

**TOWN OF BELLINGHAM
DEPARTMENT OF PUBLIC WORKS**

**Snow and Ice Control
FY 2010**

Introduction:

The Bellingham Department of Public Works maintains the community's 100 miles of roads. In addition to plowing, we apply deicing agents. This is typically straight rock salt, but some mixed salt and sand is applied.

We take great pride in our snow fighting operations and are often complimented for our efforts. We appreciate the support we get from our residents, Selectmen, and Town Administrator. Although we think we do a pretty good job, Mother Nature always has the upper hand.

Several factors affect snow and ice control. We do the best we can with the manpower, equipment, tools, and products available to us. We do not have a "Black Road" policy. A Black Road policy is to plow and treat the roads non-stop until all roads are down to pavement "Black". We make an effort to achieve Black Road status, but make no representation or guarantee that we can achieve this or any previously achieved level of snow and ice control.

DPW Snow & Ice Fleet Fy2010

Six – six wheel dump trucks with spreaders and plows (3 with additional belly plows)
One – ten wheel dump truck with plow
Three – small dump trucks with plows
Seven – pickup trucks with plows
One – front end loader used to load spreaders with rock salt and sand/salt mix
One – skid steer loader with V plow (used on larger sidewalks)
One – trackless with snow blower or V plow (used on sidewalks)
Two – backhoes (reserve - use as needed to cover for the loader or push snow in parking lots)
One – catch basin cleaning truck with plow (reserve - used only if absolutely needed)
One – road grader with large V plow (reserve - used only in the very worst blizzard)

Pre – Winter Preparation

Usually in the summer, the Town of Framingham sends out the annual cooperative bid for Rock Salt. Bellingham is one of the towns in this cooperative bid group. Bids are processed by the Town of Framingham and result send out to all members of the cooperative bid group. The Director sends the results and a memo to the Board of Selectmen to officially award the Rock Salt bid for the fiscal year.

Typically in August or September, the Director places a newspaper ad requesting quotation for plow blades. Documents are available in electronic format (MS Word Documents in K:\SNOW) for easy update for the new season. Quotations are typically due in early October. Once the quotations are received, the DPW Mechanics order plow blades as the see necessary to have sufficient materials in stock before the season begins.

In Mid October, the Director sends out a mailing to the previous year's Snow Plow Vendors (private snow plow truck drivers). He also reviews documents and updates the policy & procedures, application forms, route maps, and route street lists, and rates. (The MassHighway rates are published on line and a good reference for fair rate establishment.) Snow Plow Vendor documents are available in electronic format (MS Word and Excel Documents in K:\SNOW) for easy update for the new season. Applications are typically due in mid November. A day or two after application due date, the Director reviews the applications and assigns any open routes to subs from the previous year. The Snow Vendor information and list is in the MSAccess database K:\Snow\Snow Vendors 2000.mdb. A list of all assigned routes and drivers with their contact information is printed as is a list of the subs. All assigned vendors are sent a letter, route map, and street list. All subs are sent a letter and asked to confirm their interest in staying on as a sub without an assigned route. Labels are printed using the database and time cards are prepared and placed in GPS Phone rack in the Foreman's Office. The Director updates the Snow Vendor preset calling list in the CodeRED system.

We try to keep a picture file of the Snow Plow Vendor drivers and vehicles but it is not always up to date and has not been as useful a tool as we had anticipated when we started the program a few years ago.

The Snow Vendor Route Map and Sanding Road map is in an AutoCAD drawing in K:\SNOW\Snow Routes.dwg. The town wide map is printed and posted in the Foreman's office. Individual route maps are also in the snow route book. These maps are excerpts of the full AutoCAD town wide map. The list of streets related to Plow Vendor routes is an Excel document in K:\SNOW\Snow Routes 2000.xls.

The Director contacts the Nextel Government Services Agent in October and schedules the activation of the Snow Vendors GPS phones. The phones should be activated no later than Thanksgiving and deactivated on or about April first.

