workers could experience cold stress from exposure to cold temperatures (*Worksafe BC*):

- Working outside during cold weather
- While working outside, being exposed to wind, which pulls heat away from the body
- Wet clothing, from sweat or water
- Fatigue, which makes it harder for the body to create heat

Environmental hazards, job/task related hazards, and personal risk hazards can all increase the risk of receiving a cold-related injury (*Municipal Safety Association*):

- **Temperature**: Hypothermia can develop with prolonged exposure under 10°C.
- **Sweating/Precipitation at 10°C or less:** Sweating, rain or snow will make a worker's clothing wet, and this increases a workers' rate of cooling.
- **Wind at 10°C or less:** Increasing wind speed increases a workers' rate of cooling.
- **Cold Equipment:** Workers working with equipment in freezing temperatures may be at increased risk.
- **Personal Factors:** Workers' health status may influence their capacity to withstand cold environments.

The most common cold-related injuries associated with working in cold environments are hypothermia and frostbite. Severe cold stress can lead to hypothermia; this is a gradual process, and because it happens slowly, workers may not realize they are in danger until it's too late. Feeling cold is the most important warning sign to note. If workers feel cold, their bodies are likely losing heat faster than their bodies are making it.

6.1 Hypothermia

Hypothermia occurs when the core body temperature drops below 36°C. It is important to be able to recognize the key warning signs for each of the three stages of hypothermia:

Stages of Hypothermia		
Stage	**Core Temperature**	**Signs and Symptoms**
Mild Hypothermia	Drops by 1-2 °C (1.8 or 3.6 °F) *Note: this is the amount below 36°C*	• Feel chilled/cold sensation • Goose bumps • Unable to perform complex tasks with hands • Poor judgment, muddled thinking and abnormal behavior • Bouts of shivering • Hands may be numb
Moderate Hypothermia	Drops by 2-4 °C (3.8 or 7.6 °F)	• Violent shivering or shivering has stopped altogether • Inability to think and pay attention (e.g. victim cannot understand what is being said) • Mild confusion although may appear alert • Slow, shallow breathing • Slurred speech • Poor body co-ordination (e.g. stumbling gait) • Slow, weak pulse
Severe Hypothermia	< 32°C (< 89.6°F)	• Shivering has stopped • Unconsciousness • Little or no breathing • Weak, irregular or non-existent pulse • Dilated (wide open) pupils • Exposed skin blue and/or puffy • Possible similarity of symptoms to clinical definition of death

Source: BC Municipal Safety Association

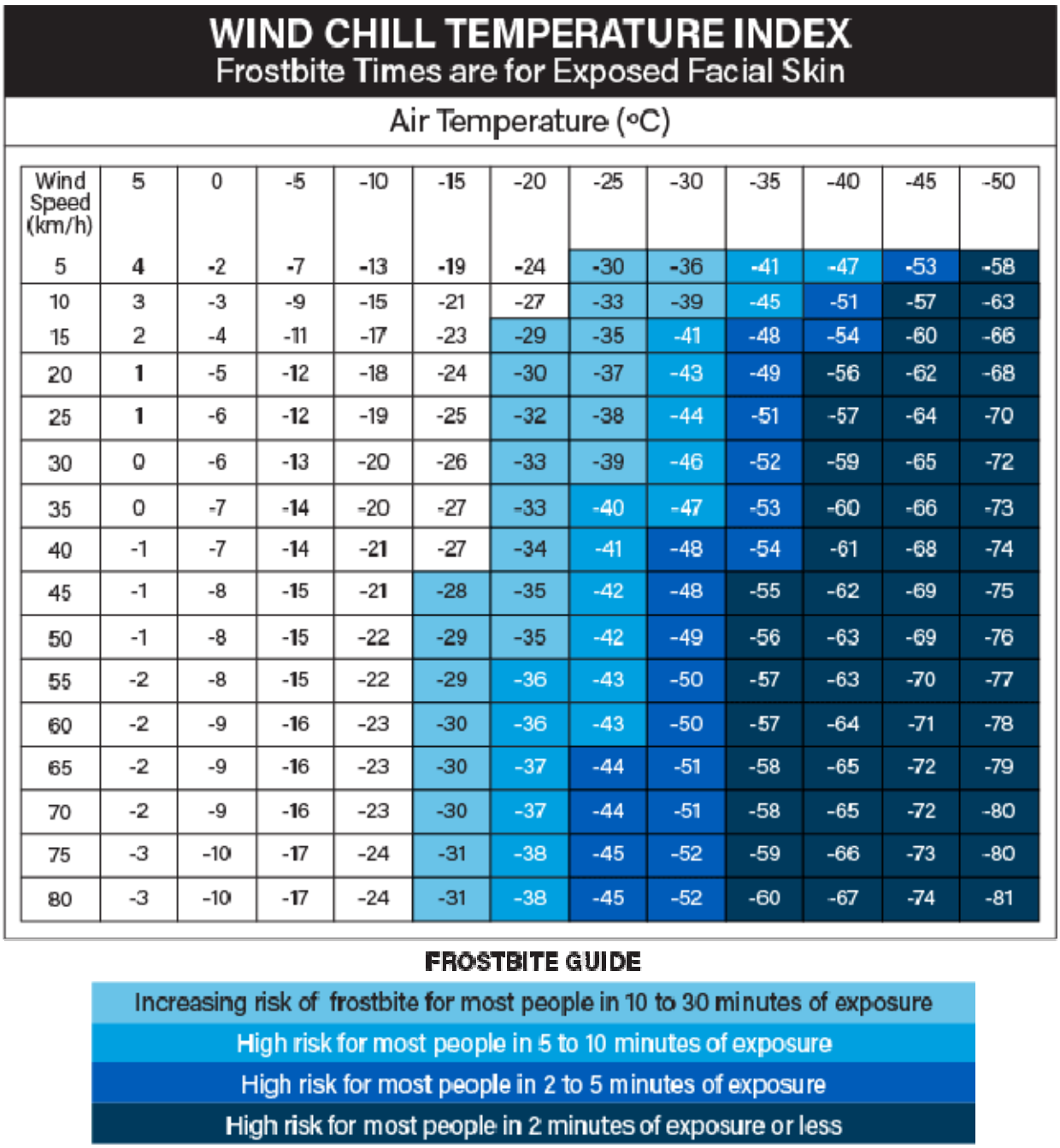
In the event that a worker exhibits signs and symptoms of hypothermia as a result of accidental exposure, co-workers will follow procedures for the treatment of hypothermia or cold-related injuries. Call 9-1-1 immediately, and the designated worksite First Aid Attendant should begin First Aid Treatment for hypothermia (see *Appendix C, First Aid Treatment for Hypothermia*).

