

# Roadway Snow Removal and Ice Control

*Includes:*

- *Regional Streets Snow and Ice Removal*
- *Local Streets Snow and Ice Removal*
- *Sidewalk Snow and Ice Removal*
- *Park & Facility Snow and Ice Removal*
- *Snow Disposal Sites*

## Service Overview

### DESCRIPTION

Undertake effective roadway snow and ice control services in order to provide safe and accessible conditions on City streets and sidewalks during the winter season.

### KEY GOALS

1. To provide the citizens of Winnipeg with safe and accessible roadway infrastructure during the winter months by delivering efficient and effective snow and ice control services.
2. To implement “Best Management Practices” for the municipal use of road salt for snow and ice control in winter months in accordance with Environment Canada’s new Code of Practice for Road Salt Management.
3. To work closely with the private sector to ensure that there is a sustainable quantity of private sector equipment to assist the City in carrying out the winter snow clearing operations.
4. To examine various options for the provision of snow disposal sites and develop a long term strategy to provide this service in a cost-effective manner in the future.

## SERVICE LEVEL STATISTICS

Description	2004	2005	2006
Annual Snowfall (centimetres)	149.2	171.2	152.0
Days of Snowfall (3 cm or more)	18	13	15
Regional Streets - Priority 1 Truck Plows (Dept Budgets for 3 events)	7	5	8
Regional Streets – Priority 1 Grader Plows (Dept Budgets for 3 events)	3	3	2
Bus Routes and Truck Routes – Priority 2 Truck Plows (Dept Budgets for 3 events)	6	5	9
Bus Routes and Truck Routes – Priority 2 Grader Plows (Dept Budgets for 2 events)	3	5	3
Residential Streets – Priority 3 Grader Plows (Budget 2 events)	2	3	4
Alleys (Dept Budgets for 2 events)	3	5	5
Salt Applied (tonnes)	17,100	21,700	22,000
Sand Applied (tonnes)	96,700	88,000	51,400
Snow Removed/Hauled (cm <sup>2</sup> )	359,000	417,000	119,000
Sidewalks Plowed (kilometres)	23,000	16,200	31,300

# Strategic Direction

## LINK TO PLAN WINNIPEG

- 3C-04 Promote Mobility Through Principles of Universal Access
- 4B-03 Promote Safety on Streets and Sidewalks

## SYNOPSIS OF POLICY DIRECTION

This service aligns with Council's long term vision for Winnipeg, as articulated in Plan Winnipeg. Specific policy direction for this service is contained in Section 3: Planned Development, Transportation and Infrastructure, and Section 4: Public Safety, Health and Education. (Specific sub-services provided include snow removal, ice control and provision of snow disposal sites).

### Legislation

- Highways and Transportation Act
- Highway Traffic Act
- Environment Act
- Workplace Safety and Health Act
- Emergency Measures Act
- Freedom of Information and Protection of Privacy Act
- City of Winnipeg Charter
- Workers Compensation Act
- Access to Information Act

### Council Policy

- Plan Winnipeg
- Snow and Ice Control Policy

### By-Laws

- Noise Control 2480/79
- Snow Emergency 6548/95
- Streets 1481/77
- Traffic 1573/77
- Vehicles 6726/95
- Winnipeg Parking Meter 6547/95

## KEY FACTORS INFLUENCING SERVICE DELIVERY

### Citizen Expectations

Citizens value an effective and efficient movement through the City during winter.

Public expectations around winter mobility are increasing with regards to timeliness of service delivery.

### New Technology

There is a movement towards new technologies and practices in winter maintenance operations, particularly in the utilization of liquid de-icers for pre-wetting and anti-icing and AVL (automatic vehicle location) technology.

### Rising Equipment, Material and Contract Costs

The City is facing substantial increases in the costs of the snow and ice control activities. Fuel price have increased from .60 cents/litre in 2004 to .94 cents/litre in 2007. Likewise, salt prices have increased from \$57.00/tonne in 2003 to \$76.00/ tonne in 2007.

