

Keep It Clear



Recommendations for Sidewalk Snow and Ice Removal in Massachusetts

prepared by

WalkBoston

MAKING OUR COMMUNITIES MORE WALKABLE

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Executive Summary

Sidewalks are key to Massachusetts' transportation infrastructure. Walking is an integral part of virtually all journeys and has health, environmental and community benefits. Year-round walkable sidewalks deserve the attention and encouragement of all levels of government and all members of the community. Improving the pedestrian realm serves us all.

Snowy and icy sidewalks pose a challenge to Massachusetts pedestrians. Most cities and towns hold property owners responsible for clearing sidewalks abutting their property, yet sidewalks often remain impassable days after a storm. Even in municipalities with adequate snow removal ordinances, enforcement does not keep up with those who do not clear, and current state law limits fines to no more than \$10 per day in towns or \$50 per day in cities.

In response to many comments from Massachusetts pedestrians and observations by our staff, WalkBoston has developed seven basic recommendations to improve sidewalk snow and ice clearance. The recommendations would be carried out by city and state agencies, by individual property owners/managers, and by advocacy organizations such as WalkBoston. If executed in concert, these recommendations will make a noticeable difference in sidewalk conditions.

1. Create a norm of snow and ice clearance through social awareness campaigns that make uncleared sidewalks and curb ramps as unacceptable as litter.
2. Identify a municipal point person for snow removal so that reporting an uncleared sidewalk or getting assistance is provided through one well-advertised and well-staffed phone number.
3. Set priorities for sidewalk snow clearance that identify the most critical sidewalks to ensure that enforcement and public snow clearance are focused on the most important locations.
4. Improve monitoring and enforcement by giving ticketing authority to municipal workers who are already outdoors and can therefore see the problems in person (and remember that the goal is to clear sidewalks, not to raise money).
5. Design sidewalks for easier snow removal with simple design interventions, especially at common trouble spots such as curb ramps.
6. Train municipal and private snow plowing personnel so that plow drivers are sensitive to the needs of pedestrians and are proficient in techniques that aid clearance of sidewalks, curb ramps, crosswalks, and pedestrian crossing islands.
7. Create sensible state policies through appropriate legislation to eliminate the liability property owners face for clearing sidewalks and allow municipalities to levy more reasonable fines against those who fail to clear.

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WalkBoston thanks the creative and diligent efforts of the three interns who researched and wrote the vast majority of this report: Aaron Stelson, Kate Setterlund and Steve Miller.

On the cover:

A pedestrian navigates through the snow-covered sidewalks of Manchester-by-the-Sea in 2004. All photos were taken in Massachusetts by Dan Burden of Walkable Communities, Inc.

About WalkBoston

WalkBoston is a non-profit membership organization dedicated to improving walking conditions and encouraging walking in Massachusetts cities and towns. Founded in 1990, our members come from 60 communities and more than 70 companies and institutions across the state.

Why walk?

Good walking conditions are the backbone of every community's transportation system and one of the most important elements of a livable community. Neighborhoods where walking is an attractive, convenient and safe option have healthier residents, fewer cars on the road, and a stronger sense of community. Walking has numerous health benefits, and pedestrian activity makes residential areas more neighborly, commercial areas more vibrant, and helps to reduce crime.

Walking is a central component of the transportation system of Massachusetts and is part of virtually every trip – alone or combined with public transit, driving, or cycling.



Trips less than one mile make up 27 percent of all journeys.¹ Walking these short trips would take 20 minutes or less. Improved walking conditions are an effective way to encourage walking, and prompt and effective snow clearance is central to maintaining acceptable walking conditions.

After a snowfall, it is common to see pedestrians taking to the street, as sidewalks remain uncleared.

Why shovel?

As during any season or day of the week, many people walk during and after winter storms whether for transportation, exercise, or pleasure. However, a look down Massachusetts' streets after a snowfall often reveals well-plowed streets, adjacent to impassible sidewalks and crosswalks, and pedestrians who have taken to the narrowed and dangerous street.

¹ Untermann, Richard K., [Accommodating the Pedestrian](#), 1984.

Safe passage along sidewalks is critical for pedestrians. In many cases, to slip and fall means getting hurt.² Every winter there is a dramatic spike in fractures in Massachusetts, especially of the hip and forearm, due to slips on icy sidewalks.³ The impacts are greatest on those who depend on walking – children on their way to school, transit users, parents with strollers, wheelchair users⁴, and the elderly.⁵ In 2000, 21% of Massachusetts residents were over the age of 55; by 2030 that number will grow to 33% of the population.⁶ Access to sidewalks after a snowfall is already an important issue to seniors, and as the population of Massachusetts ages, the impacts on this particularly vulnerable population will grow.⁷

Care and management of sidewalks is a public responsibility, no different than the responsibility for public streets and parks. Just as municipalities and state agencies ensure that roads are safe and clear for vehicles, so too should they ensure that sidewalks are clear for pedestrians. As a matter of equity, public health, and accessibility, pedestrians should receive the same level of service for sidewalks that drivers receive for roads.

