

# Policy on Snow Clearing and Ice Control

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## POLICY STATEMENT:

The goal of the Policy on Snow Clearing and Ice Control is to maintain the City's roadways, back lanes, sidewalks, active transportation routes and designated park pathways in such a manner so as to:

1. Provide safe and accessible operating conditions for motorists, cyclists and pedestrians;
2. Reduce the hazards of icy road conditions;
3. Minimize economic losses to the community and industry resulting from unsatisfactory winter driving conditions;
4. Facilitate the handling of emergencies by Police, Fire and Ambulance Services during the winter;
5. Provide safe and accessible operating conditions for the Transit system and facilitate their essential operations during a snow emergency.

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## Snow Clearing and Ice Control Priorities:

For the purpose of snow clearing, the street system has been classified in three categories, Priority 1 (P1), Priority 2 (P2), and Priority 3 (P3). However, for a variety of reasons, some streets/sidewalks/active transportation routes that are designated as a particular priority may be plowed on an accelerated basis together with streets in a higher priority. The definitions listed below describe the general rule and some exceptions to the rule.

### Priority 1 Streets:

Includes all Regional Streets, in addition, some streets around the Health Sciences Centre have been plowed as Priority 1 to facilitate ambulance access to the hospital.

### Priority 2 Streets:

These include non-regional bus routes and collector streets based on traffic counts although some streets in industrial areas are exceptions to the traffic count standard.

### Priority 3 Streets:

Residential and/or little used industrial streets.

## **Sidewalks and Active Transportation (AT) Pathways:**

Unless otherwise designated as an "Active Transportation Priority Route (P1AT, P2AT, P3AT)", sidewalks are plowed and sanded on the same priority as the adjacent street.

Plowing of Active Transportation pathways shall be established by the Public Works Department to identify a priority level for each pathway, based on the functional use of those pathways routes.

## **Designated Park Pathways:**

Includes all (community and neighbourhood) parks pathways that have been designated for snow clearing services. This infrastructure will be plowed as Priority 4 (P4), when adequate funding is available within the approved annual Snow Clearing and Ice Control Budget.

## **Back lanes:**

For reason of accessibility for citizens and refuse collection, back lanes are usually given an accelerated priority for plowing.

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# **SECTION A: Plowing of Streets and Back Lanes**

## **PRIORITY 1 STREETS**

Priority 1 streets shall normally be maintained to bare pavement over the full pavement width. **Generally, snow accumulating beyond a depth of 3 cm shall be removed through the use of de-icing chemicals and/or by plowing.**

Streets shall be plowed on a continuous basis until completed. Plowing shall be undertaken during the night as much as possible in order to minimize the problems associated with traffic and parked vehicles. The snow plowing operations shall be completed within thirty-six hours following the end of an average storm. During extreme snowfall events where the snowfall amount and/or accompanying severe drifting conditions makes it impractical to complete the snow clearing operations on the street system with a full complement of resources and continuous effort, the time limits specified may be extended.

**Excessive ice or snow build-up along gutters and medians or between traffic wheel paths shall normally be removed.**

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## **PRIORITY 2 STREETS**

Priority 2 streets shall normally be plowed to bare pavement over the full pavement width. **However, minor snowfall accumulations and the City policy restricting the use of de-icing chemicals on Priority 2 streets may result in a layer of compacted snow on the**

**street surface between all-out plowing operations.** A plowing operation shall normally be initiated when the snow has accumulated beyond a depth of 5 cm.

Streets shall be plowed on a continuous basis until completed. During a major storm, advanced priority for plowing shall be given to bus routes. The snow plowing operations shall be completed within thirty-six hours following the end of an average storm. During extreme snowfall events where the snowfall amount and/or accompanying severe drifting conditions makes it impractical to complete the snow clearing operations on the street system with a full complement of resources and continuous effort, the time limits specified may be extended.

**Excessive ice or snow build-up along gutters and medians or between traffic wheel paths shall normally be removed.**

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## **PRIORITY 3 STREETS**

Priority 3 streets shall normally be maintained to a compacted snow surface as opposed to bare pavement. **However, Priority 3 streets shall be plowed to the pavement surface whenever conditions allow during an all-out plowing operation.** Plowing on Priority 3 streets shall commence after an inspection warrants a clearing operation, usually following a 10 cm snowfall accumulation or equivalent local drifting conditions.

