



Snow and Ice Control Plan

Revised: November 2023

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Foreword

The Snow and Ice Control Plan 2023 builds on previous versions of the Town's Snow and Ice Control Plan, which was originally developed beginning with the 2001-2002 winter season. The primary purpose of the 2023 revision to the Snow and Ice Control Plan is to recognize the assumption of snow and ice control activities directed by the Town and its officers and employees rather than by a third party contractor.

Objective

To provide an effective, efficient, environmentally friendly and financially responsible level of service for snow and ice control in the Town of Grand Bay-Westfield, and to ensure that this level of service is well understood and accepted by all stake holders, Council, municipal staff, employees, and the public.

Mission Statement

To provide a consistent and adequate level of snow and ice control in the Town of Grand Bay-Westfield, ensuring road salts and sand when needed are applied at the right time, in the right place, and in the right amounts to protect the environment, motorists and pedestrians.



Policy

The Town of Grand Bay-Westfield provides Snow and Ice Control on municipal streets and sidewalks according to pre-established priorities to provide a defined level of service.

The Town of Grand Bay-Westfield provides snow and ice control to municipal properties. Snow and ice control service to these facilities is also by pre-established priorities.

Street Priority

Streets are prioritized based on their importance in the overall transportation network:

Priority 1 – streets are arterial and heavily traveled collector streets e.g. River Valley Drive and Nerepis Road (Route 177).

Priority 2 – streets are collectors and some heavily traveled local streets, e.g. Allan Street and Longwood Drive, Epworth Park Road, and Pamdenec Road.

Priority 3 – streets are typically low traffic collectors and local streets e.g. Sandlewood Crescent and Westfield Crescent.

Higher priority streets are serviced earlier in the storm response and are given a higher level of service. The specifics for the storm response are described in the Responsibility Section.

Sidewalk and Municipal Properties Priority

Sidewalks and municipal properties are prioritized based on their expected use during and after the storm.

Priority 1 areas require immediate service during the storm e.g. the Fire Stations. Sidewalks are partially serviced during plowing operations. However, sidewalks are not fully serviced until after the main storm event has concluded.

For clarification any sidewalk serviced during the storm event is temporary and for the purpose of providing additional room for snow storage from the snow plowed off the road. During the storm event the sidewalk cannot be fully serviced until the street plow makes its last pass plowing snow/slush onto the sidewalk.

Priority 2 areas are municipal properties currently in use during the storm, e.g. Centrum, Lions Building.



Priority 3 areas are those not expected to be used until after the storm event, e.g. bus stops, dog park, sewerage lift stations. The specifics for storm responses are described in the Responsibility Section.

The stated priorities are guides used for direction which may be altered depending on a number of possible conditions. For example a Priority 3 roadway may be serviced before a Priority 2 roadway due to safety factors, e.g. existence of steep hill or the logistics of servicing a roadway while the equipment is in the area.

Responsibilities

1. Council is responsible to ensure policies are in place to handle storm events. Under the *Snow and Ice Control By-law*, a copy of which is attached as Appendix “A”, Council has delegated authority to the Chief Administrative Officer (CAO) to develop, adopt and implement this Snow and Ice Control Plan.
2. The CAO is authorized to subdelegate such authority to any one or more other officers and employees of the Town. Where this Snow and Ice Control Plan assigns responsibility for any function to an officer or employee of the Town, the authority for such responsibility is subdelegated to that officer or employee by the CAO.
3. The Public Works Commissioner is responsible to:
 - a) the CAO for snow and ice control in the Town of Grand Bay-Westfield; recommendations are forwarded to the CAO for consideration;
 - b) monitor and review storm events with appropriate municipal staff to ensure a consistent and adequate level of service was provided;
 - c) direct and arrange for snow control services for streets, sidewalks and municipal properties.
4. The Public Works Commissioner is responsible for ensuring the winter storm response is in accordance with this Snow and Ice Control Plan. The general procedure followed will be in accordance with established priorities:
 - a) **Priority 1** – Arterials and Selected Collectors
 - b) **Priority 2** – Collectors and Selected Locals
 - c) **Priority 3** – Local Streets
5. The Operators of all Snow Control and Winter Maintenance vehicles and equipment will operate in a safe and efficient manner at all times. Operators will be responsible for ensuring that their route is completed in accordance with the Snow and Ice



Control Plan. The Operators will report to their immediate supervisor if there are any problems or difficulties with their equipment as soon as possible or required.

Procedures

Specific policies and procedures have been based on experience, available resources, and the expectations of Council and the Community.

Policies are approved by the CAO on behalf of Council. Procedures are approved by the Department Head.

Procedures for Snow and Ice Control During a Storm Event

1. A decision will be made by the Town's road inspector for a roadway response and the Public Works Superintendent for a sidewalk and municipal properties response regarding what type of vehicle and how many vehicles will be used during the storm event. For example, a light snowfall may require spreader trucks only. As the storm intensifies, additional vehicles/equipment may be necessary. Heavy snowfall may require all available vehicles and equipment.
2. Icy conditions by themselves or combined with snow, require special operations. This may include applying a sand/salt mix at intersections, hills and heavily traveled routes, the reassignment of vehicles and equipment to Priority 1 and 2 streets to maintain an effective and efficient level of service of snow and ice control may be necessary.
3. The Road Inspector and Public Works Superintendent will exercise judgment on what types of vehicles and equipment will be used with each situation. Factors that contribute to these decisions include, light snow, heavy wet snow, ice, freezing rain, ice pellets, time of day, day of week, temperature, storm duration, etc. Roadway response Application Guide (Appendix "C") is only one guide to assist in decision making. Other factors include, experience of personnel, available equipment, safety concerns, etc.

Priority of plowing will be in accordance with the approved priority detailed for each piece of equipment. The Works Commissioner or the Public Works Superintendent may order changes in standard procedures as special situations dictate.

The Works Department services all Municipal sidewalks. Plowing and salting occurs after the roadway snow and ice control is completed.



a) Streets

Priority 1 – Level of Service – Arterials/Heavily Traveled Collectors

Arterial and heavily traveled collector streets and hills receive the highest priority. These streets are plowed continuously during snowstorm, where possible (see guidelines below). The Snow and Ice Control measures utilize controlled salting to maintain clear driving lanes following a storm:

1. apply one salt application to prevent bonding with asphalt, (subject to temperature, time and intensity);
2. plow after 4 cm accumulation, when possible;
3. plow continuously during storm , visibility permitting;
4. controlled salting after driving lanes are plowed with no further accumulation expected;
5. storm conditions or other factors do not always allow this objective to be met.

Priority 2 – Level of Service – Collectors/Heavily Traveled Locals

Collectors and heavily traveled local streets are plowed to hold snow accumulation to 8 cm where possible. Salting is carried out following the storm to maintain clear driving lanes:

1. apply one application of salt to prevent bonding with asphalt after first plow; (subject to temperature, time and intensity);
2. plow after 4 – 8 cm accumulation, when possible;
3. repeat so as to hold maximum accumulation to 8 cm;
4. controlled salting on designated collectors and heavily traveled local streets;
5. controlled salting after driving lanes are plowed with no further accumulation expected;widen during daylight hours if possible;
6. storm conditions or other factors do not always allow this objective to be met.

