



SNOW & ICE CONTROL PLAN  
FOR STREETS AND SIDEWALKS

TOWN OF GRAND FALLS  
PUBLIC WORKS DEPARTMENT

DECEMBER 2017

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**Disclaimer**

This plan is based on normal winter weather conditions, reliability and availability of resources both human and physical. The Town does not guarantee a level of service under abnormal or extreme winter conditions nor in the event of a work stoppage.

## 1.0 INTRODUCTION

### 1.1 General

The Town of Grand Falls currently plows and salts all public streets within its Town limits. All of these streets are asphalted, with the exception of new gravelled subdivision streets not yet asphalted, and a few kilometres of streets that are chip sealed.

The Town also clears the snow off sidewalks, parking lots and all fire hydrants.

### 1.2 Aim

To provide an effective and efficient level of service for snow and ice control in the Town of Grand Falls and to insure that this level of service is well understood by operators, supervisors, senior staff, Town Council and the public.

### 1.3 Mission

To provide a consistent level of snow and ice control in the Town of Grand Falls.

### 1.4 Policy

The Town of Grand Falls provides snow removal and ice control on Town streets and sidewalks according to pre-established priorities. Streets are prioritized based on their importance in the overall transportation network.

**Priority 1** - Streets are arterial and heavily travelled collector streets.

**Priority 2** - Streets are collectors and some heavily travelled local streets.

**Priority 3** - Streets are typically local streets.

Higher priority streets are serviced earlier in the storm response, and are given higher level of service.

## 2.0 RESPONSIBILITIES

The superintendent of the transportation division is responsible to the director of the public works department for snow and ice control in the Town of Grand Falls.

The superintendent or his designate is responsible for ensuring the winter storm response is in accordance with this Snow and Ice Control Plan. The superintendent, along with his foremen, will be familiar with this plan and will conduct winter maintenance tasks to achieve and maintain safe driving and ease of traffic flow.

The general procedures followed will be in accordance with established procedures.

- a) Priority 1 — Arterials and heavily travelled collectors
- b) Priority 2 — Collectors and heavily travelled locals
- c) Priority 3 — Local Streets

Please remember, you may not live on a priority one street but you probably drive on one. It is to everyone's benefit that these high volume streets are serviced first.

Evening, night and weekend crews play a critical role in storm response. While they ensure the Snow and Ice Control Plan is followed, they are expected to exercise judgment and respond to changing conditions.

The operators of all snow control and winter maintenance vehicles and equipment will operate in a safe and efficient manner at all times. They are responsible for ensuring their vehicles and equipment are in a safe and mechanically ready state. Operators will also 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 supervisors if there are any problems or difficulties with their equipment, both at the start of or during the storm response.

### 3.0 PROCEDURES

Specific policies and procedures have been developed over a number of years and are based on experience, available resources and the expectations of Council and the community.

#### Procedure for Snow and Ice Control During Snowfall Conditions

1. From 8am to 5pm Monday to Friday it's the superintendent or his designate who will patrol the streets within the Town limits during and after snow and ice events. A decision will be made concerning what type of vehicle and how many will be used to clear snow and ice from the streets. For example, a light snowfall may require salt trucks only. Whereas if snowfall increases, additional vehicles may be necessary – this could include loader plows or truck plows. Heavy snowfall may require all available vehicles and equipment.
2. Statutory holidays and at all hours, other than 8am to 5pm Monday to Friday; the Grand Falls Police force will patrol the streets within Town limits. If they judge that the streets are icy and or snow have accumulated, they will call the on-call Public Works personnel to advise them of the streets conditions. A decision will then be made concerning what type of vehicle and how many will be used to clear snow and ice from the streets.
3. Ice conditions by themselves or combined with snow, may require special operations. This may include extra salting/sanding of intersections, heavily traveled routes and/or hills.
4. The superintendent will exercise judgment on what types of vehicles and equipment will be used with each situation. Factors that contribute to these decisions includes light snow, heavy wet snow, ice, ice pellets, time of day, day of week, etc. Other factors include experience of personnel, available equipment, safety concerns, etc.

### 4.0 SNOW PLOWING

#### 4.1 Objective

The snow plowing objective is to plow all streets to the travelled surface width within eight (8) hours of storm ending for snowfalls up to 30 centimetres. For snowfalls above 30 centimetres, the objective is to clear the snow as soon as available equipment and personnel will allow.

The amount of snow received during each event and the type often varies (wet/heavy, dry/powder, combinations of each) and this can either positively or negatively effect the times stated above.

Levels of service for specific types of roadways are provided in Appendix A. The street classification map is provided in Appendix C.

