

Standard Operating Procedures

Dover, New Hampshire

No: 2020-2021

Date: December 9, 2020

Policy: Winter Operations Snow Removal and Ice Control

Governing Laws: RSA 231:92-a; RSA 507-B:2-b; *Dover Code Chapters 141-11; 141-12; 141-16; 141-48.*

Approval Date: *December 9, 2020*

WINTER OPERATIONS SNOW REMOVAL AND ICE CONTROL PROCEDURES

Dover, New Hampshire

OBJECTIVE: It is the goal and intent of the City of Dover to provide timely, efficient and cost-effective winter maintenance, snow removal and ice control on the roadways of the municipality for the safety and benefit of the City's residents and the general traveling public.

PROCEDURE: The objective stated above will be achieved by implementation and execution of the procedures and tasks outlined in the City of Dover Winter Operations Snow Removal and Ice Control Procedures. Due to the many variables that are inherent in New England weather, each storm and/or weather event may require slightly different effort and/or emphasis on any number of maintenance tasks, which together, determine the overall winter maintenance, snow removal or ice control strategy.

LEVEL OF SERVICE: It is not possible to maintain a snow and ice-free road or sidewalk during a storm. It is the intention of the City to provide practical, safe access along city streets and municipal facilities during winter storms. The City's Community Services Department shall strive to achieve bare pavement on all priority streets in Dover within the 24 hours following snowstorms 2" or greater. All operational decisions regarding pre-salting, scheduling equipment operators and private contractors shall be based upon this goal. The Department shall conduct removal operations throughout snow storms to keep non-priority streets open for vehicles.

It is the City's policy to begin snow removal operations upon accumulation of two-inches of snowfall. The Public Works Supervisor may, at his or her discretion based upon weather information reports, elect to not remove snow until greater or lesser accumulations. During nights and weekends the Dover Police Department shall notify the Public Works Supervisor that road conditions warrant mobilization of snow removal or ice control activity.

Pre-treatment and ice control may be addressed in advance of a storm, during the actual storm as seen effective, and proceeding the storm. It should be noted that salt has a much slower effect on melting snow and ice at temperatures below 20 degrees, and may not be applied until it is warmer. Chemical pre-wetting maybe used to enhance deicing operations when conditions dictate.

Sidewalk snow clearance will be conducted as practical during winter storms. Personnel availability and the need to maintain safe roadways will take priority.

COMMAND: Direction of all winter maintenance activities for the City of Dover is vested with the Community Services Director or his or her designee.

EXECUTION: The policy outlined above is intended to serve as the normal operating procedures for winter maintenance, snow removal and/or ice control for the City of Dover. One or more of the following, which may delay or prevent the implementation of this policy, may affect all or any part of this Policy:

- Equipment Breakdown
- Snow Accumulation in Excess of 1" Per Hour
- Freezing Rain or Other Icing Conditions
- Extreme low temperatures
- Traffic Congestion
- Emergencies
- Personnel illness
- Loss of personnel due to pandemic or mandated quarantine, or other similar circumstances outside of the City's control.

EQUIPMENT: The Highway Department utilizes all the assets of the department as needed to address snow emergencies. A list of the current rolling stock assets used in snow removal and ice control operations is included in the appendices of this policy. Snow equipment shall be operational by November 1st. Equipment with multiple uses may not be converted for snow operations until needed or the secondary use operations cease for the season. Each city vehicle is equipment with a Global Positioning System (GPS) sensor to allow for position monitoring of the equipment.

ROUTES: Currently, the City is divided into eighteen (18) major plow routes. Additionally, there are six (6) 4 x 4 trucks with 4-way plows used to maintain small streets, utility facilities, emergency service facilities, municipal parking areas, and to assist in support of trucks assigned specific routes. Each street on all plow routes is designated as either a priority street or non-priority street. Streets that receive treatment are shown on the Winter Operations Treatment street map. Outside contractor assistance may be utilized to help augment City

staff and equipment.

The City uses wheeled loaders and a large snow blower in the downtown area to load snow for removal to snow fields as it may restrict parking or line of sight distances at intersections. The City sidewalks are broken into three (3) separate zones: Southside, Downtown, and Northside. The City has two sidewalk plows and three skid steer loaders used for winter maintenance on designated sidewalks. There are prioritized areas for pedestrian access, with emphasis on school zones. Remaining sidewalks are addressed as budget, staffing, and equipment allow.

MANPOWER: The City of Dover has thirty three (33) full-time personnel assigned to its winter maintenance operations. The Highway Department shall have primary responsibility for removing snow and ice from city streets and sidewalks. Staff from the Utilities, Facilities and Grounds, the Wastewater Treatment Plant divisions, and contracted equipment and drivers are utilized during snow removal and ice control operations as well. All private contractors used during snow storms shall report to the Supervisor on duty during their operations and provide progress reports on the status of their routes. One member of the Fleet Services Division is on duty during winter operations to repair equipment. A call-in list of personnel and contractors with phone numbers is maintained and updated by the City.