Priority 3 – Level of Service – Local Streets

Local streets are plowed after 8 cm accumulation of snow, salting is carried out for snow and ice control. The level of service accepts a snow packed street during the storm, with hills, curves, intersections and hazardous areas treated with salt:

1. plow after 8 cm or more accumulation, when possible;
2. repeat plowing as necessary;
3. salt hills, curves, intersections and icy spots during the storm;
4. controlled salting after driving lanes are plowed with no further accumulation expected;
5. widen during daylight hours if possible;
6. storm conditions or other factors do not always allow this objective to be met.



b) Sidewalks and Municipal Facilities in Use

Priority 1 – Level of Service – Sidewalks and Municipal Facilities in Use

Municipal Facilities in use receive the highest priority. The Community Centrum, Lions Building, River Centre and Fire Stations 1 & 2 including access road are serviced during the storm event depending on scheduled usage. The snow and ice control utilizes controlled salting to maintain an adequate walking surface:

1. apply one salt application to prevent bonding with parking lots and access road at Station 2; (subject to temperature, time and intensity);
2. plow parking lots and access road Station 2, intended for use during the storm event after 4 cm accumulation, when possible;
3. shovel all walkways scheduled for use during the storm event each time the parking lot is plowed;
4. plow and shovel continuously during the storm while the municipal building is in use, visibility;
5. widen during day light hours if possible;
6. Sidewalks are cleared and salted as soon as reasonability possible after precipitation has ended and the snow and ice control on the adjacent street has been completed;
7. storm conditions or other factors do not always allow the objective to be met.

Priority 2-A – Level of Service – Required for Specific Times

Priority 2-A areas are ones which can be interchanged between Priority 1 and Priority 3, depending on the time of day. These areas will receive spot service for the time of day they are required. The snow and ice control utilizes controlled salting:

1. plow area as close as possible to the time of day it will be used;
2. return to provide snow and ice control before the next time it will be used;

Currently only these areas are considered for Priority 2-A servicing:

1. Saint John Transit Park & Ride site at Tailwhip Park;
2. Designated School bus routes.

Storm conditions and other factors may not always allow the objective of the snow and ice control plan to be met.



Priority 3 – Level of Service – Areas requiring Service after the Storm Event

These areas are used by the Municipality throughout the year on a regular basis but do not require immediate service during a snow event. The snow and ice control utilizes controlled salting:

1. after the snow event, plow areas;
2. apply one application of salting.

Snow and Ice Control Equipment

It is the responsibility of the Public Works Commissioner for roadway, sidewalk and municipal facilities snow and ice control. Available equipment for salting, plowing, and snow removal are listed in Appendix “F”. Equipment is generally assigned as noted in Appendix “E”., Service Routes.

It should be noted the equipment can change each year, thus making Appendix “F” subject to change depending on equipment type and availability.

After Storm Snow Removal Procedure

1. Snow and Ice Removal will be carried out at selected locations as required after the initial storm response and roadway widening has occurred.
2. Snow and Ice Removal is the responsibility of the Town.
3. Snow and Ice Removal will be completed according to a pre-established priority list. Selected areas may be designated for snow removal at any time by the Public Works Commissioner.
4. Due to frequency or nature of storm events, not all areas may be cleared before the next storm event.
5. Every effort shall be made to arrange for snow and ice removal to occur during daylight hours.
6. Areas designated for snow and ice removal are prioritized on the following criteria and listed in Appendix “H”:
 - a. vehicle and pedestrian safety;
 - b. additional storage for next storm event;
 - c. drainage controls;
 - d. improve facility usage.
7. All snow and ice removed from municipal streets will be stored at either the Municipal Snow Dump Area located at the Town’s disposal site on Highland Road south of the Dog Park or the Senior ballfield parking lot off of Inglewood Drive or other sites designated by the Public Works Commissioner from time to time.



Tips for the Public

The following are helpful hints to assist residents in coping with, and assisting with Snow and Ice Control Measures;

1. Shovel snow from your driveway and place it “downstream” from your driveway entrance. This will mean less snow pushed into your driveway when the street is plowed. Our operators cannot “lift the wing” at each driveway. To do so would add significantly to the time required to plow the route.
2. If placing snowplow markers/reflectors in front of your property to mark your driveway or lawn, please place them 2.5 meters back from the edge of the travelled roadway. This space is needed to hold the snowbank.
3. When plowing your driveway, please don’t put snow on the street or sidewalk. This is contrary to Town By-laws, and can create a hazard for motorists and pedestrians. (Note: it is an offense to remove snow from your driveway and push or blow it across a roadway.)
4. Please don’t place garbage or garbage containers where they can be buried, damaged or interfere with snow removal.
5. Park your vehicle in your driveway, well off the road, until street and sidewalk operations are complete. This allows our crews to do their job and make the streets and sidewalks safe for everybody.
6. Do not leave vehicles overnight on Town streets and roads during the winter season.
7. Avoid unnecessary spinning of tires at intersections. This practice is dangerous and hazardous for other motorists. It also tends to “ice up” the intersection.
8. Avoid installing mailboxes within 2.5 metres of the travelled roadway where they can be damaged by plowing operations.
9. Ensure your mailboxes are secure before the winter plowing operations begin.
10. Use coloured ribbon to mark hedges and fences, especially on sidewalk areas. This lets our operators know where they are.
11. Please do not distract snow removal equipment operators while they are in the process of hazardous work that requires their full attention. . All concerns or requests relative to snow removal should be directed to the Town, not to individual vehicle or equipment operators.



12. All concerns or requests relative to snow removal should be directed to the Snow line, (506)738-2230, or the Municipal Office at (506) 738-6400 during normal business hours.
13. The public should be aware that there are many factors which affect the snow and ice control service the Town is able to provide, including:
 - snowfall accumulations;
 - type of precipitation (i.e. freezing rain or “just plain” snow);
 - the time of day the precipitation occurs;cleanup times will vary depending upon these factors.
14. Salting and plowing operations will be carried out on Saturdays, Sundays, as well as statutory holidays. However, snow removal operations are not typically done on weekends or statutory holidays.
15. To help prevent local flooding, try to keep the catch basin(s) adjacent to your property free from ice and snow.
16. If a homeowner engages a private plow truck to plow his/her driveway, please ask the driver not to plow snow across roadways or sidewalks so as to interfere with traffic flow or pedestrian usage.
17. When plowing or shoveling your driveway, please try and avoid creating large banks at the entrance to your driveway. These banks will hinder your visibility when exiting, possibly causing an accident.
18. If your home is susceptible to flooding during winter rain, you may wish to maintain drainage pathways along or across your property all winter to ensure they are open whenever it rains, which also allows easier monitoring to ensure the pathway is clear.
19. Objects within the right-of-way, such as newspaper boxes, basketball nets, snow plow marker, etc. need to be removed from the right of way. When benching and widening with the snowplow wing, snow may damage items within this space when plowing.



Annual Review Process

In order for the Snow and Ice Control Plan to be effective and efficient it needs to be reviewed and updated as changes occur and to be monitored to ensure the intent of the Plan is being followed.

To monitor the plans the following benchmark actions are required throughout the season to obtain data for the annual review:

- prior to a vehicle's use as a sand/salt spreader greater than a 1-ton pick-up type vehicle with electronic measuring controls, the gates or calibration equipment shall be tested to achieve the required application rates; the procedure to calibrate spreader is located in Appendix "G";
- quantities of material used (salt, sand and sand/salt mix) shall be recorded for each vehicle and each storm event;
- the Public Works Commissioner shall continuously review the activities and make a note of any issues or special circumstances; And prepare a formalized list of recommendations for the CAO before the end of May.
- before June 30th of each year forward information to the Federal Minister of the Environment as requested in Appendix "B", Annex C.

Employee/Agent Training Program

To review the Snow and Ice Control Plan a meeting of the Public Works Commissioner with applicable municipal staff will be held annually to discuss the Snow and Ice Plan and performance during the previous winter season. The Public Works Commissioner shall formalize a list of recommendations for the Chief Administrative Officer (CAO) before the end of May.

Implementation of Recommendation

Any recommendation approved for implementation is to be placed in the Snow and Ice Control Plan before the end of July.



Amendments

With the Snow and Ice Control Plan being a guide, it is subject to change even during the winter season. In order to affect minor change in a timely fashion to allow implementation during the next storm event, amendments to procedure can be made by the Public Works Commissioner if warranted.

These amendments need to be recorded and brought forward to the annual review for consideration and a formal recommendation to incorporate the changes in the Plan for the next winter season.

