

**2021-2022
City of Newton, Massachusetts
Snow and Ice Control Plan
Department of Public Works**





City of Newton

Department of Public Works

1000 Commonwealth Avenue

Newton, MA 02459

October 2021

The Department of Public Works is committed to providing exceptional snow and ice control services for our community this winter. The Department of Public Works developed this Snow and Ice Control Manual to facilitate continual refinement to the City's snow and ice control program.

The public depends upon the use and availability of streets during all types of weather-related events. When the public transportation system (public streets, MBTA bus and train stops, etc.) is shut down or the capacity is reduced, there are typically severe impacts. Accidents due to snow and ice result in property damage, personal injury, and fatalities. The inconvenience of weather delays also contributes to driver attitudes and quality of life.

Included in the manual are guidelines and instructions for carrying out the snow and ice control program for the City of Newton. For more detailed information concerning our snow and ice control program, please do not hesitate to contact us.

Sincerely,

Jim McGonagle
Commissioner of Public Works

Introduction

Due to its geographic location, Newton is subject to snow and ice, or freezing rain at any time during the late fall, winter, and early spring months. Winter events typically occur from October through April. During winter weather events, the Department of Public Works is responsible for the mobility and safety of the traveling public. This manual is in effect at times when weather conditions cause accumulation of frost, sleet, ice, snow or other occurrences on the streets and public parking lots of the City of Newton.

Objective

The objective of the City of Newton's snow and ice control program is to allocate trained personnel, proper equipment, and adequate materials to provide passable roadways that allow for safe travel.

In general practice, the priority is to provide safe passage on Newton's roadways for all residents and travelers. Additional goals include minimizing environmental impacts by limiting salt and liquid chlorides and to further improve the levels of service provided to the citizens and visitors of the City of Newton.

Purpose

The Snow and Ice Control Plan is a guide for addressing city streets during snow and ice situations.

1. Prioritize snow and ice removal throughout the City.
2. Deliver effective services, under adverse conditions, that increase safety and reduce interruptions to the personal and economic lives of residents, visitors, and businesses.
3. Supply information to the public to promote understanding and cooperation.

Officials in Charge

Commissioner of Public Works: Jim McGonagle

Deputy Commissioner: Shawna Sullivan

Director of Streets: Shane Mark

Highway Superintendent: Mike Arpino

Highway District Superintendent: Mike MacKay

Highway Assistant Superintendents: Norman Sementelli, Richard Cincotta, Tony Dethomasis,

Perry Cacciola, Jason Pisano

Deputy Director of Utilities: Doug Valovcin

Utilities Superintendent: Mike Ovaska

Utilities Assistant Superintendents: Livio Cence, John Reilly, Bobby Sullivan

Newton Snow Ordinances

The following city ordinances are applicable to snow and ice operations and are enforced during the months of November through April.

Sec. 19-174. Parking of commercial vehicles and trailers

(b) Other vehicles: From December 1st through March 31st , it shall be unlawful for any vehicle, other than one acting in an emergency, to be parked on any street, way, highway, road parkway, or private way dedicated or open to the use of the public for a period of time longer than one hour between the hours of 2:00 a.m. and 6:00 a.m. (Rev. Ords. 1973, § 13-144; Ord. No. S-87, 2-4-85; Ord. No. T-186, 11-18-91; Ord. No. Y-3, 3-19-07; Ord. No. Z14, 11-5-07; ord. No. B-39, 09-03-19)

Sec. 19-174. Parking of Commercial Vehicles and Trailers.

First offense: Warning

Second offense: \$25.00

Subsequent offense: Vehicle towed

Sec. 26-8. Removal of snow and ice from sidewalks in certain districts.

