



# **TOWN OF GRAND BAY-WESTFIELD**

## **SNOW and ICE CONTROL**

### **PLAN**

**February 2019**

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## FOREWORD

The Snow and Ice Control Plan was originally requested in October 2001. Discussions occurred and information was gathered over the 2001 – 2002 winter season to ensure current practices were not lost in the conversion to a formal Snow and Ice Control Plan.

A great deal of the information was recorded and provided by Chris Saunders, the Foreman for Industrial Cold Milling Ltd. at the Grand Bay-Westfield site of their operation.

Other sources listed below provided additional information and data which assisted in the creation of this plan.

Murray Jamer, City of Fredericton  
Gary Losier, Town of Quispamsis  
Scott Hatcher, Town of Rothesay  
Philip Shedd, Town of Sussex  
Other Municipal employees  
Salt Institute

In March 2005 the Snow and Ice Plan was revised and updated to reflect a new contractor, Brad Gould Trucking & Excavating Ltd., and more importantly Environment Canada Code of Practice for the environmental management of road salts. In Appendix “B” is a copy of the Town’s letter of intent and a copy of Environment Canada Code of Practice.

In 2009 for the next contract period new direction is being implemented in an effort to continue the process of improving snow and ice control services. The Town is going in the direction to use mainly a straight road salt application applied to control amounts so as to apply the right amount of material at the right time in the right place.

**OBJECTIVE**

To provide an effective, efficient, environmental 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, Snow Control Contractor, 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 while ensuring road salts 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 according to pre-established priorities by engaging an independent contractor to provide a defined level of service.

The Town of Grand Bay-Westfield Works Department provides snow and ice control to municipal sidewalks and municipal properties. Municipal sidewalks include River Valley Drive and Woolastook Drive. 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. **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. Fire Station No. 1 and No. 2 and all sidewalks. **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 response 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. A Priority 3 roadway may be serviced before a Priority 2 roadway due to safety factors, e.g. existence of severe 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.
2. The Works Commissioner is responsible to:
  - a) the Town Manager for snow and ice control in the Town of Grand Bay-Westfield;
  - b) ensure the annual review of the Snow and Ice Control Plan is conducted and any recommendations are forwarded to the Town Manager for consideration;
  - c) monitor and review storm events with the Snow Control Contractor to ensure a consistent and adequate level of service was provided;
  - d) direct and arrange for snow control service through the Works Department for sidewalks and municipal properties.
3. The Snow Control Contractor is responsible for ensuring the winter storm response is in accordance with this Snow and Ice Control Plan, and the Terms and Conditions as set out in the Tender for Snow and Ice Control in Appendix A. The general procedure followed will be in accordance with established priorities:
  - i) Priority 1 – Arterials and Selected Collectors
  - ii) Priority 2 – Collectors and Selected Locals
  - iii) Priority 3 – Local Streets
4. 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 to ensure 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, at the start of the storm response, during the storm response, and after the storm response.

**PROCEDURES**

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

Policies are approved by Council. Procedures are approved by the Department Head.

Procedures for Snow and Ice Control During a Storm Event

1. A decision is made by the Contractor's foreman for a roadway response and the Works Commissioner for a sidewalk and municipal properties response concerning what type of vehicle and how many vehicles will be used during the snow 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. Ice conditions by themselves or combined with snow, require special operations. This may include extra sanding 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 Snow and Ice Control Contractor and the Works Commissioner 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, 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 Contractor and Works Commissioner may order changes in standard procedures as special situations dictate.

The Town of Grand Bay-Westfield services all sidewalks. Plowing and salting occurs after the roadway snow and ice control is completed by the Contractor.

**a) Contractor's Procedure**

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

Arterial and heavily traveled collector streets receive the highest priority. These streets are plowed continuously during the snow storm, where possible (see guidelines below). The Snow and Ice Control utilizes 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. widen during daylight hours if possible;
6. 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 so as 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;
6. widen during daylight hours if possible;
7. 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 if necessary;
3. salting 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) Works Department's Procedures**

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

Municipal Facilities in use and sidewalks receive the highest priority. These areas are serviced during the storm event. The snow and ice control utilizes controlled salting to maintain an adequate walking surface:

1. apply one application of anti-icing to prevent bonding with parking lots only; (subject to temperature, time and intensity);
2. plow parking lots after 4 cm accumulation, when possible;
3. shovel all walkways to and from the building each time the parking lot is plowed;
4. plow and shovel continuously during the storm while the municipal building is in use, visibility permitting;
5. widen during day light hours if possible;
6. sidewalks are cleared and salted as soon as possible after precipitation has ended and the contractor has completed snow and ice control on the adjacent street;
7. storm conditions or other factors do not always allow the objective to be met.

Priority 2 – Level of Service – Required for Specific Times (Bus Shelters)

Priority 2 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 to maintain an adequate walking surface:

1. plow area as close as possible to the time of day the structure will be used;
2. if storm event has ended and contractor has completed the snow and ice control on the adjacent roadway, salt or sand the area as required;
3. if storm event is still underway and the contractor has not completed the snow and ice control on the adjacent roadway do not salt;
4. return to provide snow and ice control before the next time the structure will be used;
5. storm conditions and other factors do not always allow the objective 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, if necessary.

**SNOW AND ICE CONTROL EQUIPMENT**

It is the responsibility of the Contractor for roadway Snow and Ice Control, and the Works Commissioner for sidewalks and municipal facilities Snow and Ice Control to assign available equipment for salting, plowing, and snow removal as listed in Appendices F and G. Equipment is generally assigned as noted in Appendix E, Service Routes.

It should be noted the contractor's equipment can change each year and each time the tender is awarded, thus making Appendices F and G subject to change depending on equipment available.

**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 by the Contractor.
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 Works Commissioner.
4. Due to frequency of storm events not all areas will 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 I:
  1. vehicle and pedestrian safety;
  2. additional storage for next storm event;
  3. drainage controls;
  4. improve facility usage.
7. All snow and ice removed from municipal streets will be stored at the Municipal Snow Dump Area located at the fenced in compound behind the Salt Shed off of Shannon Road or other sites designated by the Works Commissioner from time to time.