6.2 Frostbite

Frostbite most typically affects the ears, cheeks, nose, fingers and toes, especially on exposed skin. It is important to be able to recognize the signs and symptoms of frostbite:

Stages of Frostbite	
Stage of Frostbite	**Signs and Symptoms**
Frostnip	• Freezing of the top layers of skin tissue • Skin appearance: white, waxy. Top layer of skin feels hard & rubbery • Deep tissue is still soft • Numbness
Superficial Frostbite	• Skin appearance: white • To touch: wooden feeling throughout affected area • All layers of skin affected • Numbness, sensation may be absent
Deep Frostbite	• Skin appearance: white • To touch: wooden feeling throughout affected area • Includes all layers of the skin • May include freezing of muscle and/or bone

The risk of frostbite is dependent on the length of time in a cold environment, the temperature, and the wind speed. The following table (next page) identifies the wind chill factor depending on the outdoor temperature and wind speed, and the associated level of risk based on the time it can take for frostbite to occur on exposed skin.



Source: Canadian Centre for Occupational Health and Safety, Adapted from Threshold Limit Values (TLV) and Biological Exposure Indices (BEI) booklet: published by ACGIH, Cincinnati, Ohio, 2024, page 226.

In the event an employee exhibits the signs and symptoms of a frostbite injury, the designated site First Aid attendant should conduct an assessment and treat as necessary (see *Appendix D, First Aid Treatment for Frostbite*)

6.3 Musculoskeletal Injury

Working in cold environments without proper controls can also increase the risk of musculoskeletal injury (MSI) by causing muscles and joints to become stiff, reducing flexibility. This can increase the risk of strains and sprains, particularly for maintenance workers.

Cold temperatures can constrict blood vessels, reducing blood flow to muscles and extremities and causing numbness in the fingers. This impaired muscle function can affect grip strength and increase the risk of injuries where workers rely on a strong and precise grip to control equipment.

Cold weather often brings snow and ice, creating slippery surfaces. This also increases the risk of slips, trips, and falls, which can result in various injuries including sprains and strains.

Risk of muskoskeletal injury is increased if:

- temperature is below 16°C
- workers are exposed to cold temperatures for long durations without a chance to warm up
- workers hands are exposed to cold water
- workers are required to be relatively stationary

Below 16°C, dexterity can be reduced for tasks that require bare hands, leading to feelings of stiffness. Contact with metallic surfaces below 7°C can further reduce dexterity. Below 4°C, touch sensitivity can be reduced. All of these situations can result in workers pressing harder, increasing the risk of contact stress.

7. Risk Controls

7.1 Temperature Monitoring

The Canadian Centre for OHS recommends monitoring temperatures below 16°C. Temperatures can be monitored by supervisors and/or designated staff using various platforms (such as phone weather apps) that use data from the Fort Nelson airport weather station; the local radio station; or thermometers and conditions at the work site.

7.2 General Guidelines for Working In the Cold

The following table sets out some general precautions that employees should take for different cold temperature ranges.

Wind Chill Hazards and What to Do			
Wind Chill	**Exposure Risk**	**Health Concerns**	**What to Do**
0 to -9	Low risk	• Slight increase in discomfort	• Dress warmly • Stay dry
-10 to -27	Moderate risk	• Uncomfortable • Risk of hypothermia and frostbite if outside for long periods without adequate protection.	• Dress in layers of warm clothing, with an outer layer that is wind-resistant. • Wear a hat, mittens or insulated gloves, a scarf and insulated, waterproof footwear. • Stay dry. • Keep active
-28 to -39	High Risk: exposed skin can freeze in 10 to 30 minutes	• High risk of frostnip frostbite: Check face and extremities for numbness or whiteness. • High risk of hypothermia if outside for long periods without adequate clothing or shelter from wind and cold.	• Dress in layers of warm clothing, with an outer layer that is wind-resistant • Cover exposed skin • Wear a hat, mittens or insulated gloves, a scarf, neck tube or face mask and insulated, waterproof footwear • Stay dry • Keep active
-40 to -47	Very high risk: exposed skin can freeze in 5 to 10 minutes (In sustained winds over 50 km/h, frostbite can occur faster than indicated.)	• Very high risk of frostbite: Check face and extremities for numbness or whiteness. • Very high risk of hypothermia if outside for long periods without adequate clothing or shelter from wind and cold.	• Dress in layers of warm clothing, with an outer layer that is wind-resistant. • Cover all exposed skin. • Wear a hat, mittens or insulated gloves, a scarf, neck tube or face mask and insulated, waterproof footwear. • Stay dry • Keep active.

-48 to -54	Severe risk: exposed skin can freeze in 2 to 5 minutes (In sustained winds over 50 km/h, frostbite can occur faster than indicated.)	• Severe risk of frostbite: Check face and extremities frequently for numbness or whiteness. • Severe risk of hypothermia if outside for long periods without adequate clothing or shelter from wind and cold.	• Be careful. Dress very warmly in layers of clothing, with an outer layer that is wind-resistant. • Cover all exposed skin • Wear a hat, mittens or insulated gloves, a scarf, neck tube or face mask and insulated, waterproof footwear. • Be ready to cut short or cancel outdoor activities. • Stay dry. • Keep active.
-55 and colder *	Extreme risk: exposed skin can freeze in less than 2 minutes	• DANGER! Outdoor conditions are hazardous.	• Stay indoors.

Source: CCOHS and Environment Canada.

** Note: While these are general guidelines, according to 7.4 non-emergency outdoor work should cease below -43°C.*

7.3 Safe Work Practices

Workers should employ a “buddy system” to keep a regular watch on each other, including faces, cheeks, and ears for signs of frostnip, frostbite and behavior for indications of impending hypothermia.

Keep a regular “self-check” for cold areas, wet feet, numbness or loss of sensation.