² The seasonal patterns were analyzed by calculating the relative risk for injury during the exposure to colder weather compared with exposure to the milder weather. Data strongly suggest that the excess incidence of hip and arm fractures is entirely due to slipping on ice and snow. Bulajic-Kopjar, M. 2000, “Seasonal variations in incidence of fractures among elderly people,” *Injury Prevention*, 6:16-19.

³ Wareham, K. et al. 2003, “Seasonal variation in the incidence of wrist and forearm fractures, and its consequences,” *Injury*, 34(3):219-222.

⁴ During testimony before the Boston City Council, a member of Boston’s Neighborhood Association Group who uses a wheelchair testified that uncleared sidewalks left him housebound for 12 days during the 2007 winter.

⁵ An incident in February 2005 underscored the importance of sidewalk snow clearance when four West Roxbury High School students were hit by a truck as they walked in the street.

⁶ Metropolitan Area Planning Council. “MetroFuture Projections Brief #1: Our Changing Population.” www.mapc.org/data_gis/data_center/2006_Projections/Changing_Population.pdf

⁷ In 2006, the Massachusetts Department of Public Health conducted focus groups with seniors on the problem of falling. One of the issues raised most often was falling on ice and snow. Many participants said that dangerous conditions – including black ice, uncleared pathways, and uneven brick sidewalks – often keep them at home after snowfalls.

Responsibility for Snow and Ice Clearance

Massachusetts communities use one of three methods to clear snow from their sidewalks: private, public, or a combination of the two.

A. Private Sidewalk Clearance

Private sidewalk snow clearance is most common in dense urban areas. It requires that each property or business owner clear the sidewalk (often including curb cuts and ramps) abutting his or her property. Usually, property owners have between three and twenty-four hours to complete snow and ice clearance. After that, municipalities may issue a warning or a ticket. Under the private sidewalk clearance model, municipalities only clear sidewalks adjacent to municipally owned buildings or on municipally owned property.

B. Public Sidewalk Clearance

Most common in suburban communities and some urban areas outside the United States, under the public sidewalk snow clearance model the municipality clears sidewalks using municipal equipment and workers. Due to cost constraints, these municipalities more often than not clear only the most traveled sidewalks—those along routes to schools, major roadways, and in business districts. Sidewalks in less traveled or tougher-to-clear areas are left to abutters’ good intentions—property owners may clear sidewalks, but they have no legal obligation to do so. While several municipalities, including Concord, MA, do an excellent job of clearing sidewalks concurrently with streets, it is far more common for municipalities to clear streets before moving to sidewalks hours after a storm has ended.⁸ Even municipalities such as Toronto, which clears most sidewalks, may leave older, narrow sidewalks to be cleared by abutting property owners.⁹

C. The Combination Method

Several municipalities combine private and public snow clearance. These municipalities clear the most heavily traveled sidewalks, but require property owners to clear abutting sidewalks in other parts of the city. For example, Fort Collins, CO, performs snow removal from sidewalks in the downtown area and adjacent to Priority 1-designated arterial streets using tractor and trackless machines but requires property owners elsewhere to clear sidewalks themselves within 24 hours of the end of snowfall.¹⁰

⁸ Fowler, Dick. Highway and Grounds Superintendent. Public Works Department Concord, MA.

⁹ City of Toronto. “Snow Management.” <http://www.toronto.ca/transportation/snow>

¹⁰ City of Fort Collins. “Snow and Ice Control.” <http://www.fcgov.com/streets/snow-ice.php>.

Existing Conditions

The balance between private and public clearance varies within Massachusetts based on a community's urban/suburban/rural balance, ability to pay for snow clearance, type of equipment required, ease of clearance, and municipal leadership.

In all cases, municipalities take public responsibility for sidewalks abutting municipal property, though the departments doing the clearance may vary. Generally, municipalities are also responsible for sidewalks adjacent to local facilities owned or used by state agencies, such as MBTA bus stops and Turnpike Authority or State bridges.

Most Massachusetts communities use the Private Clearance (A) or Combination Clearance (C) methods, where the primary responsibility for clearance falls to private property owners. WalkBoston found no Massachusetts community that utilizes the Public Clearance method (B), where the municipality is responsible for clearing all sidewalks abutting private property.¹¹ In a limited number of municipalities there is no requirement for clearing any sidewalk abutting private property.

¹¹ Communities that provide sidewalk clearance must make an investment in both personnel and equipment, such as sidewalk tractors with snow-blower attachments. (See Appendix A for more on snow-clearance equipment) Even where municipalities clear the majority of sidewalks with sidewalk-scale plows, older, narrow, or uneven sidewalks are often left uncleared because they are highly personnel-intensive and thus too costly to clear.

The Challenge



Uncleared or poorly cleared sidewalks often force pedestrians into dangerous roadways. Cars traveling around the corner seen in the photograph might not see a pedestrian in the road in time to avoid them.

