

Winter Maintenance Plan

Purpose

The Winter Maintenance Plan sets out a procedural framework for ensuring that the Municipality of Middlesex Centre continuously improves on the safe and sustainable delivery of winter maintenance services and the effective and efficient use of resources, and materials in their winter maintenance operations. This plan supersedes all previous winter maintenance plans for the Municipality of Middlesex Centre.

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. At the same time, any modifications to municipal winter maintenance activities must ensure that roadway safety is not compromised. Staff will make technical and administrative amendments to the plan as warranted by changes in; legislation, equipment, technology, staffing, material usage and application rates, road classifications, plow routes, patrol routes, and or shift changes.

In the case where [Minimum Maintenance Standards legislation](#) conflicts with this plan the Minimum Maintenance legislation will be used and deemed to supersede this policy.

Policy Statement

The Municipality of Middlesex Centre is committed to providing safe and sustainable winter maintenance operations while continuing to improve those operations to provide safety and mobility for the traveling public. As an integral part of this effort the Municipality of Middlesex Centre will strive to optimize the use of all winter maintenance materials as they pursue the goal of a safe and sustainable transportation system.

The Municipality of Middlesex Centre Public Works staff will strive, insofar as reasonably practicable, to provide safe winter road conditions for vehicular, pedestrian, and cycling traffic as set out in this Winter Maintenance Plan, and the Minimum Maintenance Standards and within the resources established by the Council of the Municipality of Middlesex Centre.

Scope

This plan applies to all municipal staff engaged in winter maintenance operations.

Roles & Responsibilities

Council, and members of Council shall approve budgets for; winter maintenance; materials, staffing, and equipment, as well as any policies or plans related to winter maintenance standards, and level of service.

The Director of Public Works and Engineering and Transportation Manager shall be responsible for reviewing and amending the winter maintenance plan annually to ensure compliance with legislation and to accurately reflect any changes to road classifications, routes, equipment, staffing or technology used in the delivery of winter maintenance activities.

The Transportation Supervisor and designates (Assistant Transportation Supervisors, and Lead Hands) shall review this plan annually with all employees engaged in winter maintenance activities and ensure compliance with this plan during winter maintenance activities.

Definitions

“Anti-icing” means the application of liquid de-icers directly to the road surface in advance of a winter event.

“Continuous Winter Event Response” is a response to a winter event with full deployment of staff and equipment that plow/salt/sand the entire transportation system.

“Council” means the Council for the Corporation of the Municipality of Middlesex Centre and includes its successor.

“De-icing” means the application of solids, liquids, pre-treated material to the road surface after the on-set of the winter event.

“Director” shall mean the Director of Public Works and Engineering or designate.

“Employee” means all employees, servants, and agents of the Municipality or contractors hired by the Municipality.

“Highway” means a common and public highway, street, avenue, parkway, driveway, square, place, bridge, viaduct or trestle, any part of which is intended for or used by the general public for the passage of vehicles and includes the area between the lateral property lines thereof.

“Minimum Maintenance Standards” The provincially legislated standards at which municipal roadways are to be maintained, [O.Reg. 239/02](#) as may be amended by the province of Ontario.

“Municipal Law Enforcement Officer” means a person appointed as such under this or any bylaw of the Municipality.

“Municipality” as the context requires, means the municipal Corporation of the Municipality of Middlesex Centre or the geographical limits of the municipality.

“Paved Road” means a road with an asphalt surface, tar and chip surface, concrete surface, composite pavement, or portland cement.

“Pre-treat” means the application of liquids (sodium chloride, calcium chloride, etc.) to dry salt or sand prior to being loaded for storage or applied to the road surface.

“Pre-wetting” means the application of liquids (sodium chloride, calcium chloride, etc.) at the spinner of the truck just prior to application to the road surface.

“Representative Patrol Route” is another term used for patrol routes used specifically for winter maintenance.