The snow plowing operations shall normally be completed within five working days following the commencement time of the plowing effort on Priority 3 streets. Work on weekends and holidays shall be limited if streets are passable. During a major storm, the Priority 1 and 2 streets shall be brought to a satisfactory condition prior to work commencing on the Priority 3 streets.

A full non-storm related widening/spot maintenance plow on Priority 3 streets may be initiated as a result of an assessment of the depth of ruts and/or the difference in depth of compacted snow and ice in the parking lane of a street as compared to the traffic lane. This plowing operation will normally be initiated in February, depending on weather conditions.

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## **BACK LANES**

Back lanes shall normally be maintained to a compacted snow surface as opposed to bare pavement. **Plowing of back lanes shall commence after an inspection warrants a clearing operation, usually following a 5 cm snowfall accumulation or equivalent local drifting conditions.** Snow plowing of back lanes shall normally be undertaken using rubber tired front-end loaders.

An enhanced level of snow clearing shall be provided in back lanes for properties that have no front street access. In these locations it may be necessary to undertake supplemental plowing and snow removal operations to provide suitable access. Any excess snow shall be relocated along available rights-of-way in the neighbourhood.

**The snow plowing operations shall normally be completed within two days following the end of an average storm.** Generally, the plowing of back lanes shall be undertaken concurrently with Priority 1 and 2 streets and prioritization may be necessary to facilitate refuse pickup.

During extended periods of mild weather, it may be necessary to undertake additional plowing of back lanes, where specifically warranted, to reduce rutting. A full non-storm maintenance plow of back lanes may be initiated based on an evaluation of back lane conditions city-wide. The plow should be a quality maintenance plow, preferably during day shifts, in order to result in acceptable driving conditions.

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## **SECTION B: Use of Salt and Sand**

### **USE OF SALT AND SAND**

#### **USE OF SALT ON CITY STREETS**

The populace of Winnipeg is largely dependent on being mobile all year round, either by automobile, truck or bus. As a result, it is critical that the street network and transportation system be functioning and safe. The City endeavours to provide an adequate level of service and, pending proper weather conditions, the application of 100% salt to City streets satisfies the following objectives:

1. Melting freshly fallen snow on arteries that are heavily traveled.
2. Preventing the formation of ice on the roadway surface due to freezing rain, fog, traces of snow, or frost formations such as on bridge decks.
3. Removing layers of snow and ice that remain on the pavement after the plowing operation is carried out.
4. Improving tire traction and braking qualities of the pavement.

#### **Priority 1 Streets**

The Public Works Department's policy for the application of salt on Priority 1 streets is defined by past practice, namely that:

(a) Salt is effective for the melting and removal of ice and snow accumulations on the pavement only when ambient (surrounding) temperatures are above approximately  $-7^{\circ}\text{C}$ , depending on pavement temperatures, the radiant heat of the sun, wind conditions, traffic speed and volume. Because of this temperature limitation, salt is generally used for that part of the winter prior to the middle of December and subsequent to the middle of February.

(b) Salt is applied in short burst applications called "spotting" on signalized intersections, controlled intersections, bridge decks, underpasses, railway crossings and pedestrian crossings, to provide satisfactory tire traction quickly under heavy traffic conditions by melting the snow and ice accumulating on pavements. This method of application is particularly useful when snow or freezing rain accumulates just prior to rush hours.

(c) Salt can also be applied continuously along the Regional street system to melt freshly fallen snow. Depending on the weather conditions prior to the snowfall, a single application will melt three to six (3 to 6) centimetres of fresh snow. Should the snowfall continue, a second application may be required to melt the additional snow. This procedure is currently being

practised instead of the alternative of plowing the fresh snow from the street followed by a salt "spotting" application for two reasons:

- (i) Bare pavement is restored quickly providing needed tire traction often in a time frame where plowing is not a viable alternative (eg. to expedite rush hour traffic), and
- (ii) The continuous application of salt compared to an "all-out" plow on the Regional streets results in a saving of approximately \$200,000.00 per application in plowing and hauling costs or \$600,000.00 during an average winter.