**TIPS FOR THE PUBLIC**

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

1. Shovel snow from your driveway and place it on the bank or boulevard “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. 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 under the *Motor Vehicle Act* to remove snow from your driveway and push or blow it across a roadway.)
3. Please don't place garbage or garbage containers where they can be buried, damaged or interfere with snow removal.
4. 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.
5. Do not leave vehicles overnight on Town streets and roads during the winter season.
6. Avoid unnecessary spinning of tires at intersections. This practice is dangerous and hazardous for other motorists. It also tends to "ice up" the intersection.
7. Avoid installing mail boxes where they can be damaged by plowing operations. Canada Post can provide guidelines concerning the proper distances from road surfaces.
8. Ensure your mail boxes are secure before the winter plowing operations begin.
9. Use coloured ribbon to mark hedges and fences, especially on sidewalk areas. This lets our operators know where they are.
10. Please don't distract snow removal equipment operators while they are in the process of hazardous work that requires their full attention.
11. All concerns or requests relative to snow removal should be directed to the Contractor, not to individual vehicle or equipment operators.
12. 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.
13. 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.
  14. To help prevent local flooding, try to keep the catch basin adjacent to your property free from ice and snow.
  15. 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.
  16. When plowing or shoveling your driveway, please try and avoid creating large banks at the entrance to your driveway. These banks can hinder your visibility, possibly causing an accident.
  17. 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 easy monitoring to ensure the pathway is clear.

### **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, the gates or calibration equipment shall be tested to achieve the required application rates; the procedure to calibrate spreader is located in Appendix “H”;
- quantities of material used (sand and sand/salt mix) shall be recorded for each vehicle for each storm event;

- monthly, the Works Commissioner and Contractor shall meet to discuss the previous month's activities and make a note of any issues or special circumstances;
- before June 30<sup>th</sup> of each year forward information to the Federal Minister of the Environment as requested in Appendix "B", Annex C.

To review the Snow and Ice Control Plan a joint meeting with the Contractor and the Works Commissioner will be held in April to discuss the Snow and Ice Plan and its performance during the winter season. The Works Commissioner and Contractor shall formalize a list of recommendations for the Town Manager before the end of May.

### **EMPLOYEE/AGENT TRAINING PROGRAM**

The tenders for winter snow and ice control include a Provisional Sum for training for the contractor's employees available upon approval by the Works Commissioner for the requested training course.

A list of employees and training completed is recorded in Appendix "M".

### **IMPLEMENTATION OF RECOMMENDATION**

Any recommendation approved for implementation is to be placed in the Snow and Ice Control Plan and forwarded to the Contractor before the end of July to provide advance notice to the contractor before the next winter season.

### **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 with the consensus of the Works Commissioner and the Contractor for roadway issues and by the Works Commissioner for Works Department responsibilities.

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 Towns Snow and Ice Control Plan;
- The Snow and Ice Control Plan shall be posted on the Town's web site for review and comment.

### **FUTURE CHANGES**

In order to continuously improve our Snow & Ice Control the following changes are planned to the next tender for Snow & Ice Control:

No changes at this time.

### **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.

**APPENDIX "A"**

**TOWN OF GRAND BAY-WESTFIELD**

**PLOWING AND OTHER WINTER MAINTENANCE  
SERVICES**

**FORM OF AGREEMENT**

**2016 - 2021**

THIS AGREEMENT, made on this \_\_\_<sup>th</sup> day of December, 2015 by and between the

TOWN OF GRAND BAY-WESTFIELD  
609 RIVER VALLEY DRIVE  
P.O. BOX 3001  
GRAND BAY-WESTFIELD, NB  
E5K 4V3

hereinafter called the TOWN, and

XXXXXXXXXXXXXXXXXX.  
XXXXXXXXXX  
XXXXX, XX  
XXX XXX

hereinafter called the CONTRACTOR.

WHEREAS the parties hereto have agreed to enter into this Agreement for the salting, sanding and removal of snow and ice from streets in the Town by the Contractor, during the period hereinafter set forth:

NOW THEREFORE THIS AGREEMENT WITNESSETH that in consideration of the mutual covenants and agreements herein contained, the parties hereto agree as follows:



**ARTICLE 1 - CONTRACTOR'S OBLIGATIONS AND SCOPE OF WORK**

The Contractor shall, at its own expense and at such times as set out, provide snowplowing services and pay for salt, sand and other appropriate abrasive materials applied (hereinafter referred to as the “plowing and other winter maintenance services”) in accordance with the following provisions:

1. The Contractor shall provide plowing and other winter maintenance for a five (5) year term beginning on the 15th day of November 2016 and ending on the 15th day of April 2021 as follows:

<b>YEAR</b>	<b>BEGIN</b>	<b>END</b>
2016 - 2017	November 15, 2016	April 15, 2017
2017 - 2018	November 15, 2017	April 15, 2018
2018 - 2019	November 15, 2018	April 15, 2019
2019 - 2020	November 15, 2019	April 15, 2020
2020 - 2021	November 15, 2020	April 15, 2021

2. Plowing and other winter maintenance services provided by the contractor will be provided on all streets listed in Schedule “A” attached, in such manner as to ensure safe driving and ease of traffic flow during the provision of such services. Also included as incidental to the main contract is Snow & Ice control at the:

- Park & Ride parking lots, located next to the River Valley Community Centre (arena), small gravel lot on the north east corner of the intersection of Inglewood Drive and River Valley Drive and the gravel lot in front of Fire Station No. 2;
- access road to Fire Station No. 2 at 293 Nerepis Road;
- access road to the Volunteer Fire Department water pump station at Westfield Crescent.

For clarification on service level requirements for the Park & Ride bus sites refer to Appendix J in the attached Schedule “B” Draft Snow and Ice Plan.

In addition to providing plowing and other winter maintenance the **contractor is also responsible to maintain the following section of sidewalks and pathways:**

- Colonel Nase Boulevard from River Valley Drive west to Highland Road and James Ready Park pathway;
- Nerepis Road from Woolastook Drive north to Mallard Drive;

- Route 102, train bridge overpass walkway;
- River Centre complex, all walkways and doorways around and next to the building and pathways around the property;

Sidewalk service level shall be such that the sidewalks and pathways are **all cleared within 10 hours after the storm event.**

Without limiting the generality of the foregoing, the services provided will include:

- i) continuous plowing during a snow storm where possible;
  - ii) ice control service using controlled salting to maintain clear driving lanes within a reasonable time **before, during and after a storm;**
  - iii) apply anti-icing measures (salt) to priority 1 roadways before plowing;
  - iv) plowing after four(4) centimetres of accumulation;
  - v) the contractor shall maintain and operate a phone system to receive calls from the Town and the Public on a 24 hour basis and to handle concerns and complaints directly dealing with plowing and other winter maintenance provided by the Contractor.
3. Plowing and other winter maintenance will proceed simultaneously starting at various locations within Grand Bay-Westfield so that plowing and other winter maintenance will be provided to ensure safe driving conditions on all roadways within the Town per Snow and Ice Control Plan. Contractor will define specific plowing and salting routes for each piece of equipment after the tender award for approval by the Town.
4. The Contractor may enter into an agreement with DOT directly to provide plowing and other winter maintenance services to a portion of Route # 177 located at the northern end of Nerepis Road between the northern Town boundary and Route # 7.
5. Plowing and Other Winter Maintenance services will be provided to other streets not listed in Schedule "A" of the Snow & Ice Plan which may come into existence or be designated, during the term of the contract as designated by the Town from time to time at the tendered price per lane kilometer rate.