Every owner or occupant of a building or lot of land abutting upon a sidewalk which is within a business, mixed use or manufacturing district, as defined by chapter 30, and every owner or occupant of a building or lot of land situated in any other district and which is used for a commercial or institutional purpose or contains more than four residential dwelling units, whether or not such uses are nonconforming uses under the provisions of such chapter, which building or lot of land abuts upon a sidewalk, shall cause any snow to be removed from the sidewalk and any ice on the sidewalk to be removed, sanded or salted within twelve (12) hours after such snow has ceased to fall or such ice has come to be formed. The preceding provision shall apply to snow and ice on accessible curb ramps in the sidewalk and shall apply to snow and ice which falls from buildings, other structures, trees or bushes as well as to that which falls from clouds. (Rev. Ords. 1973, § 19-8; Ord. No. T-127, 3-4-91; Ord. No. T-165, 8-12-91; Ord. No. U-3, 2-22-94; Ord. No. A-98, 12-19-16) State law references—Removal of snow from sidewalks, G.L. c. 85, § 5; G.L. c. 40, § 21(2), (3), (4)

Sec. 26-8. Removal of snow and ice from sidewalks in certain districts.

First offense in calendar year: \$100.00

Second offense in calendar year: \$200.00

Third and subsequent offenses in calendar year: \$300.00

Sec. 26-8A. City snow clearing—Clearing of sidewalks used as school routes.

The commissioner of public works shall clear snow from certain city sidewalks including portions of both school pedestrian routes and specific arterial and collector roadways, subject to appropriation and the availability of city personnel and equipment. The commissioner, after consultation with the superintendent of schools, chief of police and other appropriate city personnel, shall determine the total number of miles of city sidewalks to be cleared for the purposes of this ordinance based on the availability of personnel, vehicles and funding. Each year during the month of November, the commissioner shall publish a list of said sidewalk snow clearing routes. Said list shall include the street names and, where appropriate, the names of intersecting streets up to which the sidewalks will be cleared. The commissioner shall send a copy of said list to the chief of police and the superintendent of schools. (Ord. No. U-23, 7-11-94)

Sec. 26-8B. Same—Snow clearing assistance. § 26-8C NEWTON ORDINANCES — STREETS AND SIDEWALKS § 26-9 Newton Ordinances On-Line - Chapter 26 - page 3

The commissioner shall annually prepare lists of persons available to provide snow clearing assistance either for a fee or on a volunteer basis. The lists shall be prepared in consultation with appropriate school and senior services department personnel, interested neighborhood organizations, houses of worship, parent-teacher associations, and other similar groups that indicate a willingness to participate in snow clearing assistance. Said lists shall be made available during the month of November each year. The list of persons available to provide snow clearing assistance for a fee shall be available upon request to any Newton resident. Low income elderly or low-income people with disabilities requesting volunteer snow clearing assistance shall be referred to the senior services department to be matched with available volunteers. For the purposes of this section, "elderly" shall be defined as a person sixty (60) years of age or older, "person with disability" shall be defined as a person with a physical condition which substantially limits the ability to engage in physical snow clearance activities and "low income" shall be defined in accordance with guidelines established by the United States Department of Housing and Urban Development for the Community Development Block Grant Program. (Ord. No. U-23, 7-11-94; Ord. No. 175, 05-26-05)

Sec. 26-8C. Same—Snow clearance standards.

The commissioner of public works shall endeavor to minimize the blocking of sidewalks and intersections with plowed snow so as not to hinder pedestrian passage. The commissioner shall remove plowed snow from sidewalks and intersections that block pedestrian access, to the extent that such removal is feasible, as determined by the commissioner, and subject to appropriation. (Ord. No. U-23, 7-11-94)

Sec. 26-8D. Removal of snow and ice from sidewalks.