If, at any time, a worker discovers a cold-related injury, they will stop work and re-warm the area, unless doing so places them at a greater risk. The injury will be reported immediately to their supervisor.

For work at or below -7°C, work should include:

- adjusting the pace or rate of work so that it is not too high and cause heavy sweating that will result in wet clothing
- time for new employees to become accustomed to the conditions
- adjustments to include the weight and bulkiness of the clothing when estimating work performance and weights to be lifted by the worker
- arrangements to minimize sitting and standing still for long periods

7.4 Heated Shelters

If the wind chill temperature is -7°C or below, workers will have access to a heated shelter (building or vehicle) near the work area. Workers will be encouraged to use these shelters at regular intervals depending on the equivalent chill temperature.

Workers entering the shelter should remove their outer layer of clothing and loosen other clothing to let sweat evaporate as they warm up. In some cases, a change of clothing may be necessary.

7.5 Warm-up Breaks

Additional warmup breaks should begin when the ambient temperature reaches -26°C with winds of 16km/h or greater (approximately -35°C windchill temperature). All non-emergency work should stop at a temperature of -43°C (whether ambient without wind, or the windchill temperature). Warmup breaks should be for ten minutes in a warm environment.

With adequate and dry protective clothing, the following guidelines are provided for additional warm-up breaks, depending on the air temperature and wind speed:

Sunny sky air temperature		No noticeable wind		Wind 8 km/h (5 mph)		Wind 16 km/h (10 mph)		Wind 24 km/h (15 mph)		Wind 32 km/h (20 mph)	
°C below zero*	°F below zero*	Max. work period	Number of breaks**	Max. work period	Number of breaks**	Max. work period	Number of breaks**	Max. work period	Number of breaks**	Max. work period	Number of breaks**
26 to 28	15 to 19	120 minutes	1	120 minutes	1	75 minutes	2	55 minutes	3	40 minutes	4
29 to 31	20 to 24	120 minutes	1	75 minutes	2	55 minutes	3	40 minutes	4	30 minutes	5
32 to 34	25 to 29	75 minutes	2	55 minutes	3	40 minutes	4	30 minutes	5	Non-emergency work should stop	
35 to 37	30 to 34	55 minutes	3	40 minutes	4	30 minutes	5	Non-emergency work should stop			
38 to 39	35 to 39	40 minutes	4	30 minutes	5	Non-emergency work should stop					
40 to 42	40 to 44	30 minutes	5	Non-emergency work should stop							
43 and below	45 and below	Non-emergency work should stop									

*All temperatures are approximate.

**Includes a normal break after two hours and the number of additional warm-up breaks needed.

Source: Worksafe Saskatchewan

- Green zone: work as usual

    - Apply normal break schedule.
    - Dress appropriately for the weather and work duration.

- Orange zone: work with precautions

    - When working in the cold, breaks should be given in a warm area. Provide 10-minute warm-up breaks for the work time listed in the chart.
    - Minimize prolonged sitting or standing AND increase task rotation.
    - Monitor temperature at least every four hours.
    - If worker's clothing gets wet, allow them to change in a heated shelter.

- Red zone: stop non-emergency work

    - Only emergency work should be performed, with frequent breaks and safety checks.
    - Environment Canada may or may not report a wind chill index. If wind speeds are higher than those identified in the chart, a wind chill factor of -43 C should be used to determine the point at which all non-emergency work should stop.

Special circumstances

- When the work involves riding on an unshielded vehicle or some other activity that generates wind, the number of breaks should be increased appropriately. If effective protection against the wind can be provided by shields or screens, work modification or other measures, then the work warm-up schedule for "no noticeable wind" would apply.

- When work must be done in isolated areas, a 'buddy system' or a reliable two-way communication system should be used.

- Apply the schedule above one step lower (i.e. below) for work with limited physical activity. For example, at -35 C (-30 F), with no noticeable wind, a worker with a job requiring little physical movement should have a maximum work period of 40 minutes with four breaks in a four-hour period.

Wind velocity

If reliable weather reports are not available, the following table can be used to estimate wind speed and wind chill temperatures:

Wind chill index (temperature in ˚C)											
Wind speed (km/h)	**Estimating wind speed - what to look for**	**Ambient Temperature (°C)** Wind Chill Temperature (°C)									
		0	**- 5**	**-10**	**-15**	**-20**	**-25**	**-30**	**-35**	**-40**	**-45**	**-50**
10	Wind felt on face - wind vane begins to move	-3	- 9	-15	-21	-27	-33	-39	-45	-51	-57	-63
20	Small flags extended	-5	-12	-18	-24	-30	-37	-43	-49	-56	-62	-68
30	Wind raises loose paper, large flags flap and small tree branches move	-6	-13	-20	-26	-33	-39	-45	-52	-59	-65	-72
40	Small trees begin to sway and large flags extend and flap strongly	-7	-14	-21	-27	-34	-41	-48	-54	-61	-68	-74
50	Large branches of trees move, telephone wires whistle	-8	-15	-22	-29	-35	-42	-49	-56	-63	-69	-76
60	Trees bend and walking against the wind is hard	-9	-16	-23	-30	-36	-43	-50	-57	-64	-71	-78

Source: Environment Canada

7.6 Risk of Accidental Exposure

Accidental exposure to hazardous outdoor cold conditions may occur to a worker as a result of an unplanned event. Such events may include, but are not limited to, a breakdown in transportation, an extension of a work-shift combined with deterioration in weather conditions, or an unplanned school evacuation.

Schools will ensure that critical response plans have accommodation for evacuation during cold weather to minimize cold exposure, such as moving to an alternate site.

If it can be reasonably anticipated that a worker may be exposed to hazardous outdoor cold conditions as a result of an unplanned event without access to a heated shelter (such as a vehicle breakdown while traveling to a remote site) School District 81 will provide the worker with sufficient equipment to permit their survival until such time that removal from the exposure is possible. Refer to *Appendix E, Survival Kit*, for a list of suggested items to be included in a survival kit; employees are responsible for providing the clothing/footwear to be included in an emergency kit.

7.7 Protective Clothing

Personal protective clothing plays a major role in providing protection from the risk of exposure to hypothermia and cold-related injury.

Responsibility of the Employee to Provide Cold-Weather Clothing

As per BC OHS Regulation 8.2 *Responsibility to Provide*, employees are responsible for providing clothing needed for protection against the natural elements, general purpose work gloves, and appropriate footwear.