Even in communities with reasonable regulations for sidewalk snow and ice clearance, it is common for sidewalks to remain covered in snow or ice days

after a storm has passed, While many sidewalks may remain uncleared, those most likely to remain covered in ice and snow because of lack of attention from the responsible party are:¹²

- Sidewalks bordering parking lots, which are usually the responsibility of the parking lot owner.
- Sidewalks where the abutter cannot be contacted in a timely manner, such as absentee landlords or seasonal residents who have not made arrangements for snow clearance.
- Sidewalks abutting parks or undeveloped property.
- Sidewalks where there is jurisdictional overlap, such as on State or Turnpike Authority bridges at or near MBTA bus, subway, and rail stops.

The most problematic areas are sidewalk corners, curb ramps and pedestrian-crossing islands. These areas often suffer from poor drainage, creating dangerous ponds of ice or slush. The law does not require abutting property owners to clear the corners and curb ramps down to the crosswalk, and municipalities often do not take responsibility for these areas, even if the snow was deposited there by a municipal plow. Corners, curb ramps, and pedestrian-crossing islands suffer from neglect during and after snowfalls, creating a serious hazard for pedestrians.

¹² These problem areas were identified through observations and discussions with municipal staff and public works officials throughout eastern Massachusetts.

The challenge of clearing snow and ice from sidewalks, curb ramps, and crosswalks requires careful planning and coordination by municipal officials and property owners to overcome three basic problems:

1. Responsibility is divided. A patchwork of regulations is enforced by many different municipal and state agencies that may not coordinate their clearance, regulations or enforcement.
2. There is no central point of contact. Private citizens often don't know whom to contact with a question or concern, especially when they are uncertain whether the municipality, a property owner, the State, or an agency is responsible for clearing a certain sidewalk.
3. There is inadequate enforcement and awareness. Even in communities with good sidewalk clearance regulations, the rules are often disregarded because:
 - Property owners simply don't know about the requirements.
 - Property owners do not understand the importance of clearing.
 - Property owners cannot manage due to health problems or age.
 - Lax inspection and enforcement leads property owners to ignore the regulations without suffering any consequences.

Some communities have made a concerted effort to address snow and ice clearance; in others little attention is paid. Most often, the issue receives attention because one or two key policy-makers are serious about sidewalk clearance and set the tone for the community as a whole. Year-round walkable sidewalks are needed by all pedestrians, and deserve attention from policy-makers, municipal and state employees, residents, and local businesses.

Recommendations

Removal of snow and ice from sidewalks, curb ramps and crosswalks is as important as clearance from roadways and there is a clear municipal responsibility for ensuring that it happens. Clear, reasonable and enforceable policies should be established, with a system in place to ensure they are carried out. Municipalities should make private citizens aware of their responsibilities and also spell out and execute the responsibilities of the public sector.

Seven key means to improving sidewalk clearance are:

1. Create a norm of snow and ice clearance through social awareness campaigns.
2. Identify a municipal point person for snow removal.
3. Set priorities for sidewalk snow clearance.
4. Improve monitoring and enforcement.
5. Design sidewalks for easier snow removal.
6. Train municipal and private snow plowing personnel.
7. Create sensible state policies through appropriate legislation.

1. Create a Norm of Snow Clearance Through Social Awareness Campaigns.

State and local government should jointly develop and implement a “social marketing” effort to improve public and private understanding of the importance of sidewalk and curb ramp snow clearance. Clearance should become the social norm, understood to be one element of being a good neighbor or providing good government.

The marketing campaign could include many audiences including school children, social service providers, postal workers, DPWs (e.g. as with mailings about recycling, leaf collection, etc.), and community and neighborhood organizations.¹³ Such campaigns, especially when combined with laws and strict enforcement, have been effective in campaigns to increase seatbelt use, reduce littering, discourage smoking and remind dog-owners to clean up after their dogs. State and municipal public health departments may be the best lead agencies because of their long history of

¹³ For an example of an effective brochure from a Department of Public Works, see Appendix B.

social awareness campaigns. Other leadership could come from transportation, public works, elder services, or disability commission staff.

The social awareness campaign should emphasize:

- Part of being a good neighbor is keeping your street safe for your neighbors.
 1. Leaving one’s sidewalk uncleared creates an inconvenience and hazard for all, but especially children and the elderly.
 2. By clearing promptly, people will do their part to contribute to the larger effort.
- An enforcement program will cite violators with a warning or fine.
- Help is available if an individual cannot clear a sidewalk due to age, sickness or physical incapacity.

Municipalities and participating agencies should distribute information through a variety of local means, such as:

- Local newsletters and magazines,
- Schools and day care centers,
- City websites,
- City calendars,
- Local access television,
- Postings at city buildings, public libraries, and schools,
- Tax bills,
- Voter registration notices,
- Local newspapers,
- Door-to-door leafleting,¹⁴
- Phone books.

The social awareness campaign could incorporate middle and high school students in clearance programs for elders and disabled residents – perhaps through a municipally-funded program of teen employment. One example of a social awareness campaign that reinforces the importance of good snow clearance is a program in Jackson, MI, where “thank-you” door hangs were delivered by school children. The children added notes thanking residents who cleared promptly and thoroughly, mentioning that good clearance helps children get to school safely.¹⁵

¹⁴ The City of Boston distributes leaflets with information on snow clearance to its residents at the beginning of each winter season.

¹⁵ This “Shovel Audit” program is operated in Jackson, MI, by the Fitness Council of Jackson and the Jackson Arts and Technology Academy as a Safe Routes to School program.