In order to allow for safe pedestrian and wheelchair passage, every owner or occupant of a building or lot of land abutting upon a paved sidewalk or any person having charge of such property shall use reasonable efforts to remove snow and ice from the sidewalk and handicap

access ramps, and shall use reasonable efforts to treat said sidewalk and ramps to allow for a safe passageway of approximately thirty-six (36) inches in width, provided that where such sidewalk is less than thirty-six (36) inches in width the passageway shall encompass its entire width and handicap access ramps. Snow and ice shall be removed, and sidewalks and ramps shall be treated, within twenty-four (24) hours after such snow has ceased to fall or such ice has formed. This section shall apply to snow and ice which falls from buildings, other structures, trees or bushes, as well as to that which falls from clouds. The Commissioner of Public Works may extend the 24- hour compliance timeframe when weather conditions necessitate. This section shall not apply to owners or occupants of a building or lot covered by Section 26-8. The mayor or his designee is authorized to coordinate volunteer snow clearing assistance or to grant an exemption, renewable annually, for citizens who upon written petition demonstrate hardship due to a combination of health and financial duress, or religious circumstances. (Ord. No. Z-83, 3-21-11, Ord. No. A-8, 01-22-13; Ord. No. A-49, 12-01-14; Ord. No. A-67, 11-16-15; Ord. No. A-88, 11-07-16; Ord. No. A-123, 12-04-17; Ord. No. A-124, 12-18-17; Ord. No. B-38, 09-03-19)

Sec. 26-8D. Removal of snow and ice from sidewalks.

First offense per 365-day period: Written warning

Second and subsequent offenses per 365-day period: \$50.00

Sec. 26-9. Putting snow and ice upon streets, sidewalks and bridges.

(a) No person shall block, obstruct or otherwise hinder or impair pedestrian or vehicular traffic on the public ways of the city by placing snow or ice or permitting or causing snow or ice to be placed upon a street, sidewalk or bridge, except that snow or ice removed from a sidewalk may be piled in the adjoining gutter or on the loam border between the sidewalk and the street. This section shall not apply to municipal snow removal operations. (b) Without limiting the applicability of the foregoing paragraph (a), the owner or occupant of property whose driveway or sidewalk is cleared of snow shall be responsible for promptly removing snow placed on the public way (street, sidewalk and/or bridge) adjoining the owner's property as a result of clearing snow from the driveway or sidewalk of the owner. For purposes of this paragraph, "clearing snow" shall include, but is not limited to, plowing, shoveling, sweeping and any other similar means of removing snow from the driveway or sidewalk. This § 26-10 NEWTON ORDINANCES — STREETS AND SIDEWALKS § 26-13 Newton Ordinances On-Line - Chapter 26 - page 4 section shall not apply to municipal snow removal operations. (Rev. Ords. 1973, § 19-9; Ord. No. T-166, 8-12-91; Ord. No. X-97, 07-12-04)

Sec. 26-9. Putting snow and ice upon streets, sidewalks and bridges

Placing snow or ice on a public way (street, sidewalk or bridge)

First offense in calendar year: \$100.00

Second offense in calendar year: \$200.00

Third offense and subsequent offenses in calendar year: \$300.00

Causing or permitting snow or ice to be placed upon a public way (street, sidewalk or bridge)

First offense in calendar year: \$100.00

Second offense in calendar year: \$200.00

Third offense and subsequent offenses in calendar year: \$300.00

Responsibility

The Department of Public Works has the primary responsibility for execution of the snow and ice control plan for 18.3 miles of area and is responsible for more than 320 miles of roadways, 80 plus miles of sidewalks, approximately 43 City owned buildings (including 21 school sites), 15 city-owned public parking lots, streets and sidewalks over 22 bridges, areas adjacent to 70 plus school bus stops, 35 plus MBTA bus stops, 10 T-Stops, and 3 Commuter rail stops.

Snow Routes

Snow routes for arterial streets, collector routes, and residential roads are evaluated and assigned annually. Maps containing arterial, collector and residential roads identify the priority of each street within the City. The snow route priorities are based on traffic patterns, traffic speeds, traffic volumes, transportation nodes, schools or other public institutions, village squares, and the steepness of the roadways.

Facilities

The hubs of the winter operations is located at 74 Elliot Street and 90 Crafts Street. Both locations are supplied with salt and liquid salt brine. The salt barns are restocked at the beginning of the snow season and additional materials are replenished as needed.

