



THINKSTOCK



Put best practices to work now to keep lots and garages snow-free next winter.

By Phill Sexton

If you are a parking facility manager in a region that gets any amount of snow and ice, you probably already know that your risk and liability increase during the winter. While February may seem an odd time of year to begin the planning and qualification process for improving next season's snow operations, research indicates the best approach for planning next season is while you are experiencing this season.

As a proactive way to help you reduce your risk and liability and improve your planning process for next year's operation, the Snow and Ice Management Association (SIMA) has created *Best Practices Guidelines*. These guidelines are relevant to follow whether you perform the service yourself or outsource it.

Beyond the necessary insurance to protect you against liability risk, in-house operations and vendors both benefit from a detailed snow site engineering plan and site inspection process. These plans help you manage safety, risk, and environmental health.

Snow Site Engineering Plans

These plans assist you in identifying your snow removal priority areas. In other words, they define what areas of your parking lot(s) should be cleared first, second, third, etc. This is particularly helpful when responding to heavier storm or blizzard conditions.

When identifying priority snow removal areas, be sure to include items such as the location of fire hydrants, emergency exits, emergency egresses, and access to utilities. Your snow site engineering plan also needs to identify where the plowed snow is to be piled relevant to sight line issues, handicap parking areas, and drainage locations.

Other criteria snow site engineering plans should identify include:

- Bulk salt loading and storage areas. If you store bulk salt, it should be located in a covered area on an impervious layer to prevent salt waste and runoff.
- Allocated snow storage areas for snow relocation on-site. When seeking a storage area for snow on-site, you want to avoid locating snow piles where they will create parking lot drifting and/or visibility issues. Find designated areas where piles of snow won't create melting and re-freeze issues. For example, whenever possible, you need to

avoid locating the snow at the top of a parking lot slope, particularly if that slope is designed to pitch or drain to a catch basin.

- Areas for snow to be stored if hauling off-site is necessary. When you relocate snow, be certain the snow storage locations have been approved by the necessary local or state agencies. Be careful to avoid relocating the snow near sensitive waterways or water systems where increased salinity levels from salt might become an environmental concern.
- No-snow areas. Avoid blocking catch basins and manhole covers. Be certain to pay particular attention to parking deck drains where flooding can create extreme ice and load conditions.

Site Inspection Process

This process refers to evaluating the site to determine whether expectations have been met and to manage liability risk. To obtain an unbiased inspection, typically the person inspecting the snow removal site should not be the same person performing the snow operations process.

Your inspection process should answer these key questions related to the snow site engineering plan:

- Are top-property areas clear of snow and ice by the expected time? If not, why?
- Were emergency exits and fire hydrants areas cleared within four to six hours following the storm?
- Are all drains and manhole covers clear of snow and ice so they won't create flooding?
- Is there damage to address? This may include damage to light poles, signage, walkways, curbs, safety bollards, etc.

Planning vs. Expectations

Planning for the necessary resources in a snow operation can be very tricky business primarily due to the variability of conditions and expectations. First, you need to understand cycle time and the estimated capacity and costs necessary to minimize safety risks, while also meeting your client's expectations.

Cycle time is simply the amount of time it takes you to meet plowing expectations. A typical expectation is to have

Expertise and Professionalism

It's challenging for parking facilities managers to identify who is a professional in the snow and ice management industry. Furthermore, becoming better educated on the profession can be confusing because there is no mandated industry education or required licensing.

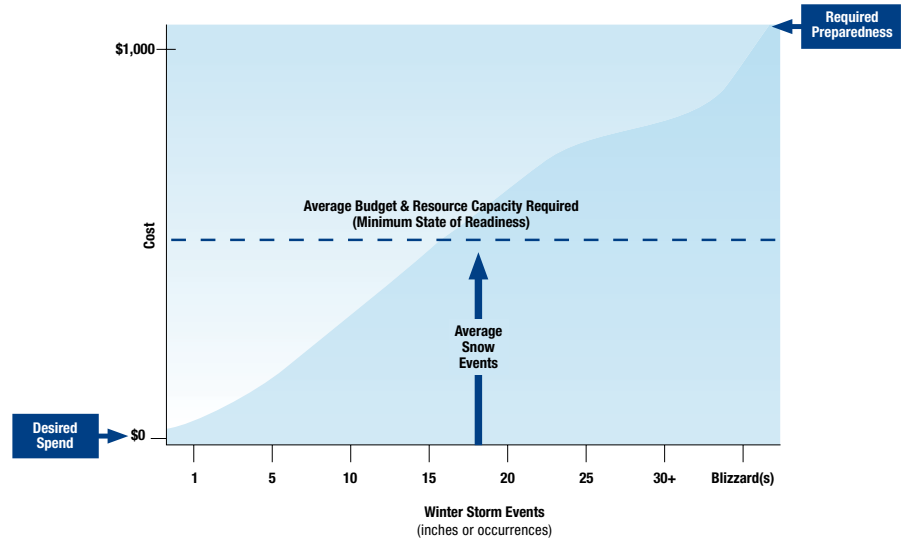
To educate yourself on how to hire a qualified snow removal professional or if you remove snow and ice from your facility, you might benefit from the information offered by the Snow and Ice Management Association (SIMA) and their educational and certification programs.