Public Education

As mentioned in the Objective Section, the Snow and Ice Control Plan needs to be understood and accepted by all stake holders. As such the following steps need to be performed annually:

- every October Council shall be reminded of the Town's Snow and Ice Control Plan;
- The Snow and Ice Control Plan shall be posted on the Town's web site for review and comment.

Conclusion

This Snow and Ice Control Plan is prepared for use as a guide to direct resources in the most efficient and effective manner. However, with a number of factors beyond our control which affect the delivery of expected service level, every attempt will be made to ensure the objective is met for every winter storm event and continually improved.



Appendices

APPENDIX “A”

TOWN OF GRAND BAY-WESTFIELD

By-law No. PW-002: Respecting Snow and Ice Control

WHEREAS the purposes of the Town include providing services the Council considers necessary or desirable for all or part of the Town;

WHEREAS the *Local Governance Act*, SNB 2017, c. 18, as amended, authorizes the Town to make by-laws for municipal purposes respecting, among other things, the safety, health and welfare of people, the protection of people and property and services provided by or on behalf of the Town;

WHEREAS the Council has determined that it is desirable to enact this By-law to provide for the development, adoption and implementation of a snow and ice control plan for the Town and to provide for other measures with respect to snow and ice control;

WHEREAS the establishment through a snow and ice control plan of priority systems for snow and ice control measures for streets, sidewalks and municipal properties is intended to recognize financial or economic factors or constraints; and

WHEREAS the limitations expressed in this By-law with respect to repairs to property and other corrective measures have been adopted by the Council for the purpose of recognizing financial or economic factors or constraints;

NOW THEREFORE the Council of the Town of Grand Bay-Westfield, in the Province of New Brunswick, under authority vested in it by paragraphs 10(1)(a) and (i) of the *Local Governance Act*, SNB 2017, c. 18, as amended, enacts as follows:

1. Citation

This By-law may be cited as the *Snow and Ice Control By-law*.

2. Definitions

“**CAO**” means the Chief Administrative Officer of the Town appointed by Council under section 71 of the *Local Governance Act*, SNB 2017, c. 18, as amended;

“**Council**” means Grand Bay-Westfield Town Council;

“**Snow and Ice Control Plan**” means the snow and ice plan for the Town developed, adopted and implemented in accordance with this By-law; and

“**Town**” means The Town of Grand Bay-Westfield.



3. Snow and Ice Control Plan

- 3.(1)** The Council shall develop, adopt and implement a snow and ice control plan.
- 3.(2)** The Snow and Ice Control Plan shall establish priority systems for snow and ice control measures for any street, sidewalk or municipal property and for any class of streets, sidewalks or municipal properties.
- 3.(3)** The Council shall review and update the Snow and Ice Control Plan on an annual basis.
- 3.(4)** The Council hereby delegates to the CAO the Council's powers, duties and functions to develop, adopt and implement a snow and ice control plan.
- 3.(5)** The CAO is hereby authorized to subdelegate to any one or more other officers and employees of the Town the powers, duties and functions delegated to the CAO hereunder with respect to the development, adoption and implementation of a snow and ice control plan.

4. Repairs to Property and Other Corrective Measures

- 4.(1)** Where real property located within the Town or any personal property, improvement or other installation located thereon is damaged or otherwise affected due to the activities of the Town or its officers, employees or agents in the course of implementing the Snow and Ice Control Plan, the Town shall repair such damage or remedy such effect:
 - (a) in respect of a lawn or other property damaged during the winter season, only to the extent that the lawn or other property is located outside the municipal right of way, subject always to paragraph (b) hereof;
 - (b) in respect of a mailbox or newspaper delivery receptacle that is damaged during the winter season, only to the extent that the damage occurred due to snow removal equipment actually hitting the mailbox or newspaper delivery receptacle; and
 - (c) in respect of sand deposited on a property, only to the extent that such sand was deposited directly at a place located outside the municipal right of way, without consideration of any sand carried to any such place due to snow or ice melt and run-off.
- 4.(2)** The Town shall not repair any damage to the property of any person where such property was placed in the municipal right of way and such damage occurred due to the activities of the Town or its officers, employees or agents in the course of implementing the Snow and Ice Control Plan.
- 4.(3)** Where access to a mailbox or newspaper delivery receptacle located within the Town is restricted by snow or ice due to the activities of the Town or its officers, employees or agents in implementing the Snow and Ice Control Plan, the Town shall not take any steps to provide access to the mailbox or newspaper delivery receptacle. Notwithstanding the foregoing, the Town may take reasonable steps to provide access to a mailbox or newspaper delivery receptacle to which access has been restricted by snow or ice in cases where such snow or ice was moved by



the Town or its officers, employees or agents in implementing the Snow and Ice Control Plan from another area where it had previously been collected after clearing.

6. Responsibilities of Property Owners and Occupants

- 6.(1)** No person shall sweep, shovel, throw, drop or place or cause to be swept, shoveled, thrown, dropped or placed any slush, snow or ice on the highways or sidewalks within the Town.
- 6.(2)** No person shall remove slush, snow or ice from a sidewalk in a manner that may cause damage to any sidewalk or curb.
- 6.(3)** No person shall deposit ice, snow or slush in such a way as to obstruct access to any fire hydrant or to obstruct or otherwise interfere with the ability of the public to use or travel upon the sidewalk.
- 6.(4)** Whenever any roof, eave or portion of roof or eave, or any window-sill, is laden with ice either in the form of icicles or otherwise, or with snow, in such manner as to endanger persons or property passing on any street underneath such ice, icicles or snow by the fall thereof upon persons or property, it shall be the duty of the owner or agent or any person having the care of such building or lot to remove such ice, icicles or snow from time to time.
- 6.(5)** In this By-law, highway has the same meaning as it does under the *Traffic By-law*.
- 6.(6)** A person who contravenes any provision of this Section 6 is guilty of an offence and upon conviction is liable to a fine of between \$100.00 and \$1,500 per offence.
- 6.(7)** The Town may require an administrative penalty to be paid with respect to a contravention of a provision of this Section 6.
- 6.(8)** A person who contravenes a provision of this Section 6 may pay to the Town an administrative penalty in the amount of
 - (a) where the person has not previously contravened this Section 6, \$100.00; and
 - (b) where the person has previously contravened this Section 6, the sum of the amount paid or to be paid by the person in respect of the most recent contravention and \$100.00, provided that in no event shall a person be required to pay an administrative penalty in an amount exceeding \$1,500.00,and, upon such payment, the person who committed the contravention is not liable to be prosecuted therefor.
- 6.(9)** A person who may pay to the Town an administrative penalty in accordance with this Section 6 may pay the administrative penalty in accordance with the *Administrative Penalty By-law*.

5. Traffic By-Law

Nothing in this By-law impairs or otherwise affects any provision of the *Traffic By-law* with respect to snow removal.

READ A FIRST TIME by summary this 10 th day of October , 2023.

READ A SECOND TIME by title this 10 th day of October , 2023.

READ A THIRD TIME in its entirety and **ENACTED** on this _____ day of _____ , 2023.

This By-law comes into force on the date of final passing thereof.

SIGNED AND APPROVED this _____ day of _____ , 2023.

John Enns-Wind
CAO / Clerk
Seal

Brittany Merrifield
Mayor

APPENDIX "B"

Letter of Intent

April 12, 2005

Minister of the Environment
c/o Director, Chemicals Control Branch
Environment Canada
Place Vincent Massey
351 St. Joseph Blvd., 12th Floor
Gatineau, QC
K1A 0H3

NOTIFICATION OF INTENT TO PREPARE A SALT MANAGEMENT PLAN

This letter confirms the intention of Grand Bay-Westfield to prepare a salt management plan in accordance with the *Code of Practice for the Environmental Management of Road Salts*, published April 3, 2004.