As per the BCGEU collective agreement, Article 26.4, maintenance employees are further provided with a parka every four years, and full-time regular outdoor employees a monthly clothing allowance for appropriate outerwear.

Procedures for Protective Clothing

The following procedures will be followed:

- A worker who is at risk of developing hypothermia or cold-related injuries will wear adequately insulated outer clothing.
- If clothing becomes wet so that its insulating value is impaired, the Employer will provide the worker with the opportunity to change into dry clothing in a heated shelter.
- If a worker becomes immersed in water, the Employer will immediately provide the worker with dry clothing and if necessary, treat for hypothermia.
- Workers will wear protective gloves, mittens, footwear, head covering and/or face coverings if there is a danger of frostbite to the extremities.
- Workers will protect their hands from cold when operating vibrating tools. They should ensure extra gloves are available if their gloves get wet.
- If work is required outdoors in snow or ice covered terrain and the worker is exposed to ultraviolet light, glare or blowing ice crystals, workers will ensure that they supply and wear eye protection appropriate to the hazards.

Choosing Appropriate Protective Clothing

Protective clothing is needed for work at or below 10°C. Clothing should be selected to suit the temperature, weather conditions (e.g., wind speed, rain), the level and duration of activity, and the task being performed. These factors are important to consider so that you can regulate the amount of heat and perspiration you generate while working. If the work pace is too fast or if the type and amount of clothing are not properly

selected, excessive sweating may occur. The clothing next to body will become wet and the insulation value of the clothing will decrease dramatically. This reduction in insulation value increases the risk for cold injuries.

- Clothing should be worn in multiple layers which provide better protection than a single thick garment. The air between layers of clothing provides better insulation than the clothing itself. Having several layers also gives you the option to open or remove a layer before you get too warm and start sweating or to add a layer when you take a break. It also allows you to accommodate level of activity, changing temperatures and weather conditions. Successive outer layers should be larger than the inner layer, otherwise the outermost layer will compress the inner layers and will decrease the insulation properties of the clothing.
    - The inner layer should provide insulation and be able to "wick" moisture away from the skin to help keep it dry. Thermal underwear made from polyesters or polypropylene is suitable for this purpose. Polypropylene wicks perspiration away from the skin. It also keeps the second layer away from the skin. Cotton is a poor choice for this layer as it tends to absorb and hold moisture, which can cause the body to lose heat.
    - The insulating layer(s) of clothing should provide adequate insulation for the weather conditions under which the work is being done; they insulate the body and conserve body heat. There are many new age materials available for use as an insulating layer, but the old standbys are wool and fleece. Wool is an excellent insulator and can conserve heat even when it is wet. A light weight wool sweater serves well as the insulating layer for the upper body.
    - The outer layer provides a barrier to wind and moisture, as well as helping to conserve body heat. The best material is breathable and water resistant. Outer jackets should have the means for closing off and opening the waist, neck and wrists to help control how much heat is retained or given off. Some jackets have netted pockets and vents around the trunk and under the arm pits (with zippers or Velcro fasteners) for added ventilation.
- Insulating and especially outer layers should be easy to open or remove before you get too warm to prevent excessive sweating during strenuous activity.
- For work in wet conditions, the outer layer of clothing should be waterproof.
- If the work area cannot be shielded against wind, an easily removable windbreak garment should be used.
- Under extremely cold conditions, heated protective clothing could be used if the work cannot be done on a warmer day.
- Wear a hat suitable for the conditions, including being able to keep the ears warm. If a hard hat is required, a knit cap or a liner under a hard hat can reduce excessive heat loss. Consult with the hard hat supplier or manufacturer for appropriate liners that do not compromise the protection provided by the hard hat.
- Clothing should be kept clean since dirt fills air cells in fibres of clothing and destroys its insulating ability.
- Clothing must be dry. Moisture should be kept off clothes by removing snow before entering heated shelters. While the worker is resting in a heated area, perspiration should be allowed to escape by opening the neck, waist, sleeves and ankle fasteners or by removing outerwear. If the rest area is warm

enough it is preferable to take off the outer layer(s) so that the perspiration can evaporate from the clothing.

- If fine manual dexterity is not required, gloves should be used below 4°C for light work and below -7°C for moderate work. For work below -17°C, mittens should be used.
- Cotton is not recommended. It tends to get damp or wet quickly, and loses its insulating properties. Wool and synthetic fibres, on the other hand, do retain heat when wet.

Footwear

Felt-lined, rubber bottomed, leather-topped boots with removable felt insoles are best suited for heavy work in cold since leather is porous, allowing the boots to “breathe” and let perspiration evaporate. Leather boots can be “waterproofed” with some products that do not block the pores in the leather. However, if work involves standing in water or slush, then waterproof boots must be worn. While these protect the feet from getting wet from cold water in the work environment, they also prevent the perspiration to escape. The insulating materials and socks will become wet more quickly than when wearing leather boots and increase the risk for frostbite. When trying on boots before purchase, wear the same type of sock that you would wear at work to ensure a proper fit.

Socks

You may prefer to wear one pair of thick, bulky socks or two pairs - one inner sock of silk, nylon, or thin wool and a slightly larger, thick outer sock. Liner socks made from polypropylene will help keep feet dry and warmer by wicking sweat away from the skin. However, as the outer sock becomes damper, its insulation properties decrease. If work conditions permit, have extra socks available so you can dry your feet and change socks during the day. If two pairs of socks are worn, the outer sock should be a larger size so that the inner sock is not compressed.

Always wear the right thickness of socks for your boots. If they are too thick, the boots will be “tight,” and the socks will lose much of their insulating properties when they are compressed inside the boot. The foot would also be “squeezed” which would slow the blood flow to the feet and increase the risk for cold injuries. If the socks are too thin, the boots will fit loosely and may lead to blisters.

Face and Eye Protection

In extremely cold conditions, where face protection is used, eye protection must be separated from the nose and mouth to prevent exhaled moisture from fogging and frosting eye shields or glasses. Select protective eye wear that is appropriate for the work you are doing, and for protection against ultraviolet light from the sun, glare from the snow, blowing snow/ice crystals, and high winds at cold temperatures.