Materials

The type of material used to melt snow or ice depends on the current conditions, predicted weather, and the type of treatment being performed. The factors to consider when determining the types and amounts of materials applied are air temperatures, pavement temperatures, rate per hour of snowfall, projected temperatures following the storm, and predicted weather after the initial storm. Rock salt and anti-icing liquids are the primary chemicals used during snow and ice control operations.

Salt brine is manufactured and used throughout the city as a pre-treatment method which helps to delay the bond of snow and ice to the pavement. The City of Newton has adopted the practice of pre-wetting salt with brine and/or other environmentally friendly products. Pre-wetting the salt provides the moisture needed for the salt to go into a solution that melts the snow and ice and breaks the bond of the snow and ice from the pavement. Pre-wetting also reduces bounce and scatter of the salt during the application process.

Equipment

Snow and Ice Control Equipment: Snow and ice control equipment is inspected on an ongoing basis. Each piece of equipment undergoes a comprehensive assessment for safety, operating condition, cleanliness and corrosion.

Tandem axle dump trucks are used primarily for servicing the arterial roadways. The tandem axle dump trucks are typically equipped with plows and salt spreaders with a wetting system.

Single axle dump trucks are used for servicing the arterial roadways, the collector roadways, and local roadways. The single axle dump trucks are typically equipped with plows and salt spreaders with a wetting system.

Smaller dump trucks are used for servicing the collector roadways, and local roadways. These smaller dump trucks are equipped with plows and may have salt spreaders with a wetting system.

Full-size pickup trucks are used for servicing local roadways and are equipped with plows and may have salt spreader inserts.

Front-end loaders are used for plowing arterial roadways, snow blower operations, salt loading operations, clearing parking lots, and snow removal operations.

Backhoes are used for plowing snow on streets, narrow roadways, cul-de-sacs, clearing parking lots, and during snow removal operations.

Skid steers and sidewalk machines are used for designated sidewalk routes, and to clean up in needed areas. The sidewalk equipment can plow, blow snow, spread de-icing materials and supplement snow removal operations.

Anti-Icing (Liquid) Inserts

Anti-icing inserts are plastic containers which hold liquids that are applied to the roadway to delay snow and ice from forming a bond to the pavement. These units can also be used for de-icing, by applying liquid to the road surface after snow and ice bonding has occurred.

Auxiliary Routes and Locations

Anti-ice routes and hot spots: anti-ice routes and hot spots consist of problematic routes such as bridges, inclines, ramps, dangerous curves/intersections and other locations that have been deemed problematic in the past.

Service around schools: roadways around schools are serviced where children would be picked up and dropped off. If school has been confirmed to be in session, street maintenance staff is dispatched to service these roadways before school begins or ends. Service around Schools treats roadways as a priority.

