

<b>POLICY MANUAL</b>	Policy No. 84-2020
Township of North Dundas	Effective Date: October 1, 2020
Subject: Winter Maintenance and Salt Management Plan	

**Purpose:**

To establish a policy to provide guidance with respect to the manner in which the Corporation of the Township of North Dundas will conduct roads winter maintenance operations in the municipality.

**Background:**

It is the Township of North Dundas Public Works Department's strategy to develop a Winter Maintenance and Salt Management Plan to achieve the Winter Maintenance Service objective:

"To deliver an efficient and cost-effective service for the roadways within the Township of North Dundas, which, so far as is reasonably practicable, enables the safe movement of all modes of transportation and pedestrian traffic with a minimum of delay throughout the winter period whilst limiting the environmental impact of the service."

**Policy:**

The Council of the Corporation of the Township of North Dundas hereby confirms that the policies set out in Sections 5.5.4, 3.5.1.9, 3.5.2.3 and 3.5.2.8 of the SDG Official Plan shall constitute the policy as required by Section 270(1)7 of the *Municipal Act, 2001* and that Schedule "A" attached hereto constitutes an integral part thereof;

Further, the Township of North Dundas shall strive to provide funding in the annual municipal budget to support winter maintenance level of service and salt management in the municipality.

Approved by Council

Date: October 20, 2020

Resolution #: 9

THE CORPORATION OF THE TOWNSHIP OF NORTH DUNDAS

RESOLUTION

MOVED BY Deputy Mayor Armstrong

RESOLUTION NO 9

SECONDED BY Councillor Thompson

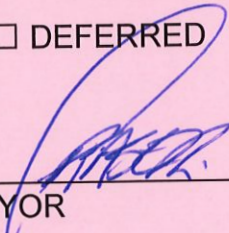
DATE October 20, 2020

THAT the Council of the Township of North Dundas approve policy # 84-2020 being a Winter Maintenance and Salt Management Policy.

☒ CARRIED

☐ DEFEATED

☐ DEFERRED

  
\_\_\_\_\_  
MAYOR

Recorded Vote:	Yea	Nay
Mayor Fraser	___	___
Deputy Mayor Armstrong	___	___
Councillor Annable	___	___
Councillor Hoy	___	___
Councillor Thompson	___	___



**SCHEDULE A**  
**PUBLIC WORKS DEPARTMENT**

**WINTER MAINTENANCE AND SALT MANAGEMENT  
PLAN**

**September, 2020**

# WINTER MAINTENANCE AND SALT MANAGEMENT PLAN

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**Winter Maintenance and Salt Management Plan  
for the  
Township of North Dundas  
Public Works Department**

**1.0 Introduction to the Winter Maintenance and Salt Management Plan**

**1.1 Purpose:**

It is the Township of North Dundas Public Works Department's strategy to develop a Winter Maintenance and Salt Management Plan to achieve the Winter Maintenance Service objective:

"To deliver an efficient and cost-effective service for the roadways within the Township of North Dundas, which, so far as is reasonably practicable, enables the safe movement of all modes of transportation and pedestrian traffic with a minimum of delay throughout the winter period whilst limiting the environmental impact of the service."

**1.2 Relevant Legislation:**

- . O. Reg. 239/02 Minimum Maintenance Standards for Municipal Highways
- . Highway Traffic Act
- . Employment Standards Act
- . Occupational Health & Safety Act

**1.3 Activity List:**

Key activities are needed to provide a full winter maintenance service. The following is a brief summary:

- . Precautionary salting
- . Precautionary and post storm stone dusting/salting
- . Plowing snow
- . Snow clearance at intersections/junctions
- . Heavy snow operations
- . Reactive Treatments

**1.4 Winter Maintenance Period:**

1. The Winter Maintenance period will operate from October 1<sup>st</sup> to April 30<sup>th</sup>. During this period the regular hours will be 4:00 am to 12:30 pm in case of snow event or at the discretion of the Director of Public Works or their designate. Afternoon shift for winter operation, if implemented, will commence from 3:30 pm.

In case of clear conditions, operators in morning shift will be required to work from 7:00 am to 3:30 pm, at the discretion of the Director of Public Works or their designate.

Snow clearing operation (plow trucks/routes) may be limited to once per weekend, if needed, in case of consistent snow throughout previous week or anticipated following week, to be within hours of service requirements. However, afternoon shift, if implemented, will ensure snow clearing operations on Sundays. Whereas, morning shift will undertake snow clearing operations on Saturdays. Above schedules may change at the discretion of Director of Public Works.

### **1.5 Winter Maintenance and Salt Management Plan Distribution:**

The Winter Maintenance and Salt Management Plan is a key document and will be issued to those shown in the distribution list in the Appendices; Appendix "A".

## **2.0 Policies and Responsibilities**

### **2.1 Service Delivery Responsibilities:**

The Public Works Department is responsible for providing the Winter Maintenance Service for the roadway operations within the boundaries of the Township of North Dundas Road System. This involves:

- . Design of the Winter Maintenance and Salt Management Plan
- . Annual production and distribution of the Winter Maintenance and Salt Management Plan
- . Establishing treatment priorities for roadways
- . Design of treatment routes for roadways
- . Ensuring availability of resources, plant and materials
- . Maintenance of operation equipment
- . Ensuring availability of weather forecast service and condition monitoring systems
- . Monitoring of highway conditions
- . Decision making to commence Winter Maintenance operations and activities as necessary
- . Day-to-day direction of operations
- . Monitoring performance
- . Providing accurate and timely information to relevant parties as required
- . Maintaining comprehensive records for Winter Maintenance operations and activities
- . Liaise with other Highway Authorities, Emergency Services and Police
- . Implementing annual reviews of the service



## **2.2 Decision Making Process and Responsibilities:**

Operational decisions will be made by the Director of Public Works and Patrol Foreman or their designate (Lead Hand) with the aid of available forecasting, Minimum Maintenance Standards, patrolling etc. However, it should be emphasized that decisions will be subjective and external input, whether in this plan or elsewhere, merely acts as an aid to that decision making by the Director or Patrol Foreman or their designate. It is vital therefore that the Patrol Foreman records the prevalent conditions and relevant information when he/she makes a decision.

## **2.3 Responsibilities of the Patrol Foreman or their Designate:**

The Patrol Foreman or their designate is responsible for monitoring the road and weather conditions for reaching an appropriate decision on the treatment for the roadway and for passing on this decision to the Operators.

The Patrol Foreman or their designate will be responsible for the timetable to clearly identify personnel involved in winter maintenance operations to encompass 24-hour coverage during the entire period. The Patrol Foreman will ensure the operations proceed in accordance with safe working procedures, hours of work, time off and on call.

The Patrol Foreman or their designate will audit the working practices of the winter maintenance operators to ensure compliance with winter maintenance standards and applications rates.

The Patrol Foreman or their designate will maintain a Daily Log and Patrol Record which will contain details of phone calls, decisions made and associated times. This log will be held on file by the Township.

The Director of Public Works and Patrol Foreman or their designate will be responsible for monitoring the weather as per MMS (Minimum Maintenance Standards). Upon request by the Patrol Foreman the Operator(s) shall monitor the weather for a total of three (3) times per day minimum and download the computerized weather report for filing.

As an example, the Patrol Foreman or their designate is responsible for at a minimum the following documentation:

- Patrol Foreman's Diary – will be kept up-to-date on a daily basis and once the diary is completed it will be retained for a retention period of twenty (20) years. The Patrol Foreman's diary will be made accessible for documentation in the event of a damage claim. Entries in the diary will be clear, concise and legible.



- . Winter Patrol Record - the Patrol Foreman will complete this record for roads patrolled. This document will provide the date patrolled, roads completed, time, weather and road conditions, any accidents that are observed, who it was patrolled by and when the patrol was completed.
- . Schedule – the Patrol Foreman will be responsible for scheduling his Operators.
- . Material Usage Records – the Patrol Foreman must ensure that usage of material is recorded per each call out and reviewed for accuracy. The Patrol Foreman will use the compu-spread, if available, download information when reviewing the material usage which will be used when a discrepancy exists with a manual entry.

## **2.4 Operator Responsibilities:**

Central to the success of any plan are the personnel involved. The Public Works Department Winter Maintenance Operators will be responsible for the Winter Maintenance Operation twenty-four (24) hours per day throughout the winter period.

The Operators at a minimum must complete the following records:

- . Vehicle Inspection Report (Circle Check) – (as per the Vehicle Inspection Policy which applies at all times during the year, but referenced here for the purpose of the Winter Maintenance).
- . As per the Highway Traffic Act, the Operator must perform a circle check prior to leaving the yard for each call out event. The Patrol Foreman will keep this record on file. No Operator will knowingly leave the yard if their vehicle or equipment has an identified mechanical/operational failure resulting from the completion of the circle check.
- . Each vehicle and stone dusting/salting equipment will be inspected prior to every individual call out operation.
- . The Operator ensures that their vehicle and stone dusting/salting equipment is cleaned sufficiently after each individual call out operation.
- . Winter Operation Record – The Operator must complete a Winter Hours of Service for each round of a call out event.

- . At the request of the Patrol Foreman, the Lead Hand or employee as designated by the Patrol Foreman shall patrol the representative roadways and document the patrol completion in their winter patrol record.
- . Record of Duty Status / Hours of Service.

## **2.5 Operating Hours:**

The Township adheres to the hours of work as set out in the Highway Traffic Act, Reg.4/93. The operators are required to track operating hours and report daily hours of service as per Highway Traffic Act, Reg. 555/06. Regular shift is eight (8) hours. When the driver has completed their extended thirteen (13) hours driving time in their on-duty time, they shall be sent home for the eight (8) hour off-duty period before driving the next shift. In addition to this, drivers are not allowed to work beyond seventy (70) hours in a seven (7) day work week. After seventy (70) hours, drivers need 36 hours consecutive off to reset to zero. Anytime, drivers have consecutive 36 hours off, the duty status reset to zero. Further, the Operator and Patrol Supervisors shall ensure the following:

- a) The total off-duty time taken in the twenty hours is at least ten (10) hours,
- b) The total driving time in the twenty hours does not exceed thirteen (13) hours;
- c) The total on-duty time in the twenty hours does not exceed fourteen (14) hours;

Refer to following table for additional details:

### Ontario Driving Limitations

For the 24-hour period "day," a driver cannot drive more than 13 hours.

Time	Condition
1. Off Duty Time - other than time in a sleeper berth	
2. Off Duty Time - in a sleeper berth	
3. Driving Time	<b>DRIVING = ≤ 13</b>
4. On Duty Time - other than driving time	

During the 24-hour period "day," a driver cannot drive after having been on-duty more than 14 hours.

Time	Condition
1. Off Duty Time - other than time in a sleeper berth	
2. Off Duty Time - in a sleeper berth	
3. Driving Time	<b>NO DRIVING AFTER ON DUTY = ≤ 14</b>
4. On Duty Time - other than driving time	

During the 24-hour period "day," a driver must be off-duty for 10 hours, which must include two hours that are not part of a mandatory off-duty period and are at least 30 minutes long.

Time	Condition
1. Off Duty Time - other than time in a sleeper berth	<b>OFF DUTY = ≤ 10</b> Off-Duty Periods must be at least 30 minutes long or they do not count toward the 10 hours.
2. Off Duty Time - in a sleeper berth	
3. Driving Time	
4. On Duty Time - other than driving time	

### Daily Limits

## 2.6 Hours of Work:

The Township will operate as outlined below:

**In case of Storm Event (Patrol/Operators):** The regular working hours will begin at 4:00 a.m. and work until 12:30 p.m., Monday through Friday. At the discretion of Director, Operators will be able to work thirteen (13) hours until 3:30 p.m., under the limitation of operating hours. Afternoon shift, if implemented, will start at 3:30 pm.

