# SURFACED ROADS WINTER MAINTENANCE

**Operations Plan** 



# **Table of Contents**

Purp	oose	1
Defi	nitions	2
1.0	Winter Operations Objective	3
2.0	Policy Statement	3
3.0	Winter Maintenance Program	4
3.	1 The System Maintained	4
3.	2 Level of Service	4
3.	3 Winter Maintenance Season	5
3.	4 Winter Preparations	5
	3.4.1 Prior to the Winter Season	5
	3.4.2 One Month Prior to the Winter Season	6
	3.4.3 Two Weeks Prior to the Winter Season	6
	3.4.4 Start of the Winter Season	6
3.	5 Winter Patrol	6
3.	6 Operations	7
	3.6.1 Staffing and Hours of Work	7
	3.6.2 Winter Materials Used Annually (Metric Tonnes)	7
	3.6.3 Application Rates	7
	3.6.4 Equipment	7
	3.6.5 Yard Facilities	7
	3.6.6 Snow Removal & Disposal	8
	3.6.7 Weather Monitoring	8
	3.6.8 Communications	8
	3.6.9 Call-Out Procedures	8
	3.6.10 Road Closure Procedures	8
3.	7 Decommissioning Winter Operations	9
	3.7.1 Two Weeks After the Winter Season Ends	9
	3.7.2 One Month After the Winter Season Ends	9
3.	8 Training	9
3.	9 Record Keeping	9

4.0	Plan Improvements	10
5.0	Monitoring & Updating	10
App	pendix 1: Snow Plow Routes by Beat	12
Вє	eat 1	12
Ве	eat 2	13
Вє	eat 3	14
Вє	eat 4	15
App	pendix 2: Temporary Road Closure Procedures	16
App	pendix 3: Speed Plow Snow Removal Procedures	17
Di	iagram A: Plowing at Railway Crossing (Option 1)	19
Di	iagram B: Plowing at Railway Crossing (Option 2)	20
App	pendix 4: Equipment	21
Apr	pendix 5: On-Call Schedule	22

### **Purpose**

This Surfaced Roads Winter Maintenance Operations Plan sets out a procedural framework for ensuring that the County of Vermilion River continuously improves on the effective delivery of winter maintenance services and the management of road salt used in winter maintenance operations, as outlined in Environment Canada's Code of Practice for the Environmental Management of Road Salts.

The plan is meant to be dynamic; to allow the municipality to evaluate and phase-in any changes, new approaches and technologies in winter maintenance activities in a fiscally sound manner.

As specified in the Code of Practice for the Environmental Management of Road Salts, the Surfaced Roads Winter Maintenance Operations Plan for the County of Vermilion River was presented to Council on March 31, 2020.

# **Definitions**

De-Icing	The application of solids, liquids, or pre-treated material to the road surface after the on-set of the winter event.
Highway	Includes a common and public highway, street, avenue, parkway, bridge, or any part of which is intended for or used by
g2,	the public for the passage of vehicles and includes the area between the lateral property lines thereof.
Paved Road	A road with an asphalt surface, concrete surface, composite pavement, or port-land cement.
Pre-Treat	The application of liquids (calcium chloride, sodium chloride, etc.) to dry sand or salt prior to being loaded for storage or applied to the road surface.
Pre-Wetting	The application of liquids (calcium chloride, sodium chloride, etc.) at the spinner of the truck just prior to application to the road surface.
Surface Treated Road	Road with bituminous surface treatment comprised of one or two applications of asphalt emulsion and stone chips over a gravel road.
Unpaved Road	Road made up of any combination of a loose mixture of pebbles and rock fragments coarser than sand.
Winter Event	A weather condition affecting roads such as snowfall, windblown snow, freezing rain, frost, black ice, etc. to which a winter event response is required.
Winter Event Response	A series of winter control activities performed in response to a winter event.
Continuous Winter Event Response	A response to a winter event with full deployment of manpower and equipment that plow, salt, and/or sand the entire system.
Spot Winter Event Response	A response to a winter event with only a partial deployment of manpower and equipment or with full deployment to only part of the system.
Winter Event Response Hours	The total number of person hours per year (plowing, salting/sanding, winging back, etc.) to respond to winter events.