A successful marketing campaign would transform sidewalk clearance into a social norm, like recycling, mowing the lawn or cleaning up after one's dog.

2. Identify a Municipal Point Person

To ensure that citizens are not faced with a maze of possible contacts, it is essential that each community identify one well-advertised phone number and email address as a central point of contact for all snow and ice removal issues. This point person(s) will necessarily call on a variety of resources (municipal, state and private) to resolve clearance issues. The phone should be staffed at least from 6AM to 8 PM, on weekdays and weekends. The point person(s) must be able to answer questions, alert authorities about problem area where public clearance is required, provide assistance to elderly or disabled residents, and get citations issued to private parties who have not cleared.

One popular method used by both small and large communities is a snow hotline. For example, Cambridge, MA; Arlington, MA; Toronto, Ontario; and Ottawa, Ontario, each have one phone number to report an uncleared sidewalk. In Fort Collins, CO, a snow hotline takes reports of uncleared sidewalks and provides information for those issued a courtesy warning. Public works and transportation department employees generally staff snow hotlines.



Some municipalities clear sidewalks in commercial areas with sidewalk snow plows. For more information on sidewalk snow plows, see Appendix A.

3. Set Priorities for Clearance

Municipalities usually prioritize streets to determine which should be plowed first. Similarly, municipalities should create a plan that designates whether sidewalks are to be cleared by a public or private party, and by what time they should be cleared. The municipality will then be able focus its resources on the most important sidewalks. One possible system is outlined in the table on page 11. Using digital mapping software now widely available, municipal administrators can map priority areas.¹⁶ Notification of the snow-clearing priority for each street might be sent on every

¹⁶ It is important to note that while high-priority roadways and high-priority sidewalks may overlap, they are

tax bill and advertised through fliers or notices in the local newspaper at the beginning of each winter.

The required timing for clearance could also vary by priority zone. For example, the DPW in Cambridge attempts to clear major squares such as Harvard, Porter, and Central within three hours after snow has stopped falling, while residential property owners are required to clear by twelve hours after the end of snowfall, sunrise to



sunset, or by 1pm after a nighttime snowfall.¹⁷ Whatever the details are for each municipality, the goal should be to create a network of cleared sidewalks in areas where there is significant pedestrian traffic as quickly as reasonably possible.

By using a social awareness campaign to encourage property owners to be good neighbors by shoveling sidewalks (including trouble spots such as curb ramps), real progress can be made in clearing sidewalks.

not always the same.

¹⁷ City of Cambridge sidewalk clearance ordinance. See Appendix C for a model snow clearance ordinance.

Table 1: Summary of Sidewalk Clearance Priorities

Type of Sidewalk	Definition of Sidewalk Type	Suggested Clearance Method
First Priority Sidewalks	<p>Sidewalks along:¹⁸</p> <ul style="list-style-type: none"> • Major routes to schools and civic institutions • Major routes connecting businesses and residents to public transportation nodes • Business areas • Heavy traffic routes • Bus routes and stops 	<p>Either:</p> <ul style="list-style-type: none"> • Municipal clearance • Clearance by private abutters with a high level of enforcement
Second Priority Sidewalks	All non-first priority sidewalks within 1/2-mile of schools, civic buildings, or public transportation nodes	Required clearance by abutters. Moderate level of enforcement ¹⁹
Third Priority Sidewalks	Sidewalks in urban communities that are not first or second priority (side streets)	Required clearance by abutters. Lower level of enforcement than second priority sidewalks.
Fourth Priority Sidewalks	Sidewalks not designated as 1 st , 2 nd , or 3 rd priority sidewalks	Clearance encouraged but not required

¹⁸ First priority sidewalks are major routes are routes carrying a high volume of pedestrian or automotive traffic within ½ mile of a major destination, such as schools, business areas, or transit nodes (including subway stations, commuter rail stations, and bus stops and depots).

¹⁹ A moderate level of enforcement means that these sidewalks should be inspected occasionally, but not as often nor at the expense of the high priority sidewalks.

WalkBoston recommends the following standards for clearance:

1. Sidewalks should be cleared to a minimum width of 48 inches (four feet), or 75% of the width of the sidewalk, whichever is larger. This would allow passage for a wheelchair or stroller and provide some space to put cleared snow on the balance of the sidewalk.
2. First-priority sidewalks should be passable within 3-6 hours after a storm, between 7 am and 9 pm.²⁰ While this may sound like a short amount of time to clear the sidewalk, clearing is usually much easier to do right after a storm because snow has not yet turned into ice or slush.
3. Clearance and walkability should be defined to include both snow and ice. Property owners should lay calcium chloride or sand on packed ice that is difficult to clear.
4. Municipalities should clear corner curb ramps to the street shortly after or simultaneously with street plowing. Municipal street plowing should not pile snow at corners, on curb ramps or on pedestrian crossing islands. While clearance of curb ramps is a particularly tricky task that is often not done, it is a problem for pedestrians and WalkBoston urges municipalities to develop a maintenance program for snow and ice removal at these critical locations.