**In case of clear day (Patrol/Operators):** The Operators will work 7:00 a.m. until 3:30 p.m., five (5) days a week, Monday through Friday. This work provides patrolling and maintenance of roads and vehicles. Afternoon shift, if implemented, will start at 3:30 pm.

**Weekend (Patrol/Operators):** The Weekend patrol will be at the discretion of the Patrol Foreman or their designate based on forecast and weather conditions. Morning weekday shift will be called in on Saturday, if needed and afternoon weekday shift will be called in on Sunday, if needed. In case of only Saturday or Sunday snow clearing operation, any one of the shifts can be called in at the discretion of Patrol Foreman or Director Public Works.

**Emergency (Operators):** During an unexpected event outside regular working hours (4:00 am to 3:30 pm), Operators will be called to assist with Road Maintenance, on an as needed basis.

## **2.7 Requirements for the Completion of Documents:**

Please note that the forms as per the Winter Maintenance and Salt Management Plan which are to be completed by the Patrol Foreman(s) and operator(s) are not to be considered discretionary but mandatory.

However, it is duly noted that the Patrol Foreman/Lead Hand/Operator will **not** sustain "personal liability" for recording Township information.

The Township will retain the original copy of documents regardless of their appearance. Coffee stains or dirt on originals are preferable to copies of original documents. If a document requires correction, then a **single line** is to be placed through the incorrect information without making it illegible and continue writing on the original document. Initial corrections or a change in the colour of ink, in the case where you change writing pens.

Please assure that your writing is legible for others to read.

## **2.8 Date and Time Format:**

The Township Public Works Department will adopt the following format for the purpose of documenting the date and time on documents or correspondence.

The date will be recorded as for example, 15/Sept./2020. It may be written in all numerical format except month.

The time shall be documented in the twenty-four (24) hour format. The recording of hours and minutes only will not be acceptable as the time could be misconstrued to represent either morning or evening.

## **2.9 List of Township Roads Employees:**

The Township Public Works Department will create annually a list of all Township Public Works Employees/ Full-time/Part-time/Contract/Casual assigned to winter operations. Each employee will be asked to "Print" their name as well as provide a "Written Signature" and their driver's license number. Township will perform at a minimum once a year, a license verification, driver's license and CVOR abstract on each employee operating a Township vehicle for winter operations.

After the list has been completed, a signatory form will be completed by additional persons working for or with the Township Public Works Department.

### **2.10 Road Closures and Liaison with the Police:**

When visibility declines to a point that it is hazardous to the driving public or snowplow operators to be on the roadway, snowplowing or ice control operations may be suspended. Suspended operations shall be resumed when visibility improves.

When weather conditions have rendered a route or roadway unsafe for use and the Director of Public Works or their designate determines the road must be closed to all traffic then this decision shall be provided to the Ontario Provincial Police and Emergency Services. Routes closed by Township instruction must be re-opened on Township instruction.

The Director of Public Works, Patrol Foremans, Public Works, Emergency Services (Fire and Ambulance), Ontario Provincial Police, Counties, Elected Officials and CAO, must be informed as soon as possible of roads closed by weather conditions. The Township will provide "Road Closure" signs and/or barricades to alert the public of the closed road. If at all possible, detours or diversion routes will be decided upon as a result of such a closure. In the event that a detour or diversion is not possible or will further endanger the travelling public by re-routing the traffic from a Township Road to a lesser travelled road, the Township will be held harmless from any motorist continuing forward on the "closed road" once so notified. The Township Public Works Department will be responsible for contacting the local media to notify the travelling public of the closed road(s) and the appropriate staff person to have it posted on the Township social media.

### **2.11 Salt Management – Objective:**

Township will optimize the use of winter maintenance materials containing chlorides on all municipal roads while striving to minimize negative impacts to the environment. The Township staff will strive to provide safe winter road conditions for vehicular traffic as set out in this document.

### **2.12 Significant Weather Event:**

As per the Ontario Municipal Act, a Municipality/Township may declare a significant weather event when a weather hazard, either forecasted or occurring, has the potential to pose a significant danger to users of the roadways in which the Municipality/Township have authority.

This declaration suspends the standard timelines required for Municipalities/Township to meet their winter maintenance objectives. All roadways are deemed in a state of repair with respect to snow accumulation and/or ice conditions, until the municipality declares the significant weather event has ended.

In each case, during the course of a declared significant weather event, the standard for addressing winter maintenance is to monitor the weather and deploy resources to address the issue, starting from the time the municipality deems it most appropriate to do so. When the municipality declares an event has ended, standard timelines for winter maintenance activities then begin.

### **Examples of Conditions when a significant weather event may be declared**

- . Significant snow accumulation during a twenty-four (24) hour period or back-to-back continuous events
- . Ice formation that occurs without warning from the weather forecast
- . High winds leading to blowing snow and large snow drifts
- . Freezing temperatures when de-icing operations will not be effective

The declaration of a significant weather event is to notify the public that due to the forecasted or current weather conditions, caution is to be exercised when travelling on roadways, and that it may take longer than usual to restore the conditions back to a normal state of repair.

### **Notification of a significant weather event**

Significant weather event notifications will be declared by the Public Works Director or their designate and will be posted on the Township's website and social media accounts.

## **3.0 Quality Control**

### **3.1 Quality Management Regime:**

Operational records are usually paper-based although where possible the Township of North Dundas will promote information being recorded electronically in a computerized system. Throughout the winter maintenance period, roads maintenance staff will produce and manage various reports as documented below and in the Appendices.

Major/minor incidents should be reported as soon as practically possible to the Patrol Foreman.

### **3.2 Information Recording and Analysis:**

The Patrol Foreman completes record of action used and provides this information to Township's staff.

This information is required for every individual call out operation.

### **3.3 Budget and Material Monitoring:**

Weekly figures for stone dust and salt usage by patrol route will be made available to Patrol Foreman and administrative staff who will in return provide a monthly financial statement and stock control report to the Director. These reports will be reviewed at the monthly meetings.

Inspection of salting operations and download of compu-spread information, if available, will be provided by the Fleet / Mechanics staff or Patrol Foreman, if possible, to ensure spreading rates, equipment speed, and route compliance.

## **Winter Materials Purchased Annually**

Material	2019	2018	2017	3 year average
<b>Solids</b>	(tonnes)	(tonnes)	(tonnes)	(tonnes)
Rock Salt (NaCl)	2,300	2,400	2,380	2,360
Stone Dust (Mix)	5,660	4,700	5,150	5,170
<b>Liquids</b>				
Salt Brine (NaCl) (L)	N/A	N/A	N/A	N/A

Township trucks are not equipped with brine equipment.

## **4.0 Route Planning**

### **4.1 Route Planning and Treatment Priorities:**

Treatment priorities for the roadways within the Township of North Dundas have been devised to ensure effective, efficient coverage within the timescales defined in the Minimum Maintenance Standards. This system of coverage is readily adaptable to prevailing conditions.



For the purposes of this policy, the *highways* under the jurisdiction of the Township of North Dundas are classified according to the Table in Section 1(2) of O. Reg. 47/13, as follows:

## 4.2 Township Roads Maintenance Priority Class Categories:

**Table 1 – Priority Class Categories**

<b>Posted Speed (AADT) Average Daily Traffic</b>	<b>91 - 100 km/h</b>	<b>81 - 90 km/h</b>	<b>71 - 80 km/h</b>	<b>61 - 70 km/h</b>	<b>51 - 60 km/h</b>	<b>41 - 50 km/h</b>	<b>1 - 40 km/h</b>
53,000 or more	1	1	1	1	1	1	1
23,000 - 52,999	1	1	1	2	2	2	2
15,000 - 22,999	1	1	2	2	2	3	3
12,000 - 14,999	1	1	2	2	2	3	3
10,000 - 11,999	1	1	2	2	3	3	3
8,000 - 9,999	1	1	2	3	3	3	3
6,000 - 7,999	1	2	2	3	3	4	4
5,000 - 5,999	1	2	2	3	3	4	4
4,000 - 4,999	1	2	3	3	3	4	4
3,000 - 3,999	1	2	3	3	3	4	4
2,000 - 2,999	1	2	3	3	4	5	5
<b>Posted Speed (AADT) Average Daily Traffic</b>	<b>91 - 100 km/h</b>	<b>81 - 90 km/h</b>	<b>71 - 80 km/h</b>	<b>61 - 70 km/h</b>	<b>51 - 60 km/h</b>	<b>41 - 50 km/h</b>	<b>1 - 40 km/h</b>
1,000 - 1,999	1	3	3	3	4	5	5
500 - 999	1	3	4	4	4	5	5
200 - 499	1	3	4	4	5	5	6
50 - 199	1	3	4	5	5	6	6
0 - 49	1	3	6	6	6	6	6

Based on 2013 traffic volumes, Township roads are classified under class 4 or 5

## 4.3 Service Standard 1 – Routine Patrolling:

- 1) The minimum standard for the frequency of patrolling of highways to check for conditions described in this Regulation is set out in the Table 2 to this section. O. Reg. 23/10, s. 3 (1).
- 2) If it is determined by the Township that the weather monitoring referred to in section 3.1 of the Minimum Maintenance Standards indicates that there is a substantial probability of snow accumulation on roadways, ice formation on roadways or icy roadways, the minimum standard for patrolling highways is, in addition to that set out in subsection (1), to patrol highways that the Township selects as representative of its highways, at intervals deemed necessary by the Township, to check for such conditions. O. Reg. 47/13, s. 2.
- 3) Patrolling a roadway consists of observing the roadway, either by driving on or by electronically monitoring the roadway, and may be performed by persons responsible for patrolling roadways or by persons responsible for or performing highway maintenance activities. O. Reg. 23/10, s. 3 (1).

**Table 2 - Patrolling Frequency**

<b><i>Class</i></b>	<b>Winter Storm Condition</b>	
	<b><i>Maximum Cycle</i></b>	<b><i>Desirable</i></b>
1	3 x every 7 days	2 x per day
2	2 x every 7 days	1 x per day
3	Once every 7 days	1 x per day
4	Once every 14 days	Once every 3 days
5-6	Once every 30 days	Once every 7 days

**Township Patrolling of Representative Roads**

Minimum patrolling of representative roads is as per table 2. Representative roads are Patrol Routes.

**4.4 Service Standard 2 – Snow Accumulation**

- 1) The Township of North Dundas has adopted the minimum maintenance standards for addressing snow accumulation as indicated below:
  - a. after becoming aware of the fact that the snow accumulation on a roadway is greater than the depth set out in the Table 3 to this section, to deploy resources as soon as practicable to address the snow accumulation; and
  - b. after the snow accumulation has ended, to address the snow accumulation so as to reduce the snow to a depth less than or equal to the depth set out and within the time set out in Table 3,
    - i.) to provide a minimum lane width of the lesser of three metres for each lane or the actual lane width, or
    - ii.) on a Class 4 or Class 5 highway with two lanes, to provide a total width of at least five metres. O. Reg. 47/13, s. 4.
- 2) If the depth of snow accumulation on a roadway is less than or equal to the depth set out in Table 3 to this section, the roadway is deemed to be in a state of repair with respect to snow accumulation. O. Reg. 47/13, s. 4.

