

# Winter Road Maintenance Standard Operating Procedures



**Town of Tewksbury, MA**  
Department of Public Works  
999 Whipple Road  
Tewksbury, MA 01876

Updated June 30, 2020

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## Winter Road Maintenance – Town of Tewksbury, MA

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## Introduction

The Town utilizes its own equipment and personnel along with contractors to handle winter road maintenance, which includes snow plowing, snow removal and salt/sand spreading.

## Personnel

The Town's Department of Public Works Highway Division and Water & Sewer Division are responsible for snow and ice removal. Employees performing the procedures in this SOP shall attend yearly stormwater pollution prevention training (IDDE training), private contractors will also be provided with materials to inform them about the risks of stormwater pollution during winter road operations.

## Equipment

The municipality owns and maintains ice control and snow removal equipment listed in Table 2. Equipment maintenance shall be conducted consistent with the Vehicles and Equipment maintenance. The wash bay/ area is located at: **999 Whipple Rd, Tewksbury, MA 01867**

- **Plows**  
When conditions warrant, plows are installed on the **11** larger trucks to move snow from the traveled roadway. Average time to install a plow is approximately **20** minutes. **7** smaller trucks are available for plowing of residential streets and clearing public lots.
- **Spreaders**  
When conditions warrant, sand spreaders are installed on the **12** larger trucks to spread sand on the traveled roadway. Each sand spreader is calibrated prior to the deicing season and every month thereafter. Sand spreaders dispense **a variable amount for each storm and weather event.**
- **Anti-Icing Dispensers and Pre-Wetting Devices**  
The municipality has **2** pieces of equipment for this task. Each is a **1000** gallon truck-mounted dispenser for anti-icing chemical application. The tanks are mounted on **2** Trucks distributes anti-icing product onto town streets and bridges utilizing spray nozzles in accordance with this SOP. Anti-icing dispensers are calibrated prior to the deicing season. Anti-icing dispensers shall be calibrated to apply **20** gallons per lane mile. Pre-wetting application shall be calibrated to dispense rates are **8** gallons of pre-wet liquid to 1 ton of salt. Sand spreaders dispense **a variable amount for each storm and weather event.**

### Public Works Equipment List

<b>Equipment Number</b>	<b>Make</b>	<b>Description</b>	<b>Additional Equipment</b>	<b>Primary Use</b>
20	Ford 550	Dump Truck	4 Yard Sander 9 Ft Plow	Salting and Plowing
60	Ford 550	Dump Truck	4 Yard Sander 9 Ft Plow	Salting and Plowing
50	Mack	6 Wheel Dump Truck	8 Yard Sander 11 Ft Plow	Salting and Plowing
51	Mack	10 Wheel Dump Truck	12 Yard Sander 11 Ft Plow 11 Ft Wing Plow	Salting and Plowing
52	Western Star	10 Wheel Dump Truck	12 Yard Sander 11 Ft Plow 11 Ft Wing Plow	Salting and Plowing
53	Mack	6 Wheel Dump Truck	6 Yard Sander 11 Ft Plow	Salting and Plowing
54	Western Star	10 Wheel Dump Truck	12 Yard Sander 11 Ft Plow 11 Ft Wing Plow	Salting and Plowing
55	Mack	6 Wheel Dump Truck	6 Yard Sander 11 Ft Plow	Salting and Plowing
56	Mack	6 Wheel Dump Truck	6 Yard Sander 11 Ft Plow	Salting and Plowing
57	Peterbuilt	6 Wheel Dump Truck	10 Yard Sander 10 Ft Plow 1000 GAL Tank	Salting and Plowing
58	Mack	6 Wheel Dump Truck	6 Yard Sander 11 Ft Plow	Salting and Plowing
59	Mack	6 Wheel Dump Truck	6 Yard Sander 11 Ft Plow	Salting and Plowing
79	Volvo	6 Wheel Dump Truck	1000 GAL Tank	Salting and Plowing

## Materials

The major materials used in snow and ice controls are coarse sand, coarse salt, anti-icing agent, road salt. These materials are stockpiled in advance of an event and are immediately available when needed and stocks are replenished between events.