Senior management will ensure that a salt management plan is developed, implemented and updated. Furthermore, the Municipality commits to reporting information about the implementation of its salt management plan as prescribed in the Code in order to allow Environment Canada to follow-up on road salts use and management in Canada.

Future inquiries pertaining to the organization's salt management should be addressed to:

Bruce Gault, P. Eng.
Public Works Commissioner
PO Box 3001
Grand Bay-Westfield, NB
E5K 4V3

Phone: 1-506-738-6422

Fax: 1-506-738-6424

Email:

Sincerely,

Bruce Gault, P. Eng.
Public Works Commissioner

**CODE OF PRACTICE
FOR THE ENVIRONMENTAL MANAGEMENT OF ROAD SALTS**

INTERPRETATION

1. The following definitions apply in this Code:

“organization” means:

- (a) any public entity that uses or that is responsible for the use of road salts on public roads in Canada; or
- (b) any company that holds a concession or lease to manage a public road, unless the public entity from which the company holds that concession or lease has developed a salt management plan that the company agrees to implement.

“road salts” mean road salts that contain inorganic chloride salts with or without Ferro cyanide salts.

“TAC Syntheses of Best Practices” means the *Syntheses of Best Practices – Road Salt Management* appended to the *Salt Management Guide* published by the Transportation Association of Canada (TAC) in 1999, ISBN 1-55187-136-X, and updated in September 2003, as amended from time to time.

“vulnerable area” means an area particularly sensitive to road salts where additional salt management measures may be necessary to mitigate the environmental effects of road salts in that area; vulnerable areas should be identified as per the guidance provided in Annex B of the Code.

2. Recommendations in this Code propose preventive, or control actions aimed at the environmental management of road salts to protect the Canadian environment.
3. This Code does not replace nor supersede any laws or regulations adopted by federal, provincial, territorial or municipal authorities in relation to, among other things, environmental protection, road safety or use of road salts.
4. This Code is not the sole guidance available to users of road salts in Canada and is intended to be used in conjunction with the *Salt Management Guide* and Syntheses of Best Practices developed by the Transportation Association of Canada and any federal, provincial, territorial, or municipal maintenance standards. Nothing in this Code should be construed as a recommendation to take action to the detriment of road safety

APPLICATION

5. This Code applies to:
 - (a) organizations that use more than 500 tonnes of road salts per year (five-year rolling average); and
 - (b) organizations that have vulnerable areas in their territory that could be potentially impacted by road salts.
6. This Code does not apply to road salts used for domestic purposes, or for private or institutional uses.

SALT MANAGEMENT PLAN

7. An organization that meets the criteria of section 5 should prepare and implement a salt management plan that contains best management practices to protect the environment from the negative impacts of road salts. The management plan should cover all activities which may result in release of road salts to the environment, such as salt storage, application of salts on roads, and disposal of snow containing road salts.
8. An organization that does not meet the criteria of section 5 should consider implementing the best management practices that are relevant to its local conditions in order to protect the environment from the negative impacts of road salts.
9. The salt management plan should:
 - (a) provide a statement recognizing the role of a salt management plan in achieving improved environmental protection without compromising road safety;
 - (b) provide a commitment or endorsement of the plan at the highest level in the organization;
 - (c) identify activities or operations through which road salts may be released to the environment and goals to achieve reduction of the negative environmental impacts of these releases;
 - (d) assess current practices against recommended best management practices, including those contained in the TAC Syntheses of Best Practices;
 - (e) contain documentation of all policies and procedures applicable to the salt management plan;
 - (f) include communication activities necessary to inform the organization and the public of the salt management plan and related policies and procedures;

- (g) contain a training program for all personnel when managing or performing winter maintenance activities involving the use of road salts;
 - (h) provide response procedures to react to uncontrolled releases of road salts that could result in environmental impacts;
 - (i) ensure monitoring of actions to measure the plan's effectiveness;
 - (j) include record-keeping as described in section 15 of this Code;
 - (k) include a procedure for yearly review of the plan by the organization with continual improvement of salt management practices and the salt management plan as better management practices become known and progress is achieved; and
 - (l) establish and implement corrective actions to address deficiencies identified in the operations of the organization to which the plan applies.
10. The environmental impact indicators listed in Annex A, the guidance for identifying vulnerable areas provided in Annex B and the data gathering and reporting provisions in Annex C of this Code should be considered during the development and implementation of the salt management plan.
11. The content and level of detail of the salt management plan may vary according to the organization's size and capability.

BEST MANAGEMENT PRACTICES

12. It is recommended that best management practices referred to in sections 7 and 8 and found in the TAC Syntheses of Best Practices be selected according to the following objectives:
- (a) **Salt Storage:** The objective is the prevention or control of releases from existing and new sites. In pursuing this objective, the following practices should be considered: coverage of salt piles and blended salt-sand piles, handling practices that avoid uncontrolled releases, drainage management, wash water collection and treatment, training of personnel, and monitoring of the effectiveness of the facility.
 - (b) **Snow Disposal:** The objective is the control of releases from existing and new sites. In pursuing this objective, the following practices should be considered: location and construction of the sites to take into account operational and environmental factors, drainage management, training of personnel and monitoring of the effectiveness of the facility.
 - (c) **Salt Application:** The objective is the reduction of the negative impacts of road salts by delivering the right amount of road salts in the right place at the right time. In pursuing this objective, consideration should be given to using

the most recent advancements in the application of winter maintenance anti-icing and de-icing materials, winter maintenance equipment, and road weather information and other decision support systems. As well, the training of personnel and the monitoring of the effectiveness of road salt application techniques should be considered.

IMPLEMENTATION

13. An organization that meets the criteria of section 5 should prepare a salt management plan within one year after publication of this Code in the *Canada Gazette*. It is recommended that implementation of the plan begins in the financial period or fiscal year immediately following the preparation of the plan.
14. It is recommended that organizations hiring agents or contractors ensure that those agents or contractors comply with any measures in the salt management plan related to their work.

RECORD-KEEPING AND REPORTING

15. An organization that meets the criteria of section 5 should:
 - (a) provide to the Minister of the Environment
 - (i) notification of intent to prepare a salt management plan within 6 months after publication of this Code in the *Canada Gazette* or within 6 months of becoming subject to this Code, whichever is later; and
 - (ii) information specified in Annex C of this Code, in the form provided by the Minister, by June 30 of the year following the year that the organization becomes subject to this Code and every year thereafter;
 - (b) keep records of all data reported, copies of the salt management plan, plan revisions, training records, and any yearly review reports, including those that contain corrective action;
 - (c) retain the information referred to in paragraph (b) for seven years; and
 - (d) make the information referred to in paragraph (b) available to the Minister of the Environment upon request.

REVIEW OF PROGRESS AND NEED FOR FURTHER ACTION

16. In order to monitor the effectiveness of this Code, organizations will be invited to cooperate with the Minister of the Environment in the preparation of progress reports on the development and implementation of salt management plans.
17.
 - (a) Five years after publication of this Code in the Canada Gazette, organizations will be invited to cooperate with the Minister of the Environment and to participate in an evaluation of progress achieved towards prevention and reduction of the negative impacts of road salts on the environment through the implementation of this Code.
 - (b) The review will consider the level of implementation of best management practices, such as those found in the TAC Syntheses of Best Practices, the progress accomplished towards preventing or reducing the negative impacts of road salts on the Canadian environment and road safety monitoring data.
 - (c) This review will help determine if other steps or programs are needed to further prevent or reduce negative impacts of road salts on the environment.

Annex A: Environmental Impact Indicators for Road Salts

Introduction

The purpose of Annex A is to provide guidance by identifying concentrations of chloride in the environment at which certain negative environmental impacts are likely to occur. A series of thresholds have been identified for different environmental compartments: surface water, groundwater and soil. Concentrations above these levels have the potential to result in negative impacts. In all cases, natural background concentrations should be considered in evaluating regional and local impacts. Data in this annex are based on findings presented in the Road Salts Priority Substances List Assessment Report.

