

City of Kingston Winter Operations Level of Service Policy

PURPOSE: Describes response times, conditions, and result

1. Objective and Goals

The Public Works department will strive, as is reasonably practical, to provide safe and passable winter road and sidewalk conditions for vehicular and pedestrian traffic within the City of Kingston. They will follow the level of service requirements defined in this policy, utilizing the resources provided by the City of Kingston Council.

In completing this task, the Public Works department will adhere to the procedures contained within the current Winter Operations Plan, the standards set out in this document and the current version of Ontario Regulation 239/02, Minimum Maintenance Standards for Municipal Highways.

2. Definitions

Ice: means all kinds of ice, however formed.

Representative roadways: means roadways within the City of Kingston that have been identified as representative of the area's various road weather conditions.

Road condition: means the condition of the roadway surface before, during and after a winter storm event:

Condition	Description
Bare and Dry	Most of the road surface is dry
Bare and Wet	Most of the road surface is moist
Partially Snow Covered	Two wheels of a vehicle are on bare surface and the other wheels are likely to be on loose snow
Partially Snow Packed	Two wheels of a vehicle are on bare surface and the other wheels are likely to be on snow bonded to the road
Partially Ice Covered	Two wheels of a vehicle are on bare surface and the other wheels are likely to be on ice
Snow Covered	All wheels of a vehicle are on loose snow
Snow Packed	All wheels of a vehicle are on snow bonded to the road
Ice Covered	All wheels of a vehicle are on ice

Roadway designation: means the classification or designation assigned to the City of Kingston's various roads, streets or highways. The roadway designation defines the winter operations level of service provision. The City's roadways fall under the four (4) designations presented in the following table.

Designation	Abbreviation	Description
Arterial	Art.	Arterial and major collector roads, BIA, major rural roads, and express transit routes
Collector & Bus Route	C&B	Collector roads and transit routes
Residential	Res.	Local residential, commercial, minor hard surfaced rural roads, parks and one-tonne routes
Un-Maintained	Un.	Roads that are un-maintained during the winter season

Snow accumulation: means the natural accumulation of any of the following that, alone or together, covers more than half a lane width of a roadway:

1. Newly-fallen snow
2. Wind-blown snow
3. Slush

Substantial probability: means a significant likelihood considerably in excess of 51 per cent.

Winter event: means the weather condition affecting roads such as snowfall, blowing snow, sleet, freezing rain, frost, or ice, to which a winter event response is required.

Winter event response: means a series of winter activities performed in response to a winter event.

Winter patrol: means the field observation of weather and road conditions.

Winter season: means the season when the City of Kingston normally performs winter roadway and sidewalk maintenance as identified in the Winter Operations Plan.

3. Patrol

3.1 Weather Monitoring

From October 1 to April 30, the current and forecasted weather will be monitored once every shift or three times per calendar day, whichever is more frequent, at the intervals identified in the Winter Operations Plan.

3.2 Patrolling

The *representative roadways* identified in the Winter Operations Plan will be patrolled a minimum of twice per day separated by at least eight hours during weekdays and weekends. When there is a *substantial probability* of snow accumulation or ice formation on the roadways and sidewalks, the patrol frequency may increase.

4. Roadways

4.1 Designations

The City of Kingston designates roads, streets or highways into four roadway designations according to their importance in the overall transportation system, average annual daily traffic (AADT) and posted or statutory speed limits.

Designation	Abbreviation	Description
Arterial	Art.	Arterial and major collector roads, BIA, major rural roads, and express transit routes
Collector & Bus Route	C&B	Collector roads and transit routes
Residential	Res.	Local residential, commercial, minor hard surfaced rural roads, parks and one-tonne routes
Un-Maintained	Un.	Roads that are un-maintained during the winter season

4.2 Level of Service Standards

4.2.1 Snow accumulation

When snow **begins to accumulate**, resources to clear snow from roadways should be deployed as soon as practicable after becoming aware of the snow accumulation and when accumulation is less than or equal to the snow depth defined in the following table.

Designation	Snow Depth for Accumulation Response	Treatment Used	Objective*		Timeframe to Achieve Objective <u>After End of Winter Event</u>
			During Storm	After Storm	
Art.	≤ 2.5cm	Plow Sand / De-ice as required	Safe and passable	Bare & wet	4 hours
C&B	≤ 6cm	Plow Sand / De-ice as required	Safe and passable	Bare & wet	6 hours
Res.	≤ 8cm	Plow Sand / De-ice as required	N/A	Partially snow packed	16 hours
Un.	Unmaintained by winter operations				

* After storm condition, is the objective to be reached as soon as possible and normally within the time frame indicated in the table, weather condition permitting.

The City does not have the resources to remove snow from private driveways. It is inevitable that the City's snowplows will create a windrow of snow across driveways in the normal course of plowing operations. The resident, business owner, or property owner is responsible for clearing driveways during roadway or sidewalk clearing operations.