A shortage of equipment operators has resulted in significantly increased costs for private sector resources that undertake the majority of the City's snow clearing work.

### Impact of Inflation

Council has directed that an annual adjustment be made to the infrastructure maintenance and operations budget to reflect the impact of inventory growth and inflation. This is especially critical in our winter operations because of the significant reliance on external resources where increased costs can directly affect the services provided. Winter maintenance costs increased significantly more than inflation in 2007 and it is highly probable that funding will have to be adjusted in future years to handle this trend. The considerable escalation in fuel prices and a shortage of trained operators has resulted in higher prices for winter maintenance materials and the provision of private sector equipment resources including the City's Snow Contracts.

### Private Contractors/Hired Equipment

The City relies heavily on private contractors/hired equipment to supplement City resources in carrying out snow clearing and removal activities. Consequently a number of new initiatives have been implemented to develop a sustainable supply of these external resources. The success of the changes will be closely monitored to ensure that the objectives have had a positive impact.

### Snow and Ice Budget

The proposed funding for the Streets Maintenance Snow and Ice Control program is lower than what would be required in an average year, based on historical costs. In addition continued budgeting for a below-average winter will make it more difficult to achieve any underexpenditures that could be utilized to restore the City's Snow Reserve.

### Environmental Issues

Environment Canada has identified that the use of road salt for snow and ice control has some measurable impacts on the environment. As a result of this assessment there will be continuing changes required to meet the Environment Canada guidelines for road salt management and to implement "Best Management Practices" for the municipal use of road salt for snow and ice control in winter months. The City is currently developing a Road Salt Management Plan to identify a strategy for complying with

Environment Canada's new Code of Practice for Road Salt Management. This document will be completed and submitted for consideration by Council in early 2008.

Climate change may have a significant effect on the type of winters that the City experiences. This will be closely monitored to identify any potential impacts/changes that will require any modifications to our normal winter activities.

### **Snow Disposal Site Operations**

The City is reviewing its current practice of providing "temporary" sites for snow disposal. The current capacity of the existing snow disposal sites is adequate but will not comply with the Environment Canada guidelines. The hours of operation are 24 hours a day, seven days a week during snow hauling time. Eighty percent of the annual volume comes from private sources / parking lots. The City of Winnipeg is the only agency that can operate a snow disposal site within the City of Winnipeg limits. Private businesses and companies can dump and store snow on their own property provided that the snow comes from that lot or property. By-Law 6400/94 prohibits the dumping of snow from other sites. No dumping fees are charged to private contractors or the general public using the sites to help ensure that there is little or no illegal dumping within the City of Winnipeg.

A survey of other winter cities in Canada indicated that some cities in eastern Canada (Montreal and Ottawa-Carleton) collect fees for private use of the snow disposal site facilities. In Western Canada (Winnipeg, Regina, Edmonton, Calgary) fees are not collected. Consideration will be given to examining alternative service delivery options for the operation of snow disposal sites. This review would consider both ways to reduce operational costs and opportunities for revenue generation.

### **Development of Operational Efficiencies**

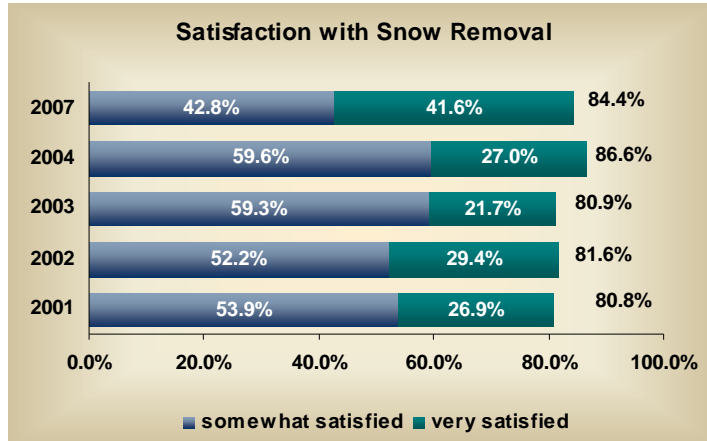
The service is proceeding with several best-practice and Work Management Initiatives which should achieve some operational efficiency through process improvement/re-engineering.