Surface water

The following paragraphs present certain thresholds associated with concentrations of chloride in surface water.

Figure 1 presents background concentrations of chloride in Canadian surface waters and concentrations of chloride that cause adverse biological effects. The column on the left provides a range of average background concentrations for five regions in Canada. The variation in background concentrations of chloride is greatest in western Canada and markedly decreases moving eastward to the Great Lakes area and Atlantic Canada. The lowest variation in chloride concentration is reported on the Canadian Shield.

The right column of Figure 1 is useful for identifying the levels of chloride in surface waters above and below concentrations reported to cause certain negative impacts. Concentrations of chloride of approximately 140 mg/L should be protective of freshwater organisms for short-term exposure; concentrations less than 35 mg/L are likely protective during long-term exposures. Overall, approximately 5 percent of species are predicted to experience effects from chronic exposure to concentrations of chloride of about 210 mg/L, while 10 percent of species would be affected at concentrations of about 240 mg/L.

Other jurisdictions have derived guidelines for the exposure of aquatic organisms to chlorides (Fig. 1). The United States Environmental Protection Agency (EPA) developed a similar guideline. Overall, the EPA guideline indicates that biota, on average, should not be affected unacceptably if the four-day average concentration of chloride does not exceed 230 mg/L more than once every three years. Similarly, the biotic impacts would be minimal if the one-hour average chloride concentration does not exceed 860 mg/L more than once every three years.

Lakes located in Canada typically undergo vertical mixing every spring and fall as a result of a change in water temperature. Dissolved salts can hinder the vertical mixing of water bodies as dense, salt-laden water sinks to deeper layers (meromixis). The absence of vertical mixing can ultimately lead to a depletion of oxygen in the lower layers of lakes and a reduction in the cycling of nutrients. Meromictic conditions have developed in lakes with salt concentrations of approximately 60 mg Na/L and 105 mg Cl/L. Small, deep lakes are the most vulnerable, although concentrations associated with meromixis will vary greatly, depending on local conditions.

Groundwater

Chloride concentrations identified for freshwater biota will likely be protective of groundwater biota and groundwater that emerges into surface water.

A significant proportion of road salts may be contained within the groundwater system. The time taken to reach equilibrium where salt inputs are balanced by salt outputs depends on local hydrogeological conditions and may take from a few years to hundreds of years.

Soils

Soil integrity, soil organisms and vegetation will generally be protected at concentrations of about 60 mg Na/L and 90 mg Cl/L. Damage to plants has also been observed at soil concentrations of 16 mg Na/kg and 30 mg Cl/kg (dry weight). Changes in natural plant communities have been recorded in areas affected by road salts runoff and liquid salt spray from moving vehicles.

Annex B: Guidance for Identifying Areas That Are Vulnerable to Road Salts

Purpose

The purpose of Annex B is to provide guidance for organizations to consider when identifying areas of a receiving environment that may be particularly sensitive to road salts. Once a vulnerable area has been identified, organizations may then determine the level of vulnerability and the need to implement additional salt management measures.

Additional salt management measures in vulnerable areas may include:

- using technologies that further optimize the use of road salts;
- using environmentally, technically and economically feasible alternatives to road salts;
- increasing monitoring and measuring of chlorides and/or their impacts;
- locating patrol yards and snow disposal sites outside of vulnerable areas; or
- considering location and protection of vulnerable areas in the design of new roads and/or upgrading of existing roads.

It is important to note, when identifying vulnerable areas, that an area may be vulnerable either to infrequent but heavy addition of road salts or to light but frequent addition of road salts.

Organizations may consider consulting with entities that conduct, under their programs, work that could be relevant to the identification of areas vulnerable to road salts. In addition, organizations may wish to exchange information with other organizations adjacent to or having common authority over these vulnerable areas, and consult with their constituents.

Notes:

- Subsection 36(3) of the *Fisheries Act* prohibits the deposit of a deleterious substance into water frequented by fish. Nothing in this Annex should be interpreted as an authorization or recommendation to ignore this prohibition.
- The recommendations described above are intended to complement road salt management procedures already established in areas identified, designated or protected by a local, provincial, territorial, aboriginal, national or international system or body as ecologically significant or ecologically important

Considerations

When identifying vulnerable areas, organizations should consider:

1. areas draining into bodies of water, such as:
 - (a) lakes and ponds with low-dilution and long residence times;
 - (b) watercourses that experience the cumulative effects of a dense network of highways; and
 - (c) provincially significant wetlands adjacent to roadways

where the addition of road salts has the potential to significantly raise the chloride concentration of the water to the point where it could present a threat of serious or irreversible environmental damage;

2. areas draining into small, moderately deep lakes, where the addition of road salts has the potential to create layers of water of different salinity within the lake that prevent normal vertical mixing of the water (meromictic conditions);
3. areas where the addition of road salts has the potential to raise the chloride concentration, after mixing, to levels that could harm local fish or fish habitat;
4. areas adjacent to salt-sensitive native or agricultural vegetation, where the addition of road salts has the potential to cause severe reductions in flowering and fruiting, severe foliar, shoot and root injury, growth reductions, or reductions in germination and seedling establishment caused by elevated soil levels of sodium and chloride or aerial spray of sodium and chloride;
5. areas where the addition of road salts has the potential to harm the integrity of a life cycle (e.g. spawning grounds, nursery, rearing, food supply and migration areas for birds);
6. areas where the addition of road salts has the potential to harm a habitat necessary for the survival or recovery of a wildlife species listed on the List of Wildlife Species at Risk (Schedule 1 of the *Species at Risk Act*) where the area is identified as the species' critical habitat in the recovery strategy or in the action plan for the species established under that Act;
7. areas draining into sources of drinking water (surface water or groundwater, including wells), where the addition of road salts has the potential to raise the chloride concentration of the water to the point where it could not be used as a source of drinking water. Due regard should be given to background concentrations of chloride and other possible sources of chloride in making such a determination;

8. areas draining into groundwater recharge zones or that have an exposed or shallow water table, with medium to high permeability soils, such as medium to coarse sand and gravel, where the addition of road salts has the potential to significantly raise the chloride concentration of the groundwater to the point where it could present a threat of serious or irreversible environmental damage.

Annex C: Monitoring and Measuring Progress

The purpose of Annex C is to provide a common approach to monitoring and measuring progress in road salt use, the implementation of best management practices with respect to road salts, and the concentration of road salts in the environment. Information collected will be used in conjunction with additional winter severity weather data provided by the Meteorological Service of Canada, environmental monitoring data collected from case studies and water quality monitoring programs, and road safety data provided by Transport Canada to determine the extent and effectiveness of implementation of the Code of Practice.

Information to be provided to Environment Canada by organizations is described below.

1. **Background Information**

Organization

- Name and address;
- Technical contact, telephone and fax numbers, and electronic mail address;
- Population (municipalities only).

Salt Management Plan

- Existence of a salt management plan;
- Date of approval of the salt management plan;
- Date of latest revision of the salt management plan, where applicable.

Road Length Serviced

- Total length of road on which salt is applied in the organization's jurisdiction.

Winter Severity

- Organization's rating of the severity of the winter;
- Municipal Organizations Only — Total number of events requiring salt application during the winter averaged over all districts within the organization's jurisdiction.

2. **Materials Used**

- Total quantity of road salts used for winter road maintenance;
- Description of non-chloride materials used for winter road maintenance.

3. **Material Storage**

- Organization's objectives for implementing best management practices related to material storage, as indicated in its salt management plan;
- State of implementation of each management practice.

4. **Winter Road Maintenance Equipment and Road Salt Application Practices**

- Organization's objectives for implementing best management practices related to road maintenance equipment and salt application practices, as indicated in its salt management plan;
- State of implementation of each management practice;
- State of calibration program for equipment.

5. **Snow Disposal**

- Organization's objectives for implementing best management practices related to snow disposal, as indicated in its salt management plan;
- State of implementation of each management practice.