# 1.0 Winter Operations Objective

The County of Vermilion River is committed to improving winter maintenance operations while continuing to ensure public safety. The County of Vermilion River will optimize the use of winter maintenance materials, containing chlorides, on all municipal roads while striving to minimize negative impacts to the environment. The County of Vermilion River Public Works staff will strive, as reasonably practical, to provide safe winter surfaced road conditions for vehicular and pedestrian traffic within the resources established by the Council of the County of Vermilion River.

# 2.0 Policy Statement

The County of Vermilion River will provide efficient and cost effective winter maintenance to ensure, as reasonably practical, the safety of users of the municipal road network in keeping with Alberta legislation and accepted standards while striving to minimize adverse impacts to the environment. These commitments will be met by:

- Adhering to the procedures contained within the Surfaced Roads Winter Maintenance Operations Plan (SRWMOP).
- Reviewing and/or upgrading the SRWMOP on an annual basis to incorporate new technologies and developments.
- Committing to ongoing winter maintenance staff training and education.
- Monitoring, on an annual basis, the present conditions of the winter maintenance program, as well as the effectiveness of the SRWMOP.

# 3.0 Winter Maintenance Program

#### 3.1 The System Maintained

The major activities related to winter maintenance are:

- De-icing
- Snow plowing
- Salt/sand application
- Salt/sand storage
- Snow removal
- Snow storage
- Sidewalk plowing and de-icing

The County is responsible for winter maintenance on:

Paved Roads	110 km
Surface Treated Roads	142 km
Hamlets	39 km
Subdivisions	40 km
Gravel Roads	2855 km
Back Roads	645 km

#### 3.2 Level of Service

The County provides the following level of service during the winter maintenance season:

#### **Weather Monitoring**

1) From November 1 to April 30, the minimum standard is to monitor the weather, both current and forecasted, which is to occur in the next 24 hours. In addition, a visual weather check is completed by the on-call staff at 2:00 AM and 4:00 AM. On-call staff will reference, as per **Section 3.6.7 Weather Monitoring**, provincial roadway cameras on both Alberta 511 and NAV Canada websites.

#### **Snow Accumulation**

- 1) The minimum standard for addressing snow accumulation is 8 cm on gravel and 2.5 cm on pavement.
  - a. After becoming aware of the fact that the snow accumulation on a roadway is greater than 8 cm on gravel and 2.5 cm on pavement, on-call staff deploy resources as soon as possible to address the snow accumulation.
  - b. After the snow accumulation has ended, crews will continue plowing and de-icing (salt & sand) highways to provide a full lane width of safe driving conditions.
- 2) If the depth of snow accumulation on a roadway is less than or equal to 8 cm on gravel and 2.5 cm on pavement, the roadway will be evaluated to assess whether it is deemed to be in safe driving condition. If conditions are such that

there is an accumulation of wet snow with temperatures conducive to the possibility of roadway ice build-up, snow-plow sanding/salt trucks will be dispatched.

#### Ice Formation on Roadways & Icy Roadways

The minimum standard for the prevention of ice formation on roadways is completing the following:

- 1) Monitor the weather
- 2) Patrol highways
- 3) If on-call staff determines that there is substantial probability of ice forming on a roadway, staff will treat the roadway to prevent ice formation within one hour with a salt & sand application to mitigate black ice conditions.

#### 3.3 Winter Maintenance Season

The winter maintenance season within which the County will perform winter highway maintenance typically commences on November 1 and is completed April 30. For snow events outside of this time period, the County will manage the snow event as per **Section 3.4.2**.

#### 3.4 Winter Preparations

In the months prior to the start of the winter maintenance season (as identified in Section 3.3) the County undertakes the following tasks to prepare for the upcoming winter season.

#### 3.4.1 Prior to the Winter Season

Prior to the winter season, if required, administration will prepare and call tenders for the supply of materials (salt) and replacement parts (for plows, sanding application equipment).

Prior to the winter season the County will:

- Conduct a training session for staff where all policies, procedures, schedule, reporting procedures for call-out, route maps, equipment training and safety precautions will be discussed. Any issues resulting from the meeting regarding the policies, procedures, schedules, reporting procedures for call-out, route maps, equipment training and safety precautions shall be resolved either at the meeting or prior to the winter season.
- 2) Train winter patrollers (or staff whose duties also include patrolling) on:
  - a. The route(s) to be patrolled between winter events
  - b. Their duties during a winter event
  - c. Record keeping requirements
  - d. Call-out procedures
  - e. De-icing material(s) to be applied for the forecasted weather conditions
- 3) Inspect equipment to ensure proper working order. Schedule and complete all equipment repairs.