Sweating

To prevent excessive sweating while working, remove clothing in the following order:

- mittens or gloves (unless you need protection from snow or ice),
- headgear and scarf.
- open the jacket at the waist and wrists, and
- remove layers of clothing.

As you cool down, follow the reverse order of the above steps.

7.8 Contact with Cold Surfaces

Prevent the contact of bare skin with cold surfaces (especially metallic) below 7°C as well as avoiding skin contact when handling evaporative liquids (gasoline, alcohol, cleaning fluids) below 4°C.

For work below the freezing point, care must be exercised when handling metal tools and materials. Insulated gloves will be used for any tool use in sub-zero temperatures.

7.9 Preventing Cold-Related Musculoskeletal Injury (MSI)

Where reasonable, outside work should be scheduled for warmer times of the year.

Tools that need to be used in cold weather should be selected with consideration to reducing forceful gripping or awkward postures, such as adjustable/ergonomic handles. Tools with lower levels of vibration should also be selected, when possible. Where possible, store tools in a warm place before use.

Where possible, rotate workers between warm and cold work throughout the day; where this is not possible, ensure rest breaks are provided as indicated in *7.5, Warm Up Breaks.*

Workers should ensure that they use clothing and well-fitting gloves that are appropriate for the task and weather.

Walking in Snow and Ice

Adjust Your Gait: Shorten your stride length to keep your centre of gravity supported. Also, walk with your knees slightly bent, as lockingyour knees reduces your ability to adjust to a slip.

Slow Down: Take slow, deliberate steps and be on the lookout for icy spots. Place your whole foot down at once, shifting your weightslowly to this foot before stepping with the other foot.

Keep Your Hands Free: Carrying heavy items in your hands hinders your ability to provide balance. You need your arms free to help yourecover your balance if you start to slide. Do not walk with your hands in your pockets for this very same reason.

Wear Appropriate Footwear: Footwear with a thick rubber or non-slip sole is recommended. Avoid wearing heels and footwear withminimal tread.

Entering and Exiting Your Vehicle: Take care when stepping into/out of your car as you are usually off balance and on only one foot.Consider carrying a bag of sand in your vehicle that you can sprinkle on the ground before exiting the vehicle.

Snow Covered Curbs: Exercise caution around snow-covered curbs on paths and roadways.

Entering/Exiting Buildings: Entrance ways may be slippery, exercise caution and report any missing floor mats to Facilities.

7.10 Personal Risk Factors

Workers should understand the importance of high-caloric foods when working in cold environments such as warm, sweet drinks and soups to maintain caloric intake and fluid volume. It is important to maintain an adequate fluid balance, as working in cold environments can result in excessive sweating.

Poor physical fitness; not being acclimatized to the cold; having a cold or flu-like symptoms; chronic illness, especially heart disease, asthma/bronchitis, diabetes mellitus or chronic circulatory problems; fatigue; and using drugs such as alcohol, nicotine, caffeine and/or medication that inhibit the body's response to the cold or impairs judgement, can all increase an employee's risk for cold stress injuries.

Employees using vibrating equipment in cold weather without proper precautions are at an increased risk of contracting Vibration/white finger disease (also known as Raynaud's Disease or Raynaud's Phenomenon); if it is a pre-existing condition, it can increase the risk of a cold-stress injury in the hands while working in cold weather.

8. Cold Stress Hazard Identification

When conditions are identified outside of the scope of the initial assessment (*Appendix B*), School District 81 will conduct a cold stress hazard identification to determine whether a worker is or may be exposed to conditions that could cause hypothermia or cold-related injury. The hazard identification process is divided into 3 parts to identify risk factors:

- Part A: Environmental Hazards
- Part B: Job/Task-Related Hazards
- Part C: Personal Risk Hazards

Use the form located in *Appendix F, Cold Stress Hazard Identification,* to record the results.

9. Cold Stress Risk Assessment

When hazards are identified outside of the scope of the initial assessment (*Appendix B*), School District 81 will perform a risk assessment if hazards have been identified that may expose a worker to the risk of cold stress.

Environmental conditions may be obtained from Environment Canada providing that information is recent and up to date. Follow a 4-step risk assessment for cold stress. Refer to *Appendix G, Cold Stress Risk Assessment,* for the 4-step risk assessment procedure.

The Secretary Treasurer will be responsible for conducting the cold stress risk assessment. The form located in *Appendix G* may be used to document the results of the risk assessment process.

A cold stress risk assessment will be completed when outdoor or workplace environments may put workers at risk of hypothermia or cold-related injuries.

10. Record Keeping

School District 81 will maintain records of the following:

- Cold Stress Assessments
- Worker Education and Training

11. Training Requirements

Goal

To ensure that all workers are aware of the Cold Stress Program and the policy and procedures that accompany it. Workers who work in cold environments or may be accidentally exposed to cold environments will be trained annually, with consideration to their job classification.

Objectives

As a result of this training all workers and their supervisors will:

- Understand the effects of cold stress.
- Be knowledgeable of the temperatures associated with risks of cold stress and understand the hazards of working in a thermally cold environment.
- Know the requirements for cold stress assessments and the procedures to be followed.
- Understand the importance of adequate clothing for cold environments.
- Recognize the signs and symptoms of cold-related disorders and know the first aid procedures for workers exhibiting signs of cold-related disorders, including rewarming techniques.
- Know when to remove workers from cold environments.
- Understand the significance of warning signs when posted in indoor work areas and know the procedures that are to be followed if warning signs are in use.

Summary of Training

- Definition of Cold Stress and terms used in the program
- Regulations that apply to Cold Stress
- Responsibilities of the employer, supervisors, workers and JHS committee or Worker Health and Safety Representative, as applicable
- Requirements for cold stress hazard identification and assessment procedures
- Requirements for the implementation of risk controls
- Requirements for providing hand warming devices
- Procedures for protecting workers at risk from accidental exposure
- Requirements for removing and treating workers exhibiting signs and symptoms of cold-related disorders
- Requirements for worker education and training
- Procedures for establishing indoor cold stress hazard areas
- Requirements for maintaining records

Appendix A – Resources

The following resources were used in the development of this cold exposure plan.