Private Ways, Sidewalks, Parking Lots, and Driveways

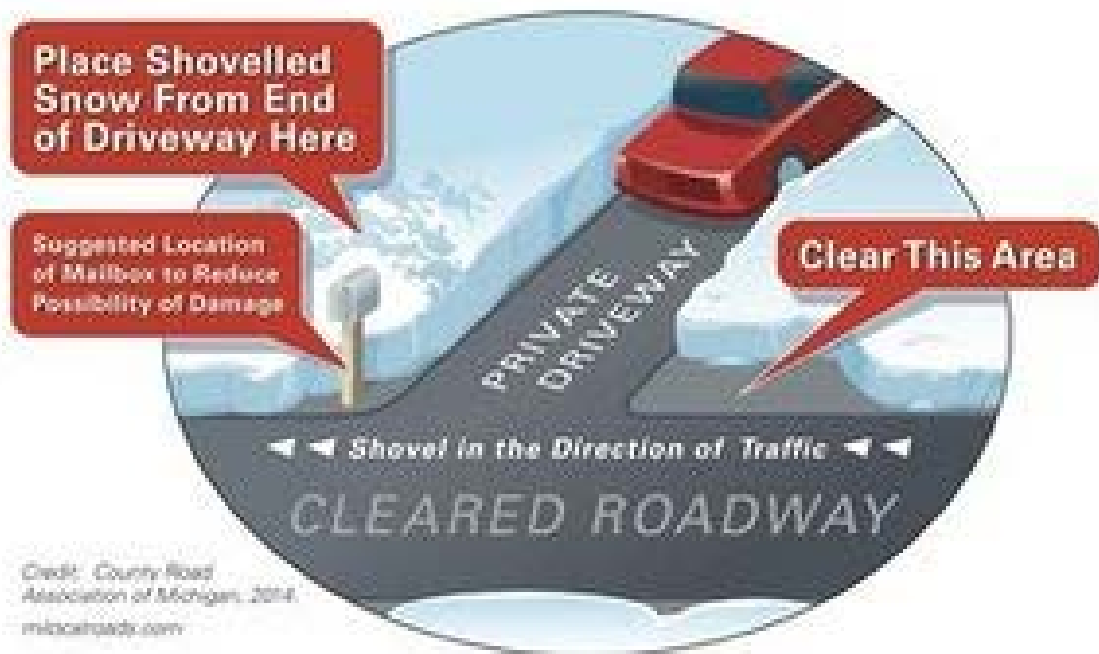
Private Ways: The City provides limited plowing service on paved private ways due to the need for emergency access. Private ways which are not paved that have limited access and/or low traffic volumes will be plowed only.

Sidewalks: The minimum width for sidewalk plow routes is 36". The designated City sidewalk routes are divided into six separate routes. City staff performs snow and ice control on 80-plus miles of designated sidewalk routes including 1,400 curb cuts contained within those routes. The City is responsible for the sidewalks adjacent to city-owned property and designated city sidewalk routes, all other sidewalk maintenance is the responsibility of the adjacent property owner per City Ordinance Section 26-8 and 26-9.

Parking Lots: The Department of Public Works and the Department of Parks & Recreation & Culture maintain snow and ice control on city owned building property, parking lots, sidewalks and stairways.

Driveways: The resident, business owner or property owner is responsible for opening driveways that are plowed closed by city snow and ice control efforts. Snow from plowing driveways or opening driveways shall not be plowed into the street per City Ordinance Section 26-9.

Avoid the "Second Shovel"



In-Event Performance Indicators/Goals

During an event, the goal is to maintain traffic flow as safely as possible. The most important focuses will be to reduce the ability for ice to bond to the pavement and control accumulation. Once the snowfall or inclement weather begins to subside, and the event has been brought under control, the goal is to have all City roadways recovered to a fair and passable condition within eight hours. Once the event has ended, roadways are serviced until they are in a good bare/wet pavement condition. Snow and ice control events differ and come with challenges that can impact portions of the city independently. Different strategies may be implemented based on pavement conditions, and weather forecasts.

Post Service Expectations

Before considering an operation complete, the City strives for standardized conditions citywide. The general roadway condition should be bare/wet pavement. There are occasional areas having snow or ice accumulations resulting from drifting, sheltering, cold spots, ice, packed snow, etc. After a snow event ends, staff continues to monitor roadways for icy spots, areas where winds redeposit snow in travel lanes and roadways where the refreeze potential is high. Personnel may also be dispatched to clear catch basins so that melting snow can run-off.

Hauling Operations

Snow hauling occurs at key intersections, village centers, business centers, safe route to school areas, sidewalks abutting city owned property, and transportation nodes upon the Commissioner of Public Works' determination. Factors that determine when snow hauling is required include snow accumulation, snow depth from prior storms, predicted snowfall accumulation amounts, and temperatures following the storm.