“Sand/Salt Route” is a collection of road segments, which during a winter storm will receive applications of sand/salt to prevent the formation of a bond between snow and pavement, or if such a bond has already formed, to break that bond. Typically, such routes have some sort of bare pavement level of service.

“Sand Route” is a collection of road segments which during a winter storm will receive applications of sand to provide a temporary increase in grip. In rare occasions such routes include gravel and other unpaved roads, where the use of salt or other freeze- depressant materials might impact road stability. The level of service on such routes would not have bare pavement as a service goal, and after other methods of snow and ice removal are unsuccessful.

“Significant Weather Event” means an approaching or occurring weather hazard with the potential to pose a significant danger to users of the highways within a municipality.

“Spot Winter Event Response” is a response to a winter event with only a partial deployment of staff and equipment or with full deployment to only part of the system.

“Transportation Manager” means the Transportation Manager or designate, or successor to that position for the Municipality of Middlesex Centre.

“Transportation Supervisor” means the Transportation Supervisor, assistant or designate, or successor to that position for the Municipality of Middlesex Centre.

“Unpaved Road” is a graded road with a gravel, stone or other loose traveling surface.

“**Winter Event**” is a weather condition affecting roads such as snowfall, windblown snow, freezing rain, frost or ice to which a winter event response is required.

“**Winter Event Response**” is a series of winter control activities performed in response to a winter event.

“**Winter Event Response Hours**” are the total number of person-hours per year (plowing, salting/sanding, winging back, removing, etc.) to respond to winter events.

WINTER MAINTENANCE PROGRAM

1.0 Winter Maintenance Overview

1.1 Overview of the Municipality of Middlesex Centre

- **Type of Organization:** Municipal
- **Structural Level:** Lower Tier Municipality
- **Estimated Population:** 18,928
- **Total Area:** 588.0 km²
- **Total Road Center Line Kilometers:** 603 km
- **Total Kilometers of Sidewalk:** 36.8 km
- **Total Kilometers of Maintained Off Road Trails:** 1.34 km
- **Address:** 10227 Ilderton Road, Ilderton, Ontario, N0M 2A0, Canada
- **Telephone:** 519-666-0190
- **Website:** www.middlesexcentre.ca
- **Director of Public Works & Engineering:** Rob Cascaden, Tel: 519-666-0190 ext 5245
- **Transportation Manager:** Andrew Giesen, Tel: 519-666-0190 ext 5253
- **Police:** Ontario Provincial Police, Contact Person: N/A, Primary Tel: 1-888-310-1122

1.2 Snowfall Volumes

The Municipality of Middlesex Centre is located immediately north and west of the City of London. The Municipality receives on average 194.3 centimeters of snow with an average

of 60 days of snow fall events. This is one of the highest snowfall volumes and days with snow in southwestern Ontario. Due to the geographic layout of the Municipality, the north of the Municipality (old Lobo and London Townships) generally see more snow and snow events than the south of the Municipality (old Delaware Township).

Due to the proximity of Middlesex Centre to the great lakes, there are frequent lake effect snow events which can deposit large amounts of snow in a short amount of time and with proper wind conditions can result in long periods of continuous snowfall.

Days	Location	Inches	Centimeters
22	Chatham-Kent	31.2	79.2
45	Guelph	61.1	155.1
60	London	76.5	194.3
60	Owen Sound	130.1	330.4
32	Point Pelee National Park	40.8	103.8
41	Sarnia	44.1	112.0
62	Waterloo	62.9	159.7
44	Windsor	50.9	129.3

Please refer to the following link for table reference: [Average yearly snowfall in southwestern Ontario](#)

1.3 Winter Maintenance Season

For operational purposes, the Municipality of Middlesex Centre assumes the winter season commences on November 1 and is completed by March 31, while acknowledging that winter events may occur outside of this timeframe.

1.4 Winter Maintenance FAQs

The Municipality has a number of standard responses, and general information regarding winter maintenance operations which can be found in Appendix F and also on the Municipality’s website.

