

## Snow \& Ice Control Program

## Program Overview

The Snow and Ice Control Program maintains a safe transportation network that is efficient for vehicle road users during the winter months and strives to ensure the City meets its legislative requirements in addition to Council's mandated levels of service.

Preventing the accumulation of snow and ice or quickly removing it (as is reasonably practical) increases safety, mobility, and improves commerce. As such, operational priorities are established for all of the City's roads, lanes, parking lots, sidewalks and paved trail networks, as defined in the Official Community Plan.

Snow \& Ice management along provincial highways is managed by the BC Ministry of Transportation and Infrastructure (MoTI) and their contracted services.

## Assets

## Existing:

- Heavy Equipment: 14 Units
- Medium Equipment: 2 Units
- Small Equipment: 8 Units
- Salt and Sand Spreaders: 7 Units
- Truck Mounted Brine Units: 2 Units

New for 2022:

- 1 Mini Skid Steer \& Attachments
- 1 Mini Brine Attachment

Awaiting Delivery:

- 1 Heavy Equipment Unit



## Logic Model

## A visual illustration of a program's resources, activities and expected outcomes

| Inputs | Activities | Outputs | Outcomes | Impacts |
| :---: | :---: | :---: | :---: | :---: |
| - Labour hours <br> - Fleet Equipment <br> - Salt <br> - Sand <br> - Fuel <br> - Technology <br> - Public inquiries <br> - Contracts <br> - Policies <br> - Previous plans, routes and lessons learned | > Pre-season preparations <br> > Safety and skills training <br> $>$ Road patrols and inspections <br> > Weather monitoring <br> $>$ Snow plowing and deicing <br> $>$ "Snow removal" (hauling) <br> $>$ Sidewalk clearing <br> $>$ Fleet repairs <br> > Communications <br> $>$ Record management <br> $>$ Safety investigations <br> > Operational improvements | > Maps and event documents <br> $>$ Road user satisfaction from plowed and de-iced surfaces returning to mostly bare pavement conditions as soon as possible (winter maintenance) <br> > Citizen satisfaction from issue response (public inquiries) Cost effective operations from safe plowing speeds and efficient plowing zones and routes <br> > Material application rates aligned to weather patterns <br> > Contractor payments <br> $>$ "Snow removal" (hauling) in priority areas (downtown core) | Staff safety awareness, knowledge and skills Interest and attention on maintaining safe, accessible, and reliable roads, sidewalks, paths, parking lots, facilities and parks Road user satisfaction <br> $\checkmark$ Citizen satisfaction <br> $\checkmark$ Public awareness of winter storms and driving hazards Accessible facilities and parks <br> Mobility of traffic at or near normal speeds and density, especially on high traffic roads | - Reduction of crashes that reported road conditions as a factor <br> - Commerce; transport of goods and services <br> - Reduced disruption of essential activities such as schools, medical appointments, garbage collection, police and emergency services <br> - Quality of life maintained related to users and various modes of transportation |

## When to Salt \& Plow

The City has 341 lane-km of roads, 156 km of sidewalks, 15 km of paved trails, and 25 parking lots

| Asset Class | When does the City start to apply product (brine, or salt, or sand)? | How many hours does it take to apply product each round?* | When does the City start plowing? | How many hours does it take to plow each round?* | Required Outcome |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Arterial Roads | Before snow accumulates if temps are forecasted below $0^{\circ} \mathrm{C}$ without rain | 3 hours <br> (4 fleet vehicles) | Based on road conditions. <br> Typically 2.5 cm of snow accumulation | 6-8 hours <br> (6 fleet vehicles) | Bare pavement or centre bare |
| Major roads, transit routes and streets with hills | Before snow accumulates if temps are forecasted below $0^{\circ} \mathrm{C}$ without rain | 3 hours <br> (4 fleet vehicles) | Based on road conditions. <br> Typically 2.5 cm of snow accumulation | 6-8 hours <br> (6 fleet vehicles) | Bare pavement or centre bare |
| Local Roads | By request | n/a | 10 cm of snow accumulation | 14-20 hours (12 fleet vehicles) | Safe and passable |
| Cul-de-sacs and lanes | By request | n/a | 10 cm of snow accumulation | 24-36 hours from end of snowfall | Safe and passable |
| Sidewalks | Before snow accumulates if temps are forecasted below $0^{\circ} \mathrm{C}$ without rain (DCBIA only) | n/a | 5 cm if more than 10 cm of snow accumulation is forecasted | 24 hours from end of snowfall | Safe and passable |
| Paved Trails | Before snow accumulates if temps are forecasted below $0^{\circ} \mathrm{C}$ without rain | 3 hours | 5 cm if more than 10 cm of snow accumulation is forecasted | 24 hours from end of snowfall | Bare pavement |
| Separated Cycle Tracks \& Paved Multi-Use Paths | Before snow accumulates if temps are forecasted below $0^{\circ} \mathrm{C}$ without rain | 3 hours | 5 cm if more than 10 cm of snow accumulation is forecasted | 24 hours from end of snowfall | Bare pavement |
| Civic properties and public facilities | Before snow accumulates if temps are forecasted below $0^{\circ} \mathrm{C}$ without rain | 8 hours | 5 cm if more than 10 cm of snow accumulation is forecasted | 24 hours from end of snowfall | Safe and passable |
| Parking lots | Before snow accumulates if temps are forecasted below $0^{\circ} \mathrm{C}$ without rain | 3 hours | 5 cm of snow accumulation | 12 hours (2 fleet vehicles) | Bare pavement |

## Street Clearing

The City clears snow from roads in order of priority:

1. Arterial and major collector roads, emergency services facilities, bus routes and the downtown core commercial area
2. Minor collector roads, streets with steep hills, school zones
3. Local roads
4. Cul-de-sacs and lanes

## Street Clearing Map



## Sidewalk Clearing

The City clears snow from sidewalks on high volume pedestrian routes where mechanical clearing is possible.

This includes arterial roads, the downtown core, park frontages, transit areas, sidewalks adjacent to emergency and municipal facilities, separated bike lanes and prioritized paved walking trails.

Snow is also cleared from sidewalks on collector roads without residential homes where mechanical clearing is possible.

## Sidewalk Clearing Map



## Next Steps

Snow \& Ice Control Policy Update: 2023