Worksafe BC

Cold Stress - https://www.worksafebc.com/en/health-safety/hazards-exposures/cold-stress

MSI Prevention Guidance: Cold Temperature - https://www.worksafebc.com/en/resources/health-safety/information-sheets/msi-prevention-guidance-cold-temperature

Canadian Centre of Occupational Health and Safety (CCOHS)

Cold Environments - https://www.ccohs.ca/oshanswers/phys_agents/cold

BC Municipal Safety Association (BCMSA)

Supplemental Safety Programs – Cold Stress - https://www.bcmsa.ca/resources/supplemental-safety-programs/

Note: while the BCMSA program was updated in January of 2025, this plan was developed with BCMSA's current resource at the time, which was their 2022 program.

WorkSafe Saskatchewan

Working in Cold Weather - https://www.worksafesask.ca/prevention/environmental-risks/working-in-cold-weather/

Note: CCOHS refers to Worksafe Saskatchewan's "Working in Cold Conditions" guide for a work warm-up schedule depending on wind chill temperature.

Environment Canada

Wind Chill Index - https://www.canada.ca/en/environment-climate-change/services/weather-health/wind-chill-cold-weather/wind-chill-index.html

Appendix B - Initial Workplace Assessment

Workplace Assessments

Assessments were carried out at each worksite by supervisors and health and safety representatives to determine:

- what outdoor work is conducted by staff in different job classifications in cold weather;
- the maximum amount of time typically spent outdoors on the task;
- shelter available;
- if there was a temperature below which those tasks were no longer carried out.

The data is compiled together in Table 1.

According to the assessment results, school-based staff (support staff, teachers, and administrators) are typically outdoors in cold weather for a maximum of 30 minutes, regardless of duty; except for outdoor instruction, which may be up to 90 minutes. Outdoor instruction is not required of employees, and teachers have the flexibility to adapt outdoor learning activities based on the weather. Maintenance staff, on the other hand, can be outdoors in cold weather up to two hours at most (after which they would have their regularly scheduled break).

At all worksites, nearby heated shelters (such as schools and maintenance buildings) are readily available; the exception may be during outdoor learning activities, where depending on the activity teachers and support staff may be further away from the building (such as going for a walk, skiing, etc.), which exposes them to higher risks.

Two temperature thresholds established in the district impact the parameters of outdoor work for many employees. SD 81 Policy 5520, *Student Transportation*, specifies that all student transportation will cease at a wind-chill temperature of -40°C; so bus supervision likewise ceases below that temperature threshold. Though not specified explicitly in policy or protocol it is common practice in the district that schools do not have outdoor recess/activities below -20°C, so outdoor supervision/learning only occur when temperatures are above that threshold. The exception to this is Toad River, where it is easier to ensure all students are prepared for the weather. In that case, staff make a daily determination if the weather is appropriate for outdoor recess.

Maintenance workers do not typically conduct groundskeeping or outdoor building maintenance when temperatures drop below freezing; however, there is a variety of regular winter work (snow clearing, winter surface management) that is conducted during cold weather, along with deliveries (such as chairs for assemblies) and emergency outdoor repairs/services. The duration of this work in cold weather is typically determined by the scope of the task along with regular coffee/lunch breaks. In freezing temperatures, maintenance workers leave their vehicles running and can use them as heated shelters as necessary, in addition to nearby district facilities.

Outdoor Work in Cold Weather by Job Classification				
Job Classification	**Type of Outdoor Work**	**Max Time (min)**	**Shelter Available**	**Typical Cutoff Temp (°C)**
EA/PA	Supervision – bus	15 - 30	School	-40
	Supervision – recess	30	School	-20
	Crosswalk Duty	10 - 25	School	None
	Outdoor Instruction	90	School	-20
Teacher	Supervision – recess	30	School	-20
	Outdoor Instruction	90	School	-20
	Walking to facilities (town)	10	School/facility	-20
	Walking to hall (Toad)	3	School/hall	None
Principal	Supervision – bus	15 - 30		-40
	Supervision – recess	30		-20
	Crosswalk	10		None
Maintenance II	Using wheelchair lift	5	Bus	-40
Maintenance III	Groundskeeping	120	Facility, vehicle	0
	Facilities maintenance (regular)	120	Facility, vehicle	0
	Facilities maintenance (emergency)	120	Facility, vehicle	None
	Snow/ice removal	45	Facility, vehicle	None
	Deliveries (e.g. chairs)	30	Facility, vehicle	None
Director of Facilities	Groundskeeping	120	Facility, vehicle	0
	Outdoor facilities maintenance (regular)	120	Facility, vehicle	0
	Outdoor facilities maintenance (emergency)	120	Facility, vehicle	None
	Snow/ice removal	45	Facility, vehicle	None
	Deliveries (e.g. chairs)	30	Facility, vehicle	None

Other hazards that identified that do not necessarily fall into the above categories of assigned work:

- vehicle breakdown and/or adverse weather conditions when traveling between Fort Nelson and Toad River
- handling tools/equipment in cold weather conditions
- unplanned school evacuations during cold weather conditions

Appendix C – First Aid Treatment for Hypothermia

Definitions

Afterdrop	A situation in which the core temperature decreases during the rewarming of a hypothermic victim. Caused by peripheral vessels in the arms and legs dilating if they are re-warmed.
Vasoconstriction	Narrowing of blood vessels decreases the blood flow to periphery, thereby reducing the process of heat loss.
Vasodilation	Opening of blood vessels increases surface blood flow, thereby increasing the process of heat loss (when ambient temperature is less than body temperature).

General Tips for Handling Hypothermic Victims

- Immediately call 9-1-1 if a case of hypothermia is suspected
- Always handle the victim gently. Rough handling can cause heartbeat irregularities and death.
- Remove the victim from the cold environment for assessment and treatment by certified First Aid attendant as soon as possible
- Hot fluids may be given only if the victim is fully alert, without any signs of confusion. Victims with moderate and severe hypothermia have a high risk of vomiting and must not be given anything by mouth.
- Do not attempt to exercise victims. Take immediate measures to prevent further heat loss and continue to do so even if victim regains consciousness.
- Remember that the victim may still be alive even if there is little or no pulse or heart beat.