- 3) For the purposes of this section, the depth of snow accumulation on a roadway may be determined in accordance with subsection (4) by a municipal employee, agent or contractor, whose duties or responsibilities include one or more of the following:
  1. Patrolling highways.
  2. Performing highway maintenance activities.
  3. Supervising staff who perform activities described in paragraph 1 or 2. O. Reg. 47/13, s. 4.
- 4) The depth of snow accumulation on a roadway may be determined by,
  - a. performing an actual measurement;
  - b. monitoring the weather; or
  - c. performing a visual estimate. O. Reg. 47/13, s. 4.
- 5) For the purposes of this section, addressing snow accumulation on a roadway includes, but is not limited to,
  - a. plowing the roadway;
  - b. salting the roadway;
  - c. applying abrasive materials to the roadway; or
  - d. any combination of the methods described in clauses (a), (b) and (c). O. Reg. 47/13, s. 4.
- 6) This section does not apply to that portion of the roadway designated for parking. O. Reg. 47/13, s. 4.
  - a. "Snow accumulation" means the natural accumulation of any of the following that, alone or together, covers more than half a lane width of a roadway:
    - . New fallen snow
    - . Wind-blown snow
    - . Slush

**Table 3 - Snow Accumulation**

<b><i>Class</i></b>	<b>Response to Snow Accumulation</b>		<b>Surface Condition</b>		
	<b><i>Depth</i></b>	<b><i>Time</i></b>	<b><i>Lag time</i></b>	<b><i>Desired Condition</i></b>	<b><i>Minimum Condition</i></b>
1	2.5 cm	4 hours	12 hours	Safe & passable	Safe & passable

2	5 cm	6 hours	12 hours	Safe & passable	Safe & passable
3	8 cm	8 to 12 hours	18 hours	Safe & passable	Safe & passable
4	8 cm	12-16 hours	24 hours	Safe & passable	Safe & passable
5	10 cm	16-24 hours	24 hours	Safe & passable	Safe & passable

The Township does not maintain any Class 1, 2 or 3 roadways.

Given the Township roads are class 4 or 5, this allows for efficient winter plow operations and response commencing at 4:00 AM shift, subject to emergencies.

Please note that Safe and passable is defined as there may be some snow remaining but the surface can be safely travelled if done so in accordance with the conditions.

#### **4.5 Service Standard 3 – Icy Roadways**

The Township of North Dundas has adopted the minimum maintenance standards for treating icy roadways as indicated below:

- 1) The minimum standard for the prevention of ice formation on roadways is doing the following in the twenty-four (24) hour period preceding an alleged formation of ice on a roadway:
  1. Monitor the weather in accordance with section 5.1.
  2. Patrol in accordance with section 4.
  3. If the municipality determines, as a result of its activities under paragraph 1 or 2, that there is a substantial probability of ice forming on a roadway, treat the roadway to prevent ice formation within the time set out in the Table to this section, starting from the time that the municipality determines is the appropriate time to deploy resources for that purpose. O. Reg. 47/13, s. 5.
- 2) If the municipality meets the minimum standard set out in subsection (1) and, despite such compliance, ice forms on a roadway, the roadway is deemed to be in a state of repair until the earlier of,
  - a) the time that the municipality becomes aware of the fact that the roadway is icy; or
  - b) the applicable time set out in the Table to this section for treating the roadway to prevent ice formation expires. O. Reg. 47/13, s. 5.

- 3) The minimum standard for treating icy roadways after the municipality becomes aware of the fact that a roadway is icy is to treat the icy roadway within the time set out in the Table to this section, and an icy roadway is deemed to be in a state of repair until the applicable time set out in the Table for treating the icy roadway expires. O. Reg. 47/13, s. 5.
- 4) For the purposes of this section, treating a roadway means applying material to the roadway, including but not limited to, salt, stone dust or any combination of salt and stone dust. O. Reg. 47/13, s. 5.

**TABLE 4 - ICE FORMATION PREVENTION AND ICY ROADWAYS**

Class of Highway	Time
1	3 hours
2	4 hours
3	8 hours
4	12 hours
5	16 hours

O. Reg. 47/13, s. 5.

#### **4.6 Winter Maintenance Operational Routes per Patrol:**

As defined in Appendix 'D', the Winter Maintenance Routes may be subject to change by the Patrol Foreman or their designate in the event of an emergency.

Routes will be reviewed at the end of each winter season to determine whether changes are warranted.

A route is defined as a full surface.

##### **4.6.1 Mountain Plow Route -Winchester Yard**

Fawcett Road, Pavement, Class 4 Road  
 Van Camp Road, Pavement, Class 4 Road,  
 Development Road, Pavement, Class 4 Road,  
 Clark Road, Pavement, Class 4 Road,  
 Boundary Road, Class 4 Road,  
 Hyndman Road, Class 4 Road,  
 Shaw Road, Class 4 Road,

Ronson Road West , Class 5 Road,  
Village of Mountain Streets, Class 4 Roads  
Van Camp Road, Gravel, Class 5 Road,  
Nelson Road, Class 4 Road,  
Lough Road, Class 4 Road,  
Nelson Road, dead end, Class 4 Road,  
South Mountain Streets, Class 4 Road  
Nation River Road, Class 4 Road,  
Sandy Row, Class 4 Road,  
Simzer Road, Class 5 Road,  
Mulloy Road, Class 4 Road,

Total Route "Mountain" = 107.44 lane kms

#### **4.6.2 Hallville Plow Route - Winchester Yard**

Spruit Road, Class 4 Road,  
Jennings Road, Class 5 Road,  
Kerr's Ridge Road, Class 4 Road,  
Hallville Streets, Class 4 Roads,  
Loughlin Ridge Road, Class 4 Road,  
French Settlement Road, Class 3 Road,  
Belmeade Road, Class 4 Road,  
Boundary Road, Class 4 Road,  
Allen Road, Class 4 Road,  
Development Road, Class 4 Road,  
Church Road Class 4 Road,  
Lillico Road, Class 4 Road,  
Blaine Road, Class 5 Road,  
Riddell Road Class 4 Road,  
Shellian Lane, Class 4 Road  
Coleman Cres. Class 4 Road  
Travis Trail, Class 4 Road

Total Route "Hallville" = 97.68 lane kms

#### **4.6.3 Inkerman Plow Route - Winchester Yard**

Barkley Road, Class 4 Road,  
Guy Road, Class 4 Road,  
Levere Road, Class 4 Road,  
Crowder Road, Class 4 Road,  
Cameron Road, Class 4 Road,  
Lough Road, Class 5 Road,  
Pepperville Road, Class 4 Road  
Norton Road, Class 4 Road,  
McIntyre Road, Class 4 Road,  
Bailey Road, Class 4 Road,  
Village of Inkerman Streets, Class 4 Road,  
McIntosh Road, Class 5 Road,  
Timmins Road, Class 4 Road,  
Moore Road, Class 4 Road,  
Sandy Row, Class 4 Road,  
Kirkwood Road, Class 4 Road,  
Pemberton Road, Class 4 Road,  
Cass Bridge Road, Class 5 Road,  
Hogaboam Road, Class 4 Road,  
Hollister Road, Class 4 Road,  
Link Road, Class 5 Road,

Total Route "Inkerman" = 108.36 lane km

#### **4.6.4 Ormond Plow Route**

Route "Ormond" - Winchester Yard  
Liscumb, Road, Class 4 Road,  
County Road 3,  
Cayer Road, Class 4 Road,  
Rodney Lane, Class 4 Road,  
Ormond Road, Class 4 Road,  
Bisson Road, Class 4 Road,  
Spruce Road, Class 4 Road,  
Armstrong Road, Class 4 Road,  
Merkley Road, Class 4 Road,  
Jennings Road, Class 4 Road



Harmony Road, Class 4 Road,  
Foresthill Road,, Class 4 Road,  
Old Carriage Lane, Class 4 Road  
Tudor Gate, Class 4 Road  
Bridal Path, Class 4 Road  
Elizabeth Street, Class 4 Road  
Lafortune Drive, Class 4 Road  
CountryLane, Class 4 Road,  
Cloverdale Road, Class 4 Road,  
Benson George Road, Class 5 Road,

Total Route "Ormond" = 95.04 lane kms

#### **4.6.5 Morewood Plow Route**

Route "Morewood" - Winchester Yard  
Loucks Road Class 4 Road,  
Connaught Road, Class 4 Road,  
Kelly Road, Class 4 Road,  
Finch-Winchester Boundary Road, Class 4  
Wheeler Road, Class 5 Road,  
Coyne Road, Class 4 Road,  
Gibeault Road, Class 4 Road,  
Coulthart Road, Class 4 Road,  
McLaughlin Road, Class 4 Road,  
Village of Morewood, Class 4 Road,  
Carruthers Road, Class 4 Road,  
Kyle Road, Class 5 Road  
Stevens Road, Class 4 Road  
Marionville Road/ Russell Boundary, Class 4 Road,  
Dagenais Road, Class 5 Road,  
Thompson Road, Class 4 Road,  
Steen Road, Class 5 Road,  
North Wing Road, Class 4 Road  
South Wing Road, Class 4 Road  
Lafleur Road, Class 5 Road,  
Crump Road, Class 4 Road,  
Thibault Court, Class 4 Road,  
Kittle Road, Class 4 Road,

Total Route "Morewood" = 112.44 lane kms

#### **4.6.6 Chesterville Plow Route**

Route "Chesterville" - Winchester Yard

Loucks Road, Class 4 Road,  
Floods Corner Road, Class 4 Road,  
Byers Road, Class 4 Road,  
Main Street N, Class 4 Road,  
Howard Street, Class 4 Road,  
Brannen Drive, Class 4 Road,  
Industrial Drive, Class 4 Road,  
Queen Street West , Class 4 Road,  
Joseph Street, Class 4 Road,  
John Street, Class 4 Road,  
Francis Street, Class 4 Road,  
Harper Road, Class 4 Road,  
Emma Street, Class 4 Road,  
McMillan Street, Class 4 Road,  
King Street, Class 4 Road,  
Queen Street East, Class 4 Road,  
Ches Albert Street, Class 4 Road,  
Ralph Street, Class 4 Road,  
Water Street, Class 4 Road,  
Victoria Street, Class 4 Road,  
Ches Church Street, Class 4 Road,  
Casselman Street, Class 4 Road,  
Armstrong Place, Class 4 Road,  
Mary Street, Class 4 Road,  
College Street, Class 4 Road,  
Faubert Avenue, Class 4 Road,  
Thompson Road, Class 4 Road,  
Streeterpete Road, Class 4 Road,  
Erin Avenue, Class 4 Road,  
Elizabeth Drive, Class 4 Road,  
Tabitha Court, Class 4 Road,  
Lori Lane, Class 4 Road,  
William Street, Class 4 Road,  
Riverside Drive, Class 4 Road,  
Michael Street, Class 4 Road,  
Pauline Street, Class 4 Road,  
Martin Street, Class 4 Road,

Total Route "Chesterville" = 32.26 lane kms

#### **4.6.7 Winchester Springs Plow Route**

Route "Winchester Springs" - Winchester Yard  
Nesbitt Road, Class 4 Road,  
Winchester Springs Road, Class 4 Road,  
Shay Road, Class 4 Road,  
McMillan Road, Class 4 Road,  
Forward Road, Class 4 Road,  
Nation Valley Road, Class 4 Road,  
River Road, Class 4 Road,  
Ball Road, Class 5 Road,  
Dillabough Road, Class 4 Road,  
Limerick Road, Class 4 Road,  
Webb Road, Class 4 Road,  
St. Mary's Road, Class 4 Road  
Droppo Road, Class 4 Road