In mid October, the Mechanics start to check the status of our salt truck and spreaders and place the spreaders in the back of our six wheel dump trucks. The goal is to have four salt truck ready by about December first. The remaining two are done as soon as the ten day forecast indicates the possibility of a winter storm. *(Putting the spreaders in all dump trucks has a significant impact on our ability to perform late season paving and street sweeping.)*

Standard Storm Fighting Procedure

The DPW management tracks the weather forecast very carefully. We receive information from a specialized weather service that send us detailed timelines for snow accumulation. We also tune in to local TV stations and going on line.

In a typical storm incident, our six salt spreading trucks go out as soon as the Police Department tells us the roads are getting slick. The salt truck operators will then generally make the call as to whether plowing is needed.

For small plow-able storms we try to do all the plowing in house. We put our front plows on the salt trucks, and any other truck for which we have a driver, and attack the storm. Sometimes we call in a few private plow trucks to expedite the clean up. Plowing with in house forces is typical for storms with accumulation of 4 inches or less, but sometimes the timing of the storm requires a more aggressive attack.

If the snow is getting to a depth of greater than 4 inches, or obviously will get there, we use a preset call list in our CodeRED calling system to call in our full list of thirty-three private plow trucks. Each of the thirty-three private truck is assigned a route and is given a map and list of side streets for which they are responsible. They are directed to hit the entire route to maintain emergency access and go back over their route and push the snow back to the curb line once it stops accumulating. A private plow truck is assigned the Municipal Center, Town Hall, Police, Fire, Library, and Senior Center parking lots.

Most Town vehicles and all private plow trucks are equipped with GPS tracking Nextel phones. The DPW management utilized a real time vehicle tracking system to track the location of our fleet during a storm. All vehicles working for the Town have two-way communication with the DPW management.

Once the private plow trucks are called in, all Town trucks switch to main roads. One large salt truck with a plow will pair up with one small pick up or dump truck with a plow in tandem until the snow slows.

The DPW office and phones are manned during regular working hours. When private plow trucks are in, at least one of the DPW Managers (Foreman, Assistant Director, or Director) is in the office. The manager on duty fills out a Time-Incident-Response Log sheets to track calls, requests, issues, and problem resolution time. This form is a useful tool in transfer of command to avoid having unresolved issues slip through the cracks.

We place rock salt (Sodium Chloride) in the early stages of a storm. Then as snow becomes plowable depth, we switch to an all plowing operation with very little salt used. We apply a salt and sand mix in some steep hills while plowing. We will use the salt/sand mix if we start to run low on salt. Our salt trucks are equipped with tanks to treat the salt with liquid calcium chloride just before it is spread on the roads. This is called pre-wetting and we typically only use this when the temperature is below 20 degrees. Calcium chloride will melt snow at colder temperatures than rock salt. Salt works best to melt ice and snow at temperatures above 20 degrees.

All plows work to keep their route clear until the snow has stopped and then push the snow back to the curb line. As private plow trucks complete their routes, they are often reassigned to work at the school parking lots.

Town trucks check on the completion of private plow truck routes and if supply is available, we wrap up the storm with a final treatment of salt on all roads. If supply is short, we will treat only the main roads and hills with salt. The DPW trucks will check the schools and treat the school's access roads and parking lots.

Our top priority is main roads followed by side streets that have hills, followed by the schools, then all other streets. Plowing of sidewalks on main streets is next priority, but sleep for the crew is considered before sidewalk plowing. If no one is sufficiently rested, this work is postponed. The DPW does not plow any side street sidewalks, and we have no equipment capable of treating sidewalks with salt.

Bellingham residents are allowed to come to the DPW and fill a bucket or two with salt or salt/sand mix. A sign is posted directing residents to special piles in a location out of the way of our salt truck filling area.

No two storms are the same. Snow has different weight and compacting properties. A fluffy dry snow requires less salt, sand and plowing than a heavy wet snow, but tends to blow back onto already plowed areas. Wet snow may result in very slippery conditions, especially when the newly fallen snow freezes on the pavement. A deep freeze immediately after a snow event creates refreezing issues.

We try treat and plow the streets before traffic packs the snow down on the roadway. Once snow bonds with the road, it is much harder to plow and takes much more treatment to get back to pavement.