4. Improve Monitoring and Enforcement

It's important to note that the goal of enforcing snow-clearance ordinances is not to raise funds for a city or town through ticketing. The purpose of enforcement is to encourage clearing of sidewalks and curb ramps.

Policies for monitoring and enforcement should specify:

1. The municipal department(s) responsible for monitoring snow clearance.
2. The municipal department(s) responsible for enforcement.
3. The penalties for non-clearance or insufficient clearance and how the fines are collected.
4. How clearing of sidewalks adjacent to public property will be handled and enforced within municipal government.
5. Who will clear neglected sidewalks and how the responsible party will be billed for the service.

²⁰ Requirements for when snow must be cleared vary throughout Massachusetts but are for the most part quite similar. In Cambridge, snow must be cleared within 12 hours after the end of snowfall if it falls during the day; if it falls at night, snow must be cleared by 1:00 PM the following afternoon. In Worcester, snow must be cleared within 10 hours after the end of snowfall. New Bedford has a stricter requirement: snow must be cleared within 4 hours after the end of snowfall if it falls during the day; if it falls at night, it must be cleared by 11:00 AM the following morning. Boston has one of the strictest laws, but it is rarely enforced to its letter: snow or ice cannot remain on a sidewalk for more than three hours between sunrise or sunset without being removed or covered with sawdust or calcium chloride.

6. Who will provide services to those who, due to age or disability, cannot clear the sidewalk in front of their property, whether they are able to repay the cost or not.

Even when there are bylaws requiring clearance, sidewalks often remain impassible, and enforcement is minimal due to either a lack of enforcement or a lack of manpower for sufficient enforcement. For example, in the City of Boston, the Inspectional Services Department (ISD) is responsible for issuing tickets for uncleared sidewalks. However, there are fewer than 15 code enforcement officers on staff.²¹ Although these officers patrol priority areas and respond to tips and complaints, they cannot cover the entire city quickly. If municipalities also gave ticketing authority to other staff members who spend much of the day outside, sidewalk clearance could increase. For example, Cambridge recently gave parking enforcement officers the ability to ticket for uncleared sidewalks and has since seen a marked improvement in private sidewalk clearance.²²

Tickets should be issued for both uncleared and poorly cleared²³ sidewalks, with residents and businesses receiving prompt notice that they have been ticketed.²⁴ Rigorous enforcement should be undertaken to increase compliance, especially for first priority sidewalks.

It may be difficult for a city or town to follow through on collecting fines. It is not uncommon for fines to remain uncollected, especially if the fine amount is relatively small. Unlike parking tickets, snow removal tickets are a more involved process because a ticket can't simply be left at the violating property. Instead, a ticket is also often mailed to the property owner. While the DPW or some other department may write the ticket, it is usually the city or town clerk or treasury that collects the fine. If tickets are contested, the municipality goes to court. Some courts are cooperative with municipalities seeking fines while others easily dismiss tickets. In the end, while tickets may be given to offenders, they may not always be paid. In some jurisdictions

²¹ Bill Good, head of City of Boston's Inspectional Services Department.

²² It is important to note that along with this new enforcement capability, Cambridge also adopted a much more pro-active stance toward sidewalk clearance. According to data from the Cambridge Department of Public Works, parking enforcement officers write, on average, half of all tickets for insufficient sidewalk clearance. The other half is written by the DPW.

²³ Poorly cleared sidewalks are sidewalks where the abutting property owner has made an attempt to clear the sidewalk, but falls short of explicit requirements for sidewalk clearance, such as those detailed in Recommendation 3.

²⁴ In several municipalities, tickets for non-compliance with sidewalk clearance are mailed to the property owner. Unfortunately, this disconnects the failure to clear the sidewalks with the ticket, and the property owner does not receive the ticket in time to clear the sidewalk. By leaving a notice in a mailbox or on the door and then mailing a ticket, municipalities can better connect fines with failure to clear sidewalks. This also helps tenants see the consequence of an uncleared sidewalk and can help put pressure on absentee landlords.

around the country, fines for lack of sidewalk clearance are added to property tax bills – an approach that seems better at getting the attention of the property owner.

Municipalities have different approaches to dealing with those members of the community, such as low-income elderly or disabled, unable to shovel snow or pay for private clearance. Fort Collins, Colorado, has an “Adopt-a-Neighbor” program which coordinates volunteers to shovel for someone who cannot do so on their own. The Cambridge Department of Public Works will clear the sidewalks at no cost if residents in need of assistance add their name to the annual exemption list.²⁵ Other communities provide no snow clearance services for the elderly or disabled and thus are reluctant to ticket property owners. Provisions to help low-income elderly or disabled people clear their sidewalks are necessary to ensure that while all sidewalks get cleared, only property owners who have the ability to shovel are ticketed. Specific programs will vary among municipalities.