Total Route "Winchester Springs" = 125.46 lane km

#### **4.6.8 Winchester Plow Route**

Route "Winchester" - Winchester Yard  
Dawley Drive, Class 4 Road,  
Winfield Ave, Class 4 Road,  
Win Bailey Avenue, Class 4 Road,  
Dufferin Court, Class 4 Road,  
Dufferin Street West, Class 4 Road,  
Holmes Street, Class 4 Road,  
Annable Road, Class 4 Road,  
Dufferin Street West, Class 4 Road,  
Howard Street, Class 4 Road,  
Whitney Street, Class 4 Road,  
North Street, Class 4 Road,  
Queen Street, Class 4 Road,  
Centre Street, Class 4 Road,  
Gladstone Street, Class 4 Road,  
Alexander Street, Class 4 Road,  
Wincrest Ave. Class 4 Road,  
Beach Street, Class 4 Road,

MacDonald Cres. Class 4 Road,  
York Court, Class 4 Road,  
York Street, Class 4 Road,  
Wickers Way, Class 4 Road,  
Quart Court, Class 4 Road,  
Anne Street, Class 4 Road,  
Fred Street, Class 4 Road,  
May Street, Class 4 Road,  
Win Albert Street, Class 4 Road,  
Clarence Street, Class 4 Road,  
Victoria Street, Class 4 Road,  
Caleb Street, Class 4 Road,  
St Lawrence/County Rd 38, Class 3 Road  
Church Street, Class 4 Road,  
Louise Street N&S, Class 4 Road  
Cass Cres. Class 4 Road,  
Christie Lane, Class 4 Road  
Henderson Cres. Class 4 Road  
Gypsy Lane (portion) Class 4 Road  
Wintonia Drive, Class 4 Road  
James Street, Class 4 Road,  
Lancaster Lane, Class 4 Road,  
Arora Cres. Class 4 Road,  
Total Route "Winchester" = 30.30 km lane km

#### **4.7 Allocation of Vehicles, Equipment and Materials:**

The Township Public Works Department will commit 50% of the winter truck fleet be ready for use by October 1<sup>st</sup> of each year.

Remainder of vehicles will be ready by October 15<sup>th</sup> of each year.

##### **4.7.1 Roads Fleet Inventory:**

Township Public Works Department vehicles may be dedicated to the Winter Maintenance fleet.

The following summary of vehicles are owned, operated and maintained by Township forces.

Equipment Classification	Number of Pieces
Graders	2
Loaders	1
Heavy Weight Vehicles (Tandem + Single Axle Trucks)	6+2
Light Weight Vehicles (1/2 ton)	4
Forklift	1
Backhoe	1
Sidewalk Plows	2
Pressure Washer	1
Asphalt Hot Box for pot holes / patches	1
Light Weight Vehicles (1 tons) – (4wd for Patrol & 2wd for hot box)	2

#### **Location of Vehicles and Other Equipment:**

Vehicles as listed in the table above are housed at Winchester Yard. However, in the case of an emergency, these vehicles may be deployed to one of the Township properties but will be returned to their normal operational site once the emergency has ceased.

#### **4.7.2 Calibration Procedures:**

Calibration of the mix/salting equipment (compu-spreads, application rates for mix and salting equipment, etc.) will be carried out annually before the start of the winter maintenance season and re-checked as deemed necessary. New equipment calibration performed by supplier upon delivery. For other equipment, calibration is performed by mechanic at the start of each season, after each time the stone dusting equipment has been worked on or modified and at least once more during the season or as required by patrol Foreman.

#### **4.7.3 Fuel Stock and Locations:**

Winchester Yard has mobile re-fueling tank on patrol light duty truck for diesel fuel. Diesel fuel usage is closely monitored through the diesel fuel stock entries. The Patrol Foreman reorders diesel fuel on an as-needed basis. The tanks house approximately 400 litres. Fuel for gas operated vehicles is purchased at local vendors (Guy Fuels) on credit.

#### **4.7.4 Material Availability:**

Stone dust and Salt are tendered on a (2) two-year contract and released early in the season once the previous winter maintenance season has ended. The successful

supplier must supply the Township on an as-needed basis over the course of the winter season (October through April). Stone dust shed(s) and salt domes are located at Winchester Yard and filled prior to the winter period. The stone dust domes and salt sheds are monitored closely by staff and usage is documented so that the facilities may be refilled prior to depletion.

The Township may purchase stone dust from the County as needed. The target mix for Stone Dust-Salt (Pre-Mix) for the Township use is 3 Stone dust:1 salt.

List of Stone dust Dome facilities:

Winchester Yard      straight Rock Salt  
Capacity of Dome – 1,100 tonnes

## **5.0 Weather Prediction and Information**

### **5.1 Weather Prediction and Information Support:**

The information used in decision making will be a combination of a road weather forecast and manual road condition checks.

The Patrol Foreman will discuss possible actions with the Equipment Operators and other Patrol Foremen. Further discussions may ensue should the forecast suggest extreme weather conditions.

The Patrol Foreman assesses the conditions on a continuing basis with the aid of the forecast, and upon the completion of each of the routes will consider the potential need for additional resources and deploy action accordingly.

## **6.0 Operational Procedures**

### **6.1 Township Winter Maintenance Treatment Procedures:**

During periods of adverse weather conditions or forecast predictions and where there may be uncertainty about the course of action required the Patrol Foreman or their designate and the Equipment Operator should consult the following guide:

Background: Each storm has individual characteristics and must be dealt with accordingly. Therefore, exceptions to this plan may occasionally be necessary.

While the Township may implement winter maintenance procedures and minimum maintenance standards it is also the responsibility of the travelling public to acknowledge adverse weather conditions and drive accordingly.

Motorists should drive their vehicles during adverse weather conditions with additional

caution and watchfulness, especially with respect to reduced traction and/or visibility. Motorists are advised to reduce their speed substantially below the posted speed limits during the periods of adverse conditions.

## **6.2 Standard Township Procedures for Winter Maintenance Operations:**

The primary method of snow removal shall be by plowing. Salt or stone dust/salt may be used to preclude the formation of ice, enhance snow/ice removal or to improve traction. It can be expected that snow will be plowed into driveways as a normal part of snow removal operations.

The Township will not be responsible for snow or ice pushed or otherwise placed on the roadway or shoulders by others (sec. 181, Highway Traffic Act). The Township will not be responsible for damage to lawns on the Township road right of way or for the deposition of gravel in road ditches unless there are extenuating circumstances. These areas may be repaired on a case-by-case basis at the discretion of the Director of Public Works, or their designate.

A piece of Township snow removal equipment may damage a mailbox located in or immediately adjacent to the roadway. The Township will not repair damage to items if the damage is due to the force of the snow being discharged by the snow removal equipment. The Township may repair/replace personal property damaged by direct contact by its equipment on a case-by-case basis. Damaged mailboxes will be replaced with standard, conventional boxes or materials only, as the Township takes no responsibility for special installations or mail box designs which are installed on the Township road right of way.

Under no circumstances shall the Township use one of its pieces of equipment to push, pull or tow stranded, private vehicles from a roadway or ditch except in a life or health threatening situation. In such cases a Township employee may give brief assistance or call for emergency response. Likewise, no Township employee may use a Township vehicle or piece of equipment to perform snow or ice control operations on private or commercial property.

### **Sidewalks:**

The Public Works Department is responsible for maintaining/plowing snow from sidewalks in Winchester, Chesterville, Morewood and South Mountain. The Township may, remove the snow accumulated on areas between the sidewalk and main streets in Winchester and Chesterville on clear days, depending upon weather conditions and resources. This will be completed as a low priority function, following the completion of the Township priority work on the driving surface. However, with the implementation of afternoon shift, regular snow removals may be performed



on clear days. Snow removal in Winchester by the staff will be performed in conjunction with the current contract, as needed. Patrol Foreman currently call the snow clearing contractor in Winchester once or twice a week.

### 6.3 **Rates for Salt and Stone Dust**

In addition to the Minimum Maintenance Standards as set out by the Township the following procedures are provided as a guideline for winter maintenance operations.

<u>Some snowpack or ice, no precipitation</u>	<u>55 kg / ln km salt</u>	<u>55 kg/ ln km salt</u>	<u>130 kg / ln km stone dust-salt mix (2:1)</u>	<u>Yes</u>
<u>Mostly snow pack or ice covered or light precipitation (2 to 5cm)</u>	<u>55 kg / ln km salt</u>	<u>55 kg / ln km salt</u>	<u>130 kg / ln km stone dust-salt mix (2:1)</u>	<u>Yes</u>
<u>Snow packed or iced over, or heavy precipitation (5cm or higher)</u>	<u>55 kg / ln km salt</u>	<u>65 kg / ln km salt</u>	<u>130 kg / ln km-stone dust -salt mix (2:1)</u>	<u>Yes</u>
<u>Freezing Rain</u>	<u>65 kg/ ln km salt</u>	<u>130 kg / ln km stone dust-salt mix (2:1)</u>	<u>130 kg / ln km stone dust-salt mix (2:1)</u>	<u>n/a</u>
<u>Gravel Road</u>	<u>130 kg / ln km stone dust – salt mix (3:1)</u>	<u>130 kg / ln km stone dust – salt mix (3:1)</u>	<u>130 kg / ln km stone dust – salt mix (3:1)</u>	<u>Yes</u>
<u>Snow Condition / Pavement Temperature</u>	<u>-8 C and above</u>	<u>-9 to -12 C</u>	<u>-13 C and below</u>	<u>Plowing</u>

### **Minimum Application Rates – kg/ lane km:**

**Note:** Patrol Foreman or their designate can make adjustments as necessary based on local climate.

#### Conventional Stone Dust / Stone duster

- Two-way salting or stone dusting/salting shall be the Township standard unless weather conditions or circumstances dictate otherwise.

### 6.4 **Contract Routes:**

The Township of North Dundas will review the need for contract truck routes annually.

The contracted routes will be awarded by tender process. The Township presently does not have winter contracts. Contract trucks will be called out by the Patrol Foreman or their designate, if needed, subject to approval of Director of Public Works.

## **6.5 Environmentally Sensitive Areas**

It is necessary to understand the impacts of the Township winter maintenance policies and practices on environmentally and agriculturally sensitive areas. The following measures are employed to assist the Township in identifying environmentally sensitive areas within the Township:

- . Identify wetlands, streams and valleys, environmentally sensitive areas, pond, lakes, reservoirs, woodlands, fish, wild life, plant habitat, threatened and endangered species, flood plains and hazard lands, and areas of natural and scientific interest adjacent to salt storage areas.
- . Liaise with conservation authorities.
- . Seek guidance from federal/provincial ministries and/or agencies, when necessary.

The Township salt storage and facilities lie outside the ten (10) year capture zone and environmentally sensitive features, so salt storage is not a significant concern.

## **7.0 Training**

### **7.1 Training Provided to Winter Operators and Applicable Roads Staff**

The Township Public Works Department will endeavour to provide the following training to its staff:

- a) Full Time Roads staff will be given the opportunity to receive First Aid/CPR Training
- b) All Roads staff will be given WHMIS training
- c) All Roads Staff will be provided with access and knowledge on Occupational Health and Safety
- d) All Operators will be provided with third party Snow Plow Driver training

## **8.0 Continuous Improvement Practices and Strategies**

### **8.1 Monitoring and Updating**

An annual review of the Winter Maintenance and Salt Management Plan by management and staff will occur at the end of each winter season. As a result of this review the plan will be updated to include any changes in Department Policy, strategies, and new techniques or equipment to be used in the upcoming winter season. Changes made to

the plan will be incorporated in the annual fall maintenance session in preparing for the upcoming winter control season.