6. **Winter Road Maintenance Training**

- Existence of a winter road maintenance training program related to the organization's salt management plan;
- Organization's objectives for training of personnel, as indicated in its salt management plan;
- State of training of personnel.

7. **Areas Vulnerable to Road Salts**

- Existence of areas vulnerable to road salts;
- Description of additional salt management practices undertaken by the organization in identified vulnerable areas, where applicable.

8. **Environmental Monitoring**

- Chloride concentration and frequency of sampling at each sampling location, if available.

APPENDIX “C”

APPLICATION GUIDE

PRIORITY 1 – Arterials and Heavily Traveled Collectors

PRIORITY 2 – Collectors and Heavily Traveled Local Streets

PRIORITY 3 – Local Streets

Application Rates, Kilograms per Lane Kilometer

PAVEMENT TEMPERATURE	PRIORITY 1	PRIORITY 2	PRIORITY 3
0° AND ABOVE	0 - 55 KG	0 - 55 KG	0 - 25 KG
-4° C TO 0° C	65 KG.	65 KG	35 KG
-7° C TO -4° C	70 KG	70 KG	40 KG
-10°C TO -7° C	75 KG	75 KG	45 KG
- 13°C TO -10 C	80 KG.	80 KG	50 KG
Below -13 C	A. If unbonded, try mechanical removal without chemical	B. If bonded, apply salt/sand mix at 200 Kg/IKm	C. Apply salt/sand mix as necessary.

Note: The definition of “Sand” used in Appendix “C” is a mix of salt and sand in a ratio which provides a 20% concentration by volume. Example, 8 parts sand is mixed with 2 parts of salt.

Application rates will be reviewed every year and adjusted accordingly to meet services level in conjunction with environmental protection.

APPENDIX "D"

Streets listed in alphabetical order

Priority 1

Arterial and Heavily traveled collectors:

Allan Street

Colonel Nase Boulevard

Ferry Road

Epworth Park Road (between River Valley Drive and Inglewood Drive)

Inglewood Drive

Murray Street/Eldon Lane Nerepis Road

Pamdenec Road (River Valley Drive to east to River Street)

River Valley Drive

Woolastook Drive

*Beverley Hills Drive

*Brandy Point Road, (hill portion onto Inglewood Drive only)

*Central Avenue

*Florence Drive

*Garden Road

*Highland Road **(Woolastook Drive to Colonel Nase Boulevard)

*Hillandale Drive

*June Avenue

*Leila Street

*Mallard Drive

*MacLean Road

*Park Avenue

*Philip Street

*Sunnyside Drive

*Timberlee Manor Road

*Valley View Drive

- *Priority 2 or 3 rated street serviced as a Priority 1 due to steep hills.
- **Only a portion of the street is serviced at the Priority 1 standard.

APPENDIX "D" CONTINUED

Priority 2 – Collector and Heavily Traveled Local Streets

Streets listed in alphabetical order

Baycrest Drive

Bayview Road

Bellaire Terrace

Brookdale Avenue

Chestnut Drive

Edgemount Drive

Epworth Park Road (River Valley Drive west to end)

George Street

LaCroix Drive

Lakeview Road

Longwood Drive

Majestic Drive

Meadow Brook Drive

Morningside Crescent

Ridge Way

Rosemere Drive

Southwest Street

Station Street

Timberlee Manor Road

Thompson Road

APPENDIX “D” CONTINUED

Priority 3 – Low Traffic Collectors and Local Streets

Streets list in alphabetical order:

Alder Road	Grove Street	Pioneer Lane
Allingham Terrace	Hall Road	Points Road
Andrew Court	Hamilton Road & Hamilton Road Extension (prvt)	Prosser Court
Apple Hill Road	Hammond Road	Rainbow Cres.
Ash Glen Lane	Harmony Road	Ready Street
Ballentine Place	Harris Road	River Bend Court
Balsam Drive	Hazel Street	Riverdale Court
Baysong Bluff	Highland Road (gravel portion)	Riverside Park
Beach Road	Hillside Road	River Street
Birchee Drive	Honeydew Court	Riverview Ave.
Birchwood Court	Horseshoe Lane	Robbin Court
Boyd Drive	Hoyt Street	Round Lake Road
Brandy Crescent	Ingleside Court	Sandlewood Cres.
Brandy Point Road	Irvin Lane	Second Street
Broad Street	Kendra Court	Shannon Road
Brooker Lane	Kenwood Lane	Smith Lane (north & south leg)
Brundage Point Road	Kirtley Ave.	South Street
Bustin Road	Leighside Court	Spruce Street
Calvin Lane	London Lane	Stevens Court

Cavalier Lane	Maple Row	Sunset Cres.
Cooper Lane	Maralyn Court	Tanglewood Court
Country Club Drive	Mcdonald Ave.	Teal Street
Crestwood Drive	Mersereau Road	Tilsley Place
Crystal Court	Midwood Lane	Wasson Lane
Douglas Street	Milligan Road	Wedgewood Drive
Ella Lane	Mullen Lane	West Street
Elandon Street	Nelson Street	Westfield Cres.
Elsie Lane	North Street	William Street
Evergreen Drive	Oak Lane	Willow Lane
Fern Avenue	Old Shore Road	Windsong Court
First Street	Olive Road	Windsor Street
Florence Drive	Ononette Road	Wong Way
Fourth Street	Pine Avenue	Woodside Court
Frederick Street	School Street (on non-school days)	Young Street
Gary Court		

APPENDIX “E”

SERVICE ROUTES

When a piece of equipment is called into service to perform a task, in which the vehicle may be able to perform several, each task is independent and shall generally be performed as shown in Appendix “F”.

Truck 2016-01 Western Star, Tandem c/w plow, wing and side spreader

PRIORITY 1	PRIORITY 2	PRIORITY 3
River Valley Drive		
Nerepis Road		
Route 177 extension of Nerepis Road to the Eagle Rock Road		
Inglewood Drive		
Woolastook Drive		
Colonel Nase Blvd		

Truck 2017-03 Ford F-350 with plow, and rear spreader

PRIORITY 1	PRIORITY 2	PRIORITY 3
Central Avenue		Alder Road
Pamdenec Road (River Valley Drive to Inglewood Drive)		Apple Hill Road
		Bustin Road
		Broad Street
		Ella Lane
		Fern Avenue
		Frederick Street
		Hamilton Road
		George Street
		Hillside Road
		Irvin Lane
		Kirtley Avenue
		Maple Row
		North Street
		Old Shore Road
		Pine Avenue
		Points Road
		River Street
		Smith Lane
		Tilsley Place
		Young Street
		Wong Way
		Ride & Share lot corner of Inglewood Drive and River Valley Drive

Truck 2017-02 Freightliner Single Axle 4x4 with plow, wing and side spreader

PRIORITY 1	PRIORITY 2	PRIORITY 3
Allan Street	Belleaire Terrace	Allingham Terrace
Beverley Hills Drive	Brookdale Avenue	Andrew Court
Epworth Park Road	Edgemount Drive	Balsam Drive
Florence Drive	Lakeview Road	Birchwood Drive
Garden Road	Morningside Crescent	Boyd Drive
June Avenue		Calvin Lane
Leila Street	Ridge Way	Cooper Lane
Pamdenec Road (B)	Rosemere Drive	Crystal Court
Park Avenue	Southwest Street	Elandon Street
Philips Street	Thompson Road	Elsie Lane
Valley View Drive		Evergreen Drive
Highland Road (Woolastook Drive to Colonel Nase Boulevard)		Grove Street
		Hoyt Street
		Ingleside Court
		London Lane
		Maplecrest Drive
		McDonald Avenue
		Mersereau Road
		Midwood Lane
		Olive Road
		Pioneer Lane
		Ready Street
		Riverdale Court
		Riverview Avenue
		School Street (only on non-school days)
		Wasson Lane