The salting of Priority 1 streets on a continuous basis must be authorized by the Director of the Public Works Department or his designate.

(d) Salt is applied at an application rate of 170 kg per lane kilometre. Over the next two years, the City of Winnipeg's fleet of salt spreader trucks will be equipped with automatic spreader controls. In conjunction with this upgrading, the Public Works Department will be developing varying application rates to correspond to changeable street conditions. For example, the application rate of salt for a light "spotting" requirement should be different from the application rate for a continuous salting operation to melt 3 to 6 cm of fresh snow.

### **Priority 2 Streets**

The use of salt on Priority 2 streets has not been well defined up until now. It has been used on a few higher volume streets routinely and on other streets on occasion. There is greater use in extreme conditions such as a severe freezing rain.

In view of the existing level of environmental concern with respect to the use of salt, it is recommended that the application of 100% salt not be used on Priority 2 streets other than under extreme conditions equivalent to that caused by freezing rain.

The salting of Priority 2 streets must be authorized by the Director of the Public Works Department, or his designate.

### **Priority 3 Streets**

As previously indicated, the existing Policy for Snow Clearing and Ice Control states that Priority 3 streets shall be maintained to a compacted snow surface. Therefore, it is recommended that salt shall not be used on Priority 3 streets.

## **USE OF TREATED SAND ON CITY STREETS**

Treated sand is also used in the City to provide a reasonable level of safety on our street system. Salt is added to the sand (5% by weight) to enhance its performance as follows:

- (a) It serves to keep sand fluid and workable when stockpiled throughout the cold winter months so that the stockpiles do not freeze and become unusable, and
- (b) The salt has the effect of keeping the sand fluid and workable enough that it can be handled in the conveying and spreading apparatus used in the trucks that apply the treated sand to the streets, and

(c) The presence of the small quantity of salt in the mixture allows the material, under reasonable weather conditions, to stick to the icy surface of the roadway, thus reducing the tendency for the sand to be blown off the pavement surface by the wind and passing vehicles.

The first priority of application of treated sand after any snow accumulation is on the Regional Street system (Priority I), then the Bus Route and Collector system (Priority II), followed by an application on the Residential street system (Priority III).

### **Priority 1 and 2 Streets**

Treated sand is applied at an application rate of 320 kg/lane kilometre to improve traction on Priority 1 streets when the ambient temperature is below -7°C, a temperature at which salt is no longer effective. It is applied to Priority 2 streets as conditions warrant ensuring a reasonable level of safety to motorists and pedestrians.

The application of treated sand on Priority 1 and 2 streets is normally done on an intermittent basis along these streets, but may be continuous. After the initial application, and depending on the time of application, wind conditions, amount of traffic and any further accumulation of snow, additional applications of treated sand may be required at controlled intersections, bridges, subways, curves and inclines on the Priority 1 street system. The additional applications are usually made because of the significant traffic volumes and higher speeds on the Priority 1 streets. The action of vehicle tires at intersections dislodges the sand particles and the subsequent air movement caused by the moving vehicles blows the sand away from the wheel paths and to the side of the roadway resulting in the necessity for additional sanding. Treated sand is blown off the roadway in open areas due to a combination of air movement caused by moving vehicles and the force of normal wind and/or gusts. Therefore, additional applications of treated sand must be made in an effort to provide reasonable tire traction.

### **Priority 3 Streets**

Operating procedures have been developed to reduce the application of treated sand on Priority 3 streets consistent with maintaining reasonably safe conditions. The reduction will be accomplished by reduced application rates and by a more judicious evaluation of the locations to be sanded.

On Priority 3 streets, the application of sand shall be restricted to "spotting" or short bursts at controlled intersections, pedestrian corridors and crosswalks, railway crossings and inclines. There will be other locations where sanding may be required. These areas are to be identified on a "site specific" basis by the Area Streets Supervisor, or his designate.

Sanding will not be undertaken in back lanes except under extreme conditions and where authorized by the Director of the Public Works Department, or his designate.

NOTE: Sand and salt application rates are presently under review.