## **SUMMARY OF GOALS AND STRATEGIES**

- 1. To provide the citizens of Winnipeg with safe and accessible roadway infrastructure during the winter months by delivering efficient and effective snow and ice control services.**
  - Develop sustainable funding plan to deal with high inflationary costs for equipment and materials.
  - Implementation of Work Management initiatives to achieve operational efficiencies.
  - Implement new technologies and practices in winter maintenance operations.
  - Develop and implement succession / replacement plan.
  - Continue with snow and ice control winter maintenance training programs.
  - Work with Transit for snow clearing at bus stops and in bus lanes.
- 2. To implement "Best Management Practices" for the municipal use of road salt for snow and ice control in winter months in accordance with Environment Canada's new Code of Practice for Road Salt Management.**
  - Establish and implement a road salt management action plan that conforms with Environment Canada Guidelines for use of road salt.
  - Investigate alternatives to road salt use for ice control.
  - Utilize new technologies to optimize delivery of ice control materials.
- 3. To work closely with the private sector to ensure that there is a sustainable quantity of private sector equipment to assist the City in carrying out the winter snow clearing operations.**
  - Expand dialogue with industry associations to promote investment in snow clearing equipment.
  - Implement new initiatives to ensure guaranteed availability of adequate equipment numbers.
  - Implement "equipment scheduler" to ensure fair treatment for private sector.
- 4. To examine various options for the provision of snow disposal sites and develop a long term strategy to provide this service in a cost-effective manner in the future.**
  - Review current practice of temporary snow disposal sites.
  - Examine alternative service delivery options for the operation of snow disposal sites including the implementation of user fees to recover costs.

# Performance Information

## CITIZEN SATISFACTION



Approximately 85% of respondents were satisfied with snow removal efforts for the City as a whole which is fairly consistent with other years.

Source: City of Winnipeg, CAO Secretariat, August 2007 Survey ( +/- 4.2%, 19 times out of 20)

The following information was taken from the 2006 Public Works Citizen Satisfaction Survey conducted annually every spring.

Citizens were asked "How satisfied are you with snow clearing and ice control of your..."

	2002	2003	2004	2005	2006
Street	65.9%	63.8%	59.3%	45.5%	52.4%
Back lane	50.7%	54.8%	39.9%	24.2%	29.3%
Sidewalk	50.5%	53.7%	45.5%	33.5%	32.9%

Citizen satisfaction with snow clearing and ice control has decreased significantly over the years, especially for back lanes and sidewalks. Citizen satisfaction was significantly lower for snow and ice control of back lanes and sidewalks.

## EFFECTIVENESS MEASURES

These effectiveness measures will be tracked starting in the 2007/2008 winter:

- % of citizens satisfied or very satisfied with service quality
- % of snow and ice control expenditures that are delivered by the private sector
- Average number of days required to clear snow in the winter season by street type
- % of winter events where the response met or exceeded established service levels for snow clearing
- % of snow and ice control equipment not available as a result of breakdown/repairs

## EFFICIENCY MEASURES

These efficiency measures will be tracked starting in the 2007/2008 winter:

- Unit cost per tonne of salt applied to roadway
- Cost per lane kilometre for residential and regional street clearing operations (contract and in-house)

## BENCHMARKING INFORMATION

In 2008, the following benchmark data regarding levels of service in other cities will be compiled, specifically in the areas of: when do other cities plow, what do they plow, clearing of windrows, hauling/Snow removal, clearing of front approaches, use of salt/sand for ice control. Existing information can be summarized as follows:

Service	Wpg	Edmonton	Regina	Toronto	Ottawa
Regular Residential Street Cleaning	Yes	Under review	No	Yes	Yes
Regular Plowing of Residential Walks	Yes	No	No	Yes	Yes
Regular Plowing of Alleys	Yes	Yes	Yes	No	No