Snow Hauling Operations Storage Sites

Upon commencement of snow hauling, the snow and ice will be taken to several snow storage sites throughout the city. Snow hauling will utilize the following locations in prioritized order as snow storage sites:

1. Elliot Street Maintenance Yard (90 Elliot Street)
2. Rumford Avenue DPW Yard (115 Rumford Avenue)
3. Forte Park Vehicle Lot (233 California Street) ***Parks and Recreation site***
4. Auburndale Park Vehicle Lot (West Pine Street)
5. Upper Falls Playground Vehicle Lot (Chestnut Street)
6. Cold Spring Park Vehicle Lot (Dunklee Street)

Sensible Salting

Since the use of salt in high concentrations can have a negative impact to the environment including the streams, lakes, and rivers within Newton. Best Management Practices have been developed that minimize the use of road salt and will be adhered to during winter operations. The following proactive measures will be used as part of Best Management Practices:

1. winter materials will be stored inside salt barns
2. pre-determined snow storage sites for hauling operations
3. use of anti-icing liquids before, during, and after a winter weather event
4. controlled maximum salt application rates at 400 pounds per lane mile
5. salt spreader calibration
6. pre-wetting solid salt as it is applied to the roadways
7. staff training conducted annually and post storm
8. continued monitoring of applied salt during and after snowstorms

Inclement Weather and Emergency Information

Winters in Newton bring a variety of inclement weather conditions which can impact the safe and orderly flow of traffic. The following is a general description from the National Oceanic Atmospheric Administration (NOAA) of four categories of inclement winter weather.

Winter Weather Categories

Light Inclement Winter Weather: Pavement temperature is at 32 degrees or above with light rain or snow creating icy bridge decks or light ice on roadways. Accumulation of 2" or less.

Medium Winter Storm: Snowfall with temperatures near or just below freezing with no anticipated drop in temperature; little to no drifting of snow. Accumulation between 2" – 4".

Heavy Winter Storm: Snowfall with temperatures at freezing and dropping; moderate drifting of snow. Accumulation between 4" to 6"

Major Winter Storm: Significant freezing rain or snow with temperatures falling and winds creating major drifts resulting in blocked roadways. Accumulation of 6" or more.

Winter Weather Terminology

Freezing Rain Advisory: Freezing rain/drizzle is light and ice accumulations are less than 1/4 inch.

Winter Weather Advisory: This is an all-encompassing term that replaces the old snow advisories, sleet advisories, blowing/drifting snow advisories, and freezing rain/drizzle advisories. It is used when a mixture of precipitation is expected such as snow, sleet and freezing rain or freezing drizzle, but will not reach warning criteria. Used when sleet or snowfall amounts are expected to be less than 3 inches in a 12-hour period, or freezing rain/drizzle is light and ice accumulations are less than 1/4 inch.

Special Weather Statement: Used to highlight weather events that can have a high impact but fall below advisory or warning criteria. Used when wind-driven snow intermittently reduces visibility to 1/4 mile or less. Travel may be hampered. Strong winds create blowing snow by picking up old or new snow.

Winter Storm Watch: Issued when conditions are favorable for the development of hazardous weather elements, such as heavy snow or sleet, blizzard conditions, significant accumulations of freezing rain or drizzle, or any combination thereof which meet or exceed local Winter Storm Warning Criteria. Watches are usually issued 12 to 48 hours in advance of a Winter Storm event.

Winter Storm Warning: Issued when hazardous winter weather conditions are imminent or very likely, including any occurrence or combination of heavy snow, wind-driven snow, sleet, and/or freezing rain/drizzle. Winter Storm Warnings are issued for expected sleet and snowfall amounts of 4 or 6 inches or more in 12 hours, or 6 inches or 8 inches or more in 24 hours. It is also used when damaging ice accumulations are expected during freezing rain situations; walking and driving becomes extremely dangerous, and ice accumulations are usually 1/4 inch or greater. Finally, it is also issued with sustained winds or frequent gusts of 35 miles per hour or greater and considerable falling and/or blowing snow reducing visibility to less than 1/4 mile. These conditions are expected to last at least three hours. Usually issued 12 to 24 hours before the event is expected to begin.