- 4) Arrange for the delivery of pickled sand to both the Kitscoty Public Works Maintenance yard and the Dewberry yard and begin filling storage facilities. The pickling of sand is completed prior to the start of the winter season by a contractor, blended at a rate of 21 litres of calcium chloride to 1 tonne of sand. Prior to the pickled sand being spread on the roads, it is mixed with approximately 15% salt. Pending the type of weather event, the salt may be mixed at a higher percentage, if necessary.
- 5) Confirm that all guardrail, catch basin, manhole covers, hazard and fire hydrant markers, if any, are in place. Any missing markers will be replaced prior to the winter season.

#### 3.4.2 One Month Prior to the Winter Season

One month prior to the winter season the County will:

- 1) Post the winter shift schedule (Appendix 5)
- 2) Assign equipment to staff
- 3) Calibrate material application equipment
- 4) Allow operators time to familiarize themselves with any new equipment, material application rates, material application equipment and their route (driving the route and noting obstacles along the route).
- 5) Assign staff to monitor weather forecasts daily. Assign night patrol shift if forecast indicates an overnight winter event is probable. The patrol person will be authorized to initiate a winter event response if conditions warrant it.
- 6) Have four snow plow fleet units ready to respond to a winter event.
- 7) Have sufficient staff available to operate the fleet if conditions warrant a winter event response.

#### 3.4.3 Two Weeks Prior to the Winter Season

Two weeks prior to the winter season the County will:

- 1) If dictated by forecasted weather, begin regularly scheduled night patrols of representative roads.
- 2) Have 100% of the required complement of snow plow fleet trucks ready to respond to a winter event
- 3) Have staff available to operate the required complement of snow plow fleet trucks, in response to a winter event, if required.

#### 3.4.4 Start of the Winter Season

At the start of the winter season the County will:

- 1) Implement the winter shift schedule (Appendix 5)
- 2) Begin patrolling representative roads
- 3) Respond to winter events as per the SRWMOP

#### 3.5 Winter Patrol

During the winter maintenance season, the County carries out a winter patrol on a route of representative roads. The purpose of the patrol is to monitor and record weather and road conditions, in addition to mobilizing winter maintenance operators and equipment should a winter event be observed. On the approach of a winter event

or during a winter event, the route of representative roads may be modified depending on the type and severity of the winter event or the direction from which the winter event approaches.

The patrol person(s) will be familiar with local conditions in their patrol area and journalize road and weather conditions as well as any actions taken during the shift.

#### 3.6 Operations

#### 3.6.1 Staffing and Hours of Work

The County has a full-time Public Works employee assigned to each snow removal/de-icing vehicle used for winter operations. Each vehicle is assigned a route for sanding/salting and/or plowing. (Appendix 5)

The County adheres to the hours of work as set out in the Employment Standards Code.

#### 3.6.2 Winter Materials Used Annually (Metric Tonnes)

Material	2015/2016	2016/2017	2017/2018	2018/2019	4 Year Average
Rock Salt (NaCl)	300	400	450	500	413
Sand	2000	2300	2600	3000	2475
Sand & Salt Mix	2300	2700	3050	3500	2888

#### 3.6.3 Application Rates

Typically, an application rate of 0.5 tonnes of sand & salt mix is applied per lane kilometer. Application rates may vary depending upon the type and severity of the winter event.

#### 3.6.4 Equipment

The County provides 4 (plus 1 spare) plow trucks and 2 loaders for the winter maintenance of 4 plow route areas and 24 subdivisions/multilots. Additional equipment (skid steer, grader, and one-ton plow truck) is utilized in hamlets.

#### 3.6.5 Yard Facilities

The County provides winter maintenance services from the patrol yards listed below. Each patrol yard has a front end loader capable of loading the winter maintenance fleet with sand and/or salt.

#### 1) Kitscoty Yard (505040 Hwy 897- North of Kitscoty)

Equipment Storage: Heated 5 bay shop with 4 parking bays and 1 wash bay Material Storage: Winter sand/salt is placed inside a tarped building capable of holding 2000 tonnes of mixed material and approximately 300 tonnes of salt.

#### 2) Dewberry Yard (159 Railway Ave, Dewberry)

Material Storage: Winter sand/salt is placed inside a tarped shed capable of holding 1000 tonnes of mixed material.

