



## TOWN OF NEEDHAM, MASSACHUSETTS PUBLIC WORKS DEPARTMENT

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NEEDHAM'S SNOW AND ICE PROGRAM - 2000 / 2001. Revised: 11/29/00

The Department of Public Works is responsible for the development and implementation of the Snow and Ice program. The goal is to provide the public with safe reasonable travel. Success in the battle of winter snow fighting requires the cooperation and assistance of informed citizens. The DPW plows 130 centerline miles of roadway, 52 miles of sidewalk, as well as commuter, municipal, and school parking lots.

Needham has a thorough and well-regimented snow and ice program. Needham controls Snow and Ice operations through a command center at 470 Dedham Avenue. In the most challenging storms, keeping streets passable for emergency services is the primary goal. Each storm is unique and presents different challenges. Some critical factors of snow and ice fighting are timing, temperature, intensity, moisture content, and the accuracy of the forecast. Conditions before the storm, during the storm, and after the storm are also important factors. Needham has a comprehensive winter plan and is well prepared.

Needham combats snow and ice with a five-stage plan under which streets receive priority service. Town officials will use discretion to achieve the best results.

Stage 1: Chemical and abrasive application.

The chemical operation is usually the first mode of operation for a winter storm event. The goal is to prevent snow and ice from adhering to the pavement. The level of response ranges from one to seven chemical spreaders. In a full response Needham will spread de-icing materials on six designated routes that cover 50 % of the Town's roadways. Chemicals are placed on main commuter roads, hills, and in municipal parking lots. Chemicals require time and traffic to create brine to produce the desired results. Needham practices an improved version of 'The salt institutes sensible salting approach'. This approach recognizes and emphasizes getting the most benefit from the chemical application, while maintaining safe roads in an economical way, considering the protection of the environment. Safety is always the highest priority. De-icing materials are custom blended on sight as conditions warrant. The DPW uses various combinations of rock salt, sand, calcium chloride, and a liquid magnesium chloride mixture, depending on storm conditions. The result of combining de-icing materials improves overall road conditions, is economical, and is more environmentally friendly.



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#### Stage 2: Modified chemical operation.

Plows are mounted on the chemical trucks. The units scrape the pavement and drop chemicals on their assigned chemical routes. This operation is useful if snow and ice begins build up on the roadway or when serious drifting occurs. Often seven additional DPW plow units are called in to assist. The plow units work in tandem with the chemical units to scrap off the roadway on their routes then clear off school and municipal parking lots before applying chemicals or abrasives.

#### Stage 3: Full plow operation.

When snow and ice accumulation exceeds 3 inches and additional snow is forecasted the third stage of the program, is implemented. The chemical operation discontinues and the full plow operation is called up. A total of 34 town plows and 25 contractor plows begin operation across town. All equipment begins to clear the snow and ice from their pre-established routes. Each plow unit traverses it's entire route, making opening passes in the center of the road, and then retraces it's steps to completely clear the roadway. Street corners and intersections are pushed back after roadways are cleared.

#### Stage 4: Sidewalk plowing.

When snow and ice depths reach 4" sidewalk tractors are dispatched to provide accessible passage along the 52 miles of school designated walking routes. The town is divided into four routes; each route will have a specialized track machine for the plowing of sidewalks. These tracked machines will either use a V-blade or a straight reversible blade depending on its mission. These powerful units are capable of punching through deep snow banks. In conjunction with the four tracked units three multi purpose tractors will be deployed to assist with the initial opening of sidewalks. The three multi purpose units will switch from pushing snow to snow blower attachments when conditions warrant. The snow blowers can lift and direct the placement of the snow as needed. The tracked machines continue circling their routes, breaking through snow banks particularly at intersection and driveways that may have been inadvertently fill in. Snow blowers can greatly improve the finished product.

## Stage 5: Snow Removal and Hauling Operation

There are 4 basic levels within the snow removal operation plan. The objective is to provide safe travel for vehicular traffic and pedestrians. Snow removal operations are implemented after a plowing event. The amount and type of precipitation, and the post storm forecast help determine the level of effort. The removal of snow and ice is concentrated in the down town and heights business districts. The success of this operation requires the cooperation of the business community, town officials and citizens. The town's General By-law require that the property owners or their tenants clear and maintain sidewalks. Currently the DPW does not clear snow and ice from sidewalks in the business districts. The Police Department is responsible for the enforcement of the appropriate by-law for snow and ice.

Level 1 - The first level of snow removal includes the clearing of snow from cross walks, handi-cap ramps, Town Hall sidewalk and bus stops. Equipment may create openings in the snow banks at regular intervals as conditions warrant. The cut outs provide pedestrian access to vehicles parked in the road.