Blizzard Warning: Issued for sustained or gusty winds of 35 mph or more and falling or blowing snow creating visibilities at or below 1/4 mile; these conditions should persist for at least three hours.

Snow Flurries: Light snow falling for short durations. No accumulation or light dusting is all that is expected.

Snow Showers: Snow falling at varying intensities for brief periods of time. Some accumulation is possible.

Snow Squalls: Brief, intense snow showers accompanied by strong, gusty winds. Accumulation may be significant. Snow squalls are best known in the Great Lakes region and may persist for many hours and produce six inches or more of snow in 12 hours or less.

Blowing Snow: Wind-driven snow that reduces visibility and causes significant drifting. Blowing snow may be snow that is falling and/or loose snow on the ground picked up by the wind in quantities that horizontal visibilities are reduced to less than seven miles.

Sleet: Rain drops that freeze into ice pellets before reaching the ground. Sleet usually bounces when hitting a surface and does not stick to objects. However, it can accumulate like snow and cause a hazard to motorists.

Freezing Rain: Rain that falls onto a surface with a temperature below freezing. This causes it to freeze to surfaces, such as trees, cars, and roads, forming a coating or glaze of ice. Even small accumulations of ice can cause a significant hazard.

Wind Chill Warning: Issued when wind chill temperatures are expected to be hazardous to life within several minutes of exposure. Issued when wind chill temperatures are expected to be minus 25 degrees Fahrenheit.

Wind Chill Advisory: Issued when wind chill temperatures are expected to be a significant inconvenience to life with prolonged exposure, and, if caution is not exercised, could lead to

hazardous exposure. Wind Chill temperatures are expected to be in the range of minus 10 degrees Fahrenheit to less than or equal to minus 24 degrees Fahrenheit.

Radar Information

National Weather Service radar imaging as well as weather forecasting and radar imaging from The Weather Channel and NOAA is available to operations staff. Additionally, all DPW locations have access to subscription weather services.

Snow Emergencies

A snow emergency may be declared by the City of Newton Chief of Police. The decision to institute a snow emergency will be determined based on the time of day the storm ends, air temperatures, pavement temperatures, actual snowfall amounts, projected temperatures following the storm, and predicted weather after the initial storm. A snow emergency prompts special parking restrictions to be in effect to allow for thorough clearing of streets and parking lots. Due to the difficulties encountered plowing streets where vehicles are parked alongside the curb, a parking ban will be put into effect and local law-enforcement officials will enforce these parking restrictions.

Training

Training is conducted each fall for personnel engaged in the snow and ice control program. Training provides hands-on experience and an overview of systems, policies and procedures including stormwater pollution prevention measures. The program provides employees the opportunity to re-acquaint themselves with the vehicles and equipment used in snow and ice removal operations. Annual training topics include:

1. Snow training: classroom and hands-on training
2. Dry runs of all routes
3. Snow chaser training
4. Dispatcher training
5. Contractor training
6. Inspection training
7. Sensible salting plan training
8. Weather Forecasting training

Communication/Service Requests

The Department of Public Works and the City's Director of Community Communications will coordinate the response to all media requests. The Director of Community Communications will work with the Department of Public Works to update residents via the media, City website, social media, and other outlets. The Director of Community Communications works in conjunction with the Director of Streets to obtain the most current and concise information available for disbursement to the media and City of Newton Administration. The Department of Public Works will also ensure that timely information is provided to staff working at the 311

Customer Service Center, so that they may properly address any questions or concerns of residents who contact the city.

Performance Factors

The plan set forth in this manual may be affected by at least one or more of the following events which could delay or alter snow and ice control by the City:

- Weather so severe as to cause work to be stopped for the safety of all personnel
- Unforeseen conditions and emergencies
- Significant medical related emergencies
- Vehicles disabled in deep snow
- Equipment breakdown