#### 3.6.6 Snow Removal & Disposal

Currently, as needed, a County owned property is utilized to store snow.

#### 3.6.7 Weather Monitoring

From November 1st to April 30th, the minimum standard is to monitor the weather, both current and forecasted (to occur in the next 24 hours), once per day or more frequently if weather conditions dictate.

In order to determine an effective winter event response and allocate the appropriate resources, the County supplements road patrol information with weather information from various sources which includes but is not limited to:

- Observations from staff and communication with staff at adjacent municipalities.
- Customized weather forecasts which are updated 4 times per day from a value added.
- Meteorological Services (Environment Canada)
- Monitoring websites; <a href="https://511.alberta.ca">https://s11.alberta.ca</a> and <a href="http://metcam.navcanada.ca">http://metcam.navcanada.ca</a>

#### 3.6.8 Communications

All winter maintenance vehicles are equipped with two-way communication devices (radio, cell phone) Staff are responsible for reporting changing winter weather and/or road conditions as the changes are observed.

The County provides a call center which serves as the main hub for ingoing and outgoing calls from staff, emergency services, and the public.

#### **Call Center Details:**

- 780-846-2244 (Monday to Friday from 8:30 AM to 4:30 PM)
- 780-846-2929 (Weekends, Statutory Holidays and After Hours)

#### The County communicates important information to the public via:

- Municipal Website: www.vermilion-river.com
- Twitter: www.twitter.com/vermilionriver
- Facebook: <u>www.facebook.com/pages/Countyofvermilionriver</u>

#### 3.6.9 Call-Out Procedures

Operational decisions will be made by the on-call patrol supervisor or his/her designate. However, it should be emphasized that decisions will be subjective; external input merely acts as an aid in determining if a call out of staff is warranted. When weather conditions dictate, the on-call patrol supervisor contacts appropriate staff.

#### 3.6.10 Road Closure Procedures

In the event that a road must be closed due to a severe weather event, the County will follow the *Temporary Road Closure* procedures (Appendix 2).

#### 3.7 Decommissioning Winter Operations

After the winter season ends, the County undertakes the following tasks:

#### 3.7.1 Two Weeks After the Winter Season Ends

- 1) Continue monitoring weather forecasts. Assign night patrol shift if forecast indicates an overnight winter event is probable.
- 2) Decommission 80% of the snow plow fleet. Remove snow plow and sanding equipment from truck units.

#### 3.7.2 One Month After the Winter Season Ends

Cease all winter highway maintenance operations, unless needed. Decommission the remainder of the equipment, providing the weather forecasts warrant it.

#### 3.8 Training

The County provides winter operations training for all staff involved in the delivery of winter services. In the past, initial and recurring training has been provided internally. However, additional agencies are able to provide this service. It is compulsory for staff to attend the training sessions.

Staff will verify that the training was received by signing the Safe Work & Job Procedures for Speed Plow Snow Removal operations (Appendix 3).

Current winter operations training includes, but is not limited to:

- Equipment walk around
- Equipment calibration
- Record keeping
- Health & Safety
- Level of service policies, best practices and job procedures
- Identification of plow routes including variations for year to year and issues identified along the route
- Yard and equipment maintenance

#### 3.9 Record Keeping

Full and accurate completion of documents, according to the applicable procedures ensures that the County is protected from liability by providing solid documentation that procedures have been followed. Staff are responsible for keeping the following records:

#### **Equipment Operators:**

- Route Plowed
- Regular and spiked loads of sand/salt

#### **On-Call Patrol Staff:**

- Call out diary
- Weather conditions
- Road conditions

# 4.0 Plan Improvements

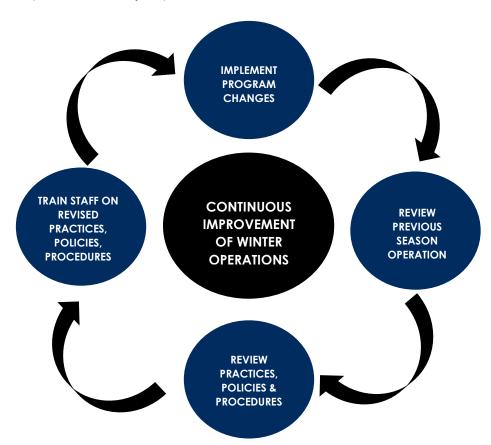
The current winter maintenance policies, best practices and job procedures form the baseline upon which improvements can be made to winter operations. The County will continue to undertake and strive to achieve exceptional winter maintenance by replacing and updating both facilities and equipment.