#### 4.2 Initial Operation

Initially, salt is spread on all arterial and some collector streets as storm begins. This step eliminates the freezing of the first snowfall and makes the “bare pavement” goal more achievable. In many cases of light snowfall, this is all that is required. Upon the accumulation of four to eight centimeters of snow, the salt truck operators commence plowing and the other plow operators are called in.

For snow plowing operations, the Town is divided into seven (6) zones with the equipment assigned to each zone being the best suited for the anticipated road conditions (see Appendix D for drawings showing the plowing routes of each zone). Appendix H provides a list of the equipment available for snow and ice control. Plowing continues on these routes until the snow has stopped falling and all the streets are plowed. As well, the crews normally make a pass over the streets after the snowfall ends to widen the streets and clear the intersections. However, depending on the length of the storm or the build-up of snow on the edge of the street, it is sometimes necessary that this widening take place after the crews have rested.

#### 4.3 Road Hazards

Plowing on municipal streets is not the same as plowing on the open road. Municipal plowing is usually at slower speeds. The streets are shorter between intersections and there are many hazardous structures such as manhole covers, valve boxes, railway tracks, etc., which often project above the street surface. In the fall the work crews make adjustments to eliminate these hazards but they often reappear through frost action. Curbs are also difficult to locate during snowstorms; steel markers are therefore placed in the fall at strategic locations to assist the operators to avoid lawn damage. In order to familiarize the equipment operators with their routes and these hazards, the operators in the various zones will travel their districts with their supervisor prior to snowfall. This process also increases their productivity and minimizes equipment damage.

#### 4.4 Sidewalks

Sidewalks are plowed and salt/sanded according to the following priorities:

##### Priority 1

1. *Sidewalks on heavily traveled arterial streets*
2. *Sidewalks near school zones*

##### Priority 2

3. *Sidewalks on less travelled arterial streets and collector streets*
4. *Remaining sidewalks*

Please note that 300m of sidewalks will not be cleared from snow on Madawaska Road North side, from Soucy lane to Park Street. Also sidewalk on overpass bridge located on Madawaska Road will not be cleared from snow.

See Appendix F for the Sidewalk Snow Clearing Map.

The objective is that all Priority 1 sidewalks will be cleaned of snow within 24 hours from the end of the snowfall for snow storms up to 30 centimetres. When we receive larger snow accumulations, it may take as long as 72 hours depending on the type of snow (wet and heavy, powder, etc.), the previous accumulations, equipment and staff availability.

All sidewalks in Priority 2 will be cleaned from snow after the sidewalks in Priority 1 have been cleaned from snow and this during regular hours. The objective is to complete the snow clearing operations in the three (3) days after the sidewalk snow has been removed as per Priority 1.



NOTE: It is not the Town's intention to have bare sidewalks during the winter season. Snow will be removed and sand provided to improve traction.

#### 4.5 Parking Lots

As a general rule, parking lots are cleared after streets have been plowed. The objective is that parking lots will be cleared within eight (8) hours of the snow event end. Snow will be stockpiled at strategic locations in the parking lots to minimize lost parking spaces. When deemed necessary the stockpiled snow will be hauled to the snow dump. (See Appendix E for the list of parking lots.)

#### 4.6 Damage Due to Snow Plowing

Public works staff are alerted to damages due to snow removal by other Town employees, by a member of the public, or through routine checks.

##### 1. Lawn Damage

Information regarding lawn damage due to snow removal is relayed by public works and dispatch to the foreman for investigation and scheduling of repairs.

The department will maintain a list of properties with lawn damage, and the repairs will be scheduled to begin in the spring (when growing medium is available).

The foreman ensure that employees who perform this work are trained for, or experienced in, the proper procedure for repairing lawn damage, and appropriate precautions are taken to ensure the safety of Town employees and the public. Every effort is made to minimize disruption in the work area.

### **5.0 SNOW REMOVAL**

After the initial snow plowing operations are completed, snow could be removed, depending on conditions, from the sides of selected streets. This is accomplished by loading the snow into trucks and hauling it to specifically identified locations for disposal (snow dumps), or blowing the snow off the street and sidewalk to the adjoining area. Town staff and equipment as well as hired equipment and trucks are utilized for this operation.

Also, if accumulations warrant, snow could be hauled from major intersections to improve sight distances.

There are not enough resources available to remove snow from the sides of all Town streets, however if deemed necessary for public safety reasons, streets can be widened by blowing the snow in back of the sidewalks, curbs or ditches.

