

Snow Shovelability Safety Guide

Shovel**YES** Shovel**NO**

In Brief

- The City of Buffalo code requires the removal snow and ice from public sidewalks by 9:00 a.m., regardless of the time it fell and weather conditions.
- This ‘guide’ uniquely identifies potentially life threatening weather conditions when the removal of snow or ice would be considered life threatening. The triggers are based on select ‘warnings’ as issued by the National Weather Service (NWS).
- Recommend the adoption of the ‘Snow Shovelability Safety Guide’ as part of the City’s snow and ice removal code - so that no one breaks the law!
- This ‘guide’ allows a ‘time reset’, where enforcement action would be delayed if potentially life threatening weather prevented snow or ice removal before 9:00 a.m. And it provides an alert to pedestrians, warning them when sidewalks may not be cleared.
- This guide does not require the City of Buffalo to tell people not to shovel snow or remove ice, nor is any individual prohibited from shoveling snow or removing ice at any time.

Buffalo’s Current Snow and Ice Removal Code

The City of Buffalo’s current snow and ice removal code (Article VIII) states, in part, that *“It shall be the duty of every owner or occupant of any premises abutting any public street to remove, before 9:00 a.m., all snow and ice which may have fallen upon the sidewalk, abutting said premises”*. This duty, as currently described in the code, protects the public by providing an enforcement action to clear sidewalks for the safe passage of pedestrians – preventing the need to walk on a road – but does not take into consideration the safety of individuals shoveling snow and removing ice under potentially life threatening weather conditions. Nationwide, there are thousands of injuries and hundreds of deaths related to snow-shoveling accidents. The ‘Snow Shovelability Safety Guide’ balances the safety concerns of pedestrians and owners/occupants of premises.

Snow Shovelability Safety Guide

The goal of the ‘Snow Shovelability Safety Guide’ is to encourage snow and ice removal, while providing a needed buffer for Buffalo’s snow removal code by avoiding the requirement to shovel snow or remove ice in potentially life threatening weather situations. And at the same time, alerting pedestrians that sidewalks may not be cleared during these periods of life threatening weather. The proposed guide would require that snow and ice be removed by 9:00 a.m. when potentially life threatening weather conditions are not present, but the 9:00 a.m. deadline would be relaxed when potentially life threatening weather might place a person in jeopardy (both the property owner and pedestrian). In other words, the ‘Snow Shovelability Safety Guide’ provides a ‘time reset’, allowing residents a ‘window’ in which they may safely

shovel snow or remove ice. The definition of this 'time reset' will need to be determined, as it applies to the City's enforcement actions. To be clear, the 'Snow Shovelability Safety Guide' does not prohibit an individual from shoveling snow or removing ice, nor does it prevent a pedestrian from walking on sidewalks.

Guide Criteria

1. Very Cold Temperatures

Very cold weather can lead to hypothermia (especially prevalent in the elderly) and frostbite. Very cold weather can also adversely affect the heart through increased heart rate and blood pressure as the body attempts to maintain core temperature. The added physical stress of shoveling during very cold weather increases the risk of heart attacks. It is reasonable to choose a temperature below which it would be considered unsafe to shovel snow or remove ice from a sidewalk surface.

The Wind Chill Factor is a measure of the combined cooling effect of temperature and wind, reducing the temperature a body senses. The National Weather Service (NWS) issues a **Wind Chill Warning** when the wind chill is less than or equal to negative 25°F; a temperature they consider "life threatening", and an appropriate criteria to apply to lower the risk for those considering shoveling snow or treating sidewalks during periods of very cold weather.

2. High Wind Speeds

Increased wind speed, combined with cold temperatures decreases wind chill (it feels colder), but the wind itself causes hazards with blowing snow, reduced visibility, danger from falling tree limbs, flying debris, and a potential loss of balance. The NWS issues a **High Wind Warning** when winds pose a hazard or are "life threatening". Here the criteria are winds greater than or equal to 40 mph for at least one hour, or winds greater than or equal to 58 mph for any duration. The Beaufort Scale - Force 8 criteria - defines winds of 40 to 46 mph as a gale, with whole trees moving, and resistance being felt when walking against the wind. A NWS **Blizzard Warning** is issued when sustained winds or gusts are greater than or equal to 35 mph for a period of three hours or longer, along with considerable falling and/or blowing snow (i.e., frequently reducing visibility to less than ¼ mile). It is reasonable to establish a criteria related to high wind speed, when defined as potentially life threatening.

3. Extensive Ice Accumulation

The buildup of ice on surfaces may result in a fall and physical injury. The NWS issues an **Ice Storm Warning** when freezing rain will produce an expected accumulation of ice of 1/2 inch or greater, making walking and driving "extremely dangerous".