#### Equipment (forecasted):

 Equipment replacement is on an as needed basis to maintain a current and efficient fleet. Typical annual replacement: 3 graders, 1 loader, 1 plow truck.

# 5.0 Monitoring & Updating

The purpose of monitoring and updating the SRWMOP is to provide a basis for continuous improvement of winter operations and to reassess winter maintenance policies, best practices and job procedures.



At the end of the winter season a meeting to review winter operations will be held with all winter operations staff to itemize all issues that arose during the winter season and to discuss how these issues may be resolved. Prior to the start of the next winter season the County shall train staff on the changes to equipment and winter maintenance policies, best practices and job procedures.

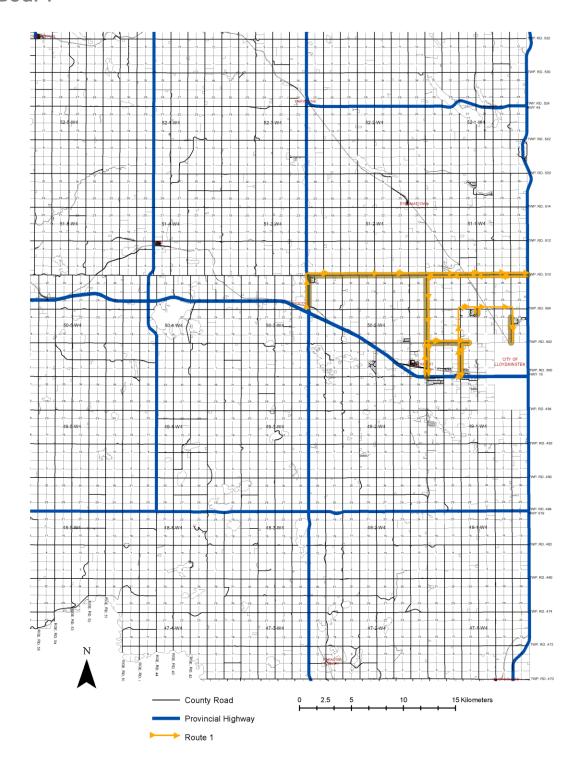
#### Disclaimer

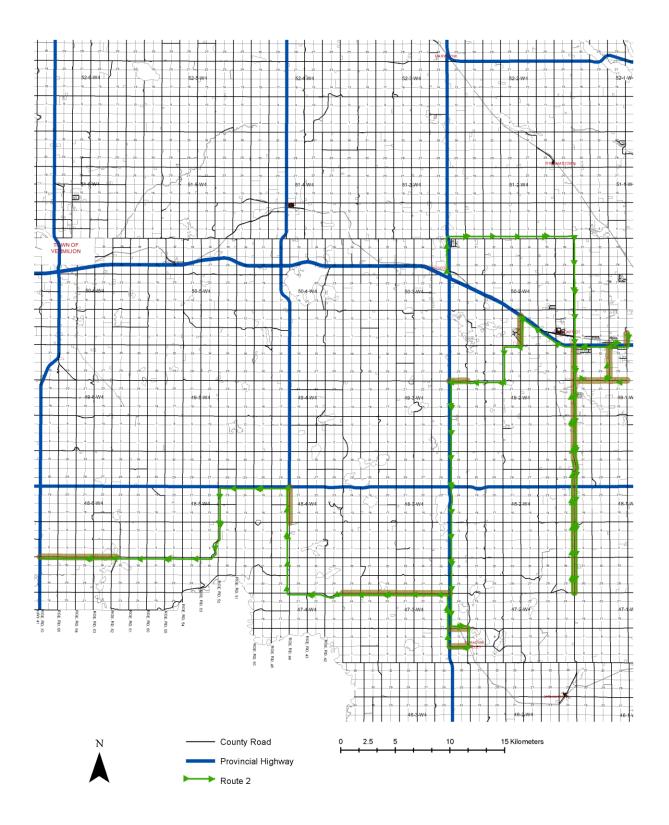
The information contained within this document is not legal advice nor meant to take the place of legal advice. Furthermore, the information and recommendations contained in this document are solely the opinion of the County of Vermilion River do not form legal "standards" and should not be viewed as such.