Post Storm Debriefing and Modifications

After the Storm the DPW Management reviews any issues that arose during the storm. Route Maps may be modified or plow vendor assignments changed due to truck break downs. DPW equipment repairs are prioritized and work started. A new set of time cards is prepared and placed in the rack with the Snow Plow Vendor GPS phones. If there has been a lot of snow the loader or backhoe may go out to clear snow piles at intersections to improve sight distance. Equipment is assigned to clean snow from less critical sidewalks on main streets.

Our Limitations:

Our salt shed is about one quarter of the size we should have. This means that if we get two or three big storms in a row we run out of salt. Although we place orders as soon as a storm hits, there is a very limited number of salt suppliers and they have only a limited number of trucks. There are 351 cities and towns, plus the State's highway department calling suppliers for delivery to restock and all at the same time. In severe times, the State will require suppliers to fill their sheds before allowing any delivery to towns.

We have only six salt trucks to treat about 100 miles of roadway. It snows on all the streets at once. Our trucks have no special abilities. If there is a big back up on our main roads, which is not uncommon if a storm hits or intensifies during peak commuter times, our trucks are simply stuck in traffic like everyone else.

We have a staff of 18 excellent AFSCME workers. When a severe storm hits, everyone has a vehicle or task to do and all come in to work the storm. In fact, we have more vehicles than staff available to operate them. There is no reserve team of rested drivers waiting to come in if the storm has a long duration or we get back to back storms.

Our drivers (town and private) do not have super hero vision. In the middle of the night, on snow covered road, the curb line is not clearly visible. We need to push the snow back to the curb line; we do not want to plow up lawns or shoulders, but it happens with no malicious intent.

Freezing rain is our biggest nightmare. No public works department is equipped to deal with it well. Salt gets washed away and sand gets quickly covered. In addition, the trees and power lines are loaded with ice and often fall creating power outages and blocking roads.

We do not have the staff to clear snow from our over 700 hydrants and 2,200 catch basins, and do not typically assign staff or hire private contractors to do this work. We request our residents take a few extra minutes to see that the basins and hydrants are clear.

We are not equipped to pre-treat the roads in preparation for a storm. We must simply react once the storm starts. There are fairly new snow and ice pretreatment products (Anti-Icing) on the market. A move towards Anti-Icing would require a quantum leap for us. We would need to purchase equipment suited for distribution of liquid chemicals and move away from salt spreaders. Our geographic location makes the use of anti-icing products very tricky. We are often very near the snow rain line. Anti-icing products will likely become the standard in the future, but for now rock salt is still our best tool.

Finances

Budget concerns have never affected how we fight a winter storm.

We and all cities and towns in Massachusetts, budget a low estimated amount for snow and ice control. The DPW Director tracks the expenses in the Snow and Ice Budget (1000-423). When the budgeted funds are about to be exceeded, he sends a memo to the Selectmen and Finance Committee requesting permission for emergency spending. Votes are taken at next scheduled meeting of the Selectmen and Finance Committee as a formality.

At the Annual May town meeting, which is near the end of the fiscal year, funds are transferred into the Snow and Ice budget to cover the actual costs. Typically Our Chief Finance Officer holds funds in free cash to cover the anticipated May transfer.

TOWN BYLAWS – RELATED TO SNOW – As of October 2009

Article 1.04. General Penalty For Violation Of By-Laws

Whoever violates any of the provisions of these By-Laws whereby any act or thing is enjoined or prohibited, shall, unless another provision is expressly made, forfeit and pay a fine not exceeding three hundred dollars (\$300) for each violation, each day representing an independent violation.

Article 15.02. Snow Removal Operations

No resident shall permit or cause snow to be pushed on, pushed over or placed across a Public Way or sidewalk. The penalty for violating Article 15.02 is the responsibility of the resident.

Article 16.01. DPW Director Authorized To Remove Vehicles Hindering Snow Removal

The DPW Director may, for the purpose of snow removal, plowing snow, or removing ice, from any way, remove or cause to be removed to some convenient place including in such term a public garage, any vehicle interfering with such work, and impose liability for the cost of such removal, and of the storage charges, if any, resulting there from, upon the owner of the vehicle.