## **8.2 Performance Measures**

Consider performance measures to determine whether the objectives of the salt management plan have been met. Achievement, year-over-year, will be measured against the benchmark / previous four (4) years average. Some of the indicators may include:

Monitoring the severity of the winter season:

- . Total annual cm of snow accumulation
- . Total number of days with measurable snowfall
- . Total number of days with freezing rain
- . Total number of continuous winter event responses
- . Total number of spot winter event responses
- . Total number of winter event hours

Monitoring the salt used

- . Tonnes of salt purchased annually
- . Percent of applications where discharge rates were exceeded
- . Total tonnes of salt applied annually per lane km

Ensuring customer satisfaction

- . Total number of complaints received regarding winter operations
- . Percent of complaints that resulted in a response

Measuring the success of the plan

- . Percent of the goals, if any, set out in the plan that were met

## **8.3 Level of Services Policy**

The Township currently maintains a winter maintenance level of service as per this document that meets or exceeds Ontario Regulation 239/02.

## **8.4 Equipment Calibration and Verification**

- . Properly calibrated equipment is one of the keys to the effective placement of de-icing material on municipal roads.
- . Applications rates for all materials are outlined in this document and are subject to annual review.
- . Prior to the winter season and each year thereafter, all spreaders will have their calibration verified and will be calibrated as needed. During the winter season the

equipment will be checked and recalibrated once mid-season and each time there has been work on the vehicle's hydraulic system.

- . Prior to the winter season and each year thereafter all routes will be benchmarked for the theoretical amount of winter materials required.

### **8.5 Equipment Washing**

Equipment washing is intended to reduce the amount of chlorides, oil, grease and grit that is discharged back into the environment.

- . An oil/water separator is in place at the patrol yards and vehicle washing happens indoors.

### **8.6 Material Delivery and Handling**

In the fall season, salt and stone dust is delivered and stockpiled. Winter stone dust is mixed with salt and all material conveyed to indoor storage, if not already done so.

- . Ensure all deliveries of stone dust, and salt are covered while in transport, and schedule deliveries in good weather if feasible.
- . Ensure the loading areas are swept clean following the transfer of the material.
- . Ensure proper records are kept that include weigh tickets

### **8.7 Storm Response**

Patrol Foreman have decision-making authority for winter road maintenance during winter storm events that includes, but is not limited to, combinations of precipitation, air and pavement temperatures, time of day and traffic volume. The patrol staff have the ability to call in plow operators on an as-needed basis given the current road conditions, factors to be considered are:

- . Type of storm event;
- . Air and/or pavement temperature during event
- . At end or after the storm event; temperature rising, temperature falling
- . Time of day; effect of heat gain during daylight hours
- . Time of day; traffic volumes assist in breaking the bond of snow/ice with the pavement
- . Wind direction
- . Drifting conditions; do nothing and let the wind blow the snow across the road
- . Frost penetration in the road base contributing to pavement temperature

### **8.8 Technological Review**

Existing and new technology should be continuously monitored to determine applicability in the current policy and procedures with a view to altering them for continuous improvement in response to winter storm events.

Technological improvements should be periodically reviewed for the following aspects of salt management:

- . Pre-wetting
- . Direct liquid application or anti-icing
- . Impact of different liquids on the equipment used for application
- . GPS for vehicle locating and data transfer
- . Electronic spreader controls with capability for solids, liquids, and data transfer via GPS
- . New spreader equipment with liquid capabilities
- . Environment protection at snow dumps to prevent discharge of debris and chemicals directly into a watercourse with the melt water
- . Use of RWIS for localized weather and pavement temperature forecasting
- . Use of infrared thermometers for measuring pavement temperature
- . Use of pavement temperature as a tool in determining when and what material is to be used

## **9.0 Conclusion**

### **9.1 Final Statement:**

The Winter Maintenance and Salt Management Plan Policy laid out above is to establish goals and guidelines for the Township of North Dundas Public Works Department employees regarding winter maintenance of snow and ice control. It is not to be construed to create any duty to a specific individual or employee but is to act as a guideline for winter maintenance operations for the Township of North Dundas. The policy can be updated from time-to-time at the discretion of Director Public Works in consultation with the CAO. Updates will be documented and reported to the Council for consideration and input.

**10.1****Appendix “A”****Distribution List**

<b>Name</b>	<b>Title</b>	<b>Telephone Number</b>
Angela Rutley	CAO	Office: 613-774-2105 ext. 231 arutley@northdundas.com
Khurram Tunio	Director of Public Works	Office: 613-774-2105 ext. 292 Cell: 613-614-2450 ktunio@northdundas.com
John Oswald	Patrol Foreman	Office: 613-774-2105 ext.229 Cell: 613-229-3552 joswald@northdundas.com
Barry Giberson	Lead Land	Cell: 613-795-1545
Roads Staff	Operators / Laborer	Office: 613-774-2105

**10.2****Appendix “B”****Contact List**

<b>Name</b>	<b>Title</b>	<b>Contact Information</b>
Angela Rutley	CAO	Office: 613-774-2105 ext. 231 arutley@northdundas.com
Khurram Tunio	Director of Public Works	Office: 613-774-2105 ext. 292 Cell: 613-614-2450 ktunio@northdundas.com
John Oswald	Patrol Foreman	Office: 613-774-2105 ext.229 Cell: 613-229-3552 joswald@northdundas.com

Barry Giberson	Lead Hand	Cell: 613-795-1545
Roads Staff	Operators / Labourers	Office: 613-774-2105
Ontario Provincial Police	In Case of Emergency/ Road Closure	24 Hr. Service – 613 774 2603
Emergency Medical Service	Acting Chief Wayne Markell, 601 Campbell Street, Cornwall	Office: 613-930-2787 x 2384 Cell: 613-551-7340
Stephen Mann	Economic Development and Communications Officer	P: 613-774-2105 ext.244 C: 613-229-7179



## **10.3**

### **Appendix "C"**

#### **Copies of Records/Reports to be Completed by Patrol Foremen and/or Operators (See attached)**

- a. Routine Patrol Record**
- b. Winter Patrol Record**
- c. Patrol Foreman's Diary (typical – not attached)**
- d. Samples Record of On-Duty Status as referenced in 2.4, Hours of Work Record and Highway Traffic Act, Hours of Service**
- e. Winter Weather / Operation Record (forecast records, not attached)**
- f. Daily Inspection Report**

10.3.a. Patrol Record – Corporation of the \_\_\_\_\_ of \_\_\_\_\_

Date of Patrol:	Weather		
	Clear	<input type="checkbox"/>	Wind <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/>
Start of Patrol (Time)                      End of Patrol (Time)	Partly Cloudy	<input type="checkbox"/>	Direction _____
	Overcast	<input type="checkbox"/>	Visibility <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor <input type="checkbox"/>
Patrolled by: (Please Print)	Rain	<input type="checkbox"/>	Air Temperature
	Snow	<input type="checkbox"/>	
Signature:	Freezing Rain	<input type="checkbox"/>	
	Fog	<input type="checkbox"/>	

Blank space  
Acceptable

Condition Codes		Action Required
N/A	Not applicable	No action required
→	Acceptable	No action required
M	Marginal - a defect observed, that does not create a hazard	Monitor defect
NS	Observed Defect Needs Service	Schedule repair to comply with MMS or LOS

[illegible]

10.3.b. Winter Patrol Record – Corporation of the\_\_of \_\_\_\_\_

Date of Patrol:	Weather						
	Clear	<input type="checkbox"/>	Time	Wind	Light <input type="checkbox"/>	Moderate <input type="checkbox"/>	Strong <input type="checkbox"/>
Start of Patrol (Time)	Partly Cloudy	<input type="checkbox"/>	Time		Direction _____		
	Overcast	<input type="checkbox"/>	Time	Visibility		Good <input type="checkbox"/>	Time
Patrolled by: (Please Print)	Rain	<input type="checkbox"/>	Time		Fair <input type="checkbox"/>	Time	
	Snow	<input type="checkbox"/>	Time		Poor <input type="checkbox"/>	Time	
Signature:	Freezing Rain	<input type="checkbox"/>	Time	Weather Comment:			
	Fog	<input type="checkbox"/>	Time				

Condition Codes		Action Required
✓	Observed Condition requiring a Winter Event Response	Schedule operations to comply with MMS or LOS
X	Observed Condition No Response Required	No Action required
N/A	Not applicable	No Action required

### Results of the Patrol of Representative Roads

[illegible]

RECORD OF DUTY STATUS															(This document cannot be used as a driver's daily log. See instructions inside the front cover.)																	
Driver's Name										Company																						
Location										Address																						
Accumulated hours of past 14 days																																
	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	Date																
Off-duty																	Off-duty															
Driving																	Driving															
On-Duty (not driving)																	On-Duty (not driving)															
Midnight	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	Total Hours	Date							
Off-Duty																								Off-duty	Mo.							
Driving																								Driving	Day							
On-Duty (not driving)																								On-Duty (not driving)	Cycle 1__ 2__							
Midnight	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	Total Hours	Date							
Off-Duty																								Off-duty	Mo.							
Driving																								Driving	Day							
On-Duty (not driving)																								On-Duty (not driving)	Cycle 1__ 2__							
Midnight	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	Total Hours	Date							
Off-Duty																								Off-duty	Mo.							
Driving																								Driving	Day							
On-Duty (not driving)																								On-Duty (not driving)	Cycle 1__ 2__							
Midnight	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	Total Hours	Date							
Off-Duty																								Off-duty	Mo.							
Driving																								Driving	Day							
On-Duty (not driving)																								On-Duty (not driving)	Cycle 1__ 2__							
Midnight	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	Total Hours	Date							
Off-Duty																								Off-duty	Mo.							
Driving																								Driving	Day							
On-Duty (not driving)																								On-Duty (not driving)	Cycle 1__ 2__							
Midnight	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	Total Hours	Date							
Off-Duty																								Off-duty	Mo.							
Driving																								Driving	Day							
On-Duty (not driving)																								On-Duty (not driving)	Cycle 1__ 2__							

# Record of Duty Status - Hours of Service

## Record of Duty Status for Local Driver (Operating within 160 km of terminal) 7 Day Cycle

Driver Name: \_\_\_\_\_

Date:					Start Location:										End Location:										
Duty Status	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Totals
Off Duty																									
On Duty - Driving																									
On Duty - Not Driving																									
Remarks																									

7 Day ON DUTY Total

Date:					Start Location:										End Location:										
Duty Status	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Totals
Off Duty																									
On Duty - Driving																									
On Duty - Not Driving																									
Remarks																									

7 Day ON DUTY Total

Date:					Start Location:										End Location:										
Duty Status	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Totals
Off Duty																									
On Duty - Driving																									
On Duty - Not Driving																									
Remarks																									

7 Day ON DUTY Total

Date:					Start Location:										End Location:										
Duty Status	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Totals
Off Duty																									
On Duty - Driving																									
On Duty - Not Driving																									
Remarks																									

7 Day ON DUTY Total

Date:					Start Location:										End Location:										
Duty Status	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Totals
Off Duty																									
On Duty - Driving																									
On Duty - Not Driving																									
Remarks																									

7 Day ON DUTY Total

Mandatory Off Duty Time - Minimum of 10 hours off duty required, 8 hours must be consecutive

On Duty Driving - Maximum of 13 Hours in a shift

On Duty Status - Driving and Non Driving - Maximum of 14 hours in a shift - 8 consecutive hours off duty required

Shift Duration - Maximum of 16 hours from the start of shift - 8 consecutive hours off duty required

7 Day Cycle - Maximum of 70 hours On Duty in 7 consecutive days - 24 consecutive hours off duty required

**\*\*Sheet must be completed in full and submitted to Supervisor\*\***

10.3.f. Daily Vehicle/Equipment Inspection Report (CVOR) – to be used in conjunction with Schedule 1

Daily Vehicle / Equipment Inspection Report

This vehicle inspection must be completed each day prior to movement of any vehicle or equipment.  
This completed report must be carried in the vehicle and submitted to your supervisor at the end of shift.