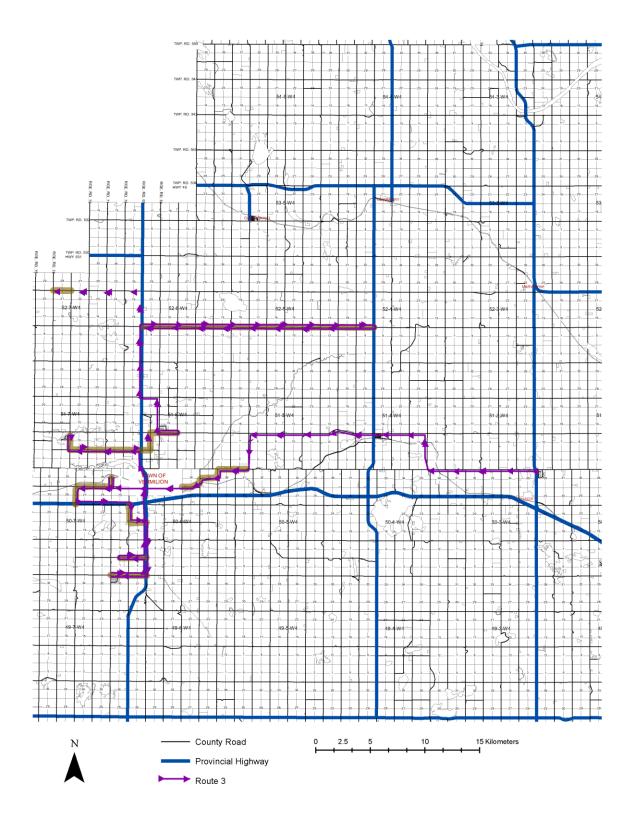
This manual may be affected by at least one or more of the following events which could delay or alter snow and ice control:

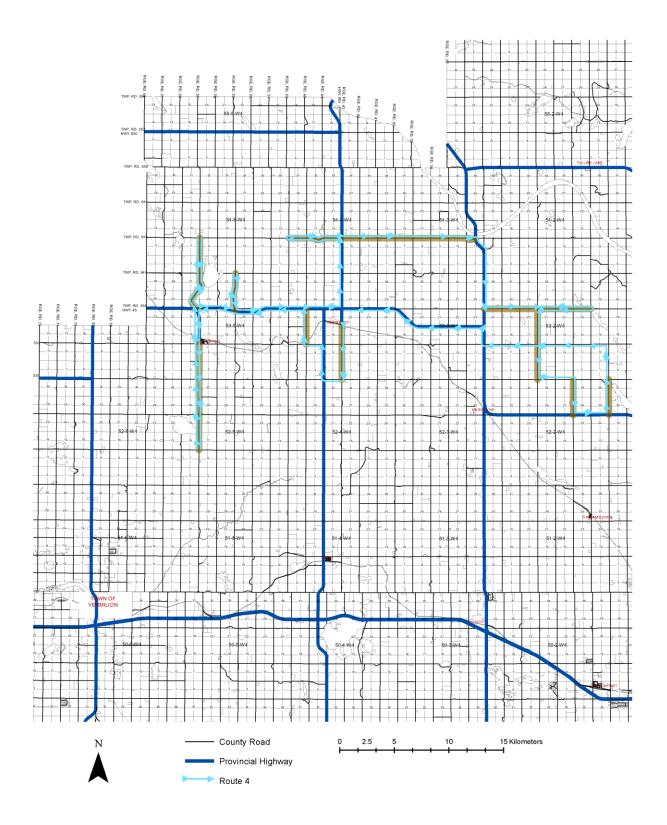
- Equipment breakdown
- Snow removal vehicles being disabled in deep snow
- Severe weather that causes work to be stopped for the safety of all personnel
- Unforeseen conditions
- Emergencies
- Significant medical related emergencies

# **Appendix 1: Snow Plow Routes by Beat**









# Appendix 2: Temporary Road Closure Procedures

Date Developed: August 29, 2019

**Job:** Maintenance or Emergency Temporary Road Closure

**Developed By:** Darrell Denis

Equipment Required	Material Required	PPE Required
<ul> <li>Signage</li> </ul>		<ul> <li>High Visibility Vest</li> </ul>
<ul> <li>Barricades</li> </ul>		<ul> <li>High Visibility Coveralls</li> </ul>
<ul> <li>Traffic Control Device</li> </ul>		<ul> <li>Steel Toed Boots</li> </ul>
<ul> <li>Amber Flashing Lights</li> </ul>		<ul> <li>Gloves</li> </ul>
<ul> <li>Flag Paddles</li> </ul>		
<ul> <li>Hand Held Radios</li> </ul>		

