Be Prepared for Winter Events – Plan ahead

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Severe winter weather is a significant cause of insured catastrophic losses and is a risk for many businesses across the country. You will want to ensure your staff, faculty, students, and other key stakeholders stay safe, and that the school remains open and operational, no matter what the season brings.

Review your Emergency Operations Plan (EOP) - update information if needed

> If you need help with the Emergency operations Plan (EOP) the state of Vermont provides a resource. All Hazards Emergency Planning guide

Review your Continuity of Operations Plan – Update if needed

The purpose of these Continuity of Operations (COOP) procedures is to maintain or rapidly resume essential operations within the school after an incident that results in disruption of normal activities or services to the school. Failure to maintain these critical services would significantly affect the education and/or service mission of the school in an adverse way.

- Review or create a continuity of operations plan as it pertains to winter storms and winter readiness.

PRE-PLANNING

- Review your communication plan for employees, students and families across multiple channels.
    - Consider how you will communicate if your area is experiencing severe power outages, Radio? Cellular? Etc.
    - A school-based system may require phone service to operate. If the phone lines are not operational, are you prepared to communicate using another service?
    - Can you access the phone-based system remotely?
- Create a snow and ice removal plan for all roofs and grounds.
- Prepare all of you snow removal equipment. Install plows, install sanders, make sure that they have been serviced, greased, check oil and fuel levels. Could be difficult to get fuel if the power is out.
- Train staff on the signs and symptoms of exposure to frost bite and hypothermia if they will be working outside during a winter storm.
- Create or update a vendor list that you will have remote access to in the event the building loses power or you lose power at your house you may not be able to access your list.
    - **Appendix A** (at the end of the document) was created as a template to assist you in this process.
- Conduct internal and external inspections of your facilities and make repairs.
- Test/practice the plan.
- Enable wireless emergency alerts on your cell phone. The weather resources below all have weather alert apps that you can install on any smart device.

- WCAX Weather
- WPTZ Weather
- VT Alert

What to listen for from the National Weather Service:

- **ADVISORIES** –
    - An advisory is issued for weather that is expected to be a disruption to the normal routine and an inconvenience, but it is not expected to be life-threatening. Advisories are issued for 1 to 3 inches of snow, The time frame is similar to that of a warning.
- **WATCH** means be prepared.
    - Meteorologists have determined that conditions appear right for the development of the hazard. Probability of occurrence is greater than 60% in the watch area. Watches generally cover larger areas than warnings. In the case of thunderstorms, less than 30% of the watch area may experience the hazard. However, with larger winter storms, the entire watch area may be affected. Winter storm watches, lead-times are usually 12 to 36 hours
- **WARNING** means take action.

    The hazard (Winter Storm, Extreme Cold etc) is imminent. The probability of occurrence is extremely high. Warnings are issued based on eyewitness reports or clear signatures from remote sensing devices such as radar and satellite. Lead-time for winter storms can be 6 to 18 hours.

    In addition to Winter Storm Warnings, schools need to also be concerned about exposure to cold as students stand awaiting buses to pick them up or during an outdoor recess. The degree of exposure the student will experience will be a function of the temperature, the wind, the clothes they wear, and the amount of time they are exposed. The National Weather Service issues Wind Chill Warnings when the wind chill temperature is expected to reach -30°F or colder. At -30°F, exposed flesh can become quickly frost bitten. If the morning temperature is 5°F and the wind is blowing 15 mph; the wind chill temperature is -25°F. The National Weather Service issues Wind Chill Advisories when the wind chill is expected to reach -15°F or colder.

    In cases of extreme cold, proper clothing is very important and needs to be stressed to the students. Teachers should be taught to recognize symptoms of frost bite and hypothermia. Outdoor activities should be canceled. Delaying school hours may or may not solve the problem of students

standing at bus stops in the cold if the temperature rises enough. Bus stop shelters would help protect the students from exposure to wind.

Purchase supplies

- Purchase non-slip water absorption mats for all entrances.
- Consider traction products for boots such as Cleats, Spikes, YaxTrax etc.
- Evaluate your assets and purchase if needed
    - Snow removal equipment such as shovels and snow blowers.
    - Deicing solutions, do you have a good supply
    - Fuel for snowblowers, generators etc.
    - Can you supply blankets to staff in case they get stranded at school.
- Check your stock of personal protective equipment (PPE): Ensure that your team has proper winter gloves, footwear, and visibility gear, especially for those tasked with snow and ice removal.