		Wedgewood Drive
		Willow Lane
		Woodside Court

Truck 2017-01 Freightliner tandem with plow, wing and rear spreader

PRIORITY 1	PRIORITY 2	PRIORITY 3
Access to Fire Station # 2	Park & Ride lot in front of Fire Station #2	Ballentine Place
Sunnyside Drive	Access road to Westfield Crescent pump house	Birchee Court
Mallard Drive		Brundage Point Road
MacLean Road		Chestnut Drive
Timberlee Manor Road		Country Club Drive
Hillandale Drive		Douglas Street
Highland Road (Woolastook Drive to Colonel Nase Boulevard)		Ferry Road
		Gary Court
		Hall Road
		Hammond Road
		Mullen Lane
		Ononette Road
		Prosser Court
		Riverbend Court
		Robbin Court
		Teal Street
		Westfield Crescent (includes widening to create parking and access to the pumphouse building)
		William Street
		Windsor Street

Truck 2016-02 Freightliner Single Axle with plow, wing and side spreader

PRIORITY 1	PRIORITY 2	PRIORITY 3
	Baycrest Drive	Baysong Bluff
	Meadowbrook Drive	Brandy Crescent
	Longwood Drive	Brandy Point Road
		Crestwood Drive
		Honeydew Court
		Kendra Court
		Leighside Court
		Majestic Drive
		Milligan Road
		Nelson Street
		Oak Lane
		Rainbow Crescent
		Riverside Park
		Sandlewood Crescent
		Stevens Court
		Tanglewood Drive
		Shannon Road
		Sunset Crescent
		Windsong Court

Truck 2016-036 22016 F-250 with plow and spreader

PRIORITY 1	PRIORITY 2	PRIORITY 3
	Bayview Road	Ash Glen Lane
	Station Street	Beach Road
		Brooker Lane
		Cavalier Lane
		First Street
		Fourth Street
		Harmony Road
		Harris Road
		Hazel Street
		Horseshoe Lane
		Kenwood Road
		Second Street
		Spruce Street

**SERVICE ROUTE FOR SIDEWALKS AND PATHWAYS AFTER THE LAST PLOW
PASS ON THE ADJOINING ROAD**

**** Operational note, for the safety of our operators, pedestrians and passing motorists the Trackless sidewalk unit needs to travel with the flow of traffic when using the snowblower attachment to ensure the operator maintains a clear and open window to see ahead.**

Westfield Elementary School

NON SCHOOL DAY

- Nerepis Road (east side) across from 203 Nerepis Road northward to 264 Nerepis Road
- Nerepis Road (west side) Mallard Drive south to 281 Nerepis Road
- River Centre pathways and doorways
- Nerepis Road (west side) Westfield Country Store south to Woolastook Drive
- River Valley Drive at Woolastook south to Garden Road
- Colonel Nase Boulevard (River Valley Drive to James Ready Park)

SCHOOL DAY

- Nerepis Road Westfield Country Store south to Country Club Drive
- Continue on the Non-School Day route above

Grand Bay Primary School and Inglewood School

NON-SCHOOL DAY

- River Valley Drive at Garden Street south to Allan Street
- Community Centrum, 1 complete circle of the building
- River Valley Drive at West Street south to Town Boundary
- River Valley Drive at WorkSafe driveway north to Elsie Lane along the curb
- River Valley Drive at Station Street, north along walkway to walking trail entrance
- Woolastook Drive at River Valley Drive (north) south to Post Office

SCHOOL DAY

- River Valley Drive at Garden Street south to Epworth Park Road
- Epworth Park Road west to River Valley Middle School Driveway
- Epworth Park Road at River Valley Drive south to Allan Street
- Community Centrum, one pass around the building returning to Allan Street
- Woolastook Drive at Allan Street, south to River Valley Drive
- River Valley Drive at Woolastook Drive, south to Town boundary
- River Valley Drive at WorkSafe driveway north to Elsie Lane along face of curb
- River Valley Drive at Station Street, northward along walkway to walking trail entrance
- River Valley Drive at West Street, southward to Woolastook Drive

APPENDIX “F”

EQUIPMENT INVENTORY

Equipment No.	Type of Equipment/Available Uses
2022-01	2022 Doosan DL 280-7, 3.66 cu.yd bucket and 12ft reversible plow, no wing
#2016-01	2016 Western Star Tandem c/w 12 ft power angle, 11 ft wing and 12 yard left hand side discharge spreader
#2017-01	2017 Freightliner SD 114 Tandem Axle c/w 12’ power angle & 11 ft wing, 12 yard slide in rear discharge spreader
#2017-02	2017 Freightliner SD 108 single axle 4x4 c/w 11’ power angle & 9’ wing, 8 yd, 4 season box with side spreader
#2016-02	2016 Freightliner SD 108 single Axle, 11’ power angle & 9’ wing c/w 8 yd, 4season box with side spreader
#2017-03	2017 Ford F-350 c/w 8’ Fisher plow and 1.8 cu.yd spreader
#2016-03	2016 Fors F-250 c/w 8’ Boss plow, 1.8 cu.yd spreader

Equipment Description	Use
2019 Ford F-250	8 ft V-angle plow with spreader
2019 Ford F-550 1-Ton	9 1.2 ft. V-angle plow with spreader
2015 JCB214 Backhoe	Bucket for loading
2016 Freightliner	10 ft. angle plow
2015 Trackless	4 ft. wide snowblower or angle plow and rear spreader
2010 Trackless	4 ft. wide blower or 4 ft power angle plow

CALIBRATION INSTRUCTIONS

SNOWFIGHTERS TRAINING PROGRAM

<http://www.saltinstitute.org/snowfighting/6-calib.html>

Calibration

Different dry and liquid materials will spread at different rates at the same setting, so spreaders must be calibrated with the material that will be used. Use the Salt Institute Calibration Chart for easy record-keeping. The chart is also available (free) as a MS Excel spreadsheet file which does all the calculations automatically.

Spreader Calibration Procedure

Calibration of spreaders is simply calculating the pounds per mile discharged at various spreader control settings and truck speeds by first counting the number of auger or conveyor shaft revolutions per minute, measuring the material discharged in one revolution, then multiplying the two and finally multiplying the discharge rate by the minutes it takes to travel one mile.

With hopper-type spreaders, specific gate openings must be calibrated. Measure from floor of conveyor to bottom edge of gate.

Each spreader must be calibrated individually; even the same models can vary widely at the same setting.

Equipment Needed:

1. Scale for weighing
2. Canvas or bucket/collection device
3. Chalk, crayon or other marker
4. Watch with second hand.

APPENDIX “G” CONTINUED

Calibration steps

Warm truck’s hydraulic oil to normal operating temperature with spreader system running

- Put partial load of salt on truck
- Mark shaft end of auger or conveyor.
- Dump salt on auger or conveyor
- Rev truck engine to operating RPM (at least 2000 RPM)

Count number of shaft revolutions per minute at each spreader control setting, and record

Collect salt for one revolution and weigh, deducting weight of container. (For greater accuracy, collect salt for several revolutions and divide by this number of turns to get the weight for one revolution.) This can be accomplished at idle or very low engine RPM.

Multiply shaft RPM (Column A) by discharge per revolution (column B) to get discharge rate in pounds per minute (Column C), then multiply discharge rate by minutes to travel one mile at various truck speeds to get pounds discharged per mile.*

*For example, at 20 MPH with 30 Shaft RPM and 7 lbs. discharge – $30 \times 7 = 210$
 $\times 3.00 = 630$ lbs. per mile.

Calibrating Automatic Controls

Automatic controls come with factory calibration cards that indicate the proper rate of spread for each setting. However, when there is a need to calibrate, use the following steps:

1. remove or turn off spinner
2. set auger on given number, such as No. 2
3. tie sack or heavy canvas under discharge chute
4. mark specific distance, such as 100 or 1,000 feet
5. drive that distance with spreader operating
6. weigh salt collected in sack or canvas
7. multiply weight of salt by 5.2 (in case of 1,000 feet) or 52.8 (in case of 100 feet).