#### Job Steps:

- Maintenance: advertise one week prior to the road closure on the County website, Facebook page, Twitter page, and post signs at closed area stating closure dates and times
- 2) **Emergency:** advertise on the County website, Facebook page, and Twitter page.
- 3) Contact and advise all emergency services of the closure
- 4) Contact and advise the school division of the closure
- 5) Install proper signage and barricades at the work site
- 6) Install directional signs on detour route
- 7) Install barricades at closest intersection to closed area
- 8) Traffic control at barricades where detour route begins
- 9) During night hours, ensure barricades have flashing amber lights
- 10) Upon completion or repair(s) and/or the end of the emergency event, remove all signs and barricades.

Date Reviewed:	
Reviewed By: _	
Supervisor Signature:	
Safety Manger Signature:	
Department Director Signature:	
CAO Signature:	

# Appendix 3: Speed Plow Snow Removal Procedures

**Date Developed:** August 29, 2019

Job: Speed Plow Snow Removal

**Developed By:** Darrell Denis

Equipment Required	Material Required	PPE Required
<ul> <li>Plow Truck</li> </ul>	<ul> <li>Sand/Salt</li> </ul>	<ul> <li>High Visibility Vest</li> </ul>
<ul> <li>Front End Loader</li> </ul>	<ul> <li>Plow Blades</li> </ul>	<ul> <li>Steel Toed Boots</li> </ul>
<ul> <li>Radio/Phone</li> </ul>		<ul> <li>Gloves</li> </ul>
		<ul> <li>Glasses</li> </ul>

#### Job Steps:

#### In the Yard

- 1) Before starting the Plow Truck, fill out a Vehicle Trip Inspection form
- 2) Exit/Enter the shop as per Plow Truck Entering & Exiting Shop safe work and job procedure
- 3) Radio checks are to be made to the supervisor on early morning calls
- 4) Complete a hydraulic check (turn spinner on and off, lift and lower plow and wing) prior to loading the truck with sand/salt
- 5) Load with sand/salt mixture percentage as per the designated supervisor on call
- 6) Load sander only to its legal capacity. Ensure all loose loads are corrected before leaving the yard
- 7) Maintain three points of contact when climbing up and down sanders
- 8) Use a safe and cautious stance when on top of sanders to prevent slipping and falling

#### In the Field

- 1) When plowing the roads, never exceed 60 km/hr
- 2) Be aware of all hazards (frost heaves, rail crossings, bridges, etc.)
- 3) Watch for children waiting for the school bus
- 4) Shut sander off when meeting traffic to prevent damage to oncoming vehicles
- 5) Do not plow the bridge decks with the wings down, only use the front plow
- 6) Plows and wings are to be used on the driving surface of the highways only and not used for winging down shoulders
- 7) No climbing on top of the sander to knock lumps off while in the field
- 8) When beat is completed you are to contact the supervisor to see if you can help another truck complete its beat
- 9) Before ending the shift, fuel truck, unload excess sand, and clean the cab. Call supervisor to inform them you are safe and your shift is completed.
- 10) Report any maintenance needs to the on call supervisor

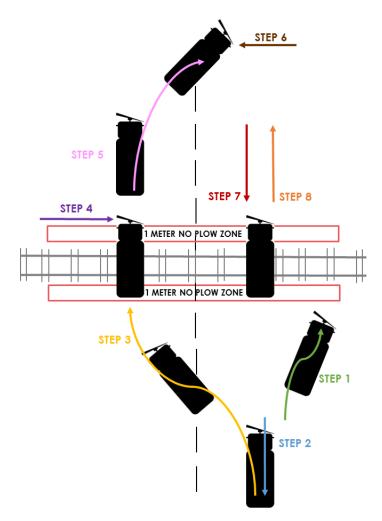
Snow Cleaning Bridges and Guard Railed Areas

- 1) Slow down to a crawl
- 2) Lift the wing plow up completely
- 3) Lift front plow far enough up to clear the edge of the bridge deck and disengage clutch
- 4) Reset the front plow on the bridge deck and proceed across the bridge. Lift the front plow to leave the bridge deck
- 5) Lower front plow and then lower wing plows as you leave the guard rail area.
- 6) Continue plowing
- 7) You may sand across the bridge if necessary

Snow Plowing at a Railway

1) See attached Diagram A & Diagram B

Date Reviewed:	
Reviewed By:	
Supervisor Signature:	
Safety Manger Signature:	
Department Director Signature:	
CAO Signature:	



#### Diagram A: Plowing at Railway Crossing (Option 1)

When approaching railway crossings slow down to a crawl, watching for traffic approaching from both the front and rear.