The rate per lane kilometer is the 5 year lump sum price divided by 5 years divided by 5 months per year and divided by the total number of lane kilometers to be maintained per month per Schedule "A".

The lump sum price includes the use and purchase of salt and sand by the contractor over the duration of the contract.

**As per the Snow and Ice Control Plan the intent is that salt is used for all road way applications except when the temperature is too cold or the street is designated otherwise in the Snow and Ice Control Plan.**

6. The Contractor will provide snowplowing and other winter maintenance services at the following times:
  - a) automatically at any time during the day, evening or night during a weather event; and
  - b) at any such other times as the Town may request;
  - c) ice control service automatically at any time during the day, evening, or night to maintain clear and safe driving lanes.
7. The plowing and other winter maintenance services to be provided by the Contractor under this contract does not include the loading and hauling of snow and ice from the streets or roads and as such, is considered additional services separate and apart from this agreement. This work is considered extra and will be assigned to various contractors as required by the Town under a separate Work Order.
8. Snow control and other winter maintenance services shall follow the Town's DRAFT Snow and Ice Plan dated October 2015 and attached as Schedule "B". The draft Snow & Ice Plan dated October 2015 will be revised to reflect the new contractor once awarded when the Snow & Ice Plan is next revised.
9. Plow blades shall be adjusted so as to leave a minimum amount of snow on the road surface. Supply of plow blades shall be the responsibility of the Contractor.
10. Notwithstanding section 7 plowing and other winter maintenance services shall include periodic pushing of snowbanks beyond the roadway shoulder with a plow wing suitable for the street to allow for additional snow storage for future storms and benching to improve

visibility, and proper drainage in the event of a rainstorm. This practice shall occur as close as reasonably possible to the end of each storm event.

11. The Contractor shall submit to the Town a description of each piece of equipment including license number, serial number, photocopy of registration, name and address of owner, proof of insurance, plow attachments, age, and proposed use of each piece of machinery in carrying out the terms of this contract after tender award.

Also, the Contractor shall notify the Town of any changes to equipment or major breakdowns throughout the duration of this contract.

12. If the Contractor experiences difficulties or problems, which prevent the terms of this contract from being fulfilled, the Contractor shall notify the Town immediately.

13. **Crawler tractors will not be allowed on paved road surfaces unless specifically authorized by the Town.**

14. The Town will purchase and maintain a pile of salt in the Town's Salt Shed over the duration of the contract. The price to purchase and truck the salt will be deducted from the contractor's monthly invoice according to amounts used as determined by electronic spreading device recorders on vehicles and estimates agreed to by the contractor and the Town. At the end of each winter season a third party consulting firm will inspect and assess the amount of salt remaining. Appendix "N" in the Snow & Ice Plan shows the history of salt usage. The Town is able to purchase salt from Cargill in Sussex for \$ 60.00 TM from May 1 to December 1, 2016. The price increases to \$60.50 TM between December 2, 2016 and April 30, 2017. Future price for salt beyond April 30, 2017 is unknown. Trucking cost per tonne has been in the \$12.00 range from the Cargill mine near Sussex. The Town will also include the Town's non-recoverable portion of the HST to the charge per tonne. The cost of salt and trucking will increase over the life of the contract, please adjust your bid to reflect possible increases.

15. Prior to November 1<sup>st</sup> of each calendar year the Contractor will purchase and stockpile sand in sufficient quantity to provide the winter maintenance services under this contract. The Contractor agrees that the stockpiles will meet the following gradation for winter sand:

100% passing the 9.5 mm screen and not more than 8% passing the 75um screen.

Contractor will pay for salt used in mixing with sand and a sieve analysis performed by a third party consulting firm to verify gradations each year and at times throughout the contract when sand is purchased.

16. Without limiting the generality of the foregoing the Contractor agrees to comply with the Department of the Environment's Guidelines for the supply, delivery, housing and storage of sand and salt and is liable for any loss or damage arising from its supply, delivery, housing and storage.
17. In case of equipment breakdown(s) during a storm the contractor shall arrange for backup equipment as required. Back up equipment shall be available within a reasonable time. A list of available backup equipment shall be supplied to the Town.
18. The Contractor is responsible for all costs for using backup equipment.
19. The Contractor shall submit as part of the Tender bid, a list of equipment to provide the following service levels, including required equipment referenced:
  - a. Priority 1 Streets to be serviced once every **2 hours**;
  - b. Priority 2 Streets to be serviced once every **4 hours**;
  - c. Priority 3 Streets to be serviced once every **6 hours**;
  - d. 1 - 4 wheel drive vehicle is to be designated as a Supervisor/Foreman vehicle for roadway monitoring;
  - e. communication network between all vehicles, and Supervisor/Foreman;
  - f. Supervisor/Foreman will have access to a laptop at all times to be able to monitor weather, vehicle application rates, road temperature and plow routes;
  - g. all vehicles designated for plowing and/or material spreading will be equipped with AVL/GPS units purchased by the Town; installation and setup will be done by the Contractor and Webtech/agent to the Town's satisfaction. Each year there will be an inspection/setup of AVL/GPS units by Webtech/agent;
  - h. minimum equipment requirements and minimum model year:
    - a. 1 loader with a bucket and plow / wing attachment; (2011)
    - b. 2 tandem truck(s) with plow, wing and spreader; (2012)
    - c. 3 single axle dual wheel dump trucks, with plow, wing and spreader; (2012)
    - d. 2 - ½ ton or larger trucks with plow and spreader; (2015)
    - e. 1 supervisor 4x4 vehicle; (2015)