If you are looking for snow and ice management professionals in the U.S. or Canada, visit the Hire a Pro section at sima.org. Here you will find information on how and where to find snow and ice management professionals throughout the United States and Canada.

To become a Certified Snow Professional (CSP™), a snow removal expert needs to pass the CSP™ exam, which tests snow and ice management industry standards and best practice. A CSP™ not only needs to pass a rigorous exam verifying knowledge of six disciplines for running a snow and ice management business, but is also required to maintain 15 continuing education hours annually.

To obtain a free copy of SIMA's Best Practices Guidelines and other documents or tools to help you, visit sima.org/bestpractices.

Snow & Ice Management Cost (\$) and Capacity Curve



primary lots and walks clear by 7 a.m. If a snow storm or squall begins at 3 a.m. and produces two inches of snow per hour for two hours (four inches total), a 7 a.m. all-clear expectation requires your staff or vendor to have the proper equipment and manpower to cycle through the entire parking area and walkways in two hours.

If you expect to meet the 7 a.m. deadline, you have to clear all parking lots and walkways within one to one-and-a-half hours. This also means de-icing operations can only take about approximately 15 minutes. This example illustrates the cost and response risks you share with clients, and other vendors and subcontractors.

When developing estimates, professional snow and ice managers use systems and tools to calculate the required resources and costs for a particular site. Part of this evaluation is based on surface area and time calculations. For example: A snow contractor calculates that an eight- to nine-foot plow can clear two inches of snow at an average rate of one hour per acre, three inches of snow at 90 minutes per acre, and four inches at two hours per acre. Depending on specific expectations of the site related to tolerance levels for accumulation and time of day, a four-inch event may need to be cleared up to three times. Therefore, expectations have a direct effect on the estimated cost and responsiveness.

You can verify the capacity of planned equipment and manpower based on the estimated resources using an average two-inch cycle time requirement. For example, if you have an eight-acre lot using the same storm scenario of a 3 a.m. start time and two inches of snow per hour for two hours, three trucks with eight- to nine-foot plows are necessary to complete the required cycle time expectation of "all clear" conditions by 7 a.m.

If you are paying a vendor on a time and materials basis (T&M), it may seem more cost effective to agree on the less expensive hourly rate for use of trucks, or renting a smaller, less expensive piece of equipment if you are performing the service yourself. In markets known for heavier accumulating storms (even if only one or two per season), it is wiser to make the upfront investment for larger equipment that can cover more surface area in a shorter period of time. Even if larger equipment is double the hourly or rental rate, it will save you money in the long run. These cost savings add up in time, loss, and liability.

Enormous budget variations are often the case for snow removal. Parking professionals in areas that experience inconsistent snowfalls, such as those in the mid-Atlantic states, only plan for three to five events equaling 10 to 15 inches of snow annually, and aren't prepared to deal with heavier-than-average storms that might occur every few years.

From a cost standpoint, you benefit when you budget and equip for above-average conditions, even when there's only a small chance of a heavy storm or years with little to no snow. Over the course of five to 10 years, the cost of not being properly equipped far exceeds the cost of always being prepared with the proper capacity of equipment and human resources. While average size storms might only require half the amount of cost and resources, most areas expect you to be in a state of readiness for the worst weather. This requires you to plan for the proper response planning and allocate the appropriate funds to meet the worst-case preparedness scenario as illustrated in the Snow and Ice Management Cost and Capacity Curve.

Storm Response Planning


Your storm response planning needs to include contingencies for a variety of weather events and natural disasters. In addition, it needs to include snow storms or blizzards as well as other cause and effect conditions that may occur because of the initial snow. These events may include:

- Road closures. Consider what may occur if heavy snow closes roads and designated resources and snow removal vehicles aren't able to get through.
- Power outages. Think about your plan in the event there are power outages that cut off communications or prevent refueling of vehicles.
- Ice conditions/freezing rain. Draw contingencies in the event there are icy conditions or freezing rain. Consider changes to de-icing materials depending on the weather conditions.
- Holidays. Think through what you might need to do if you experience a heavy snow or blizzard during a holiday when only minimal crews are scheduled to work.
- Emergency incidents. Determine a plan of action to be implemented when it's snowing during a fire or medical emergency that requires immediate and uninterrupted access.

Communication, Documentation, and Verification

Whether you manage a snow operation or hire a service provider, simple and consistent planning for communication, documentation, and verification is important to have for managing expectations, and are critical for liability and risk management. New technologies including GPS, smartphones with cameras, and other off-the-shelf systems provide quicker and easier ways to communicate, document, and verify service.

The simplest form of communication is a phone tree. We suggest establishing a minimum of three forms of a communication for three people who represent the site, and three people who are responsible for the work to be performed. In total, there should be six people listed with their cell/text, office, and home phone numbers.

Most snow removal professionals document and verify their snow removal process using a service report for each storm. These reports should include the start and end time of the storm, site conditions, weather conditions, amounts of accumulation, and the snow removal services performed. You and your service providers need to sign off on each service report to verify timing and the actual services performed. 



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