Management/Rewarming of Mild Hypothermic Victims

- Minimize his/her exertion.
- Remove wet clothing and get the victim into warm, dry clothes and wrap victim in warm blankets. Make sure the victim's head is covered. Place something warm and dry under the victim. Move the victim to a warm environment. Do not make the victim exercise to warm up.
- Do not suppress shivering, even if violent. Shivering is the most effective way to generate body heat.
- Do not massage the extremities (hands, arms, legs, feet, etc.,) or the trunk.
- Do not place victim in a warm bath or shower.

Management/Rewarming of Moderate to Severe Hypothermic Victims

- Check for airway obstructions and breathing or circulation problems and perform appropriate action if there are any abnormalities in these areas.
- Remove all wet clothing, make sure victim is dry and replace with dry, multiple-layered coverings. If possible, the victim should have a polypropylene layer next to the skin to minimize sweating on the skin.

- Wrap the victim in warm blankets or a sleeping bag. If this is not possible, cover the victim with warm dry clothing or blankets, making sure that the victim's head is covered and something warm and dry is also placed under the victim.
- Move the victim to a warm, dry environment.
- Do not suppress shivering, even if it is violent. Shivering generates body heat.
- Do not give anything by mouth, as there is a high risk of vomiting.
- Do not massage the trunk or extremities of the victim.
- Do not place the victim in a hot bath or shower.
- If available, heated, humidified air or oxygen should be administered.
- Continue first aid treatment even if the victim appears lifeless. The body sometimes survives for hours without signs of life at very low body temperatures.
- Know how to assess hypothermia and give help when it is needed, even if the victim resists help. The victim may be confused and unaware of what is happening and may deny assistance when it is needed.
- Arrange rapid transport to the nearest medical facility.

CPR for Hypothermic Victims

If a person is suffering from severe hypothermia they may exhibit many of the clinical signs of death:

- Cold
- Blue skin
- Fixed and dilated pupils
- No discernible pulse
- No discernible breathing
- Comatose and unresponsive to any stimuli
- Rigid muscles

Despite exhibiting these signs, the victim may still be alive and further steps should be taken to closely evaluate the victim's condition:

1. Check for airway obstructions and breathing or circulation problems. Take appropriate action if there are any abnormalities in these areas.
2. Complete a full 1-minute assessment of the victim. The radial pulse may be absent if the victim is in severe hypothermia, therefore check the carotid pulse for a 1-minute period to ascertain if there is a slow heart beat. Although the heart rate may be as low as 2-3/minute and breathing rate 1/30 seconds, the heart will be filling completely and distributing blood fairly effectively. Due to the severely reduced demands of the hypothermic body, the reduced heartbeat may be able to satisfy circulatory needs with only 2-3 beats/minute.
3. If there is no pulse, commence CPR and continue to do so as the victim is re-warmed.
4. Although ventilation may have stopped, it is possible that the body may be able to survive for some time using only the oxygen that is already in the body. If ventilation has stopped, artificial ventilation should be commenced. In addition to making more oxygen available, blowing warm air into the person's lungs may assist in internal rewarming.

Note: During severe hypothermia the heart is hyperexcitable and mechanical stimulation such as CPR, moving the victim or the effects of "afterdrop", may result in fibrillation of the heart, leading to death. As a result, CPR may be contraindicated for some hypothermic victims.

Appendix D – First Aid Treatment for Frostbite

Frostbite most typically affects the ears, cheeks, nose, fingers and toes.

First Aid Treatment for Frostbite		
Stage of Frostbite	**Signs and Symptoms**	**First-Aid Treatment**
Frostnip	• Freezing of the top layers of skin tissue • Skin appearance: white, waxy. Top layer of skin feels hard & rubbery • Deep tissue is still soft • Numbness	• Rewarm the area gently, generally by blowing warm air on it or placing the area against a warm body part • Do not rub the area – this causes damage to skin and tissue
Superficial Frostbite	• Skin appearance: white • To touch: wooden feeling throughout affected area • All layers of skin affected • Numbness, sensation may be absent	• Rewarm as for frostnip if affected area is only small • If area is large, use immersion method • Transport to hospital if necessary
Deep Frostbite	• Skin appearance: white • To touch: wooden feeling throughout affected area • Includes all layers of the skin • May include freezing of muscle and/or bone	• Begin rewarming techniques using immersion method • Transport to hospital as soon as possible

Rewarming Techniques for Frostbite Injury

Treatment for frostbite should ideally be performed in a hospital. The following procedures may be followed if, for some reason, hospital treatment is not available:

- Monitor water temperature (38.9°C - 43.33°C) closely throughout the immersion period.
- Remove any wet or tight clothing.
- Gently place the affected area in a warm water bath. If warm water has to be added to maintain immersion temperature, do not pour directly on the affected area as this will cause the tissue to warm too fast causing further damage.
- Circulate the water frequently to maintain an even temperature.
- Immerse affected body area for 25-40 minutes as appropriate.
- Thawing is complete when the part is pliable and color and sensation has returned. Discontinue the warm water bath when thawing is complete.
- Do not use dry heat to re-warm.

After the affected area has been warmed, it may become puffy and blister with a burning feeling or numbness. When normal feeling, movement and skin color have returned, the affected area should be dried and wrapped in a sterile bandage to keep it clean and warm. Warning: once the area is re-warmed, there can be significant pain.

- If there is a chance that the affected area may get cold again, do not re-warm it as it will cause severe tissue damage.
- If the person is hypothermic and frost-bitten, the first concern is to re-warm the core body temperature. Do not re-warm the frost-bitten areas until the core temperature reaches 35.5°C.
- Refrain from consuming alcohol.
- Refrain from smoking, as nicotine constricts blood vessels thereby increasing the risk of developing frostbite.
- Seek medical attention as soon as possible.

Appendix E – Survival Kit

A survival kit should contain the following items:

- Change of clothing including underlayer, insulating layer and outer layer garments (employee provided)
- Spare gloves, footwear, head covering and face covering (employee provided)
- Emergency supplies including flashlight, waterproof matches, energy snacks such as nuts and raisins, bottled water
- Light weight emergency rain poncho
- Protective eye wear
- Sleeping bag stored in plastic vapor-barrier wrapper
- Means of communication i.e. cell phone, 2-way radio

Appendix F – Cold Stress Hazard Identification

Appendix A – Cold Stress Hazard Identification

Location of Hazard I.D:	**Date/Time of Hazard I.D:**
Name of Assessor:	**Workers or Tasks being Evaluated:**
Signature of Assessor:	

The Cold Stress Hazard Identification process is divided into three parts:

Part A: Environmental Conditions

Part B: Task-Related Hazards

Part C: Personal Risk Factors

Repeat the hazard identification procedure if or when conditions (environmental or worker) that may present a new risk of cold stress change.