This will be the amount of salt discharged per mile, which remains constant regardless of speed, but calibration must be done for each control setting.

APPENDIX “H”

AFTER STORM SNOW REMOVAL PRIORITY

Priority 1 – Vehicle and Pedestrian Safety

- any intersection or roadway in which snow or ice is causing a safety hazard
- any sidewalk in which snow or ice is causing a safety hazard
- any walkway to a municipal facility used by the public or emergency personnel

Priority 2 – Additional Storage for next storm event

- cul-de-sac portion of Irvin Lane
- end of Kenwood Road

Priority 3 – Drainage Controls

- end of Station Street
- end of Harris Road
- end of Beach Road
- end of Hammond Road under overpass on left
- end of Brooker Lane
- end of paved portion of Shannon Road

Priority 4 – Improve Facility Usage

- Fire Stations No. 1 & 2
- Lions Building
- Caboose parking lot, 250 River Valley Drive
- Unity Park, parking lot, pathway and stairs

APPENDIX "I"

SPECIAL CONDITIONS

- Bustin Road is to only receive a sand or similar abrasive material free of salt;
- gravel roadway surfaces receive a sand mix only;
- Portion of Kirtley Ave. from Fern to Young is not plowed or sanded due to the steepness of the roadway and equipment operator safety;
- Council Motion May 11, 2009:
 - ...moved to continue the current policy with respect to winter maintenance on the portion of Kirtley Avenue between Fern Avenue and Young Street with the following measures to be initiated as of November 2009:
 1. a permanent sign will be placed on the shoulder of this portion of Kirtley Avenue which would warn of its danger in winter and that it is not maintained by the Town and persons shall pass at their own risk;
 2. a barrier placed at the top of the hill, beside the sign, on the approaching lane to the hill.
- London Lane, the equipment operator shall insure a minimum application rate for salt/sand mix be applied;
- Saint John Transit parking located next to the River Valley Community Center (arena) needs to service as a Priority 2-A at times of bus route and Priority 3 when bus service is not available;
- small gravel lot on northeast corner of the intersection at Inglewood Drive and River Valley Drive and the gravel Park & Ride lot in front of Fire Station No. 2 shall be serviced as Priority 3
- Access road and vehicle bay doors at Fire Station No.2, 293 Nerepis Road shall be serviced as a Priority 1 at all times outside of normal work hours;
- Access road to the Volunteer Fire Department water pump station off of Westfield Crescent shall be serviced as a Priority 3.

APPENDIX “J”

PLAN REVISIONS

APPENDIX “K”

Repairs to Property and Other Corrective Measures

The following provisions are contained in the *Snow and Ice Control By-law* and are intended to provide guidance and direction to staff and residents in dealing with complaints.

- Where real property located within the Town or any personal property, improvement or other installation located thereon is damaged or otherwise affected due to the activities of the Town or its officers, employees or agents in the course of implementing the Snow and Ice Control Plan, the Town shall repair such damage or remedy such effect:
 - (a) in respect of a lawn or other property damaged during the winter in respect of a lawn or other property damaged during the winter season, only to the extent that the lawn or other property is located outside the municipal right of way, subject always to paragraph (b) hereof;
 - (b) in respect of a mailbox or newspaper delivery receptacle that is damaged during the winter season, only to the extent that the damage occurred due to snow removal equipment actually hitting the mailbox or newspaper delivery receptacle; and
 - (c) in respect of sand deposited on a property, only to the extent that such sand was deposited directly at a place located outside the municipal right of way, without consideration of any sand carried to any such place due to snow or ice melt and run-off.
- The Town shall not repair any damage to the property of any person where such property was placed in the municipal right of way and such damage occurred due to the activities of the Town or its officers, employees or agents in the course of implementing the Snow and Ice Control Plan.
- Where access to a mailbox or newspaper delivery receptacle located within the Town is restricted by snow or ice due to the activities of the Town or its officers, employees or agents in implementing the Snow and Ice Control Plan, the Town shall not take any steps to provide access to the mailbox or newspaper delivery receptacle. Notwithstanding the foregoing, the Town may take reasonable steps to provide access to a mailbox or newspaper delivery receptacle to which access has been restricted by snow or ice in cases where such snow or ice was moved by the Town or its officers, employees or agents in implementing the Snow and Ice

Control Plan from another area where it had previously been collected after clearing.

APPENDIX “L”

New policy	Mailboxes
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Importance	To provide guidance and direction to staff, contractors and residents in dealing with complaints.
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Questions	Call the Town Office at (506) 738-6400
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Mailboxes (damage)	When a mailbox is damaged during the winter season the Town and its contractor/agent engaged to provide snow control services is only responsible when a mailbox is damaged by the actual snow removal equipment hitting the mailbox . Depending on the storm event, snow leaving the snow plow blade may hit and damage a mailbox, in such cases the town or its contractor/agent is not responsible for damages.
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(blockage)	In cases where the mailbox has been plowed in as a result of normal roadway plowing, the town or its contractor/agent is not responsible to provide access to a mailbox. In special case if the town has pushed snow from another area, which blocked a mailbox, the town or its contractor/agent will remove the blockage. An example of such a situation would be if the town moved snow from one corner of an intersection to another corner creating a larger than normal bank by a mailbox.
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New policy	Municipal Right-of Way Damage
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Importance	To provide guidance and direction to staff, contractors and residents in dealing with complaints.
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Questions	Call the Town Office at (506) 738-6400
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LAWN (damage)	When a lawn is damaged during the winter season the Town and its contractor/agent engaged to provide snow control services is only responsible to repair lawns not located on the municipal right-of-way . The contractor and the town do try and restore areas on the municipal right-of-way, which have been damaged, but are not obligated to do so.
LAWN (winter sand)	As part of normal winter plowing, winter sand in the snow is deposited on the roadway shoulder. In the spring the snow melts and leaves the sand on the right-of-way. The Town and its contractor/agent engaged to provide snow control services is only responsible to collect sand, which was deposited off the municipal right-of-way .
Other Damages	The Town and its contractor/agent engaged to provide snow control services is only responsible for damage off the municipal right-of-way . Any damage which may have occurred to an item/area on the municipal right-of-way which was placed there by a resident is not a municipal responsibility as it relates to normal snow control services.

Repairs to Property and Other Corrective Measures

The following provisions are contained in the *Snow and Ice Control By-law* and are intended to provide guidance and direction to staff and residents in dealing with complaints.

- Where real property located within the Town or any personal property, improvement or other installation located thereon is damaged or otherwise affected due to the activities of the Town or its officers, employees or agents in the course of implementing the Snow and Ice Control Plan, the Town shall repair such damage or remedy such effect:
 - in respect of a lawn or other property damaged during the winter season, only to the extent that the lawn or other property is located outside the municipal right of way, subject always to paragraph (b) hereof;
 - in respect of a mailbox that is damaged during the winter season, only to the extent that the damage occurred due to snow removal equipment actually hitting the mailbox; and
 - in respect of sand deposited on a property, only to the extent that such sand was deposited directly at a place located outside the municipal right of way, without consideration of any sand carried to any such place due to snow or ice melt and run-off.

- The Town shall not repair any damage to the property of any person where such property was placed in the municipal right of way and such damage occurred due to the activities of the Town or its officers, employees or agents in the course of implementing the Snow and Ice Control Plan.

Where access to a mailbox located within the Town is restricted by snow or ice due to the activities of the Town or its officers, employees or agents in implementing the Snow and Ice Control Plan, the Town shall not take any steps to provide access to the mailbox. Notwithstanding the foregoing, the Town may take reasonable steps provide access to a mailbox to which access has been restricted by snow or ice where such snow or ice was moved from another area where it had previously been collected after clearing.