Around the nation, tickets typically range from \$15 to \$100 per violation.²⁶ Municipalities may have higher ticket rates for businesses and large apartment building owners, or for high-priority sidewalks. In all cases, the goal is not to raise money through ticketing, but to encourage sufficient clearance of sidewalks within a reasonable amount of time. Some cities, such as St. Paul, MN, and Dubuque, IA, clear sidewalks for property owners that fail to do so and bill them for the service, often including an administrative fee.²⁷

Notwithstanding the importance of better enforcement, enforcement exceptions will need to be made for extraordinary circumstances, such as unusually heavy snowfall. In these cases, the municipal authority responsible for snow clearance enforcement should grant time extensions to property owners or, if necessary, help clear sidewalks using municipal equipment.

5. Design Sidewalks for Easier Snow Removal

Snow clearance is sometimes hindered by the design of roads and sidewalks, and

²⁵ For residents to gain an exemption they must have an income below \$22,014 for a single-person household and below \$31,433 for a two or more person household, must live in a single-family home, and be over 60 years old or disabled. The application is simple and requires no verifiable proof of income, age, or disability status. The Cambridge Council on Aging runs the application process and the Department of Public Works clears the sidewalks for low-income disabled or elderly residents. Currently, sixty-three people are registered as needing sidewalk clearance assistance.

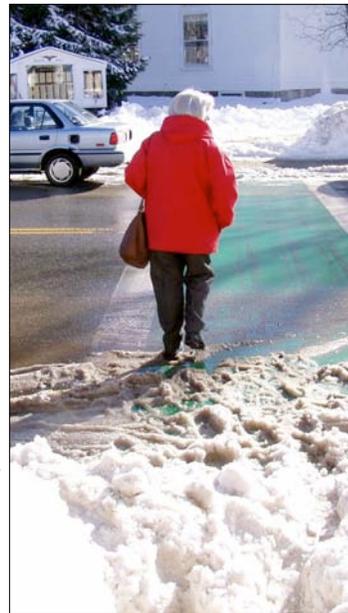
²⁶ In Ann Arbor, Michigan, fines can go as high as \$1,000.

(<http://www.a2gov.org/SafetyServices/Police/sidewalk.html>)

²⁷ <http://www.stpaul.gov/depts/citynews/snowshovel.html> and www.cityofdubuque.org/uploads/manager/SidewalkSnowRemoval.pdf

design interventions could help ease sidewalk clearance. Among the possible design measures are those described below:

- Building wider sidewalks or sidewalks with tree lawns²⁸ or terraces which create a storage area for snow, preventing street clearance from interfering with sidewalk clearance. Having a wide curb lane on roads without on-street parking can have a similar effect.
- Concrete sidewalks are smoother and easier to shovel than bricks or pavers.
- Street furniture, infrastructure, and signage should be placed at the edge of the sidewalk and not in the middle of the pathway.
- Corners and curb ramps tend to be the most problematic places for sidewalk clearance because snow plowed from streets is dumped there and accumulates. Some design improvements include:
 - Installation of drain inlets on the upstream side of corners to prevent large volumes of water from flowing around the corner. During winter, this may reduce the risk of creating slush pools at corner curb ramps.²⁹
 - Moving curb ramps slightly away from the edges of a street corner may make them easier to clear and less likely to be blocked by street snow clearance.
 - Curb extensions should be encouraged on streets with parking. Not only do they provide the pedestrian with increased visibility, but they also eliminate the area of unplowed roadway between the sidewalk and the vehicle travel lane, as seen in the photo below.



Curb ramps are common trouble spots for pedestrians, especially at crosswalks. These areas are often ignored by both property owners and the municipality, leaving a dangerous zone of ice and slush.

²⁸ A tree lawn is a grassy strip of land between the sidewalk and the street.

²⁹ http://safety.fhwa.dot.gov/ped_bike/docs/chapter1.pdf (page 27)

6. Train Municipal and Private Snow Plowing Personnel

In many states, including Massachusetts, annual training workshops are held to teach plowing techniques.³⁰ Attendees are DPW employees from cities and towns across the state. Currently, these trainings focus on highways, but also incorporate methods of clearing sidewalks. This makes these workshops ideal places to teach DPW personnel about the importance of clear sidewalks, curb ramps, and crosswalks.

There are also nationwide events that reach private contractors and companies who wish to stay competitive in the plowing market. The American Public Works Association's (APWA) North American Snow Conference brings together over 1,000 municipal and state public works professionals, winter maintenance specialists, companies with innovative services or materials, and professional trainers who all contribute their knowledge. Technical sessions and roundtable discussions cover topics such as general snow removal, plowing procedures, new technologies and winter pavement maintenance. The 2007 APWA snow conference also included a session on community outreach and citizen interaction, highlighting the need for cities to work with their residents. Plowing methods that keep sidewalks, crosswalks, and curb ramps clear should be added to the discussion.

7. Create Sensible State Policies Through Appropriate Legislation

While municipalities are usually responsible for ensuring that sidewalks are clear, state laws play a role in municipal regulation. Two state-regulated issues currently hinder the promotion of cleared sidewalks: liability and allowable fines. WalkBoston is working with legislators on bills that would change current policies and create statewide regulations that encourage residents to clear sidewalks.

Liability

In Massachusetts, property owners can be held liable for damages resulting from injuries due to falls on sidewalks adjacent to private property if the property owners have made an attempt to clear the sidewalks. However, if they do nothing to change the condition of the sidewalks, they cannot be held liable in the event of injury. Instead of motivating abutters to fulfill their responsibilities as many cities and towns require, this policy discourages people from clearing sidewalks and actually increases the risk of injury.