- i. all material spreading equipment will have electronic measuring and recording units connected to the AVL/GPS units in the vehicle; they must work with Webtech software and hardware. Some of the measuring device which work with Webtech are:
    - CompuSpread (CS230, CS440, CS550)
    - Dickey John (Control Point, Flex 4)
    - Epoke, Cirus (Spreadsmart, Dual Spread)
    - Force America (5100, 6100)
    - Schmidt Stratos
    - Accucast
    -

The contractor shall verify with WebTech that their electronic measuring and AVL/GPS devices work with Webtech software for reporting material usage;
  - j. all vehicles shall be equipped with road/air temperature sensors and be connected to the AVL/GPS units;
  - k. the Town will purchase AVL/GPS units and associated cables for the installation by contractor to record location, direction, speed, temperature sensors, spreader on/off and application rate;
  - l. Contractor shall submit monthly activity reports and material usage reports each month by the 5<sup>th</sup> day for both salt and sand/salt usage of the previous month;
  - m. the Town will pay the monthly air time fee for the AVL/GPS units between November and April each winter season;
  - n. between May and October the AVL/GPS units will be removed from the vehicles;
  - o. AVL/GPS units to be returned undamaged.
20. Supervisor/Foreman and all equipment operators and backup operators shall take courses when available. The Town has set aside \$5,000 in each calendar year available to reimburse the Contractor for training and expenses which have been pre-approved by the Town for the Contractor's employees as required for the performance of their duties under the contract. The funds for Training may be expended in whole or in part or not at all, at the entire discretion of the Works Commissioner for courses for which the Contractor has requested approval. Only the amounts actually approved and expended shall be reimbursed to the Contractor.

21. All communication networks between all vehicles and Supervisor/Foreman shall be in place before November 1<sup>st</sup> of each year of the contract.
22. The successful bidder shall maintain a phone line with voice messaging to receive incoming calls and concerns from residents between November 1<sup>st</sup> and April 30<sup>th</sup> of each winter season for the duration of the contract. The contractor shall keep a record of calls from residents regarding service requests / complaints.
23. The Supervisor/Foreman shall carry a cellular smart phone at all times during the duration of the contract.
24. The Contractor shall arrange for roadway inspection services during the contract to ensure a timely response to winter maintenance activities. The Contractor shall provide a list of at least 3 people who will be responsible for roadway inspections using the vehicle specified in section 19 (d) designated for roadway inspection services.
25. This tender is for 5 years with the option to renew under mutual agreement for a 2 year extension at the tendered price, subject to minor changes in pricing as mutually agreed.
26. Penalties will be imposed as deductions from monthly invoices. The minimum penalty deducted will be \$1,000. A list of penalties will be created during the term of the contract and are meant to ensure services are provided; the decision to impose a penalty will be made by the Works Commissioner only. The reason and documentation will be forwarded to the Contractor.

Some examples of penalties would be:

- a. response time was not adequate;
- b. failure to clean up salt spillage;
- c. failure to submit required documentation requested;
- d. equipment breakdown not repaired in a timely fashion;
- e. spreader control failures not repaired in a timely fashion;
- f. AVL/GPS unit damage;
- g. failure to respond to an emergency call from the RCMP, Volunteer Fire Department, or Ambulance Services;
- h. other items as may arise during the contract;

Refer to Snow and Ice Plan for service level requirements.

Equipment storage available at the Salt Shed location off of Shannon Road. If an office type structure is requested, approval for the building will require required from the Building Inspector and shall comply with a by-laws and the contractor shall pay for all services such as water, sewer, power and telephone.

Plow routes to be confirmed by contractor with equipment tendered after award and inserted into the Snow and Ice Control Plan.

A draft formal agreement for execution after award of contract to the successful bidder is included in tender package.

The contract will be subject to a Fuel Usage Adjustment described below:

Based on the uncertainty of world fuel oil pricing, the contract will provide for an adjustment to the monthly contract price, upwards or downwards, for changes in the price of fuel. Such an adjustment shall be determined using data published by M. J. Ervin & Associates ([http://www.mjervin.com/subscriptions/month\\_diesel\\_posted\\_2009.htm](http://www.mjervin.com/subscriptions/month_diesel_posted_2009.htm)). For the purposes of this calculation the monthly average publication data for Saint John, New Brunswick, Diesel Grade Fuel ("fuel"), of each month from November to April of any contract year shall be considered the average price for that month to be used in calculating the adjustment. In the event M.J. Ervin & Associates ceases publication of data necessary for reference to this Section, or if such data is unavailable at a time required under this Section, a publication by a similar entity, as chosen by the Works Commissioner for the Town, shall be used for the purposes of this Section.

The price for fuel of \$1.200 per liter shall be the "bench mark price" for all adjustments, upwards or downwards, for the term of this contact.

For each month of operation during the contract period, the average fuel price for the invoiced month shall be determined, and used to calculate a percentage change, upwards or downwards, from the "bench mark price" and applied to a fixed amount being allocated for fuel of \$10,000 each month or \$5,000 for a half month for the duration of the contract.

The percentage change in fuel price will be calculated by dividing the increase or decrease in price by the "bench mark price". For example with the "bench mark price" at \$1.200 and the price of fuel in a particular invoiced month is \$1.114, the decrease would be \$0.086. If we divide the \$0.086 decrease by \$1.200 the decrease would be equal to 7.167 %.

The percentage fuel adjustment for each invoiced month will be determined by multiplying the fixed amount of \$10,000 (allotted monthly fuel usage) by the percentage change in the fuel price from the "bench mark price".



Using the above example, if the price of fuel decreased by 7.167 %, the percentage fuel adjustment that would be subtracted from the monthly invoice would be \$716.70, calculated by multiplying \$10,000 by .07167 (7.167%).

Similarly, increases would be made to the monthly invoice if the price of fuel in an invoiced month increased above the “bench mark price”. The adjustment amount will be applied to the monthly invoice accordingly.