#### 5.1 Fire Hydrants

The clearing of snow around the Town's fire hydrants begins after the plowing of streets is completed and the clearing of sidewalks is under way. Fire hydrants will not necessarily be cleaned of snow after each snow storm. The superintendent, in cooperation with his foremen, will decide if the accumulation of snow around the fire hydrants and/or the snow bank along the street in front of the fire hydrant warrants the clearing operation to be activated. The objective is to clear the snow from fire hydrants as soon as available equipment and personnel will allow. For snow clearing around fire hydrants, Town equipment is used.

The Town will encourage residents to “Adopt a Hydrant”. Citizens can voluntarily clear snow from fire hydrants serving their neighborhood. Such efforts by the residents are in their own best interest as it affords better fire protection to their own property as well as their neighbours.

## 5.2 Snow Dumps

The Town will maintain two (2) snow dumps for snow disposal. One located on Ennishore Road and one on West River Road (old municipal landfill site). Sites are identified on the map illustrated in Appendix G.

Each of the snow dump sites used through the winter will be cleaned of any garbage and debris once the snow has melted in the spring.

## **6.0 SALT AND SAND OPERATIONS**

Sodium chloride remains the chemical of choice for snowstorm situations.

### 6.1 Storage

All salt is stored indoors in a weather resistant salt storage building at the Public works garage, specifically designed for salt storage. The site of the salt dome is constructed in such a way that water flows away from the building. The salt dome has an impermeable floor that protects migration of salt into the ground. It has the capacity to store approximately 300 tonnes of salt. After each salt spreading operation, any unused salt is returned to the salt storage building for storage.

All sand is blended with salt to prevent it from freezing, and is stored in the same building as the salt, in a separate area.

### 6.2 Initial Operation

As previously mentioned, Town streets are salted at the commencement of a snowstorm or freezing rain. Salt trucks are also dispatched for salt spreading at the end of the storm to assist in achieving bare pavement.

### 6.3 Sand

In Grand Falls, sand is used on the paved streets as the temperatures drop below the levels of effectiveness for salt. However, when the temperatures do drop below these levels, the streets are sanded in the same manner, as they would have been salted. Sanding rates tend to be higher than salt because it is used as an abrasive rather than a de-icer. Sanding impacts negatively on street cleanliness, sewer cleaning requirements and air quality.

### 6.4 Accidental Salt Spills

If a significant amount of road salt is spilt, such as from an overturned truck, the Public works department shall be advised by calling the following numbers: (506)-475-7762, Public Works’ staff will clean up the site as soon as possible and reuse as much of the salt as possible.

### 6.5 Critical Areas

During freezing rainstorms and when temperatures drop after a period of thawing, there are critical areas where vehicle movements can become treacherous and sometimes impossible. These occur at major intersections, main routes, hills, bridges and runoff areas. These critical areas are the first to be salted or sanded in the various districts. In many instances these are the only areas, which require salting and sanding.

The order of priority is as follows:

Arterials and collectors – salted within three (3) hours.

Local streets – salted or sanded within four (4) to six (6) hours.

### 6.6 General operations

Levels of service for specific types of roadways are provided in Appendix A. The street classification map is provided in Appendix C.

Unless otherwise specified by the superintendent, no salt is applied on chip sealed streets (example: section of Theriault Street and section of Harley Hill Street) and on gravelled streets. Only sand is to be applied on these streets. For safety reasons, the superintendant may change this procedure.

Salting rates are based on road surface temperature not ambient temperature.

Maximum operating speed for salt/sand applications is 40 km/h.

## Appendix A

### Level of service for roadway types

Arterial and heavily travelled collector streets receive the highest priority. These streets are plowed continuously during the snowstorm, where possible (see guidelines below). The ice control service utilizes controlled salting to maintain clear driving lanes during and following a storm, and a bare centre strip.

Collectors and heavily travelled local streets are plowed after five centimetres of snow accumulation. Salting / sanding is carried out following the storm so as to maintain bare pavement full width.

Local streets are plowed after five to eight centimetres accumulation of snow; salting is carried out for ice control. The level of service accepts a snow packed street with hills, curves, intersections and hazardous areas treated with salt.