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## **SECTION C: Plowing of Sidewalks and Active Transportation Routes Pathways, Active Transportation Priority Routes (P1AT, P2AT, P3AT), and Park Pathways:**

## **SIDEWALKS ON PRIORITY 1 AND 2 STREETS AND PRIORITY 1 AND 2 ACTIVE TRANSPORTATION (AT) PATHWAYS**

Sidewalks on Priority 1 and 2 streets and Priority 1 and 2 AT Pathways shall normally be maintained to a compacted snow surface. Plowing shall commence when an inspection, following a 5 cm snowfall accumulation or equivalent local drifting conditions, indicates a necessity for a clearing operation.

The snow plowing operations shall be completed within thirty-six hours following the end of an average storm. (See Sidewalks in the Downtown Square Area.)

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## **SIDEWALKS IN THE DOWNTOWN SQUARE**

Sidewalks on Priority 1 and 2 streets within the Downtown shall generally be plowed to a paved surface whenever conditions allow. However, minor snowfalls and/or warming temperatures between plowing operations may result in a layer of compacted snow or ice on the sidewalk surface. A plowing operation shall be initiated when the snow has accumulated beyond a depth of 5 cm.

The snow plowing operations shall be completed within thirty-six hours following the end of an average storm.

For the purposes of this policy, the geographical area for snow clearing enhancements in the Downtown is established in conformance with the boundaries identified by the [City of Winnipeg Downtown Zoning By-law](#).

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## **SIDEWALKS ON PRIORITY 3 STREETS AND PRIORITY 3 ACTIVE TRANSPORTATION (AT) PATHWAYS**

Sidewalks on Priority 3 streets and Priority 3 AT Pathways shall normally be maintained to a compacted snow surface. Plowing shall normally commence when an inspection, following an 8 cm snowfall accumulation or equivalent local drifting conditions, indicates a necessity for a clearing operation.

**The identification of sidewalk plowing routes on Priority 3 streets shall be undertaken in such a manner so as to prioritize, wherever possible, sidewalks in the immediate vicinity of elementary schools.**

The snow plowing operations shall normally be completed within five working days following the commencement of work. Work on weekends and holidays shall be limited.

**Notwithstanding the above, the plowing of sidewalks on Priority 3 streets and which are in the immediate vicinity of senior citizen complexes is further discussed in Clause C-4.**

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## **SIDEWALKS ON PRIORITY 3 STREETS (NEAR SENIOR CITIZEN COMPLEXES)**

Sidewalk plowing routes on Priority 3 streets shall be established so as to identify a designated access route from each senior citizen complex to the most logical Priority 1 or 2 street.

Sidewalks on these access routes shall normally be maintained to a compacted snow surface. Generally, plowing shall commence when an inspection, following a 5 cm snowfall accumulation or equivalent local drifting conditions, indicates a necessity for a clearing operation.

The snow plowing operation shall be completed within thirty-six hours following the end of an average storm and shall normally be done in conjunction with the sidewalk on the connecting Priority 1 or 2 street.

For the purposes of this policy, senior citizen complexes shall be identified as a building that is devoted exclusively to senior citizens and has ten or more dwelling units.

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## **REMOVAL OF WINDROWS**

Windrows of snow plowed across private approaches and/or walks and resulting from sidewalk clearing operations shall not be removed.

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## **ACTIVE TRANSPORTATION (AT) PRIORITY ROUTES:**

Streets and sidewalks designated as Active Transportation Priority Routes (P1AT, P2AT, P3AT) will be cleared and sanded to the same service level as all Priority 1 infrastructure, that is, within 36 hours following a snowfall.

- P2AT and P3AT streets will not be salted as a P1, they will be plowed and sanded only.
- P2AT and P3AT streets will not be classified as designated snow routes.
- For P3AT streets, only the driving lane plus sidewalks will be plowed as a P1. The rest of the street will be plowed as their original priority designation (P3).

## **DESIGNATED PARK PATHWAYS**

Unless otherwise designated as an "Active Transportation Priority Route (P1AT, P2AT, P3AT)", the activities identified in this Clause will only be undertaken when adequate funds are available in the annual Snow Clearing and Ice Control Budget.

Designated park pathways within community and neighbourhood parks shall normally be maintained to a compacted snow surface. Generally, plowing shall commence when an inspection, following an 8 cm snowfall accumulation or equivalent local drifting conditions, indicates a necessity for a clearing operation.