Other conditions relating to tenderer’s bid are:

1. monthly invoices are for previous month of service for which payment is not required before 30 days;
2. Contractor shall submit monthly activity reports and material usage reports each month by the 5<sup>th</sup> day for both salt and sand/salt usage of the previous month;
3. Between November 1 and November 14 and April 16 to April 30, the equipment shall be available within 4 hours after receiving a request from the Town for winter maintenance services;
4. Tender evaluation will include reference checks with previous clients, equipment being offered and any other feature the Town deems suitable for evaluation along with the tendered price;
5. A third party engineering firm will review and confirm remaining salt at end of each winter season for back charging to the monthly invoice submitted;
6. The successful bidder shall follow and operate under the Town’s Snow & Ice Plan amended to reflect new plow routes, equipment, contract agreement;
7. Early or late callouts for service before November 15 or after April 15, the contractor’s equipment rate shall be per the Crown Construction Act rates plus 25% for administration;
8. Contractor will engage with Webtech Wireless or service agent to ensure software and hardware are setup and working each year before November 15 each winter season. The cost for same will be paid by contractor;
9. Incidental to the operation, between November 1 and April 30 each season the contractor shall pile/position salt in the Salt Shed upon delivery.

10. Roadway widening and benching activities are considered incidental for regular plowing/widening to a reasonable width beyond the travelled roadway depending on roadway. Roadway widening shall occur immediately at the end of a storm event unless otherwise directed by the Town.

## **ARTICLE 2 - MATERIALS, APPLIANCES, EMPLOYEES**

The Contractor shall provide and pay for all materials, equipment, parts, labour, vehicles, tools, and all other items (hereinafter referred to as the “snowplowing and related materials and equipment”) necessary to provide snowplowing and other winter maintenance services under this contract.

The Contractor shall employ only orderly, competent and skillful people to do the work and be fully covered by Workers’ Compensation. All materials and equipment shall be of good quality.

## **ARTICLE 3 – PROVISIONAL SUM FOR TRAINING**

A provisional Sum for Training of \$5,000 per calendar year is included in the Form of Tender and is intended to cover the cost for pre-approved training approved by the Town. This sum is to cover the cost of training courses for Contractor’s employees as required for the performance of their work under

this contract. The Provisional Sums for Training shall be expended in whole or in part or not at all at the entire discretion of the Works Commissioner for

courses which the Contractor has requested approval. Only the amounts actually approved and expended shall be payable to the Contractor up to \$5,000 excluding HST per calendar year.

## **ARTICLE 4 - PERMITS AND TAXES**

The Contractor shall, at its own expense, obtain and maintain in good standing all permits and licenses and taxes required by any authorities having jurisdiction in order to own, possess, use or operate snowplowing and related materials and equipment and to carry on the snowplowing business for the Town including those permits, licenses or certificates required for the supply, delivery, application, housing and storage of sand and salt.

## **ARTICLE 5 - PROTECTION OF PROPERTY**

The Contractor acknowledges that he has inspected the roads and streets covered under this contract and referred to in Schedule “A” and is aware of any possible obstacles and obstructions including curbing and adjacent properties which must be avoided during the snowplowing and provision of other winter maintenance services.

The Contractor further acknowledges its responsibility to inspect the roads and streets throughout the course of this contract prior to plowing and providing other winter maintenance services.

## **ARTICLE 6 - PENALTIES**

Penalties will be imposed as deductions from monthly invoices shall have a minimum penalty of \$1,000. The list of penalties will be created during the term of the contract and are meant to ensure services are provided; the decision to impose a penalty will be made by the Works Commissioner only. The reason and documentation will be forwarded to the Contractor. If the Contractor is in disagreement with the penalty decision they may submit a written appeal to the Town Manager who will then review the appeal and make a decision on the appeal;

Some examples of penalties would be:

- a. response time was not adequate;
- b. failure to clean up salt spillage outside the salt shed;
- c. failure to submit required documentation requested;
- d. equipment breakdown not repaired in a timely fashion;
- e. spreader control failures not repaired in a timely fashion;
- f. AVL/GPS unit damage;
- g. failure to respond to an emergency call from the RCMP, Fire Department or Ambulance Services;
- h. other items as may arise during the contract;

## **ARTICLE 7 - COMMUNICATION**

The Contractor acknowledges that the Town has designated the Works Commissioner to be the Town’s representative during the contract term.

The Contractor further acknowledges that the Council of the Town of Grand Bay-Westfield by itself or the Works Commissioner may designate other agents or workmen, from time to time, to be the Town’s representative during the contract term.

In routine matters relating to this Agreement, communication between the parties shall be through the Town's Works Commissioner and the Contractor, and such communication may be verbal.

In matters relating to the substance of this Agreement, that is, its performance, breach, compliance with the terms thereof, communication shall be in writing through the Town Manager and the Contractor.

Any inquiries, complaints or like response from the area residents regarding the performance of this Contract will be directed to the Contractor by the Works Commissioner or Town Manager.

### **ARTICLE 8 - CHANGES OF WORK**

The Town, without invalidating this contract, may order changes in the work within the general scope of the Contract.

Changes in the scope of the work may result in an increase or decrease of the contract price. A request by the Contractor for additional costs must be made in writing. The Town shall determine, in its absolute discretion, as to whether or not there has been a change in the scope of the work to warrant an increase or decrease in price. The Town shall elect one of the following methods in determining an increase or decrease in the price:

- a) mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- b) monthly installments as agreed upon in Article 8 will be increased or decreased by a direct ratio of the lane kilometrage to the original lane kilometrage in Schedule "A";
- c) by cost or a mutually acceptable fixed or percentage fee.

In the event that the total lane kilometrage contemplated under the contract is changed by twenty - five percent (25%) in a proposed change order resulting in a substantial inequity in monthly installments to the Town or the Contractor, the applicable monthly installments shall be re-negotiated.

### **ARTICLE 9 - TOWN'S RIGHT TO TERMINATE THE CONTRACT**

The Town may terminate this contract immediately, without, notice, upon the Contractor:

- a) becoming insolvent;

**SNOW AND ICE CONTROL PLAN**

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- b) committing an act of bankruptcy;
- c) abandoning the work to be performed under the contract;
- d) making an assignment of the contract without the required consent;
- e) violating Article 11 herein.

The Town may terminate this contract after seven (7) days written notice to the Contractor should the Contractor fail to observe or perform any of the provisions under the contract or, in the sole discretion of the Town, the Contractor neglects to prosecute the work properly.

In the event that the Town terminates the contract the Contractor is entitled to be paid for each full month that it has completed and all other payments contemplated under the contract for the remaining term are terminated.

In the event that the contract is terminated prior to the last day of a month the Town may, without prejudice to any other remedy it may have, deduct the costs for completion of plowing and other winter maintenance services for the remaining days of the month. If the expense of finishing the work for the remainder of that particular month is less than an amount equal to the monthly installment payment under the agreement, the difference shall be paid to the Contractor, but if such expense exceeds such monthly installment, the Contractor shall pay the difference to the Town.