STEP 1: if plow is loaded with snow, turn to the right dumping the snow as close to the ditch as possible

STEP 2: when safe to do so, lift plow and wing and back up

STEP 3: when clear, move in to the opposite lane and cross the tracks

STEP 4: set plow and wing down 1 meter clear of the track

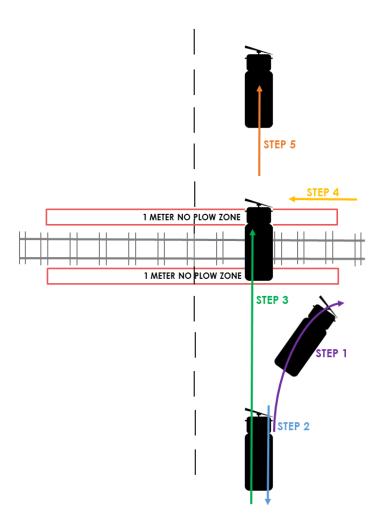
STEP 5: plow forward 2 truck lengths and turn back in to the right lane

**STEP 6:** dump snow in the ditch

**STEP 7:** lift plow and wing and back up over tracks. Set the plow and wing down to plow away from tracks

**STEP 8:** continue plowing

#### Diagram B: Plowing at Railway Crossing (Option 2)



When approaching railway crossings slow down to a crawl, watching for traffic approaching from both the front and rear.

**STEP 1:** if plow is loaded with snow, turn to the right dumping the snow as close to the ditch as possible

STEP 2: when safe to do so, lift plow and wing and back up

**STEP 3:** cross the tracks

STEP 4: set plow and wing down 1 meter clear of the tracks

**STEP 5:** continue plowing

# **Appendix 4: Equipment**

EQUIPMENT	EQUIPMENT TYPE	ELECTRONIC CONTROLLER	PRE-WET CAPABILITY	ANTI-ICING CAPABILITY	LIQUID CAPACITY	INFRARED THERMOMETERS
Unit 100	Western Star	✓	*	*	*	×
Unit 103	Sterling	✓	*	*	*	×
Unit 104	International	✓	*	*	*	*
Unit 105	International	✓	*	*	*	*
Unit 148	Freightliner	<b>√</b>	*	*	*	*
Unit 131	Dodge	<b>√</b>	*	*	*	×

# **Appendix 5: On-Call Schedule**

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	Maintenance	Maintenance	Maintenance	Maintenance	Maintenance	Maintenance
	Foreman	Foreman	Foreman	Foreman	Foreman	Foreman
	Plow Truck					
	Operator 1					
Maintenance	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel
Foreman	Foreman	Foreman	Foreman	Foreman	Foreman	Foreman
Plow Truck	Plow Truck	Plow Truck	Plow Truck	Plow Truck	Plow Truck	Plow Truck
Operator 1	Operator 2					
Gravel	Maintenance	Maintenance	Maintenance	Maintenance	Maintenance	Maintenance
Foreman	Foreman	Foreman	Foreman	Foreman	Foreman	Foreman
Plow Truck	Plow Truck	Plow Truck	Plow Truck	Plow Truck	Plow Truck	Plow Truck
Operator 2	Operator 3					
Maintenance	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel
Foreman	Foreman	Foreman	Foreman	Foreman	Foreman	Foreman
Plow Truck	Plow Truck	Plow Truck	Plow Truck	Plow Truck	Plow Truck	Plow Truck
Operator 3	Operator 4					
Gravel	Maintenance	Maintenance	Maintenance	Maintenance	Maintenance	Maintenance
Foreman	Foreman	Foreman	Foreman	Foreman	Foreman	Foreman
Plow Truck	Plow Truck	Plow Truck	Plow Truck	Plow Truck	Plow Truck	Plow Truck
Operator 4	Operator 5					
Maintenance Foreman						
Plow Truck Operator 5						

Alternate through the 2 foremen each week

Alternate through the 5 plow truck drivers each week