If property owners are to be convinced that it is their duty and responsibility to clear sidewalks abutting their homes and businesses, it is crucial that they have protection from liability stemming from their clearance of the sidewalk. Currently under legislative review in Massachusetts is a bill (H1987) that would provide immunity for people who have made an effort to clear their sidewalks. The bill is modeled after an

³⁰ The Massachusetts Local Technical Assistance Program at UMass-Amherst (Baystate Roads) holds snow and ice workshops. Baystate Roads also helps to host "Moving Together," an annual bicycle and pedestrian conference.

Illinois law, and WalkBoston supports the bill.

Allowable fines

Currently, the maximum allowable fine in Massachusetts for property owners who fail to clear adjacent sidewalks is not to exceed \$50 per day in cities, or \$10 per day in towns. This “punishment” is less expensive than the cost to hire someone to clear the sidewalk, and is an insufficient incentive for clearance. If property owners who do not clear sidewalks are to mend their ways, a more appropriate financial incentive can be an effective tool.

Currently before the Massachusetts legislature is a bill (H1959) that would increase the maximum allowable fine to \$100 per day. WalkBoston is working with legislators on this bill.

Conclusion

Snow clearance is a critical issue for pedestrians and, by extension, all Massachusetts residents. If walkways, crosswalks, and curb ramps are icy or unshoveled, travel becomes both difficult and dangerous. Sidewalks are a critical part of our transportation infrastructure, and they deserve the same attention as roads when it comes to ensuring safe travel.

An effective way to increase sidewalk clearance is the creation of a social awareness campaign that encourages property owners to clear the sidewalk by reminding them of the importance of being a good neighbor to those who use the sidewalks. Providing information about the impacts on the elderly, the disabled, and children who are at risk of injury on uncleared walkways or because they walk in the street will help to spur the campaign.

There must also be regulations that precisely delineate the responsibilities of residents and the municipality regarding snow removal from sidewalks. The regulations must set times by which sidewalks must be cleared, allow for meaningful fines, and provide effective methods of dealing with property owners who do not clear sidewalks.

Even when ordinances have been passed, lax enforcement can be a serious issue. By giving enforcement authority to those already on the streets, such as parking enforcement officers, crossing guards, or other municipal employees; by creating telephone hotlines where residents can anonymously report uncleared sidewalks; and by clearing sidewalks for and then charging property owners who do not take responsibility for clearance, municipalities can become more effective at ensuring that footways are clear.

During the winter, uncleared sidewalks are a common complaint – and for good reason. As an important part of our transportation infrastructure and a key piece of the fabric of our communities, sidewalks merit more attention when the snow starts to fall.

Appendix A

Innovative Policies

- The City of Toronto, Canada, plows all sidewalks that it can reach with its sidewalk clearing machinery (about 85% of its sidewalks). Abutting property owners – mostly in the central city with narrow or uneven sidewalks – clear the other sidewalks.³¹
- The City of St. Paul, MN, clears sidewalks when abutting property owners fail to do so. It then charges the property owner at the Department of Public Works rate of \$300 per hour, with a half-hour minimum.
- Dubuque, IA: When the Dubuque Engineering Department receives a complaint about an uncleared sidewalk, it sends a warning letter, and a few days later, if the sidewalk remains blocked, it contracts out the job. The property owner is billed for the service and that charge is added to the annual property tax bill.³²
- Cambridge, MA, recently gave Parking Control Officers the power to ticket property owners who fail to comply with sidewalk clearing statutes.
- Concord, MA clears both its roads and sidewalks, ensuring that their sidewalks are not second priority to their streets. If a curb ramp is blocked by plowing, the town will go back to clear the curb ramp by hand, if necessary.³³
- Fort Collins, CO will shovel private driveways and sidewalks if they are buried by snowplowing after residents have cleared them. A resident simply has to report it to the Streets Department phone number.³⁴

Municipal Sidewalk Clearance Equipment and Methods

Some municipalities clear sidewalks that most other municipalities choose to leave to the property owner. In a small town such as Manchester-by-the-Sea, this may entail clearing virtually all sidewalks located in the town or village center, while a larger municipality such as Brookline may only clear high-priority sidewalks along school routes, near elder housing, and in commercial areas.

Most municipalities that clear sidewalks own a variety of equipment — snow blowers, plows, and salters. These pieces of equipment are used at different points during a snowfall and for sidewalks of different widths. Wide sidewalks can often accommodate a plow (about 4-5 feet wide), while narrower sidewalks might necessitate a hand snow blower. Most communities that clear sidewalks perform the majority of sidewalk clearance with riding plows or blowers that often have salters on them as well. Some municipalities clear only those sidewalks that can be cleared

³¹ “Snow Management.” City of Toronto. <http://www.toronto.ca/transportation/snow>.

³² Kelly Ambrosy (Dubuque, IA Engineering Department): 563.589.4270

³³ Fowler, Dickinson. Highway and Grounds Superintendent, Concord Department of Public Works.