**ARTICLE 10 - PAYMENTS**

This Contract shall be based on the average yearly cost from the total bid price of \$\_\_\_\_\_ not including HST, payable by the Town to the Contractor over 5 years in five (5) monthly installments during each of the 5 winter season based on the table below.

Contract Year	Uniformed Charge
2016 - 2017	\$
2017 - 2018	\$
2018 - 2019	\$
2019 - 2020	\$
2020 - 2021	\$
Five Year Total Value	\$

The making and acceptance of final payment shall constitute a waiver of all claims by the Contractor. Payments may be withheld on account of defective work not remedied, liens filed, damage by the Contractor to others, failure to make payments properly to subcontractors or for material, labour or services owing to others by the Contractor.

The Contractor shall submit to the Town, monthly invoices for the work carried out during that period. The invoices shall be detailed in nature listing all material used (if any), services provided, HST, along with the Contractor's HST Registration Number.

**ARTICLE 11 - CONTRACTOR'S LIABILITY INSURANCE**

The Contractor agrees that the Town shall hold Five Thousand Dollars (\$5,000.00) by way of holdback from the payment due for the month of April; such holdback to be retained by the Town in an account and to be accessible by the Town and used to cover loss, expense and property damage sustained by any person or the Town by reason of the operation, handling, transportation, and use of the Contractor's equipment during the preceding contract period.

Such holdback or such portion of it shall be used for the above uses and the balance or so much thereof remaining shall be paid to the Contractor on the 15th of July without interest. Such holdback shall be in addition to and not in lieu of any other remedy that the Town may have against the Contractor for damages or indemnity arising from performance of his obligations under this Agreement.

In addition, the Contractor agrees to maintain \$3,000,000 insurance, against such damage and other public liability including, but not limited to property

damage or personal injury arising from operation of its equipment and vehicles and the Contractor agrees to file with the Town by delivery to the Town Manager confirmation of such insurance and renewals thereon, which insurance shall note the Town as a named insured entitled to any notice of cancellation.

**ARTICLE 12 - INDEMNITY**

1. The Contractor acknowledges and accepts all risk arising or pertaining to the ownership, possession, use or operation of any snowplowing and related materials and equipment or arising from the supply, delivery, application housing or storage of sand or salt and arising from any occurrence occasioned, whether in whole or in part whether directly or indirectly, by an act or omission or negligence of the Contractor or those for whom it is in law responsible. Any snowplowing and related materials and equipment left unattended by the Contractor or those for whom it is in law responsible shall be left at the sole risk of the Contractor.
2. The Contractor shall indemnify and save harmless the Town from any claims, demands, actions, losses, or property damage arising

directly or indirectly from the ownership, possession, use or operation of any snowplowing and related materials and equipment by the Contractor whether or not occasioned by the negligence of the Contractor and the Contractor shall protect and hold the Town harmless and shall pay all costs, expenses and reasonable legal fees incurred or paid by the Town in connection with such claims, demands, actions, losses or property damage. The indemnities contained herein shall not be prejudiced by and shall survive the termination of this contract.

### **ARTICLE 13 - GOVERNING LAW**

This contract shall be construed and enforced in accordance with the laws of the Province of New Brunswick and is made pursuant to the Municipalities Act.

### **ARTICLE 14 - LIENS AND OBLIGATIONS**

The final payment shall not be due until the Contractor has delivered to the Town a complete release of all liens arising out of this contract, or receipts in full covering all labour and materials for which the lien could be files, or a bond satisfactory to the Town indemnifying them against any lien.

The Town may deduct from any payments made to the Contractor a sum equal to fifteen percent (15%) to be held for ninety (90) days as security against any liens which may be filed.

The contractor shall annually provide a sworn statement stating that all expenses incurred in carrying out the contract to date have been paid. Final monies annually will not be released until the sworn statement is received by the Municipality.

### **ARTICLE 15 - ARBITRATION**

Any disagreement arising out of this contract or from the breach thereof shall be submitted to an arbitration board, and judgment upon the award rendered may be entered in the Court of Queen's Bench of New Brunswick. It is mutually agreed that the decision of the arbitrators shall be a condition precedent to any right of legal action that either party may have against the other.

The arbitration shall consist of three members. Each party hereto will appoint one member, and a third member shall be appointed by the first two members. The third member shall act as a chairperson. If the parties cannot agree to the

appointment of a third member, then such member shall be appointed by a judge of the Court of Queen's Bench of New Brunswick.

The three member arbitration board shall decide the matter after hearing from both parties. The decision shall be in writing and shall be delivered within thirty days of the hearing.

When either party requests an arbitration hearing a sum of \$1,000.00 shall be paid by the party requesting the arbitration hearing to the Town to be held and used for the costs associated with the arbitration hearing. The arbitration board can assign or decide the costs of the arbitration to either or both parties.

#### **ARTICLE 16 - SAFETY**

The Contractor shall comply with and shall require all subcontractors to comply with all applicable health and safety laws, rules and regulations, including without limitations, *the Occupational Health and Safety Act* and the rules and regulations enacted thereunder.

#### **ARTICLE 17 - DETOURS, ACCESS DURING OPERATIONS**

The Contractor shall make every effort to maintain traffic flow. At no time shall the Contractor reduce or obstruct both lanes of traffic without prior approval from the Town. If at any time it should become necessary to completely close a street, the Contractor shall notify the Works Commissioner, Westfield Volunteer Ambulance Service, RCMP and the Grand Bay-Westfield Fire Department.

He shall furnish to these agencies the times for the start of the closing and the time the road is to be reopened. At no time shall public access be closed overnight.

#### **ARTICLE 18 - PROPRIETARY OR CONFIDENTIAL INFORMATION**

The Contractor acknowledges that any information concerning the Town of Grand Bay-Westfield which the Contractor acquires during the term of this Contract is to be treated as strictly confidential information and is not to be disclosed to any other person by the Contractor or any of its employees or subcontractors and is not to be used by the Contractor or any of its employees or subcontractors for any benefit or gain.



**ARTICLE 19 - CONFLICT OF INTEREST**

The Contractor shall not, without adequate disclosure to and the consent of the Town of Grand Bay-Westfield, participate in any business, financial or other relationship where there is or is likely to be a conflict of interest.

A conflict of interest shall be defined as one that, in the Town's opinion, would be likely to affect the Contractor's judgment or actions on behalf of the Town of Grand Bay-Westfield.