4.2.2 Ice Formation Prevention and Treatment

Resources to prevent or treat ice formation should be deployed as soon as practicable after becoming aware that:

- Weather monitoring indicates a substantial probability of ice forming on a roadway, due to a pending winter weather event.
- A roadway is icy

Designation	Treatment Used		Road Objective During and After Storm	Timeframe to Achieve Objective After End of Winter Event
	Preventative	Reactive		
Art.	De-ice / DLA	Sand / De-ice / Plow as required	Safe and passable	4 hours
C&B	De-ice / DLA	Sand / De-ice / Plow as required	Safe and passable	6 hours
Res.	De-ice	Sand / De-ice / Plow as required	Safe and passable	12 hours
Un.	Unmaintained by winter operations			

5. Sidewalks and Walkways

5.1 Designations

The City of Kingston designates sidewalks and walkways into four sidewalk designations according to their associated pedestrian traffic and proximity to high volume roadways, in addition to the ease with which they can be cleared.

Designation	Description
1	Sidewalks / walkways adjacent to high volume roadways and/or sidewalks / walkways with high pedestrian volumes
2	Balance of sidewalks / walkways that can be cleared with mechanized plow equipment
3	Sidewalks / walkways that require a blower or hand shoveling to clear
4	Sidewalks that will not be cleared due to destination

5.2 Level of Service Standards

Typically during a winter event, sidewalks will be maintained with available staff not assigned to roadways, until such a time as road and weather conditions allow for additional staff to be diverted from roadway to sidewalk operations.

When snow **begins to accumulate**, resources to clear snow from sidewalks and walkways should be deployed as soon as practicable after becoming aware of the snow accumulation and when accumulation is less than or equal to the snow defined in the following table.

Designation	Snow Depth for Accumulation Response	Treatment Used	Objective After Winter Event	Timeframe to Achieve Objective After End of Winter Event
1	≤ 2.5cm	Plow Sand / De-ice as required	Safe and passable for pedestrians	24 hours
2	≤ 5cm	Plow Sand / De-ice as required	Safe and passable for pedestrians	48 hours
3	≤ 5cm	Plow Sand / De-ice as required	Safe and passable for pedestrians	72 hours
4	N/A	May be cleared, if deemed required and as time and resource availability permits	N/A	N/A

6. Bus Shelters and Stops

6.1 Designations

The City of Kingston designates the bus shelters and stops into two designations based on the level of transit service.

Designation	Description
Express	Bus shelters and stops on express bus routes.
Local	Bus shelters and stops on local bus routes.

6.2 Level of Service Standards

When snow **begins to accumulate**, resources to clear snow from bus shelters and stops should be deployed as soon as practicable after becoming aware of the snow accumulation and when accumulation is less than or equal to the snow depth defined in the following table.

Designation	Snow Depth for Accumulation Response	Treatment Used	Objective After Winter Event	Timeframe to Achieve Objective After <u>End of Winter Event</u>
Express	≤ 5cm	Plow Sand / De-ice as required	Safe and passable for pedestrians	24 hours
Local	≤ 5cm	Plow Sand / De-ice as required	Safe and passable for pedestrians	48 hours

7. Snow Removal

7.1 Areas

Snow removal areas consider public safety, snow storage capacity, on street parking requirements, as well as vehicle and pedestrian volumes.

Area	Description
1	Central business area
2	Streets with limited or no snow storage capacity
3	Cul-de-sacs and dead-ends with short turning radii
4	Other roads

7.2 Level of Service Standards

Snow removal resources will be deployed for each area once the snow removal trigger has been met and within the deployment timeframe set out in the following table, as availability of resources permits. Snow removal operations typically are carried out on weekday night shifts.

When requested by emergency services due to access concerns, resources will be deployed as soon as practicable.

Area	Snow Removal Trigger	Deployment Timeframe
1	Following any significant curbside windrow accumulation and/or after snow windrow reaches an approximate height of 45cm and a base width of 60cm	On the first subsequent weekday night shift following the end of an event, as time and as availability of resources permit
2	When the traveled width becomes less than 6 metres	In conjunction with or following snow removal in Area 1, depending on identified need, and as time and as availability of resources permit.
3	As may be required for vehicular access, following significant accumulations.	As availability of resources permit.
4	When the traveled width becomes less than 6 metres and / or as may be required for vehicular access, following significant accumulations.	As availability of resources permit

8. Annual Monitoring and Reporting

Annual monitoring and reporting will be undertaken at the end of each winter season to provide a basis for continuous improvement of the winter operations practices and procedures as outlined in the current Winter Operations Plan.

9. Record Keeping

Record keeping will follow the procedures outlined in the City of Kingston's Winter Operations Plan and be retained for the timeframe specified in The City of Kingston *By-Law No. 2008-182, A By-Law to Adopt the Recorded Information Management policy and Records Retention Schedule for the City of Kingston (Schedule 'B', File Plan Ref. T06)*. Document retention will be the responsibility of the Director of Public Works.