

Watertown Snow & Ice

Introduction

The Town of Watertown has been effective in its efforts to deal with unpredictable snowfall. Snowstorms above a certain magnitude that hit the middle of a weekday, while commuters are at work and must return home, will always cause disruption. However, the town's Snow and Ice Plan allows the town to effectively deal with most situations. The rate and accumulation of snowfall, moisture, wind velocity, time of day or night, day or days of the week, storm duration and intervals between storms interact to make each storm unique.

The effectiveness of a snow and ice program can have a significant impact on a Town during the winter season. Schools which are forced to close due to road conditions cause hardships on working parents who must find alternative care. Business and industry suffer when products cannot be shipped or when deliveries aren't made. Recent studies have shown that fuel costs increase significantly if cars must travel through accumulated snow on the pavement. The variety of conditions that can occur during the snow and ice season in the Town makes advance preparation more difficult.

Frequency of accidents, injuries and deaths will increase without the benefit of a comprehensive snow program. Elderly people who are unable to get out to grocery stores because of unplowed streets and sidewalks suffer undue hardships.

An effective snow and ice plan will always outpace the economic and safety hardships caused by ineffective snow removal operations. The intent of this plan is to reduce the threat to public safety from a snow and ice emergency.

Prioritizing activities to achieve the most effective responses possible to a wide variety of conditions is the goal for the Department of Public Works.

The procedures presented in this plan serve to outline the manner in which the Department of Public Works directs town crews and contractors in solving the problem of snow and ice control during ordinary and emergency situations.

The Benefits of Winter Maintenance

- Lower accident rates through safer roads
- Lower associated insurance and liability claims
- Generate time savings from faster (and safer) travel
- Reduce productivity losses due to unavailability of material input to production
- Reduce productivity losses due to late days and absenteeism by employees
- Ensure that emergency and security services can operate efficiently; and
- Ensure mobility for people to engage in social activities





DPW Sidewalk Plow

How much SNOW does Watertown Receive on an Annual Basis?

- Watertown's normal snow fall is 42 inches
- In 2010/2011 Watertown received 100" of snow
- Public Works responded to 10 snow/ice events
- In 1996 Watertown received ***111 inches*** of snow



Department of Public Works – Emergency Operation Center



Lowering Accident Rates thru De-icing

Information contained in the next two pages are derived from the Salt Institute.

Salt Saves Lives

- Who can place a value on the loss of a human life or on the excruciating pain and suffering that result from auto accidents or the anxiety of driving on poorly maintained roads?
On the positive side, the many consequences in terms of human misery which are avoided when effective deicing occurs are truly incalculable.
- 88.3% of all injury accidents during winter storms can be avoided by deicing roadways.

Storm Preparation

Prior to a storm, the Superintendent /Supervisor will monitor a number of local weather stations as well as National Weather Service and the Town's own weather service. Normally, storm activity is followed from afar. The staff will monitor temperature ranges and snow fall rates. As the storm progresses into Massachusetts the staff will also monitor storm activity of other communities and state agencies through radio traffic. The staff will also retrieve road surface temperatures in Watertown in an effort to estimate how fast we will experience snow bonding to the roadway.

Questions and Complaints Most Often Received During the Winter Season

- *Why is snow pushed into my driveway by sidewalk and street plows?*
- **Answer:**
It's really unavoidable. We know of no other Town in New England which removes snow from resident's driveways. It would cost literally hundreds of thousands of dollars to handle such a service. Our crews will move snow back to the curb as soon after the storm as possible.
- *Can I as a resident, push snow from my property onto the sidewalk from street?*
- **Answer:**
No. Dumping of snow is a very dangerous act that can cause skidding accidents and may bring you significant liability if an accident is caused by this dumping of snow.
- *Do some streets get more of a priority during a snowstorm?*
- **Answer:**
Yes, Major roadways in our snow plan that receive a higher volume of traffic receive higher service as outlined in our snow plan.
- *Can I park my car on the street during winter months?*
- **Answer:**
- Under Town ordinance, no car is allowed to be parked on a Town street from 1:00 a.m. to 6 a.m. from December 1st. to April 1st. The Town Manager also has the power to declare an emergency parking ban as deemed necessary to clear the streets at other times of the

day or year. During the times of a parking ban or an emergency declared by the Town Manager, cars remaining on the street will be ticketed and towed at the owner's expense.

- *What should I do if I think a snowplow is traveling too fast for safety?*

- **Answer:**

Our plows are directed to plow between 10 and 20 m.p.h. and sometimes slower; the only exception is on some of the major roadways. If you believe speeds are in excess of safe conditions, please contact us giving us the location, description of vehicle and time. We will investigate accordingly.

- *What should I do if a snowplow damages my property?*

- **Answer:**

Please send a letter to the Town Clerk's Office at 149 Main Street. Provide the following information: description of vehicle, location and estimated time of accident. Enclose any pictures or estimates.

- *Does the Town Manager get his street plowed first?*

- **Answer:**

No.

- *Does the Department of Public Works take constructive criticism and input from citizens?*

- **Answer:**

We certainly do, we encourage it. If a group of citizens would like to meet with us or have suggestions, please do not hesitate to contact us.

- *Why do snowplows block my driveway with snow when they clear the road?*

- **Answer:**

We are so sorry for this inconvenience. While plow crews try to minimize the amount of snow that gets plowed into driveways during the storm, it is the responsibility of the property owner to clear their driveway opening. Also, as long as there is snow in the street, the plow driver will continue to plow the street. Some of this additional snow will end up at the driveway opening. To avoid double work try to shovel snow from your driveway after the plow has been by, and shovel the snow to the right side of your driveway as you face the road instead of to the left.