**ARTICLE 20 - INDEPENDENT CONTRACTOR**

Notwithstanding anything in this contract to the contrary, it is understood and agreed between the parties that the Contractor is an independent Contractor and not an employee of the Town.

**ARTICLE 21 - ASSIGNMENT**

The Contractor shall not assign this contract or any part of it and may not employ or retain anyone as a subcontractor or otherwise, to perform any part of its obligations under this contract without the prior written consent of the Town which consent may be withheld.

**ARTICLE 22 - NOTICE**

All notices, requests, demands or other communications by the terms hereof required or permitted to be given by one party to another shall be given in writing by personal delivery or by registered mail, postage prepaid, addressed to such other party or delivered to such other party as follows:

a) Town at:

TOWN OF GRAND BAY-WESTFIELD  
609 River Valley Drive  
PO Box 3001  
GRAND BAY-WESTFIELD, NB  
E4K 4V3

b) to the Contractor:

XXXXX  
XXXXX  
XXXXX

## SNOW AND ICE CONTROL PLAN

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or at such other address as may be given by any of them to the others in writing from time to time and such notices, requests, demands or other communications shall be deemed to have been received when delivered, or, if mailed, forty-eight (48) hours after 12:01 am on the day following the day of the mailing thereof; provided that if any such notice, request, demand or other communication shall have been mailed and if regular mail service shall be interrupted by strikes or other irregularities, such notices, requests, demands or other communications shall be deemed to have been received forty-eight (48) hours after 12:01 am on the day following the resumption of normal mail service.

**SNOW AND ICE CONTROL PLAN**

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WITNESS WHEREOF the parties hereto set their respective corporate seals each attested by their duly authorized officers.

SIGNED SEALED AND  
DELIVERED

CONTRACTOR:

WITNESS

\_\_\_\_\_

\_\_\_\_\_  
(PRESIDENT)

OWNER:

TOWN OF GRAND BAY-WESTFIELD

\_\_\_\_\_

Grace Losier  
MAYOR

\_\_\_\_\_

Sandra Gautreau  
SANDRA GAUTREAU  
MANAGER (CLERK)

**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., 12<sup>th</sup> 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.  
Works Commissioner  
PO Box 3001  
Grand Bay-Westfield, NB  
E5K 4V3

Phone: 1-506-738-6422  
Fax: 1-506-738-6424  
Email: [bgault@towngbw.ca](mailto:bgault@towngbw.ca)

Sincerely,

Bruce Gault, P. Eng.  
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;
  - (e) 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/lKm	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  
Brittain Road  
Ferry Road  
Epworth Park Road (between River Valley Drive and Inglewood Drive)  
Inglewood Drive  
Nerepis Road  
Pamdenec Road  
River Valley Drive  
Woolastook Drive

\*Beverley Hills Drive  
\*Central Avenue  
\*Florence Drive  
\*Garden Road  
\*Highland Road \*\*  
\*Hillandale Drive  
\*June Avenue  
\*Leila Street  
\*Mallard Drive  
\*MacLean Road  
\*Park Avenue  
\*Philip Street  
\*Sunnyside Drive  
\*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  
Beverly Hills Drive  
Brookdale Avenue  
Chestnut Drive  
Edgemount Drive  
Epworth Park Road  
George Street  
Highland Road (paved portion)  
Hillandale Drive  
LaCroix Drive  
Lakeview Road  
Longwood Drive  
Majestic Drive  
Meadow Brook Drive  
Morningside Crescent  
Murray Street/Eldon Lane  
Ridge Way  
Rosemere Drive  
Southwest Street  
Station Street  
Sunnyside Drive  
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	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
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		Young Street



**WORKS DEPARTMENT SERVICE ROUTES**

**Trackless Sidewalk (Snowblower/Plow)**

- River Valley Drive and Epworth Park Road to River Valley Drive and Allan Street
- Woolastook Drive and June Ave. to southern Town boundary
- River Valley Drive and Station Street to end of CIP Sidewalk
- River Valley Drive and Woolastook Drive to River Valley Drive and Allan Street
- Nerepis Road and Hillandale north to Nerepis Road and Mallard Drive
- Route 102 from Nerepis Road to Williams Street
- Intersection of Allingham Terrace and River Valley Drive north to intersection of Mullen Lane and Nerepis Road

**Dodge 3500 1-Ton or GMC Topkick**

- Community Centrum, parking lots, Fire doors and stairways
- Fire Station No. 2, parking lots, vehicle bay doors and doorway entrances
- Lions Building, parking lot and stairways front and back
- Sand sidewalk after being cleared and all parking lots after cleared
- Works Garage 943 River Valley Drive
- Other areas as required subject to usage

**APPENDIX “F”**

**Contractor’s Inventory**

<b>Equipment No.</b>	<b>Type of Equipment/Available Uses</b>
#01-13	
#01-14	
#01-15	
#01-16	
#01-17	
#01-18	
#01-20	
#01-22	

APPENDIX "G"

**Works Department Inventory**

Equipment Description	Use
Dodge 3500 1-Ton	8 ft. angle plow with spreader
JCB214 Backhoe	Bucket for loading
GMC Topkick Truck	10 ft. angle plow
Trackless	4 ft. wide snowblower or angle plow and rear spreader



## APPENDIX “H”

### **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 “H” 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 “I”

### 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
- cul-de-sac Olive Road
- end of Kenwood Road
- end of Leila Street
- intersection of Young and Kirtley
- cul-de-sac portion at Balsam Drive
- cul-de-sac Morningside Crescent
- end of Riverview Avenue

#### 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 Shannon Road

#### Priority 4 – Improve Facility Usage

- Community Centrum
- Fire Stations No. 1 & 2
- Lions Building

**APPENDIX “J”**

**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;
- School Street serviced under contract with the Province of New Brunswick and considered a Priority 2 roadway during school days and a Priority 3 on weekends and school holidays;
- 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;
- ComeX parking lots (3) located next to the River Valley Community Center (arena), small gravel lot on north east corner of the intersection at Inglewood Drive and River Valley Drive and the gravel lot in front of Fire Station No. 2 shall be serviced as Priority 1 during times of the day when pickup or drop off is scheduled, other times the lot shall be serviced as a Priority 3 rating;
- Access road to Fire Station No.2 at 293 Nerepis Road shall be serviced as a Priority 1;
- Access road to the Volunteer Fire Department water pump station off of Westfield Crescent shall be serviced as a Priority 2.