The park pathway snow clearing operations shall be considered as a Priority 4 undertaking and shall commence following completion of the City's public sidewalk network.

Those pathways to be cleared in the community and neighbourhood parks system shall be determined by the Public Works Department.

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## **SECTION D - Snow Removal**

### **REMOVAL OF HIGH PILES**

The Public Works Department shall monitor visibility at intersections on a regular basis throughout the winter months and any identified high piles at bus stops, crosswalks, lane entrances and intersections shall be reduced so as to improve the line of sight for motorists and pedestrians. Priority shall normally be given to high piles located on Priority 1 and 2 streets.

Priority shall be given to high piles located at intersections and lane entrances in the vicinity of elementary schools.

Every effort shall be made to relocate the snow within the adjacent boulevard storage areas, but loading and hauling may be necessary in many instances.

In years of significantly above-normal snow accumulations, it may be impractical to undertake the reduction of all high piles within the City. On those occasions, efforts shall be concentrated on piles in areas of high traffic volumes.

High piles located adjacent to private approaches shall not be removed.

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### **REMOVAL OF BOULEVARD WINDROWS - GENERAL**

Windrows of snow shall normally be removed on Priority 1 and 2 streets where the following criteria are met:

(a) Bridges and underpasses.

(b) Where lack of adequate storage results in a reduction in the number of available traffic lanes thereby prohibiting the reasonable movement of vehicular traffic under normal winter driving conditions.

(c) Where lack of adequate storage prohibits the reasonable movement of pedestrians using the adjacent sidewalk.

(d) Traffic safety devices such as guardrails and impact barriers.

(e) Notwithstanding any of the above, the City shall take advantage of mechanical blowing snow to adjacent properties to accommodate snow storage wherever possible, rather than resorting to hauling.

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## **REMOVAL OF BOULEVARD WINDROWS – PRIORITY 1 ENHANCEMENTS**

Windrows of snow shall normally be removed on Priority 1 streets where the following criteria are met:

- (a) Fronting commercial business areas with on-street parking
  - (b) Windrows present significant barriers to street/sidewalk access
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## **PRIVATE APPROACHES**

Windrows of plowed snow in excess of 20 cm (8") high shall normally be removed from all front street driveway approaches in conjunction with the street plowing operation and during the same shift as the street is plowed.

If an emergency snow condition exists and it is necessary to cover a maximum area in the shortest possible time, the clearing of the windrows may be delayed until satisfactory resources are available.

Windrows of plowed snow across entrances to private yards resulting from back lane plowing operations shall not be removed.

However snow windrows may be removed as part of the enhanced level of snow clearing that shall be provided in back lanes for properties that have no front street access.

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## **ACCESSIBILITY ISSUES TO ACCESS PRIVATE PROPERTY**

Private crosswalks between the sidewalk and the curb shall be cleared to a width of 0.7 metres by City forces/Contractors, after the street clearing operations are completed, for property owners/occupants who sign a declaration on an annual basis to the effect that:

- (a) the property-owner/occupant is physically incapable of shovelling snow (copy of medical certificate required),
  - (b) no other able-bodied person resides in the property owner's/occupant's house,
  - (c) the property owner/occupant is unable to arrange having this work done by others due to financial circumstances.
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## **TRANSIT PLUS LOADING ZONES**

Windrows of snow shall normally be removed at "Transit Plus" loading zones, which have been designated by Winnipeg Transit as high volume locations and integral to their "Transit Plus" operations. These locations shall be identified in the field by special signing.

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## **COMMERCIAL/INDUSTRIAL/APARTMENT LOADING ZONES**

Windrows of snow resulting from snow plowing operations shall not be removed from loading zones serving commercial, industrial or apartment buildings.

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## **CHURCHES AND SYNAGOGUES**

Windrows of snow shall be removed, upon request, from boulevards in front of churches and synagogues in order to facilitate weddings, funerals and other very special religious events.

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## **SCHOOLS**

Windrows of snow on boulevards adjacent to schools shall not be removed unless the lack of adequate storage has resulted in the adjacent sidewalk becoming obstructed so as to prevent the reasonable movement of pedestrian traffic.