MATERIALS: The Department uses approximately 4,000 tons of rock salt and 1,800 cubic yards of sand each season. The sand is used as an abrasive and is applied to the road to improve the public's motor vehicles traction. Salt is employed by the Department as a de-icing and anti-icing agent. Rock salt is purchased from a supplier as needed. A limited quantity of approximately 400 tons is stockpiled by the Highway Department. Unless weather conditions require a different approach, Winter Maintenance Treatment routes are typically treated in one of four (4) ways:

Dirt roads, or sensitive environmental areas (public water aquifers), may only be treated with sand.

Some residential streets, areas will hills, and certain intersections will typically get treated with a mixture of sand and salt. The mixture is maintained at a minimum of one part salt to five parts sand. The salt helps to prevent the sand from freezing or "clumping" and also provides some de-icing for the roadways.

Arterial streets and collector roads are typically treated with sodium chloride, or rock salt. The intended application rate equates to about 150 pounds of material per lane mile of roadway. The salt is applied to the center of the roadway where traffic can work the material traveling either way. The salt material, in conjunction with traffic action, creates a watery brine melting snow and/or ice, and resisting snow and ice packing on the roadway. The road crown further assists with the spreading of the mixture brine. The salt brine is only effective to approximately 20 degrees Fahrenheit. The City continues to experiment with "pre-wetting" of the dispensed rock salt in

order to provide more even distribution of the rock salt, and to also expedite the conversion process to a liquid brine.

Depending on weather conditions preceding a storm event, the City may elect to treat high-traffic arterial streets and collector roads with a liquid brine solution. The City continues to experiment with expanding the use of brine. The objective is to apply a 23% salinity solution (rock salt) at a rate of 90 gallons per lane mile of roadway.

COMMUNICATIONS: All Public Works rolling stock is equipped with high band, dual-frequency radios which transmit at a frequency of 452.0125 and receive at a frequency of 457.0125. Each plow and equipment operator is assigned a unique call number. A list of all call numbers is displayed in each piece of equipment or truck. A copy of the current call numbers is included as an appendix to this policy. Radios are also maintained at the Fleet Services division garage, facilitating the operator's ability to communicate with the Dover police and fire departments.

WEATHER MONITORING: The Highway Department maintains computer access to a weather advisory service that provides weather forecasts and provides weather advisories via email to supervisory staff.

PUBLIC SERVICE ANNOUNCEMENTS: The Highway Department coordinates with the City's Media Services Department to provide information to the local radio stations on road conditions during storms and educational promotional segments encouraging public cooperation during snowstorms. The City also maintains a subscription based service (text or email) to send direct alerts or notifications to residents, property owners and or businesses.

SCHOOLS: The Highway Department administers the clearing of snow and winter treatment operations of the City schools access roads. The School Department employs private contractors for clear of their parking lots. On days when school is in session, winter maintenance efforts must be timed to coincide with bus routing and delivery. School Department staff provide snow and ice removal on sidewalks and other school facilities.

The Public Works Supervisor is in discussion with the school Superintendent or designated representative before 5:30 am on stormy days to provide current road condition information and available weather forecast information in order to determine the safety of students using school buses or traveling by private vehicle. The school Superintendent shall make the decision to cancel or postpone school for that day.

PARKING: The City may declare parking bans in response to a storm, or as-needed after a storm, to allow winter maintenance crews unobstructed snow removal and ice control routes, as much as possible, to maintain the maximum effectiveness of their efforts. When a ban is declared, all vehicles must be off all public streets, sidewalks, or rights of way (ROW) by the time the ban goes into effect. If vehicles are not removed, they may be ticketed and/or towed. A parking ban will be declared by 3 p.m. to begin at a designated time later that

evening. When a ban is declared, parking is prohibited on City streets, sidewalks and adjacent parking areas.

In addition to winter parking bans that can be called at any time, there are several streets where seasonal winter parking restrictions are in place from Dec. 1 to April 1. These streets, do not allow parking at any time, day or night, between Dec. 1 and April 1. Seasonal restrictions are required due to the limited width of the roads and concerns about plows and emergency vehicles being able to pass. An updated list of no parking restrictions can be found at www.dover.nh.gov/government/city-operations/police/parking-bureau/winter-parking-restrictions/, or in [Chapter 141-48](#) of the City's codes.

PLOW ROUTE PRIORITIES: With a total of 137 miles of roads from which to remove snow and control ice and approximately 36 pieces of equipment to handle this responsibility, the Highway Department has to assign priorities for winter maintenance route activity in order to maximize the effectiveness of their efforts for the motoring public.

- A. Streets are prioritized for snow removal and ice control as follows:

Priority	Arterial streets and Collector streets
Non-Priority	Residential streets

- B. The downtown Business District will be maintained as possible during business hours, with the main snow clearance effort to be done during declared Parking Bans as part of Post Storm Operations. Safety is a very great concern in this area due to many cars and pedestrians in the area.

- C. Public parking areas will be maintained by plowing during the winter storm. The application of slip resistant materials will be applied after the storm as determined to be needed by the Public Works/Utilities Superintendent.