- *Why doesn't Watertown use more sand?*

- **Answer:**

Our experience, and the body of research on the use of sand, indicates the benefits of abrasives (sand) applied to roadways are very minimal. Abrasives are easily displaced from the roadway by traffic and they have no ice melting properties. There are also negative environmental consequences such as air pollution and siltation of waterways. When you consider the cost of the material from purchase, storage and dispersal; through removal, clean up and disposal; it is not a cost effective material for snow and ice operations.

- *What is the importance of pavement and subsurface temperatures? Why not rely on just air temperature?*

- **Answer:**

The ability of deicing agent to melt snow and ice depends on the temperature of the roadway and not the air temperature. During the fall the pavement is often kept warmer than the

surrounding air because of the warm soil. During the spring the reverse may be true. The pavement temperatures can be colder than the air because the soil is still frozen from the low winter temperatures. The sun also has a strong influence on the pavement temperatures. It can help heat the pavement and speed the melting process. Air and pavement temperatures can often differ by as much as 20 degrees Fahrenheit.

- *I've sometimes seen snowplows driving along during a storm with their plows in a raised position. Why are they not plowing?*
- **Answer:**
There are a couple of reasons plows aren't always pushing snow. Plows may be in operation only to spread materials, or may be out of materials to spread and headed back to the Public Works yard for a refill. Another possibility is that the driver does not have the responsibility for the road he is currently on – and he's heading elsewhere.
- *Why would material be spread on a bare highway after a snowstorm is over?*
- **Answer:**
The projected roadway temperatures have a lot to do with the final treatment of a road. After plowing operations have finished and a roadway is left in a "black and wet" condition, there is the possibility of the water on the road re-freezing. This post-storm treatment of roads is typically needed at night – since temperature drops can be more dramatic than when the sun is shining.

- *Why Salt and How Much?*

- **Answer:**

Salt is effective for melting snow and ice because the chemical properties of the salt lower the freezing point of water. However, the colder it gets, the more salt is required to melt snow and ice. This is because salt begins to lose its effectiveness as temperatures drop below 25 degrees Fahrenheit. The loss becomes increasingly more substantial below 20 degrees F. At 30 degrees F one pound of salt will melt 46.3 pounds of ice; at 0 degrees F one pound of salt will melt only 3.7 pounds of ice.

Calcium chloride is mixed with salt in colder temperatures to increase the salt's melting ability. (See Calcium Chloride below.) Direct sunlight and traffic also help salt work better. Heavily traveled roads may often become slushier and clear sooner than lesser traveled roads in rural areas.

- *Where should I call if I have a question or complaint?*

- **Answer:**

We would ask that all calls be made Monday through Friday, between the hours of 8:30 a.m. and 5 p.m. at 617-972-6420. However, if you feel there is an emergency or an issue that can't wait, please call this number at your convenience. If you wish to write a letter, send it to:

Department of Public Works
124 Orchard Street
Watertown, MA 02472

Winter Weather Glossary

Have you ever wondered what makes a storm a blizzard?

Below you will find definitions of weather related terms.
Definitions provided by the National Weather Service.

Blizzard – A blizzard means that the following conditions are expected to prevail for a period of 3 hours or longer: Sustained wind or frequent gusts to 35 miles an hour or greater and considerable falling and/or blowing snow (i.e., reducing the visibility frequently to less than a quarter mile).

Heavy Snow – This generally means.... Snowfall accumulating to 4” or more in depth in 12 hours or less or snowfall accumulating to 6” or more in depth in 24 hours or less. In forecasts, snowfall amounts are expressed as a range of values, i.e., “8 to 12 inches.” However, in heavy snow situations where there is considerable uncertainty concerning the range of values, more appropriate phrases are used, such as “....up to 12 inches....” or alternatively “....8 inches or more....”.

Ice Storm – An ice storm is used to describe occasions when damaging accumulations of ice are expected during freezing rain situations. Significant accumulations of ice pull down trees and utility lines resulting in loss of power and communication. These accumulations of ice make walking and driving extremely dangerous. Accumulations are called significant when they amount to a quarter inch or more.

Nor / 'easter – A strong low pressure system that affects the Mid Atlantic and New England States. It can form over land or over the coastal waters. These winter weather events are notorious for producing heavy snow, rain, and tremendous waves that crash onto Atlantic beaches, often causing beach erosion and structural damage. Wind gusts associated with these storms can exceed hurricane force in intensity. A nor'easter gets its name from the continuously strong northeasterly winds blowing in from the ocean ahead of the storm and over the coastal areas.

Wind Advisory – Sustained winds 25 to 39 mph and/or gusts to 57 mph. Issuance is normally site specific.

Wind Chill – Increased wind speeds accelerate heat loss from exposed skin and the wind chill is a measure of this effect. No specific rules exist for determining when wind chill becomes dangerous. As a general rule the threshold for potentially dangerous wind chill conditions is about – 20 degrees Fahrenheit.

Winter Storm Warning – This announcement is issued by the National Weather Service when a winter storm is producing or is forecast to produce heavy snow or significant ice accumulations. The criteria for this warning can vary from place to place.

Winter Storm Watch – This product is issued by the National Weather Service when there is a potential for heavy snow or significant ice accumulations, usually at least 24 to 36 hours in advance.