Level 2 - All work mentioned in the first level will be implemented and snow will be removed from curb to curb. In addition snow piles will be removed from Municipal and Commuter parking lots. When snow banks are high enough to create blind spots at intersections (Peek-a-boo intersection) it will be removed or knocked down. This operation can take several days to complete.

Level 3 - Full snow and ice removal in the down town and height business district. This level of service is required after a major storm that produces substantial accumulation or as a result of multiple snowstorms. At this level snow and ice is completely removed from sidewalks and the roadway in the business districts where travel lanes become too narrow to allow safe travel. All available resources both Public and Private may work around the clock as determined by Town Officials.

Level 4 - Removal of Trees, Snow, and Ice to open roads that could not be maintained and or plowed. Roads that are blocked with snow and trees will be opened. Narrow or snow choked roads will be widened. Heavy equipment will place snow and debris where necessary to open all Town roadways as quickly as possible. This operation would take place around the clock using all available resources. A State of emergency would likely be declared and in effect.

## SNOW TIPS

Black ice is a thin film of ice that covers the pavement. It is the most difficult condition to detect. Ice can form under a wide range of conditions. Black ice can even form without precipitation as moisture in the air freezes on the pavement surface. Icing conditions usually form on bridge decks first.

When shoveling the end of your driveway it is best to place the snow on the right side as you face the street. During the push back phase less snow will be pushed back into the driveway opening. Also your visibility to the left for on coming traffic will be improved.

Placing snow in the street or sidewalk can create a hazardous condition. It is a violation of the Town's By-law. Violations could result in a \$ 50-dollar fine for each offense. Blocked sidewalks that are designated as school-walking routes could force children to enter the street to get around the bank.

Fire hydrants will be dug out as time permits. There are over 1,700 fire hydrants. Many citizens clear snow way from fire hydrants and catch basins in front or near their property. This help is an enormous benefit to the community.

If you have a contractor plow your driveway instruct them to place the snow on your property. Placing snow from private property into the right of way is a violation of the Town's By-law and could result in the order to remove the snow from the Public Way and result in a \$50-dollar fine. Inform your contractor not to place the snow in such a way that it blocks sidewalks.

## GENERAL INFORMATION

At any time during a storm, you may reach the Highway Division at 455-7550 for further information.

Sand mixed with salt is available at no charge for residential use out side the green salt shed located at the rear of the Public Works Building at 470 Dedham Avenue.

The Town will repair damage to private property caused by Town forces in the spring. To report damage to private property resulting from Town forces please contact the Highway Division at 455-7550.

Damage to privately owned lawn sprinkler, mailboxes, walls, and fences that were installed within the Town right of way are the responsibility of the owner. The Town will not be responsible for damage to these installations.

## NEEDHAM WINTER SNOW AND ICE PROGRAM 2002-2003

### DPW ROUTE SUPERVISOR Duties and Responsibilities

- Train new operator in your section to standard operating procedures. Inform them of any location known to be problematic.
- Provide and maintain communications with each operator via radio, cell phone, pager, or setting up a scheduled meeting time and place.
- Work out a prioritized plan with your operators based on storm conditions and timing.
- Maintain reasonable control over equipment operators at all times. Report the general status for all routes in your section as requested by the director or his designated agent. Equipment should have traversed through their routes within 4 or 5 hours. Notify dispatch if equipment is not on a route.
- Route supervisors will move their assigned operators and equipment within their section.
- The Director or his designated agent will determine if equipment would be reallocated to a new section or special assignment.

### DPW EQUIPMENT OPERATOR Duties and Responsibilities

- Safety first for you and the Public. Report down wires and trees and do not get out of the vehicle if wires are down, or tangled on your vehicle. Call your route supervisor and dispatch for assistance or to forward information.
- Operators must be reachable by phone at call up. Answering machines are not acceptable.
- All staff is required to report for duty within one hour of call up.
- Become familiar with DPW operating procedures, your equipment, and route assignments before the first event.
- Tell your route supervisor if there are areas that require special consideration or you need help.
- Perform a full check and service on your equipment before each operation and at regular intervals and operate the equipment in safe and reasonable manner.
- Use proper plowing techniques per the Town's standard plowing procedures stage 3. In general each operator will traverse their entire route, making opening passes toward the center of the road and then retraces their steps to completely clear the roadway. Street corners and intersections or rolled back or pushed back after roadways are cleared and repeat until complete.
- Notify your route supervisor and the garage if you need to leave your route for service.
- Notify dispatch if your equipment will be out of service for more than one hour.
- Notify your route supervisor and dispatch when you leave or return to active plowing duty.