DATE	TIME AM/PM	LOCATION	INSPECTED BY		SIGNATURE
UNIT NO.	VEHICLE PLATE	ODOMETER	TRAILER NO.	TRAILER PLATE	PRE-TRIP <input type="checkbox"/> POST TRIP <input type="checkbox"/>
DRIVER 1 NAME		SIGNATURE	DRIVER 2 NAME		SIGNATURE

Defects Noted			Schedule 1	Additional Inspection Items		
Major	Minor		Refer to Schedule 1 Major/Minor Defects	Defect		Item
		1	Air Brake System			Ownership
		2	Cab			Insurance
		3	Cargo Securement			License Plate/Sticker
		4	Coupling Devices			CVOR
		5	Dangerous Goods			Radio
		6	Driver Controls			Gauges
		7	Driver Seat			Electronics
		8	Electric Brake System			Fluid Levels
		9	Emergency Equipment and Safety			Body Damage
		10	Exhaust System			Beacons/Arrow Board
		11	Frame and Cargo Body			Harness/Plow/Wing
		12	Fuel System			Plow/Sander Controls
		13	General			Sander/Spinner
		14	Glass and Mirrors			Other:
		15	Heater/Defroster			Other:
		16	Horn			Other:
		17	Hydraulic Brake System	Inspection Notes:		
		18	Lamps and Reflectors			
		19	Steering			
		20	Suspension System			
		21	Tires			
		22	Wheels, Hubs and Fasteners			
		23	Windshield Wiper/Washer			

Fleet Technician Comments/Repairs Completed: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Fleet Technician Signature: \_\_\_\_\_












**10.4**

**Appendix “D”**

**Winter Patrol Route Drawings  
(See attached)**


## Plow Route Snow Event

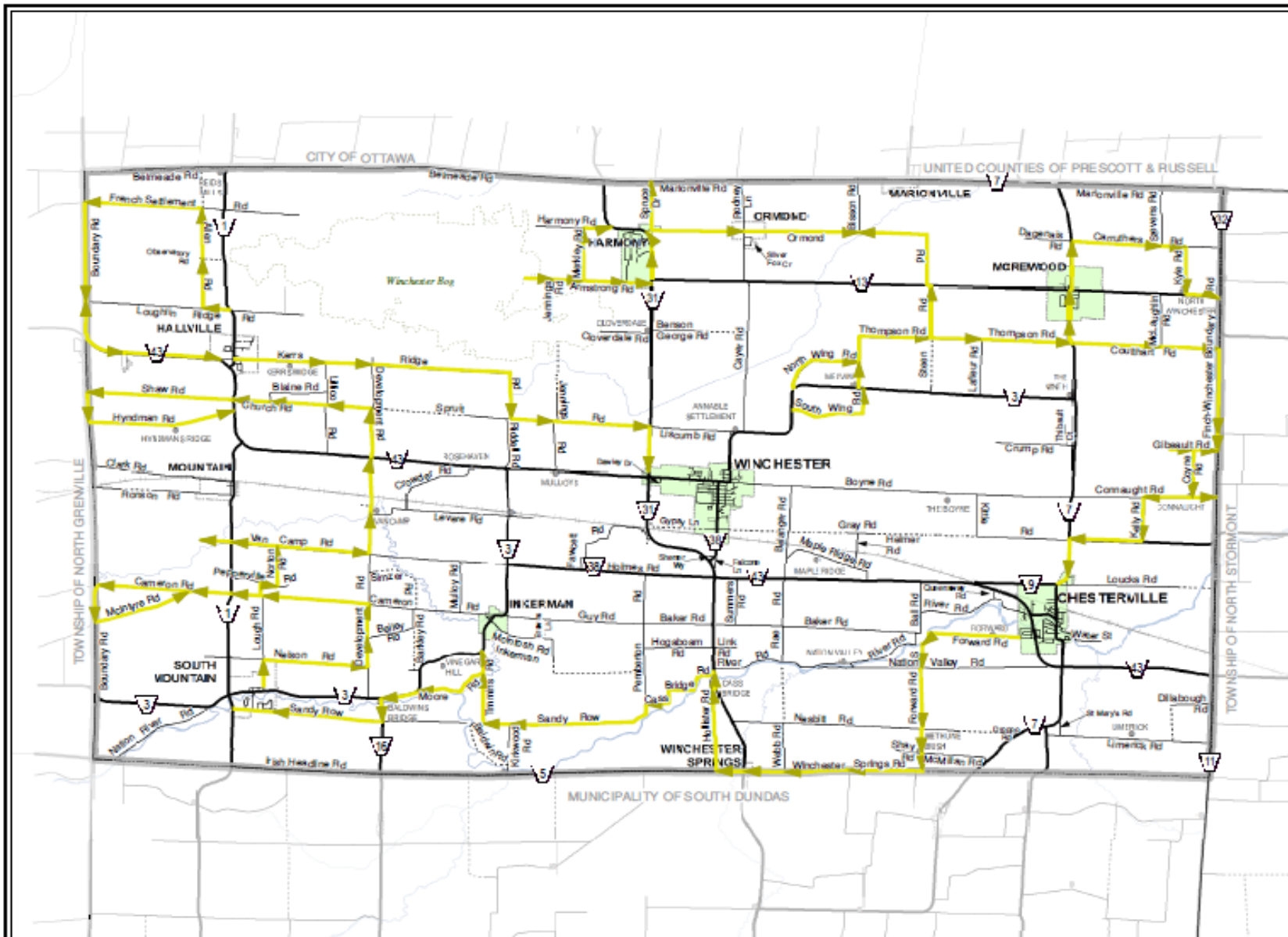
### Legend

-  Plow Route
-  Plow Area
-  Highway
-  County Road
-  Township Road
-  Private/Other Road
-  Road Allowance / Unmaintained Road
-  Under Construction
-  Railroad
-  Settlement Area
-  Township Boundary



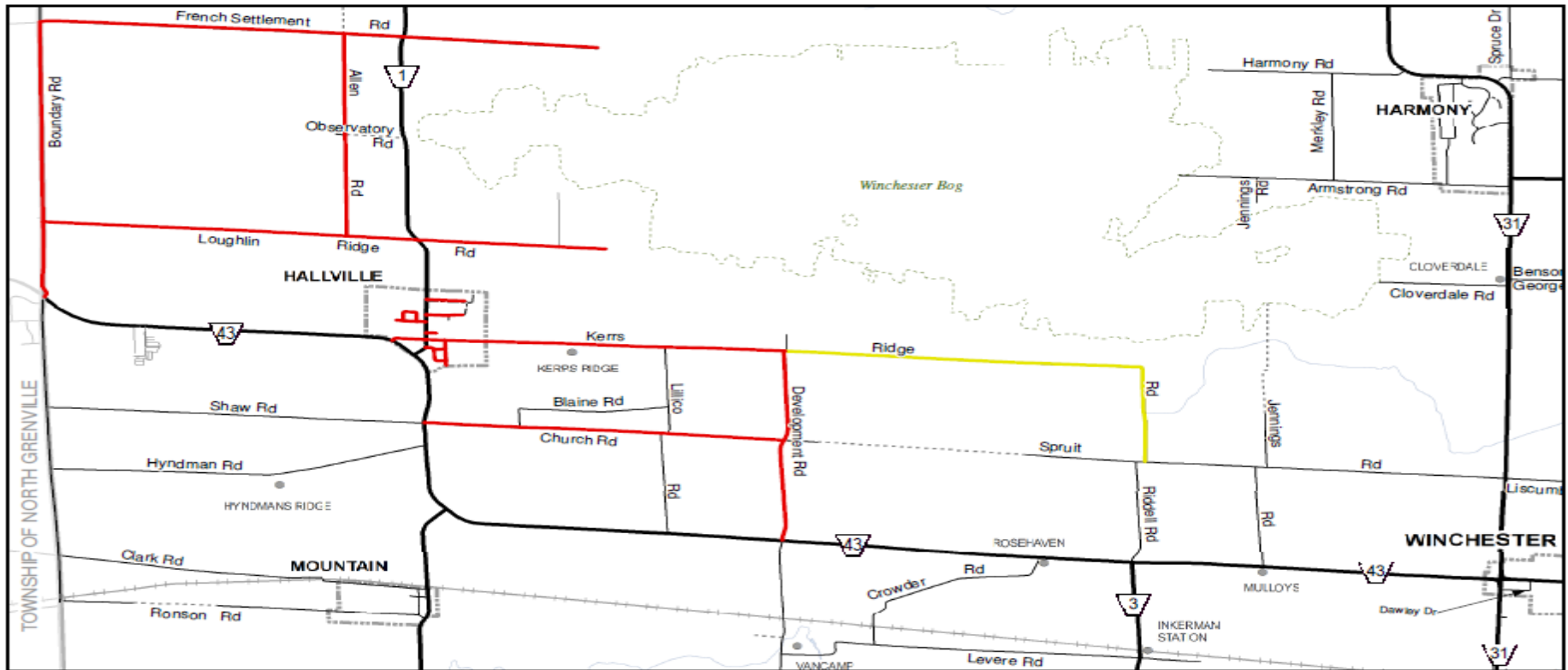
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Kilometers

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## Snow Plow Route - Hallville - 3204



### Legend

#### Snow Plow Route

##### Surface Type

- Pavement
- Gravel



County Road

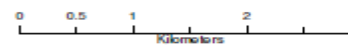
Township Road

Private/Other Road

- Road Allowance / Seasonal Road
- Under Construction
- Railroad
- Settlement Area