- **Sand**  
Sand is used as an abrasive for traction on slick roadways. Very little to no sand used in Town. Sand is stored in the covered facility located at the **DPW Yard**. Loading areas and yards are swept **daily after each use** to prevent sand build-up and run-off.
- **Salt**  
Salt is used to expedite the melting of snow and ice from the street surface and also to keep the ice from forming a bond to the street surface. Approximately **5000** tons of **Road Salt** are anticipated to be used per year and are ordered from **suppliers** prior to each deicing season. Salt is stored in the covered facility located at: **DPW Yard**. Loading areas and yards are swept **daily after each use** to prevent salt build-up and run-off.
- **Anti-icing and Pre-Wetting Chemical**  
Approximately **2300** gallons of **Liquid Calcium** is estimated to be needed for pre-wetting. These chemicals are stored at **DPW Yard** in gallon storage tanks equipped with appropriate spill control.
- **Salt Alternatives**  
Currently No Salt Alternatives are being used at this time but the town is exploring options

## Procedures

### Anti-Icing and Pre-Wetting

- Whenever possible, the anti-icing product is applied to the roadway prior to the beginning of a storm to prevent snow from bonding to the roadway surface, and also used when heavy frost or black ice is expected to be an issue for commuters. **DPW Director or Highway Foremen** will instruct staff when anti-icing is appropriate. Anti-icing will not be done prior to freezing rain or when pavement temperatures are below **32** degrees F.
- Prior to anti-icing application, equipment will be checked to ensure proper working order and ensure proper calibration of equipment. All fluid levels will be checked and filled to proper levels, all lights must be in working order. A visual walk-around inspection of the truck or equipment must be made. Any repairs must be made and reported to a supervisor or mechanic before leaving the yard.

- Anti-icing chemical will only be applied to priority routes. The priority routes list is found here:

Chandler St.	Vale St.	Chapman Rd.	Andover St.
Pond St.	South St.	Astle St.	River Rd.
East St	Salem St.	Pike St.	Fiske St.
Shawsheen St.	Brown St.	N. Billerica Rd.	International Way
Livingston St.	Lake St.	Woburn St.	Catamount Rd
Maple St.	Hill St.	French St.	Trull Rd.
Lowe St.	Bridge St.	Marston St.	
Ballard St.	Whipple Rd.	North St.	

- Anti-Icing vehicle optimal speed is **15 MPH**
- Before parking any truck or equipment after use, all fluid levels will be checked and filled. All minor repairs will be done by the operator. Any repairs the operator cannot perform will be written up on the proper forms and turned in to **Mechanic Foreman** and they will determine importance and will assign the repairs according to schedule. All deicing chemical will be washed from equipment at the wash bay or designated wash area.

**Salt Application**

- Whenever conditions warrant, salt is applied to the roadway prior to accumulation of snow to prevent compacted snow from bonding to the roadway surface. **Highway Foreman** will instruct staff when salt application is appropriate. Salting will not be done when pavement temperatures are above **32** degrees F or below **15** degrees F.
- Prior to salt application, equipment will be checked to ensure proper working order and ensure proper calibration of equipment. All fluid levels will be checked and filled to proper levels, all lights must be in working order. A visual walk-around inspection of the truck or equipment must be made. Any repairs must be made and reported to a supervisor or mechanic before leaving the yard.
- The standard salt application speed is: **15** mph.
- Follow the prioritized route or schedule. This schedule is located at: **DPW Office**
- Before parking any truck or equipment after use, all fluid levels will be checked and filled. All minor repairs will be done by the operator. Any repairs the operator cannot perform will be written up on the proper forms and turned in to **Mechanic Foreman** and they will determine importance and will assign the repairs according to schedule. All deicing chemical will be washed from equipment at the wash bay or designated wash area.

## Snow Plowing

- As the storm develops and **2-4** inches of snow has accumulated, all of the drivers and available equipment will begin to plow their assigned routes.
- Prior to plowing operations, equipment will be checked to ensure proper working order. All fluid levels will be checked and filled to proper levels, all lights must be in working order. A visual walk-around inspection of the truck or equipment must be made. Any repairs must be made and reported to a supervisor or mechanic before leaving the yard.
- Avoid plowing, pushing, blowing or storing excess snow, deicer, or other debris in or near creeks, watercourses or storm drainage systems.
- Reduce plowing speed in sensitive areas (near creeks, wetlands or other water courses) to prevent snow and deicing materials from entering waterways.
- The standard plowing speed is: **15** mph.
- Follow the prioritized route or schedule. This schedule is located at: **DPW Office**.
- Before parking any truck or equipment after use, all fluid levels will be checked and filled. Blades or bolts, which need replacing, will be taken care of unless told to do otherwise. Chains that need repairs will be repaired. All minor repairs will be done by the operator. Any repairs the operator cannot perform will be written up on the proper forms and turned in to **Mechanic Foreman** and they will determine importance and will assign the repairs according to schedule. All deicing chemical will be washed from equipment at the wash bay or designated wash area

## Record Keeping and Documentation

- Maintain a master schedule of prioritized snow and sanding routes and the miles or roads plowed or sanded. **DPW Office**
- Keep copies of manufacturer's recommendations for equipment calibration, plowing speed and salt/sand application rates. **DPW Office**
- Keep records of the amounts of salt, sand, liquid deicer, and salt alternatives applied per season. **DPW Office**
- Keep a list of all employees trained in the facility's Stormwater Pollution Prevention binder or computer file