DURING

- Activate your winter preparedness plan. Communicate the emergency preparedness plan to all employees in advance of severe weather.
- For staff working outside during a storm they should have constant communications with other staff members.
- Consider tracking staff whereabouts conducting periodic check ins. This could prevent a staff member from freezing to death if they should fall during a storm.

Stay informed

Monitor the weather and activate your plan

- Find a reliable source for severe weather information.
    - National Weather Service (NWS)
    - WCAX Weather
    - WPTZ Weather
    - VTAlert
- Consider a daily prescheduled meeting time during the event where key staff connect using Zoom, Teams or other virtual meeting platform to discuss the recovery efforts.

AFTER EVENT

- Make sure that everyone is safe
- Evaluate damage or potential failures and be prepared to evacuate if snow and ice make the building structurally unsafe.
- Conduct a post event debrief with all critical parties and evaluate what parts of the emergency response plan worked and where there were failures.
- Adjust the plan and reach out for assistance if you are having problems with your plan.

OTHER RESOURCES

We've compiled winter weather safety resources for you including snowblower safety, generator safety, preparing for a snowstorm, preventing, identifying, and removing ice dams, snow shoveling safety tips, removing snow from your roof, and saying NO to wipeouts from snow, ice, and wet surfaces!

Find the resources here: https://www.vsbit.org/winter-weather-resources

Report a claim to VSBIT if you had damage from the event

Interior Winter Preparation

Interior considerations

- Insulate and seal around attic penetrations such as partition walls, vents, plumbing stacks, and electrical and mechanical chases.
- Make sure pipes along exterior walls and in hard-to-reach places like attics and under stairs are insulated. Wrap pipes and faucets in unheated or minimally heated areas of the building.
- Drain water from any areas that are not used during the winter.
- Make sure existing freeze-protection devices and alarms are in good working order. Test freeze stats (low temperature sensing devices) and valves before the weather gets cold.

- If you do not have freeze protection devices reach out to VSBIT to ask for guidance.
- Have your sprinkler system vendor conduct routine maintenance on fire protection sprinkler systems to ensure that they are in working order. Discuss the systems' exposure to winter weather and potential mitigation options.
- Make sure that all classroom and office heating systems are functioning properly. Address any areas where heating may be insufficient.
- Identify areas around the building where ice and snow can accumulate, particularly on walkways and entryways. Arrange for regular snow removal and ensure de-icing materials (salt, sand, or ice melt) are stocked and readily available for staff to use.
- Verify that emergency exits and pathways remain clear and accessible during winter weather. Snow and ice can obstruct these areas, so regular checks are essential.

Upgrades to consider to improve readiness and response

- Install a monitoring system that provides notifications if the building's temperature drops below a pre-determined minimum. This might be included in your building alarm system or as part of your H.V.A.C. system (*check with vendors if you are unsure)*
- Install an automatic excess flow valve on the main incoming domestic water line to monitor and provide early detection of a broken pipe or valve. Excess flow valves automatically stop the flow of water when preset flow settings are exceeded. VSBIT is currently beta testing products from AlertLabs in ten (10) Vermont schools. For more information on this product send a request to risk management.
- Use wireless sensors to monitor leaks near water sources such as water tanks and commercial appliances.
- Install UL-approved gas or electric heaters in unheated sprinkler control rooms and fire pump rooms.

EXTERIOR WINTER PREPARATIONS

- Inspect and add weather stripping around doors and windows.
- Check the seals on the bottom of exterior doors. Ensure that the doors close tightly.
- Ensure that you don't have any broken windows or doors that can't be completely sealed.
- Inspect windows for brittle or missing glazing or caulking, make the necessary repairs or have a contractor make the repairs.
- Inspect and seal exterior wall cladding. Repair all cracks, holes, and leaks with caulk.

- Ensure that all outside spickets are frost proof or disconnect the interior piping to make sure that frost is unable to travel into the building.
- Make sure that parking lot storm drains are clear and working properly.
- If you have any direct vent heaters, make sure that the area in the immediate vicinity of the exhaust is clear of snow or other items that could cause the exhaust to back up.
- Make sure that nothing has been shoved in the exhaust of direct vent heaters.