4. Lightning (Thundersnow)

Lightning is an under-rated weather hazard. Our fourth criteria is defined by the NWS '**Lightning Safety 30/30 Rule**': *"If the time between when you see the flash and hear the thunder is 30 seconds or less, the lightning is close enough to hit you. If you haven't already, seek shelter immediately. Wait inside until 30 minutes have passed since the last flash of lightning"*. Given that lightning is difficult to forecast in the winter (but would likely be associated with intense lake effect snow events) and that its occurrence is usually short-lived, this would not be a Snow Shovelability criterion, but is included, and promoted, in the 'Snow Shovelability Safety Guide' to alert residents about personal safety.

Implementation of the 'Snow Shovelability Safety Guide'

The 'Shovel Safe' action (Shovel**YES**) would be the default action.

The 'Shovel Safe' action (Shovel**NO**) would be issued when forecasted wind chills are ≤ -25 °F and/or sustained wind speeds are ≥ 35 or 40 mph (depending on the warning) and/or an ice accumulation is $\geq \frac{1}{2}$ inch. The issuance of the Shovel**NO** criteria for the City of Buffalo would be dependent on issuance of one or more of the following warnings, by the NWS, and would be in effect for the issuance period:

- Wind Chill Warning
- High Wind Warning
- Blizzard Warning
- Ice Storm Warning

The choice of 'Warning' over that of 'Watch' or 'Advisory' is deliberate. Warnings are issued by the NWS when *"a hazardous winter weather event is occurring, is imminent, or has a very high probability of occurrence (generally greater than 80%). A warning is used for conditions posing a threat to life or property."* The sole use of 'Warning' removes any confusion with that of the issuance of watches or advisories. And, weather warnings are only issued by local offices of the NWS, making them immediately relevant to a specific location.

To be clear, the four NWS warnings used as triggers for the 'Snow Shovelability Safety Guide' uniquely identify potentially life threatening weather conditions. The issuance of the four NWS warning triggers are rare for the City of Buffalo. It would be a mistake to consider the Shovel**NO** as an action that might be perceived as an excuse not to shovel or an action so common that it might confuse the public. A review of the past 10 winters (2007 to 2016) of the four NWS warning triggers issued for Northern Erie County (which includes the City of Buffalo) reveals that these warnings were issued only 34 times, or an average of 3.4 times per year (for an averaged 38.4 hours per year).

As demonstrated in our review of the past 10 winters, the Shovel**NO** action would be issued sparingly – conveying a sense of great importance. The goal of the 'Snow Shovelability Safety Guide' is to encourage snow and ice removal. The Shovel**NO** action does not prohibit an individual from shoveling snow or removing ice, but rather limits the City from enforcement action during a limited number of identified life threatening weather conditions, providing a safety window from shoveling snow or removing ice under life threatening weather conditions. And it provides an alert to pedestrians, warning them when sidewalks may not be cleared.

Publicity

The 'Shovel Safe' action (Shovel**YES**) would be the default action. The public would be alerted of a Shovel**NO** action via media outreach - local media (television and radio), City of Buffalo web site, social media, and by other outreach approaches, as yet to be determined.

The 'Snow Shovelability Safety Guide' could be promoted as an 'event' each year during the first week of November (at the beginning of the snow season), raising or renewing awareness of the 'Snow Shovelability Safety Guide'.

Recommendation

We recommend a Beta test of the 'Snow Shovelability Safety Guide' during the 2017-2018 winter season.

Liability

While the 'Snow Shovelability Safety Guide' does not address liability, the initial idea of a shovelability guide met rejection, in part, because the City of Buffalo did not want to be found liable for telling people not to shovel. As previously stated, the 'Snow Shovelability Safety Guide' does not prohibit a resident from shoveling snow or removing ice, therefore the city likely could not be held liable. Actually, the 'Snow Shovelability Safety Guide' may limit liability further for the City. As the City of Buffalo's code (Article VIII) requires that the owner or occupant of a premises must remove, by 9:00 a.m., all snow or ice on properties abutting sidewalks, owners or occupants may be forced to do so under potentially life threatening weather conditions, especially if the snow falls just before 9:00 a.m. Therefore, it may be reasonable to consider that the adoption of the 'Snow Shovelability Safety Guide', as part of the City's snow and ice removal code, may provide the City of Buffalo recourse from injury liability litigation that may not be present in the existing code. Personal liability issues for residents remain unchanged, as residents may still be found liable for injuries if sidewalks are not cleared of snow and ice, but can cite, as is traditionally done in litigation, a 'Storm in Progress' as a reason for not clearing a sidewalk in a timely manner.