³⁴ “Snow and Ice Control.” City of Fort Collins. <http://www.fcgov.com/streets/snow-ice.php>.

using their five-foot plows, leaving narrower sidewalks to be cleared by residents or by hand or blower by the municipality.

Sidewalk plows have a lifespan of 15 to 20 years and cost approximately \$75,000. There are also trackless machines, which can have plows attached to the front and have other uses outside of winter, including street cleaning. Because of the year-round use, trackless machines have a shorter lifespan – less than 10 years.³⁵

While plows are able to clear heavier and larger snowfalls, they are also more likely to cause damage to sidewalks and bordering areas. Blowers generally cause little damage, but cannot clear heavy snowfalls.

Clearance of streets often impacts sidewalk clearance and vice-versa. Curb ramps are often blocked by snow that has been cleared from roadways. Municipal street plowers are often instructed not to leave large amounts of snow at the corners in order to make it easier to clear curb ramps leading to the streets, but this is easier said than done. In both Brookline and Manchester-by-the-Sea, where the municipality clears high-priority sidewalks, curb ramps are cleared by DPW staff with shovels or plows after a storm, once sidewalks and roadways have been cleared.

³⁵ Bob Moroney (Manchester-by-the-Sea Public Works) and Kevin Johnson (Brookline Public Works).

Appendix B

This model snow removal ordinance is based in part on existing ordinances in Cambridge, MA, and Toronto, Canada.

DRAFT SIDEWALK SNOW AND ICE REMOVAL ORDINANCE

Section 1. Commissioner of Public Works – Powers and duties.

The Commissioner of Public Works shall see that the highways, streets, sidewalks and all related facilities including but not limited to curb ramps, crosswalks, pedestrian islands, and curb cuts are kept in good order, and that all nuisances and obstructions therein are forthwith removed, or give notice thereof to the Chief of Police. The Commissioner shall remove all snow and ice from the sidewalks and walks around school houses, parks, and municipal facilities. To prepare for the clearing of snow and ice, the Commissioner shall prepare a list or map which prioritizes the streets, roadways, public sidewalks or footways for clearance.

Section 2. Sidewalks – Snow and ice removal.

A. Removal of Snow and Ice from Sidewalks. The owner or occupant of private property bordering on a public sidewalk or footway shall, within XX hours after snow ceases to fall in the daytime and before one p.m. after a fall of snow during the night, cause all snow and ice that may be on such sidewalk or footway to be removed therefrom. In the event of an unusually heavy snowfall or other extenuating circumstances, the time limit shall be extended at the discretion of the Commissioner of Public Works. The provisions of this section shall apply to snow, which falls from buildings as well as to, that which falls from the clouds.

B. Moving snow from private property. No property owner, occupant or other person shall move or permit to be moved snow or ice from private property onto a highway, sidewalk or public way.

Section 3. Violation – Penalty.

A. Criminal Penalty. Any person who violates Section 2 (Sidewalks – Snow and ice removal) shall be subject to a fine not exceeding one hundred dollars (\$100). Each day's violation shall constitute a separate offense.

B. Noncriminal Disposition. Whoever violates Section 2 (Sidewalks – Snow and ice removal) may be penalized by a noncriminal disposition as provided in G.L. c. 40, s. 21D. For purposes of this section, the Commissioner of Public Works shall be the

enforcing officer, except that the Commissioner may delegate his enforcing authority to designated officers of the Department of Public Works and, with the agreement of the Director of the Department of Parking and Transportation, to designated officers of the Department of Parking and Transportation. The Police Department shall render all necessary assistance to the Commissioner of Public Works in enforcing this section. The penalty for each violation will be one hundred dollars (\$100). Each day's violation shall constitute a separate offense.

Section 4. Removal from sidewalks by city – Recovery of costs.

A. Where snow and ice that falls either from buildings or from the clouds has not been removed from a sidewalk or footway by the owner or occupant of private property bordering on said public sidewalk or footway within XX hours after the fall of snow or creation of ice has ceased, the Commissioner of Public Works or a person appointed by the Commissioner may, at the expense of the owner of the building or vacant lot, clear away and remove the snow and ice, including the remediation of any slippery sidewalk or footway.

B. The Commissioner of Public Works must keep an account of all expenses incurred in doing the work and of the building or vacant lot in respect to which the work was done.

C. The expenses incurred in doing the work may be collected or recovered from the owner of the building or vacant lot in a manner as provided in G.L. c. 40, s. 21E and G.L. c. 40, s. 58.

D. Low-income elder or disabled property owners or occupants shall be exempt from fines or expenses recovered by the City only if said property owner or occupant has registered with the Commissioner of Public Works as a low-income elder or disabled and meets standards set by the Commissioner.

Section 5. Publicity – Citizen information service.

A. The City shall maintain a citizen information service center and complaints about litter, recycling, refuse and snow and ice removal problems. The City shall publicize the provisions of this chapter through the media, signs, advertisements, flyers, leaflets, announcements on radios and television, newspaper articles and through any other appropriate means, so that all citizens will have the opportunity to become informed about the legal duties of property owners and occupants, pedestrians and motorists, and about the City recycling, refuse and anti-litter services.

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