Roof

Know your roof's maximum snow load

- The snow load capacity can typically be identified in the "notes" of the building's most recent structural drawings. Existing roof load capacities on drawing sets can be a good indicator as long as:
    - No building modifications have been made,
    - The roof is not excessively aged, and
    - The roof has been properly maintained.
- If drawings are not available and the snow load threshold is unknown, then hire a structural engineer to verify it. This information will be important after an event when determining whether there is too much snow on the roof.
- Roof Drains -Verify that your roof drains on flat roofs are clear and not plugged with debris such as leaves or pine needles.
- Roof Gutters - Verify that your roof gutters are clean and working properly

Roofing

Snow guards on a steep-slope roof will prevent snow from sliding off and causing excessive snow load on another portion of the roof or physical injuries. Heating cables and a moisture barrier can help prevent ice dams and water intrusion damage.

Retrofitting a steep-slope roof

- Install snow guards or snow cleats on a steep-slope roof.

- Add insulation to attic space, particularly around HVAC ducts and other openings, to keep warm air from melting snow on the roof that may re-freeze.

Replacing your roof

- Install high-quality self-regulating heating cables on eaves, gutters, and downspouts, or around roof drains.
- Select UL Listed, FM Approved, or Canadian Standards Association (CSA) Certified heating cables. These cables won't remove ice dams but create channels that will allow water to drain off.
- Install them in a zig-zag pattern near gutters on low-sloped roofs.
- Connect to drains and drainage system to create a pathway for meltwater to follow.

For steep-slope roofs:

- Add a moisture barrier to the roof deck along the eaves of the roof. This moisture barrier should extend from the roof edge at least 2 ft toward the interior of the building, beyond the exterior wall enclosing conditioned space.
- Apply a waterproof membrane (peel and stick), also known as an ice and water barrier, on the roof deck edge.

Permanently installed generators

Loss of power

The loss of power is a leading cause of pipe freeze and pipe break losses. Buildings are without heat for an extended period leading to their freezing, rupturing and subsequent damage. Buildings without emergency power should have arrangements made for portable generators to provide emergency power to mission-critical equipment [heat plant, freezers, coolers, IT equipment, and building alarm systems]. Alternatively, provisions should be made for portable heating units to provide building heat while the building is without power.

- Permanent generators should have a proper maintenance plan that includes weekly, monthly, and annual checks. See the manufacturer's specifications for more information. (This might be done by your vendor)
- Run the unit to ensure it is properly functioning in case of an emergency.

- Check the generator enclosure for loose debris or other conditions that could cause the unit to not function properly.
- Check the status of the battery to make sure that it is fully charged
- Verify that you have enough fuel in the tank to run for a multi-day power outage.
- Inspect the exhaust area of the generator and make sure that nothing is clogging the exhaust.

Portable generators:

- Store in a dry location.
- Make sure to add stabilizer to the gas in the generator when it is stored
- Set up a maintenance schedule to include periodic test runs for the unit. This could be once a month but, it should also be tested prior to any events where it could be needed.
- Do you have a transfer switch that was professionally installed by a licensed electrician?
- Ensure that the exhaust when operating is not facing anything flammable.
- Never use a portable generator inside of a building.
- When renting a portable unit, make sure you have a contract in place ahead of winter weather. Also consider where the unit will be housed, how it will be delivered, and who will be responsible for receiving it. Note that delivery of the unit can be delayed due to the severe winter weather, which may cause some business downtime.

Upgrades

Windows and Doors

In the winter, windows can accumulate ice due to escaping warm air, resulting in potential damage when the ice melts and water infiltrates window frames or walls. Additionally, older single-pane windows offer inadequate thermal insulation, while aging doors may warp or develop gaps, providing pathways for water intrusion.

- If windows or doors show signs of aging or have gaps, cracks, or other areas of concern, replace them.

- Choose windows with double or triple pane glass that includes a high thermal resistance (R-value) and thermal break. The R-value tells you how well a system can resist the transfer of heat; the higher the value, the better that system performs. A thermal break is insulation built within the frame of the window to reduce thermal transfer.
- Install exterior personnel doors and roll-up doors that provide a high R-value.

Category of Vendor	Company Name	Contact Name	Contact Number	After hours Contact Number	Location
Propane Supplier					
Heating Oil Supplier					
HVAC company					
Tree Removal service					
Generator service					
Electric Company					
Fire Sprinkler company					
Contractor General (emergency building repairs)					
Contracor Electrical					
Contractor Plumbing					
Contractor for Roofing					
Plowing company (might be municipality)					