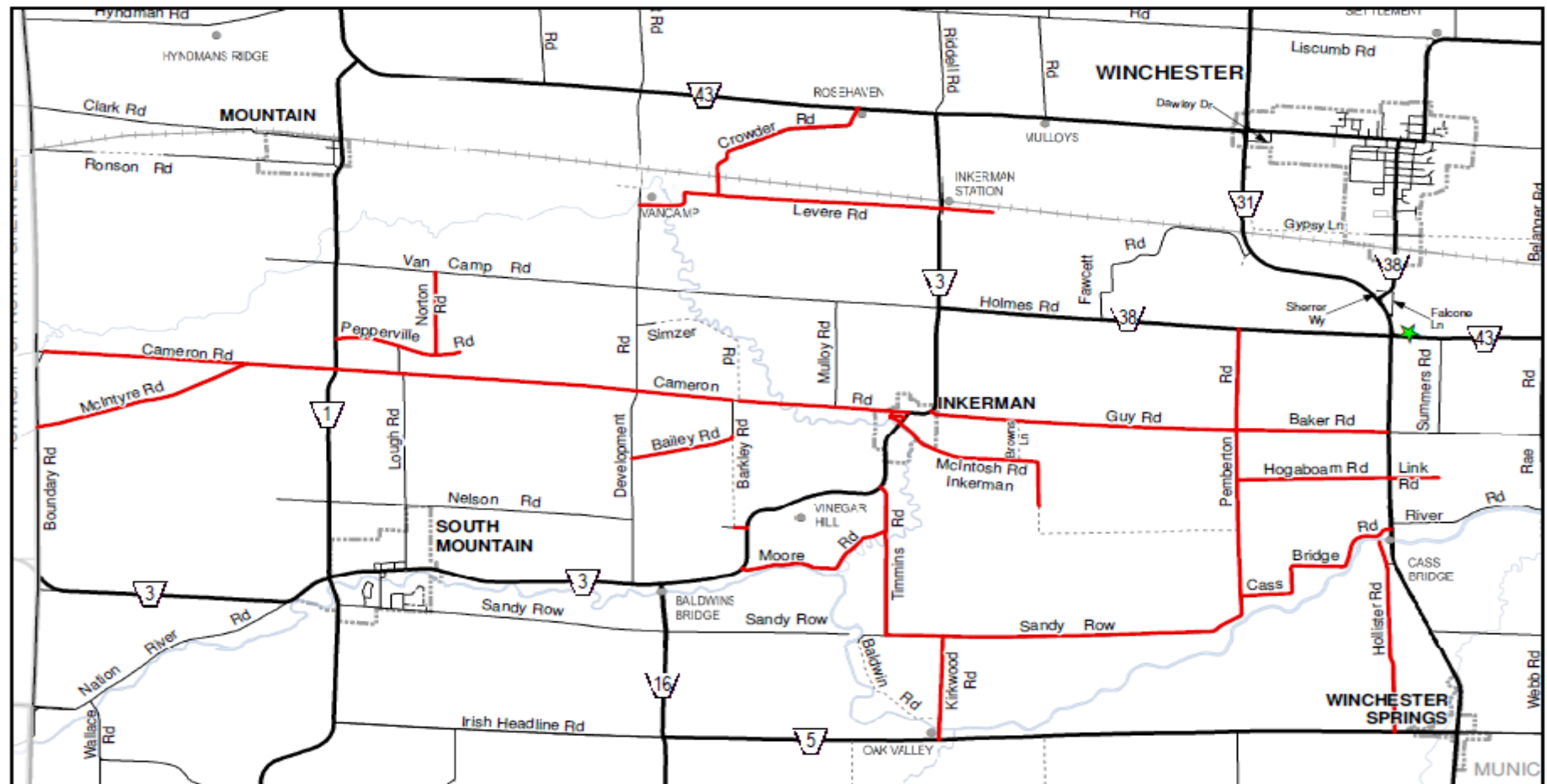


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## Snow Plow Route - Inkerman



### Legend

#### Snow Plow Route

#### Surface Type

- Pavement
- Gravel



County Road

Township Road

Private/Other Road

----- Road Allowance /  
Unmaintained Road

— Under Construction

+— Railroad

□ Settlement Area

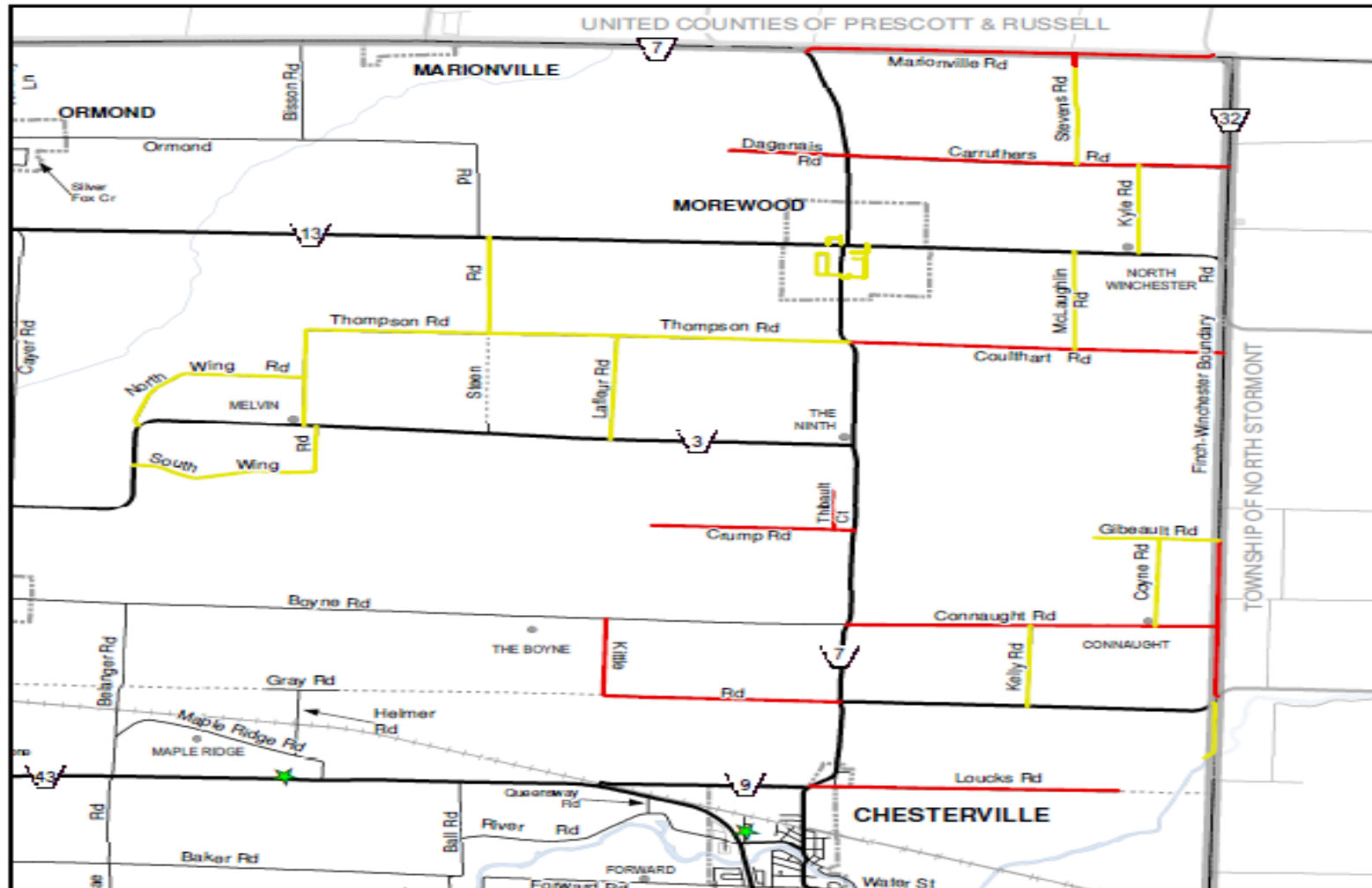


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## Snow Plow Route - Morewood - 3212