Note: A Cold Stress Risk Assessment is required only when hazards are identified in Part A.

PART A: Environmental Conditions

Instructions

- Observe the environmental conditions and make notes in Part A of any hazards that may expose workers to a risk of cold-related disorders.
- Determine whether there is a risk of accidental exposure to hazardous cold conditions and make notes in Part A – Accidental Exposure.
- Determine whether there are previous records/history of exposure to cold stress relating to the job/tasks being performed and make notes in Part A – Review of Records & Statistics.
- If an environmental hazard is present, a Cold Stress Risk Assessment must be performed.

PART A Environmental Conditions			
Hazard	**Present in Work Area**	**Absent in Work Area**	**Details of Hazard/Conditions**
Known conditions that could cause hypothermia (core body temperature to fall below 36°C (96.8°F))	☐	☐	
Conditions exist where the air temperature feels cool and is being affected by the wind	☐	☐	
Weather conditions have an equivalent chill temperature less then -7°C (19°F)	☐	☐	
Environment where workers are continuously exposed to damp/wet conditions or are likely to be wearing wet clothing	☐	☐	
Accidental Exposure			
Can it be reasonably anticipated that a worker may be exposed to hazardous cold conditions outdoors as a result of an unplanned event?	Yes ☐	No ☐	
Review of Records/Statistics			
Work area and/or occupation have been previously identified as being hazardous	☐	☐	
Areas or occupations about which workers have expressed concern	☐	☐	

PART B: Task-Related Hazards

- Observe the tasks being performed.
- Determine whether there are hazards that may expose workers to a risk of cold-related disorders.
- If a task-related hazard is present, implement appropriate risk controls.

PART B Task-Related Hazards			
Hazard	**Present in Work Area**	**Absent in Work Area**	**Details of Hazard/Corrective Action Required**
Work requiring contact with cold surfaces/materials	☐	☐	
Worker is required to perform work with bare hands	☐	☐	
Work takes place outdoors in snow or ice covered terrain and there is excessive UV light, glare or blowing ice crystals	☐	☐	
Hands and/or feet are continuously exposed to wet conditions	☐	☐	
Other:	☐	☐	
Other:	☐	☐	

PART C – Personal Risk Factors

- Each worker will complete a Personal Risk Factor Assessment in private.
- If a worker reports having a personal risk factor for exposure to cold stress, it will be reported to the supervisor to determine specific risk controls that may be required to reduce the risk of exposure.

PART C **Personal Risk Factors**			
Personal Risk Factor	**Present in Worker**	**Absent in Worker**	**Details of Risk Factor/Corrective Action Required**
Poor physical fitness	☐	☐	
Not used to working in the cold	☐	☐	
Having a cold or other flu like symptoms	☐	☐	
Chronic illness, especially heart disease, asthma/bronchitis, diabetes mellitus or circulatory problems	☐	☐	
Using certain drugs or medication such as alcohol, nicotine, caffeine and medication that inhibits the body's response to the cold or impairs judgment	☐	☐	
Exhibiting symptoms of fatigue	☐	☐	
Vibration/white finger disease (also known as Raynaud's Disease or Raynaud's Phenomenon)	☐	☐	

Appendix G – Cold Stress Risk Assessment

Instructions

- Complete Section 1, recording information on Assessor's and Worker's/Tasks being assessed.
- Complete Section 2, documenting the results of the risk assessment using information either from Environment Canada or from measurements that you record yourself.
- Include assessment of the risk of accidental exposure and effects of vibration in Section 2. (Procedures for accidental exposure and vibration assessment are located at the end of Section 2.)

COLD STRESS RISK ASSESSMENT – SECTION 1	
Location of Risk Assessment:	**Date/Time of Risk Assessment:**
Name of Assessor:	**Workers or Tasks being Assessed:**
Signature of Assessor:	
Others in Attendance: **Name:** **Signature:** **Name:** **Signature:**	
Reason for Conducting Risk Assessment:	

COLD STRESS RISK ASSESSMENT – SECTION 2		
Type of Measurement	**Reading**	**Source of Information**
Ambient Air Temperature (°C)		
Wind Speed (km/hr)		
Equivalent Chill Temperature (°C)		Wind Chill Temperature Index p. 11 (*Environment Canada*)

Category of Hazard (Using Wind Chill Temperature Index on p. 11, determine category of hazard)	❑ Low: risk of exposed, dry skin being affected in less than one hour ❑ Equivalent chill temperature of -7°C (19°F) ❑ Increasing: risk of exposed flesh freezing within one minute ❑ High: risk that flesh may freeze within 30 seconds	
Are Risk Controls Required?	❑ Yes	❑ No
List Risk Controls to be Implemented:	❑ Heated shelter ❑ PPE ❑ Spare clothing ❑ Provisions for hand warming	
Have Risk Controls been Implemented Prior to Commencing Work?	❑ Yes ❑ No ❑ N/A	
If no, give brief details of action being taken:		

Does the task involve Hand-Arm Vibration?	❑ Yes ❑ No
Are additional risk controls required to protect the worker?	❑ Yes - Give Details: ❑ No

Is there a risk of Accidental Exposure of a worker to an outdoor environment that may result in the worker suffering hypothermia or cold-related injury?	❑ Yes ❑ No
Have provisions been made for the worker to ensure survival from accidental exposure until rescue can be effected? Give Details:	❑ Yes ❑ No

Determine the Risk of Accidental Exposure

Determine whether there is a risk of workers being exposed to hazardous cold conditions outdoors as a result of an unplanned event. Prior to commencing work, look for conditions or situations that may predispose workers to accidental exposure. Make a record on the risk assessment of steps taken to protect workers from exposure, as appropriate.

Determine the Effects of Vibration

The presence of vibration in a task will have some influence on the degree of risk of exposure to cold-related injury. Where a worker is exposed to the effects of vibration in a cold environment, School District 81 will comply with WorkSafeBC OHS Regulation Parts 7.10 to 7.16 where appropriate.