**APPENDIX “K”**

**PLAN REVISIONS**

1. **Council Motion May 25, 2004**
2. **Council Motion March 15, 2005**
3. **Council Motion July 10, 2006**
4. **Council Motion June 25, 2007**
5. **Council Motion of September 8, 2008**
6. **Council Motion of February 22, 2010**

APPENDIX “L”

**Snow and Ice Control Plan**

Policy No. 2003-001

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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 Bruce Gault at 738-6422

Responsibilities

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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.

(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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APPENDIX “L” CONTINUED:

**Snow and Ice Control Plan**

Policy No. 2003-002

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New policy      Municipal Right-of Way Damage

---

Importance      To provide guidance and direction to staff, contractors and residents in dealing with complaints.

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Questions      Call Bruce Gault at 738-6422

Responsibilities

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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 normal snow control services.

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**APPENDIX "M"**

**Employee/Agent Training History**

**Contractor's Employees**



**APPENDIX “N”**

**Material Usage History**

<b>Winter Season</b>	<b>November Salt</b>	<b>December Salt</b>	<b>January Salt</b>	<b>February Salt</b>	<b>March Salt</b>	<b>April Salt</b>
2009-2010	0	244	150	131	41	0
2010-2011	33	114	270	303	51	0
2011-2012	10	167	202	297	98	0
2012-2013	0	42	35	177	63	0
2013-2014	9	254	325	265	273	21
2014-2015	47	29	249	245	83	3
<b>Avg. Total</b>	<b>16</b>	<b>141</b>	<b>246</b>	<b>283</b>	<b>101</b>	<b>4</b>

APPENDIX “O”

Water Testing Results  
Henderson Brook

The samples are collected at 2 locations in the spring after the freshet and in the fall before the winter season at low tide. The 2 sites are, Route 177 at the bridge over Henderson Brook on Designated Highway Route 177 and at the bridge over Henderson Brook on Shannon Road.

<u>DATE</u>	<u>LOCATION</u>	<u>PARAMETERS</u>		<u>CONDUCTIVITY,</u> <u>umho</u>	<u>TSS, MG/L</u>
		<u>SODIUM</u> <u>(Na),</u> <u>MG/L</u>	<u>CHLORIDE</u> <u>(Cl), MG/L</u>		
Aug. 15/03	Route 177	8.2	8.0	59	<1
Aug 15/03	Shannon Road	15.3	17.6	100	8.2
Nov 5/03	Route 177	12.6	7.6	64	1.4
Nov 5/03	Shannon Road	16.9	11.7	70	1.6
Jun 17/04	Route 177	15.1	23.9	250	NA
Jun 17/04	Shannon Road	23.8	41.5	220	NA
Oct 26/04	Route 177	23	8.2	70	<1
Oct 26/04	Shannon Road	18	17.3	110	<1
June 20/05	Route 177	6.8	7.8	63.4	4
June 20/05	Shannon Road	11.4	14.5	98.3	4
Oct 17/05	Route 177	3.3	4.6	46	1
Oct 17/05	Shannon Road	6.8	9.3	70	2
May 18/06	Route 177	11.9	18.4	117	1
May 18/06	Shannon Road	6.7	10.2	68	<1
Nov 30/06	Route 177	7.6	9.6	51	<1
Nov 30/06	Shannon Road	9.3	14.9	76	<1
June 7/07	Route 177	6.6	8.9	71	<1
June 7/07	Shannon Road	10.3	16.0	100	13
June 13/08	Route 177	12	18.1	111	4
June 13/08	Shannon Road	18	28.7	154	<1
Dec 4/08	Route 177	5.1	5.3	50	<1
Dec 4/08	Shannon Road	7.6	9.1	67	<1
June 18/09	Route 177	16	20.7	123	3
June 18/09	Shannon Road	10	12.2	89	1
Dec 8/09	Route 177	2.9	5.1	50.1	<1
Dec 8/09	Shannon Road	5.2	8.1	64.2	<1
Apr 30/10	Route 177	7.3	9.3	78.6	<1
Apr 30/10	Shannon Road	16	18.9	128.5	<1
Dec 5/10	Route 177	5.9	10.0	63	4
Dec 5/10	Shannon Road	7.9	12.8	76	9
June 20/11	Route 177	2.6	4.6	98	<1
June 20/11	Shannon Road	5.2	7.7	129	1
Nov 21/11	Route 177	3.3	7.5	58	<1
Nov 21/11	Shannon Road	5.7	12.5	76	3

**SNOW AND ICE CONTROL PLAN**

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May 31/12	Route 177	12.9	9.2	80	3
May 31/12	Shannon Road	7.4	16.8	116	6
Dec 12/12	Route 177	8.0	14.8	74	<1
Dec 12/12	Shannon Road	10.5	18.2	99	5
June 17/13	Route 177	25	18.5	114	4
June 17/13	Shannon Road	13	8.3	72	4
Nov 15/13	Route 177	3.5	5.8	63	1
Nov 15/13	Shannon Road	4.9	9.2	81	5
June 19/14	Route 177	4.2	4.2	40	2
June 19/14	Shannon Road	6.8	6.8	55	3
May 15/15	Route 177	10.3	13.4	83	3
May 15/15	Shannon Road	6.7	8.9	56	<1
Nov 26/15	Route 177	3.1	4.8	52	2
Nov 26/15	Shannon Road	5.0	7.5	66	<1
Jun 2/16	Route 177	7.1	12.7	80	5
Jun 2/16	Shannon Road	11.4	17.8	118	4
Nov 28/16	Route 177	9.0	8.3	76	17
Nov 28/16	Shannon Road	6.0	12.3	102	8
July 5/17	Route 177	6.8	9.4	73	<1
July 5/17	Shannon Road	10.0	14.8	103	5
Nov 28/17	Route 177	7.3	13.4	94	4
Nov 28/17	Shannon Road	5.4	8.0	64	2
Jun 21/18	Route 177	16.9	28.1	149	<1
Jun 21/18	Shannon Road	20.9	36.4	184	2
Dec 10/18	Route 177	10.2	15.4	81	<1
Dec 10/18	Shannon Road	9.3	16.3	108	<1
June 11/20	Route 177	16.4	29.8	143	3
June 11/20	Shannon Road	21.4	39.1	186	4
Dec 8/20	Route 177	4.5	7.6	52	1
Dec 8/22	Shannon Road	5.8	10.7	64	3