### Legend

Snow Plow Route  
Surface Type

— Pavement

— Gravel

★ Patrol Garage

□ Settlement Area

9 County Road

— Township Road

— Private/Other Road

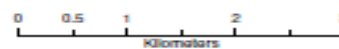
--- Road Allowance / Unmaintained Road

— Under Construction

— Railroad

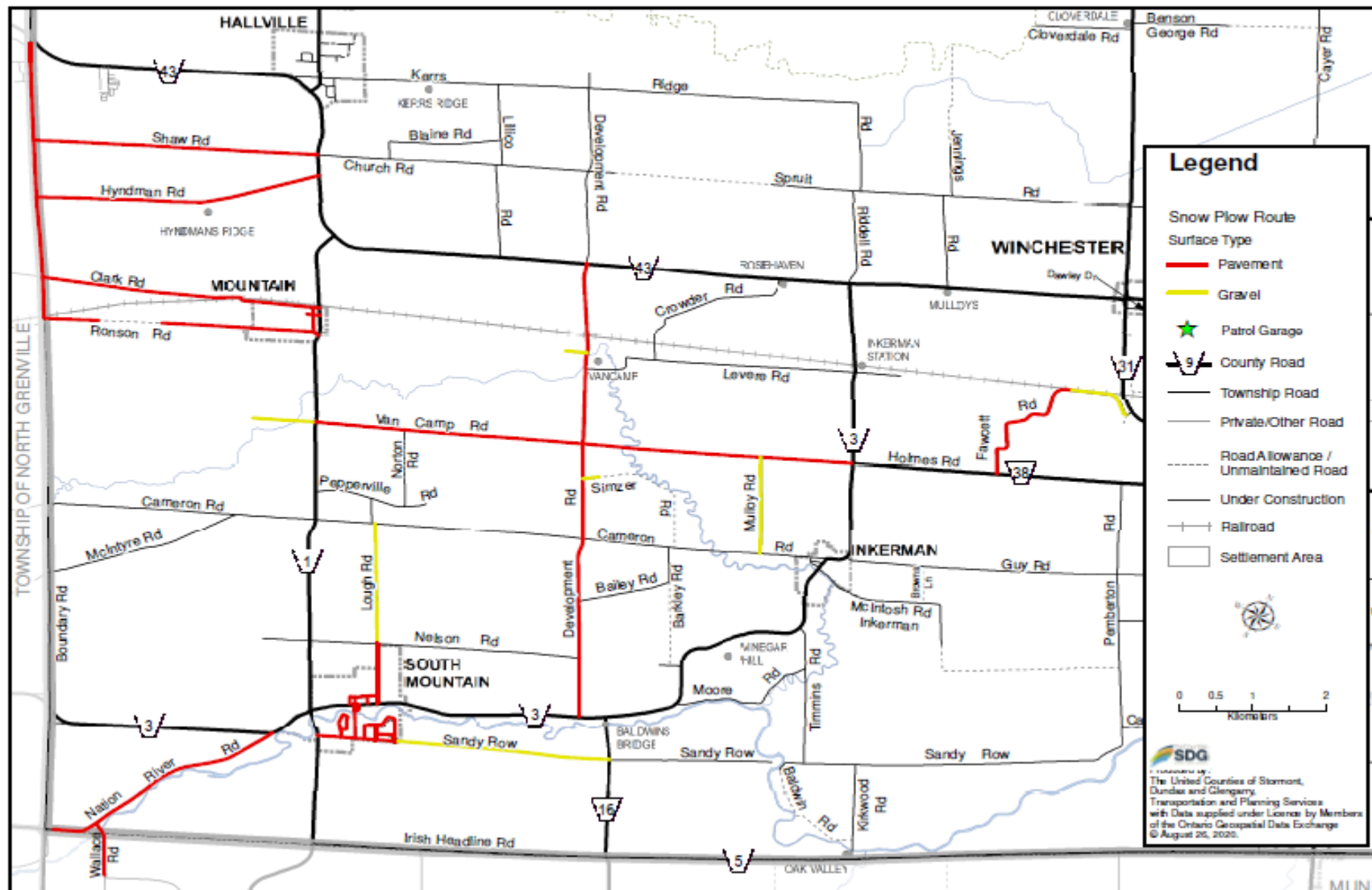


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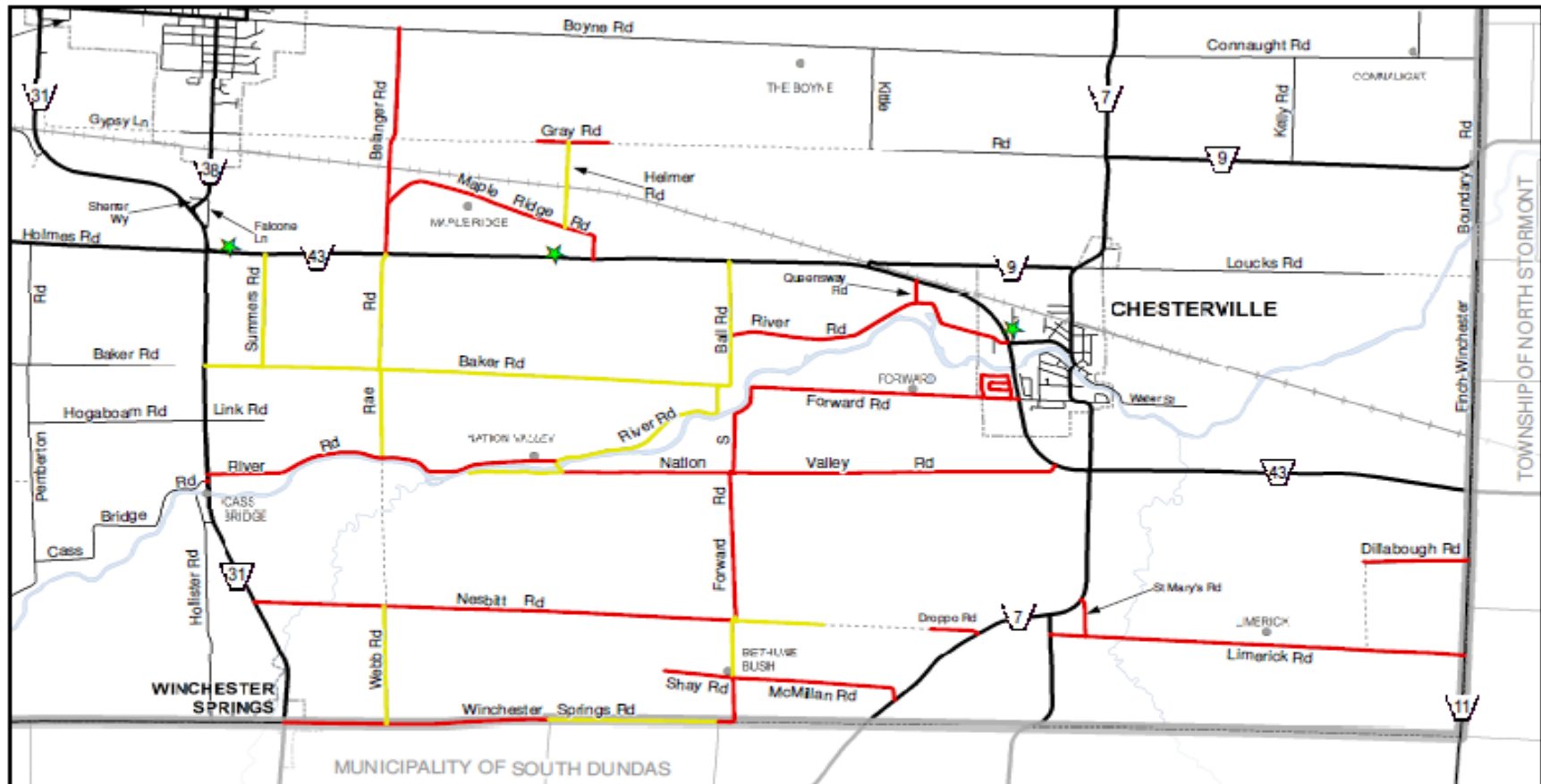
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## Snow Plow Route - Mountain - 3203





## Snow Plow Route - Winchester Springs - 3208



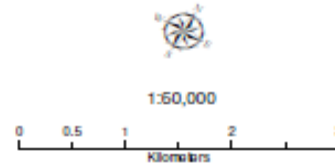
### Legend

Snow Plow Route  
Surface Type

— Pavement  
— Gravel

★ Patrol Garage  
— County Road  
— Township Road  
— Private/Other Road

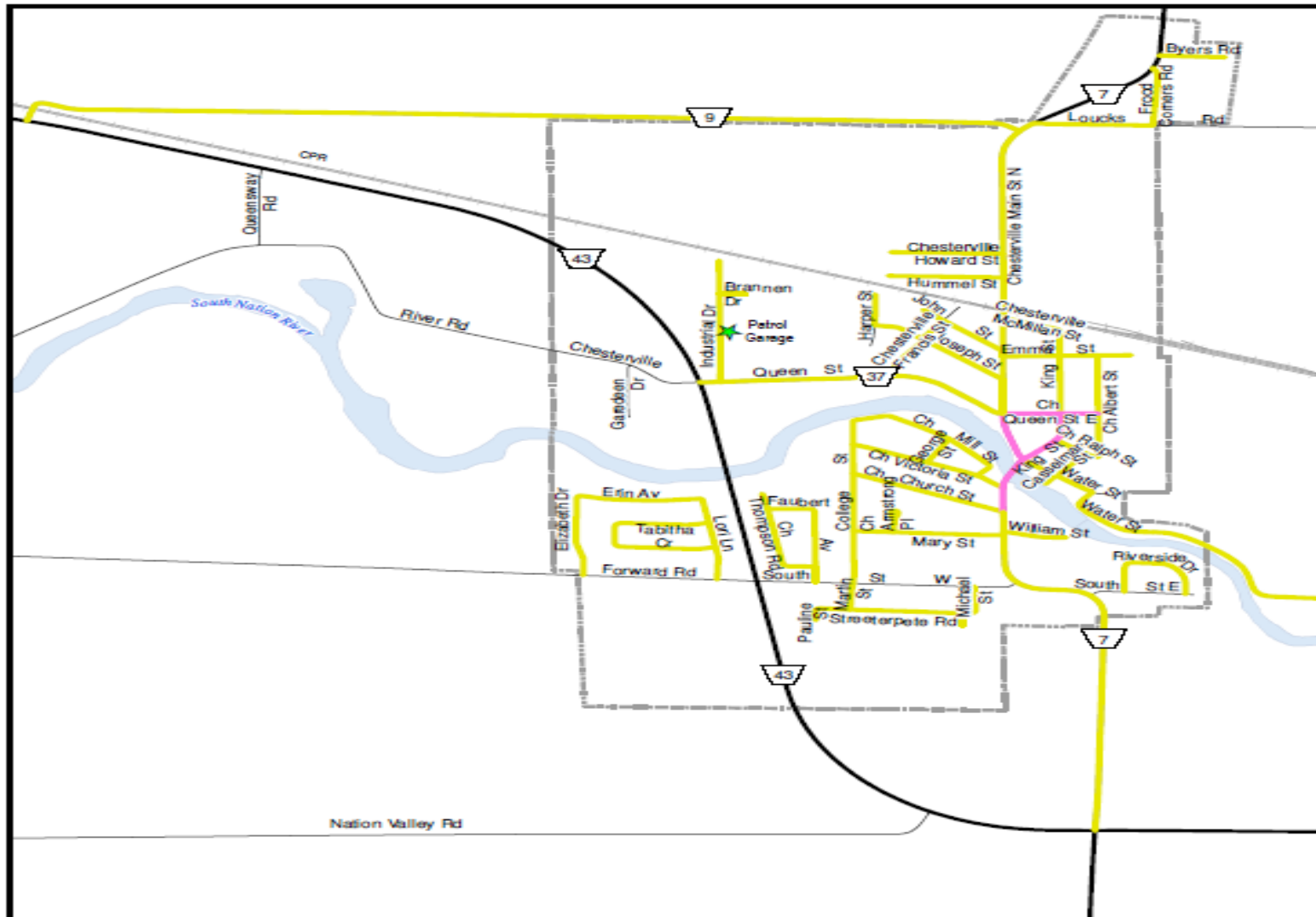
--- Road Allowance /  
Unmaintained Road  
— Under Construction  
— Railroad  
□ Settlement Area



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## Snow Plow Route - Chesterville



### Legend

**Snow Plow Route**  
 Regular Route  
 Priority Route  
 (Business Area)



County Road



Township Road



Private/Other Road

----- Road Allowance / Seasonal Road

— Under Construction



Railroad



Settlement Area



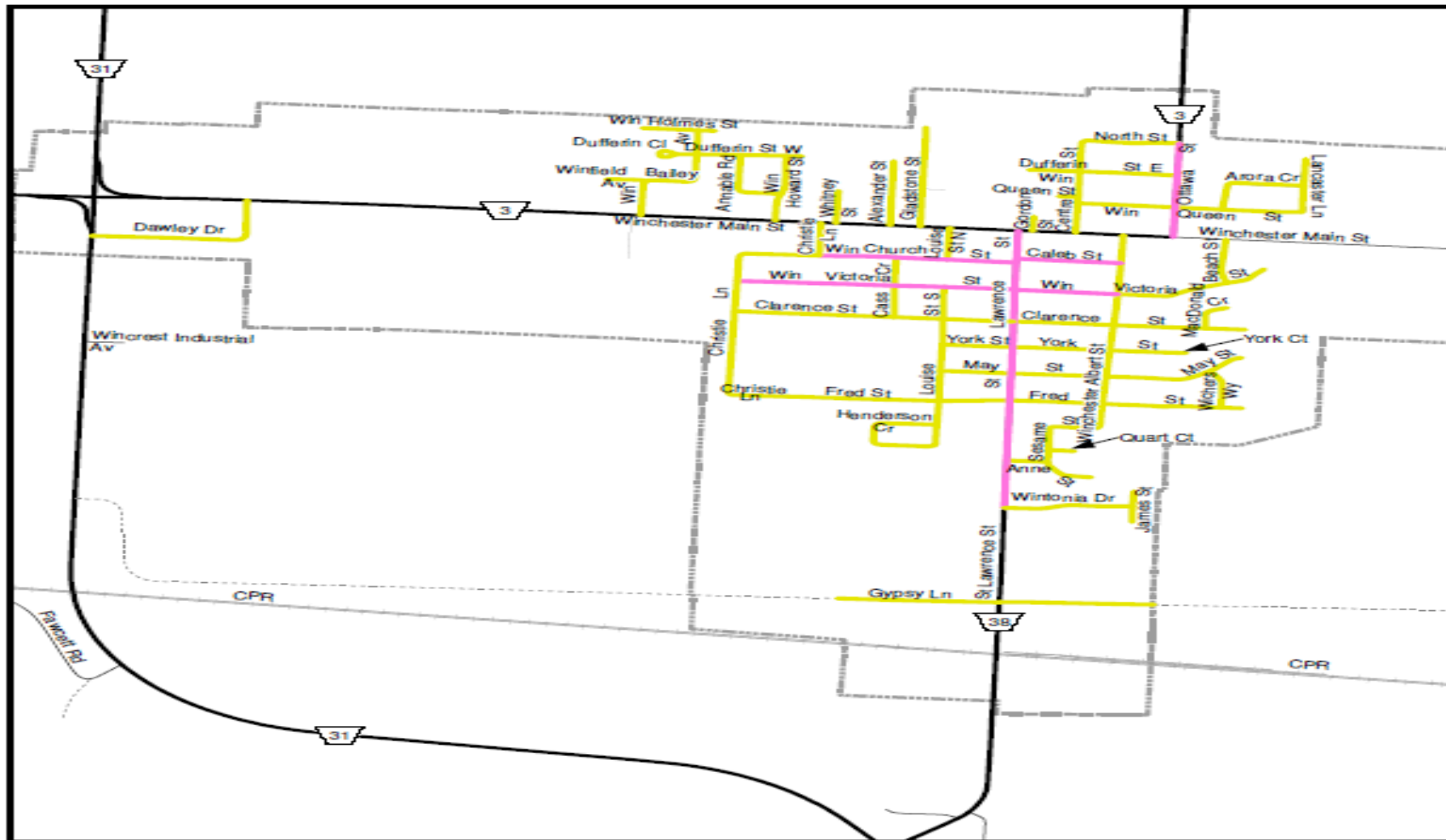
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## Snow Plow Route - Winchester



### Legend

#### Snow Plow Route

- Regular Route
- Priority Route (Business Area)



County Road



Township Road



Private/Other Road

----- Road Allowance / Unmaintained Road

----- Under Construction

---+--- Railroad

□ Settlement Area



1:14,000

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Meters



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