- D. Fire Hydrants: The Fire Department locates and shovels fire hydrants to maintain access in case of a fire. The Community Services Department will provide snow removal around fire hydrants when streets and sidewalks are completed.

- E. Each specific plow route is depicted on a route map and are included in the appendix.

ROADS AND SIDEWALKS NOT RECEIVING WINTER MAINTENANCE: The City of Dover does not maintain a number of roadways and sidewalks as part of its ongoing winter maintenance activities. The areas not maintained by the City include:

- a. City roads classified as Class VI roads

- b. Private roads and private sidewalks

- c. Unaccepted City Streets
- d. Highways and roads maintained by NH Department of Transportation
- e. City parks, except the upper parking lot at Bellamy Park as time allows.
- f. Sidewalks which are the responsibility and in the care of the school department.

DAMAGE TO PRIVATE PROPERTY: It should be noted that the municipality isn't held responsible for damage to private property that is located within the public right of way. (RSA 231:92) The right of way (ROW) is often 50' wide, and is often confused by property owners as their own property. In most cases, the ROW often extends 10 to 20 feet of either side of the paved or gravel road. Homeowners often cultivate extensions of their lawns, place mailboxes, erect fences or stonewalls in these areas, which improves the appearance of the street greatly, but is obstructive to good maintenance from being conducted on the roadway.

In the event of personal property damage, the City of Dover will only be responsible to repair or replace damaged property having been in actual contact with the snow removal equipment that is on private property and not within the public right-of-way.

SNOW REMOVAL FROM PRIVATE PROPERTY: Dover City Code Chapter 141-11 states: No person shall deposit, or cause to be deposited, any ice or snow which has been removed from private property, in or upon any street, sidewalk, or public place in the City, or deposit or cause to be deposited any ice or snow on private property in such a manner as to obstruct the normal and reasonable flow of traffic in or upon any street, sidewalk or public place within the City.

POST STORM OPERATIONS: As determined by the Public Works Supervisor, the snow banks resulting from the previous accumulations shall be pushed back, or shelved, using the plow and wing of the grader or other suitable equipment to make space for future snow storms.

Snow Removal: During the initial stages of the storm, only the roadways through the Business District may be plowed. As parking areas along the businesses are free of parked vehicles, snow removal equipment may swing wider through the street to push back large amounts of accumulated snow.

- A. The downtown Business District and other designated areas typically require snow removal. The snow removal and snow blower routes in the appendix identify areas of routine snow removal operations.

- B. When a Snow Removal Parking Ban is declared, snow removal of parking areas in the Business District will typically begin at 10:00 pm and shall cease operations at 7 am.
 - 1. Cars left in this area after the stated times will be called into the Police Department to be towed away.
 - 2. Snow removal operations may be delayed in the area of such vehicles until they have been removed.
- C. Snow removal to open parking in the Business District is accomplished using a large snow blower and loaders. Additional snow removal may be undertaken as necessary on bridges, narrow streets, the "Miracle Mile" and other areas as conditions dictate.

BRIDGES: During an event with precipitation and cold temperatures (32 degrees F or lower) bridges become icy or snow packed because of the air flow above and below the bridge deck. The list of bridges in the appendix are checked and treated as necessary during and after these events. Snow removal on bridges takes place before the amount of snow begins to impede into the roadway causing narrow passage. Removal is done by blower or front end loader.

CHURCHES: Snow removal in the immediate proximity to churches occurs to allow overflow parking in the street without causing congestion. Sidewalks are also cleared to allow pedestrian traffic access. All denominations are assisted.

Snow removal usually occurs in relation to downtown business snow removal operations.

SIDEWALK SNOW REMOVAL:

- A. Sidewalk snow clearance may not begin until:
 - 1. All other snow removal operations are manned and in progress.
 - 2. If there are insufficient personnel available to conduct sidewalk snow removal operations, as well as street and road clearance, the streets and roads shall take priority.
- B. Municipal facilities, School Zones (public streets near schools, but not on school property), and the Business District are the sidewalks with the highest priority for snow removal and ice control.
- C. The sidewalks outside the identified priority areas shall be cleared as budget, staffing, weather conditions and equipment availability may allow during and after the storm.
- D. The sidewalks will be treated with sand as quickly possible after the storm.
- E. Prioritized sidewalks to be cleared of snow and sanded are shown

on the sidewalk plow route maps included in the Appendix of this document.

If pedestrians or vehicles cause obstructions to the sidewalk snow removal operations, the City's winter maintenance operators are encouraged to request their cooperation. Otherwise, the operator is expected to call their supervisor for assistance. The operator shall avoid confrontation at all possible costs. Any vehicles blocking public access, or parked in violation of Parking Regulations or a posted Parking Ban may be ticketed and/or towed.

ADOPTION:

The City of Dover has adopted the Winter Operations Snow Removal and Ice Control Policy by Resolution on and effective December 9, 2020. All residents are encouraged to familiarize themselves with the content as it describes the condition that one might expect to encounter before, during and following a winter storm event.

Residents are also encouraged to familiarize themselves with the Winter Parking Ban regulations and guidelines.

PRIORITIZED PLOW ROUTE MAPS