



Title: Snow and Ice Program		
Department: Highway		
SOP Number: HWY-NPDES-02	Revision Number: Rev 1	Date: (mm/dd/yyyy) 12/12/2022

Revision History:

Revision Number	Date (mm/dd/yyyy)	Brief Description of Change(s)	Amended By:
0	02/24/2020	Draft standard operating procedures	Rhain Hoyland
1	11/06/2022	Addition of conditions for Sunita Williams	Kim Donovan

1.0 PURPOSE

The purpose of these procedures is to provide the Town of Needham with timely snow and ice treatment and removal services that promotes reasonable travel for vehicles and pedestrians impacted during various winter weather events. The Department of Public Works analyzes each forecasted storm and will modify the standard operation procedures as needed considering timing, duration, temperature range, storm intensity, precipitation amount and moisture content.

2.0 SCOPE

Scope of service includes 138 centerline miles of public and private roads, 54 miles of sidewalks and 28 parking lots. The Town utilizes a 4-stage program to effectively manage snow and ice operations. Snow and ice strategies include chemical anti-icing, de-icing, plowing, snow blowing and snow removal and hauling operations.

3.0 PROCEDURES (4 stages)**Stage 1: Anti-icing/De-icing Chemical Operation**

The primary goal is to prevent snow and ice from bonding to the pavement and to create a chloride brine. The chloride brine lowers the freezing point and melts snow and ice.

There are 12 DPW staff assigned during a chemical application shift and up to 8 chemical trucks assigned to routes that focus on main roads, hills, and parking lots. The chemical trucks use computerized chemical dispensing units and may use underbody scrapers and/or mounted plows. Under this stage, 60% of public roads and all municipal parking lots are treated. During ice events all roads and municipal parking lots are treated.

Stage 2: Modified De-icing Chemical Operations

When snow and ice accumulation is determined by DPW staff to be at a rate that chemical applications alone are not as effective, chemical trucks use plows and an addition 6 to 8 plows trucks are deployed. During a modified chemical operation roads and parking lots are plowed and then treated to improve the effectiveness of the chemical applications. Under this stage, 18-21 Department of Public Works staff plow and treat roads and parking lots.

In addition, 13 public works staff (2 supervisors and 11 operators) are called in to clear snow and ice from 54 miles of sidewalks and all intersecting streets along their routes. The sidewalk clearing plan has 7 routes and uses highly specialized sidewalk plow units. These units use plows and/or snowblowers depending on conditions.

There are 4 public works staff assigned to clear areas along the sidewalk plow routes that cannot be cleared by the sidewalk units. This hand crew uses manual shovels and walk behind snow blowers.

Stage 3: Full Plow Operation

When snow and ice precipitation is intense, and accumulation will be 2 or more inches a full plow operation is called. During a full plow operation approximately 75 DPW staff and 25 hired contractors are on duty. DPW staff and contractors plow routes that are pre-assigned. DPW staff include administrative, supervisory and equipment operators.

Stage 4: Snow Removal and Hauling Operations

Level 1 – Curb-to-Curb snow removal in the Downtown, Height's and Birds Hill Business district and snowbank cut outs to provide pedestrian access to sidewalks from on street parking areas.

Heavy equipment loads collected snow into trucks and is hauled to the Recycling Transfer Station (RTS). Snow blowers mounted on sidewalk units are assigned to widen streets designated as school pick up/drop off areas.

Level 2 – Snow clearing under level 1 and remove all snowbanks and clear sidewalks in the Downtown, Height's and Birds Hill Business Districts.

Snowbanks on the sidewalks are pushed to the roadway for removal. Heavy equipment loads collected snow into trucks and is hauled to the Recycling Transfer Station (RTS).

Level 3 – At this level a state of emergency is possible.

High intensity snow, ice and/or wind during storms may require the removal of trees, debris, wires and snow and ice that obstruct access to roads. Priority for snow operations staff (internal or contracted) is to maintain emergency vehicle access to all streets at a minimum. When roads become narrowed due to heavy snowfall accumulation and/or large snowbanks, the DPW may deploy snowblowers mounted on sidewalk units and loader mounted snow blower(s) to widen roadways to accommodate two-way traffic.

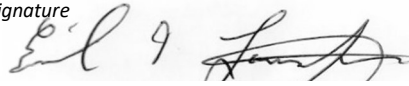
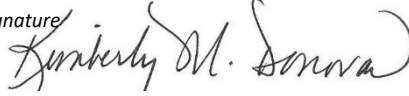
4.0 RESTRICTIONS

Plowing and Chemical De-Icing at the Sunita Williams Elementary School

Snow storage is prohibited within areas identified as the FEMA 100-year flood plain (Land Subject to Flooding) and the 50-foot Buffer Zone. Chemical de-icing to the west of the school building shall be limited to environmentally sensitive products such as "Promelt Mag" or approved equivalent. Storage shall be in accordance with the approved Snow Storage Plan, unless otherwise approved in writing by the Conservation Commission. This condition shall survive the issuance of a Certificate of Compliance.

5.0 REFERENCES

Sunita Williams Elementary School Order of Conditions, dated July 14, 2017 (DEP File #: 234-787)

Peer Reviewer: Signature  Date 12/7/2022	Author: Signature  Date 12/6/2022
Approved By: Signature  Date 12/7/2022	