<b>Arterials and heavily travelled collectors (Priority 1)</b>	<ol style="list-style-type: none"> <li>1. <i>Start immediately plowing and salting at the beginning of the snowstorm. Plowing should start as soon as slush begins to form.</i></li> <li>2. <i>Plow continuously during storm, visibility permitting.</i></li> <li>3. <i>Normally plowed to bare pavement, shoulder to shoulder, within three to four hours after storm ends.</i></li> </ol>
<b>Collectors and heavily travelled local streets (Priority 2)</b>	<ol style="list-style-type: none"> <li>1. <i>Plow after five centimetres of snow.</i></li> <li>2. <i>Salt as required during the storm.</i></li> <li>3. <i>Salting of the entire streets takes place after the storm.</i></li> <li>4. <i>Normally plowed to bare pavement, curb to curb, within five to six hours after storm ends.</i></li> </ol>
<b>Local streets (Priority 3)</b>	<ol style="list-style-type: none"> <li>1. <i>Start plowing after five to eight centimetres of snow.</i></li> <li>2. <i>Salt at intersections during the storm.</i></li> <li>3. <i>Salting of hills, curves, intersections and icy spots takes place after the storm.</i></li> <li>4. <i>Normally plowed, curb to curb, within six to eight hours after storm ends.</i></li> </ol>

NOTE: The completion times in the above table are based on a snowstorm of magnitude up to 30 cm.

The public works superintendent ensures that employees who perform this work are trained for, or experienced in, the proper procedure for winter maintenance (snow and ice removal), and appropriate precautions are taken to ensure the safety of Town employees and the public.

**Appendix B**

## Application rates for road salt

Kilograms per lane kilometer

Pavement temperature	Priority 1	Priority 2	Priority 3
0°C and above	55 kg	55 kg	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/lane km C. Apply salt/sand mix as necessary		

NOTES

LÉGENDE / LEGEND

ARTÉRIELLES / ARTERIAL	<div></div>
COLLECTRICE / COLLECTOR	<div></div>
LOCALE / LOCAL	<div></div>
MAINTENUES PAR SNC-LAVALIN / SERVICED BY SNC-LAVALIN /	<div></div>
MAINTENUES PAR AUTRES / SERVICED BY OTHERS /	<div></div>
LIMITES DE GRAND-SAULT / GRAND FALLS LIMITS	<div></div>

NO.	DATE	REVISIONS	Par: By:



TRAVAUX PUBLICS / PUBLIC WORKS

Project Projet

PLAN DE DÉNEIGEMENT ET DE DÉGLAÇAGE /  
SNOW & ICE CONTROL PLAN

Drawing Title Titre du Plan

ANNEXE / APPENDIX C  
CARTE DE CLASSIFICATION DES RUES /  
STREET CLASSIFICATION MAP

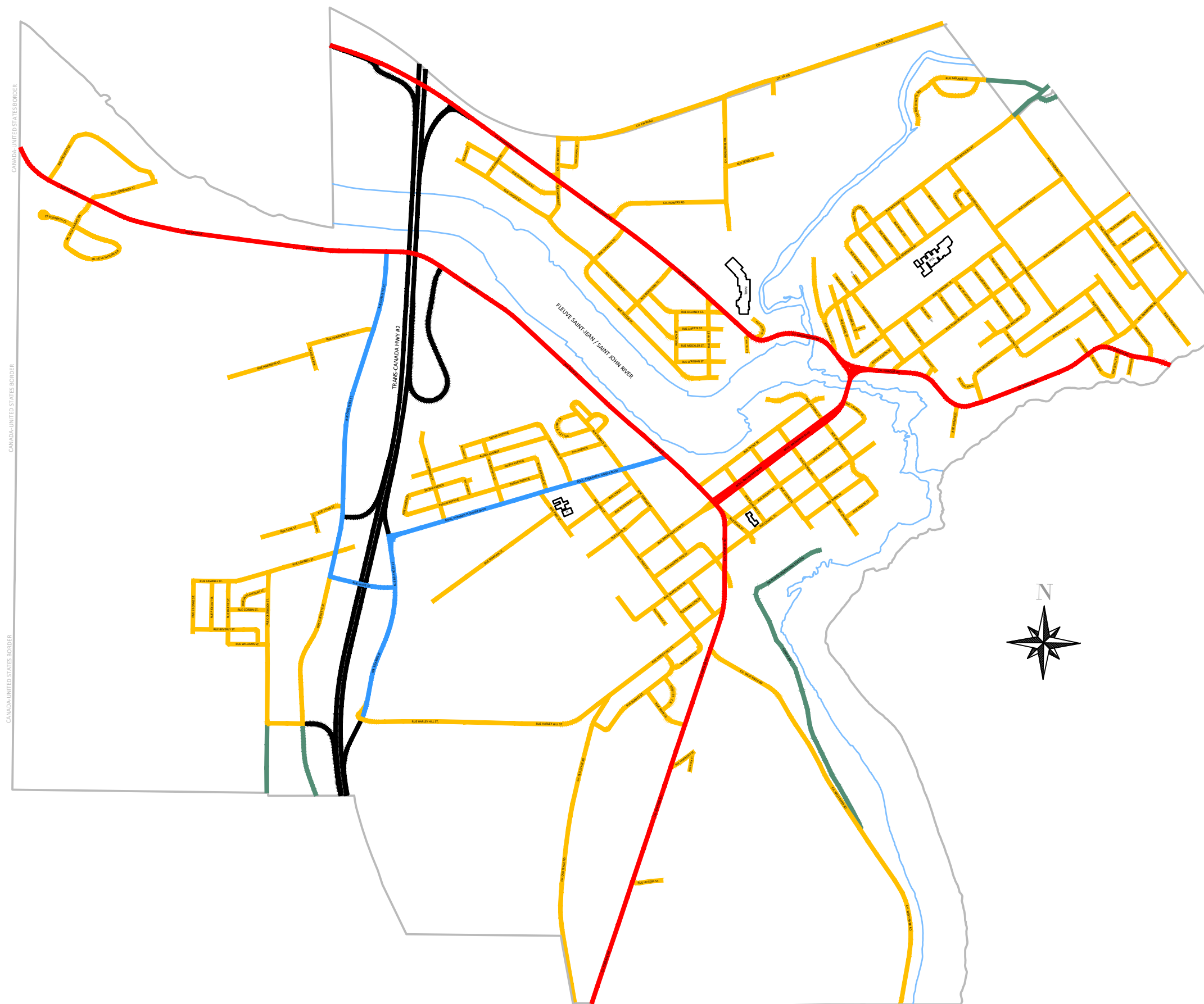
Drawn by: M.GAGNON

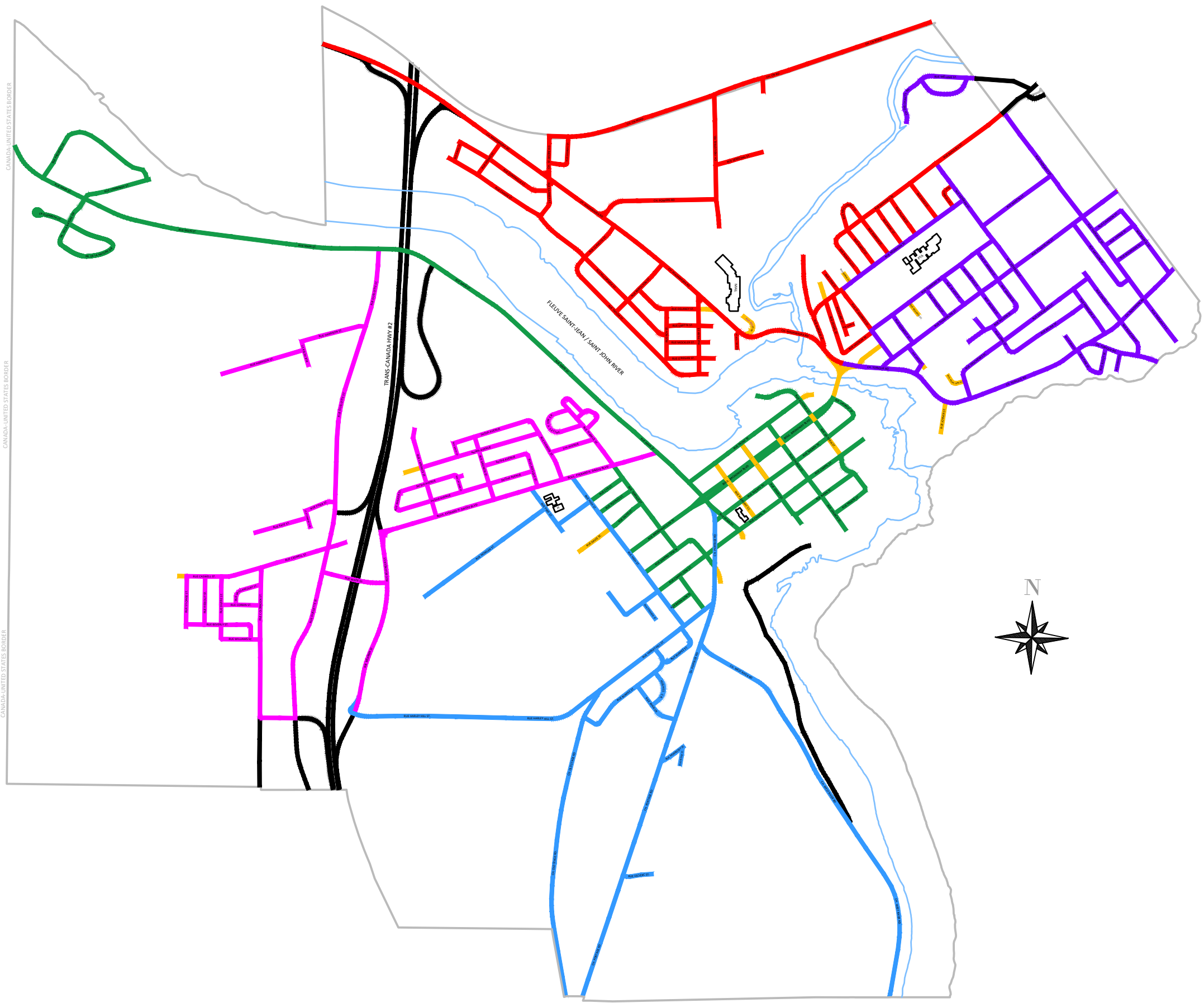
Date: 11/29/2017

Scale: NTS

Drawing Number:

Rev.  
00





NOTES

LÉGENDE / LEGEND

PLOW TRUCK NO.22	<div></div>
PLOW TRUCK NO.11	<div></div>
PLOW TRUCK NO.7	<div></div>
PLOW TRUCK NO.42	<div></div>
LOADER NO.40	<div></div>
LOADER NO.21	<div></div>

NO.	DATE	REVISIONS	Par: By:



TRAVAUX PUBLICS / PUBLIC WORKS

Project  
Projet

PLAN DE DÉNEIGEMENT ET DE DÉGLAÇAGE /  
SNOW & ICE CONTROL PLAN

Drawing Title  
Titre du Plan

ANNEXE / APPENDIX D  
ITINÉRAIRES DE DÉNEIGEMENT DES RUES /  
SNOW PLOWING MAP

Drawn by: M.GAGNON

Date: 12/01/2017

Scale: NTS

Drawing Number:  
Rev.  
00



**Appendix E**

## Parking Lots

Location
Town Hall 131 Pleasant Street
Golden Age Club 125 Manse Street
Water Treatment Plant 412 Main Street
Marina 499 M <sup>c</sup> Cormick Street
Cross-Country Skiing Parking End of Caswell Street
Centre E.P. Sénéchal Center 60 Ouellette Street
Roman Catholic Church (parking on other side of street only) 355 Chapel Street
Roman Catholic Church 226 St-George Street
United Church of Canada 116 Church Street
United Baptist Church 96 Court Street

# NOTES

## LÉGENDE / LEGEND

PRIORITÉ 1 / PRIORITY 1	<div></div>
PRIORITÉ 2 / PRIORITY 2	<div></div>
MAINTENUES PAR AUTRES / SERVICED BY OTHERS /	<div></div>
LIMITES DE GRAND-SAULT / GRAND FALLS LIMITS	<div></div>

NO.	DATE	REVISIONS	Par: By:



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PLAN DE DÉNEIGEMENT ET DE DÉGLAÇAGE /  
SNOW & ICE CONTROL PLAN

Drawing Title Titre du Plan

ANNEXE / APPENDIX F  
CARTE DE DÉNEIGMENT DES TROTTOIRS  
SIDEWALK SNOW CLEARING MAP

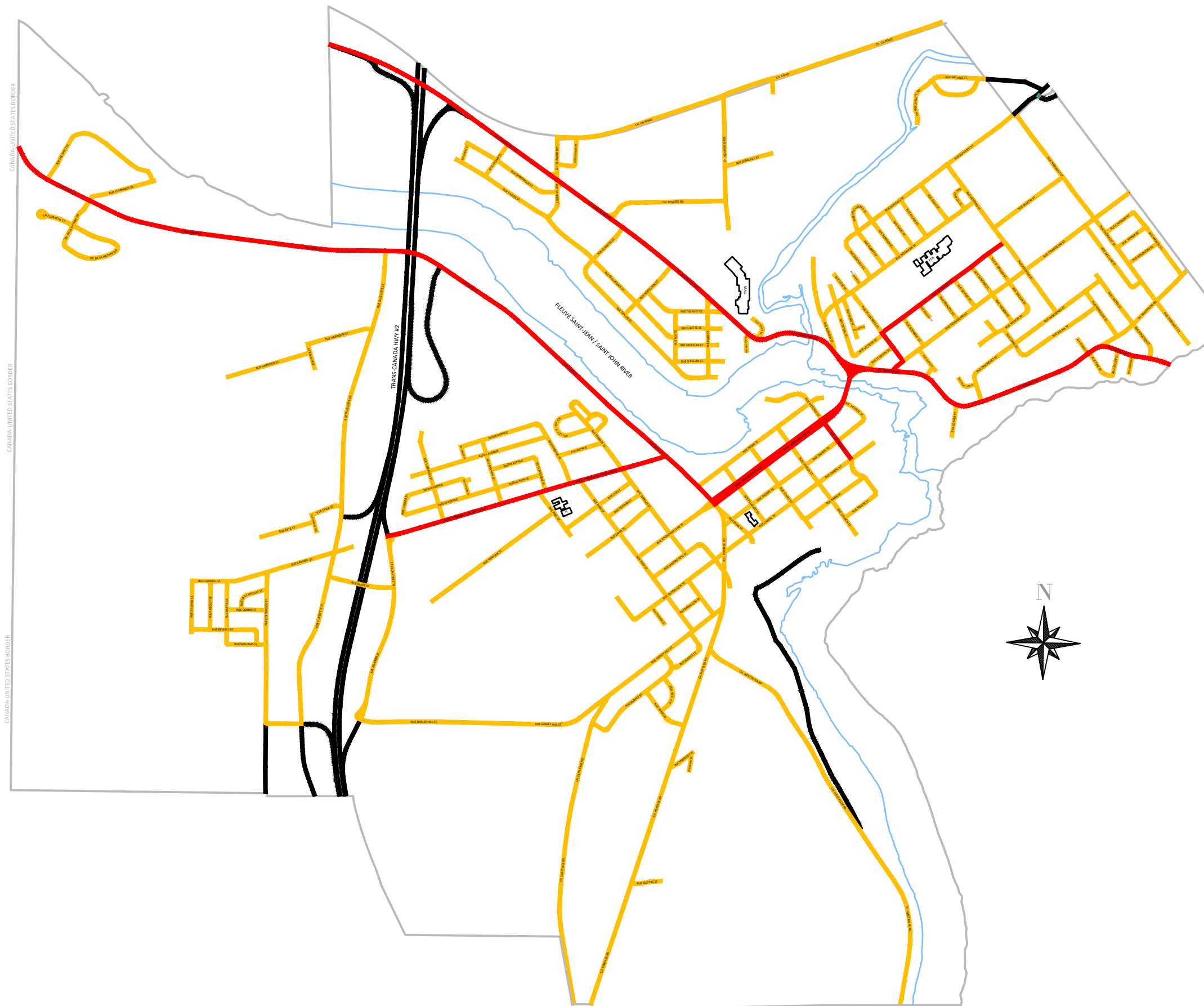
Drawn by: M.GAGNON

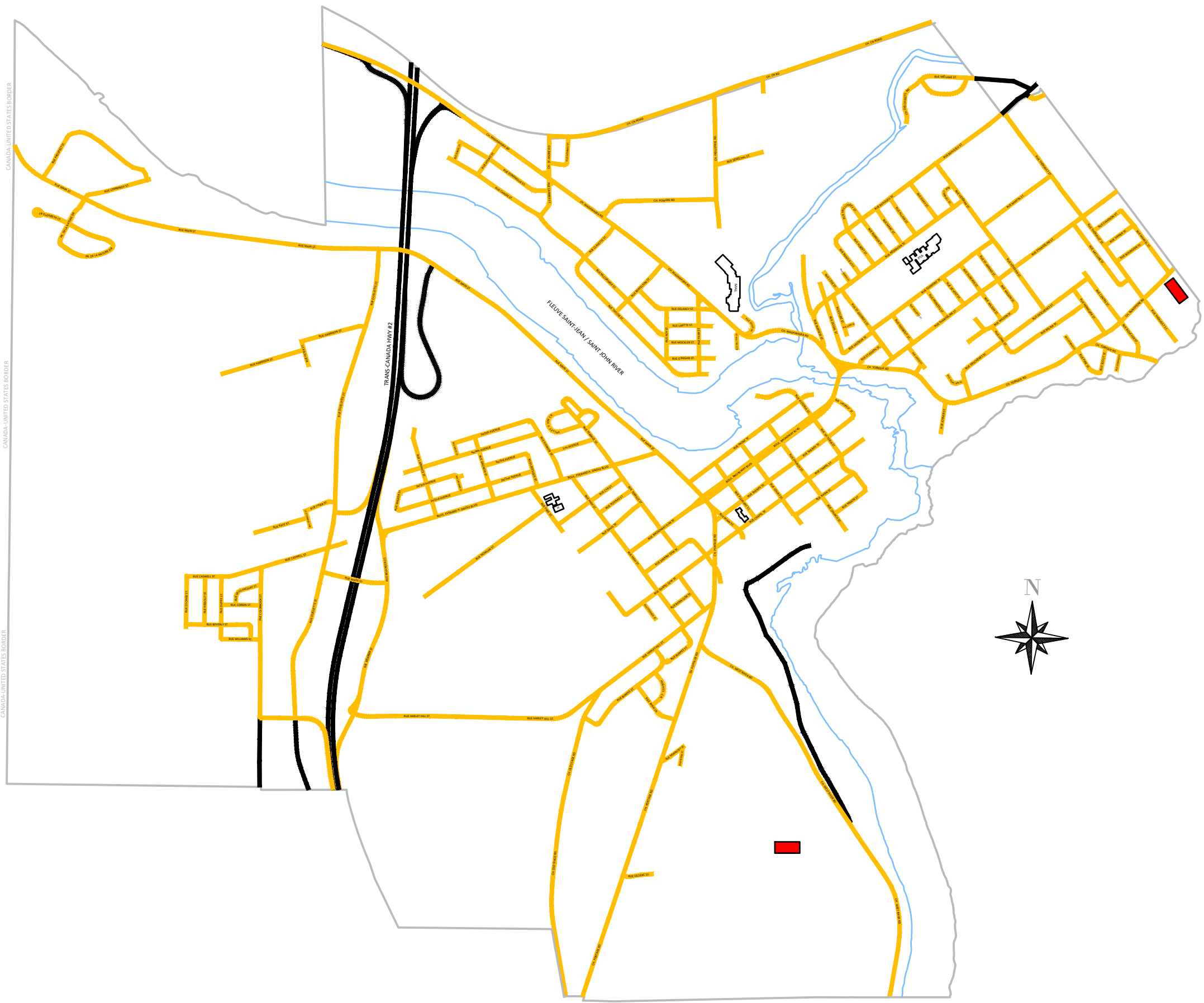
Date: 12/01/2017

Scale: NTS

Drawing Number:

Rev.  
00





NOTES

LÉGENDE / LEGEND

- SNOW DUMPS
- STREETS
- LIMITES DE GRAND-SAULT / GRAND FALLS LIMITS

NO.	DATE	REVISIONS	Par: By:



TRAVAUX PUBLICS / PUBLIC WORKS

Project  
PLAN DE DÉNEIGEMENT ET DE DÉGLAÇAGE /  
SNOW & ICE CONTROL PLAN

Drawing Title  
ANNEXE / APPENDIX G  
CARTE DES DÉPOTOIRS DE NEIGE  
SNOW DUMPS MAPS

Drawn by: M.GAGNON  
Date: 12/04/2017  
Scale: NTS  
Drawing Number: Rev. 00

**Appendix H****Snow and Ice Control Equipment List****Public Works Department**

- 3 tandem trucks with front blade and wing; also used for road salting and sanding;
- 2 tandem trucks with front blade and wing;
- 1 seven (7) tons truck with front blade; also used for road salting and sanding;
- 1 loader with front blade and wing;
- 1 loader with front blade;
- 1 Larue snow blower to hook up to a loader – Capacity: 3,000 tons per hour;
- 2 sidewalk tractors with blades, blower and salt spreaders;
- 1 backhoe;

**Recreation, Tourist and Culture**

- 1 loader with front blade and wing;
- 1 tractor with blade (or bucket) and blower.

## Appendix I

### Snow Tips

There are a few things you can do to help yourself:

Sometimes it takes several passes with the maintenance equipment to completely clear the street. Wait until plowing operations are completed and you will only have to shovel your driveway once.

When you shovel your driveway, place the snow on the "downstream" side so your driveway won't be filled in the next time the plow comes by.

Gear up for winter. Keep your car well tuned, and keep adequate supplies of salt and sand on hand for your driveway.

There are things you can do to help the Town's crews:

- Observe snow bylaw (bylaw #82).
- Don't park overnight on any Town street from November 1st to second week of April.
- Don't push snow from a driveway or parking lot onto a Town street or sidewalk.
- Don't park your vehicle at the end of your driveway in a way that would impede the Town equipment.
- To help prevent localized flooding, try to keep the catch basin adjacent to your property free from ice and snow.
- Please don't place garbage or garbage containers where they can be buried, damaged or interfere with snow removal operations.
- Avoid unnecessary spinning of tires at intersections. This practice is dangerous and is hazardous to other motorists. It also tends to "ice up" the intersections.
- ADOPT A FIRE HYDRANT – If there is a fire hydrant in front of or near your property, you may remove the snow from around it and make it accessible for emergencies. Help us to help you.

### "DRIVE CAREFULLY"

The Public Works Department attempts to minimize the impact of snow and ice for our residents. However, it is each motorist's responsibility to drive according to the road conditions. If it is slippery, please slow down.