2.0 Winter Preparations

In the months prior to the start of the winter maintenance season, the Municipality of Middlesex Centre undertakes the following tasks to prepare for the upcoming winter season.

2.1 Prior to Winter Season

Prior to the winter season, if required, prepare and call tenders for the supply of materials (e.g., salt, sand, liquid brine, etc.), replacement parts (for plows, solid and liquid

application equipment), value added meteorological services (VAMS) and contract equipment (e.g., plow trucks, spreader trucks, combination units, etc.).

Prior to the winter season the Municipality of Middlesex Centre will:

- Conduct a training session(s) for staff and contract operators where all policies, procedures, schedules, reporting procedures for callout, route maps, equipment training and safety precautions will be discussed. Any issues resulting from the meeting regarding the policies, procedures, schedules, reporting procedures for callout, route maps, equipment training and safety precautions shall be resolved either at the meeting or prior to the winter season.
- Train winter patrollers (or staff whose duties also include patrolling) on the route of representative roads to be patrolled, their duties during a winter event, record keeping requirements, and callout procedures.
- Inspect equipment to ensure proper working order. Schedule and complete any and all equipment repairs.
- Arrange for the pickup and or delivery of materials (salt, sand and liquid solution) and begin filling storage facilities and mixing sand and salt.
- Post and interview for contract winter maintenance operators, filling all vacant positions.

2.2 Two Weeks Prior to the Winter Season

Two weeks prior to the winter season the Municipality of Middlesex Centre will:

- Prepare the winter shift schedule in accordance with the Municipality's policies.
- Assign equipment to staff.
- Calibrate material application equipment.
- Review and update plow and sand/salt routes
- Monitor weather forecasts daily. Upon the forecast of an approaching winter event, schedule a patrol of a route of representative roads. If a winter event is forecast prior to the start of the next scheduled shift a night and/or weekend patrol(s) of a route of representative roads will be scheduled. If a night or weekend patrol is scheduled the patroller should monitor and record the weather forecast and road conditions. The patrol person will contact the on-call supervisor who may initiate a winter response if required.
- Have 50% of the fleet ready to respond to a winter event.

- Have sufficient staff available to operate the fleet if conditions warrant a winter event response.

2.3 One Week Prior to the Winter Season

One week prior to the winter season the Municipality of Middlesex Centre will:

- Have 100% of the fleet ready to respond to a winter event.
- Have staff available to operate the required complement of the fleet if conditions warrant a winter event response.
- Allow operators (full time staff and contract staff) 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).
- Allow staff to stake routes to aid in plowing operations in inclement weather (staking of routes is determined by the supervisor and operator assigned to the route)

2.4 At the Start of the Winter Season

At the start of the winter season:

- All road monitoring cameras installed, functioning and operational.
- Implement the winter shift schedule. (Morning Shift: 5:00am-1:30pm, Day Shift: 7:30am-4:00pm, Evening Shift: 3:30pm-12:00am).
- Begin patrolling representative roads once per shift in all roads/areas that the Municipality is responsible for.
- Respond to winter events as per the winter operations plan.

3.0 Winter Maintenance Services

The major activities related to winter maintenance are:

- Anti-icing
- Snow plowing
- Salt/sand application
- Snow removal
- Ice blading

- Sidewalk plowing
- Multi-use path plowing (select paths)
- Municipal public parking lots and public works facility plowing & salting/sanding

The Municipality of Middlesex Centre is responsible for winter maintenance on:

Road Category	Total Length (Centre Line km)
Class 3	82.4
Class 4	367.7
Class 5	37.1
Class 6	88.5
Boundary Roads (not maintained by Middlesex Centre)	27.3
Total Centre Line km	603.0

The Municipality of Middlesex Centre provides levels of service in accordance with Provincial Minimum Maintenance Standards during the winter maintenance season, in response to winter events. The minimum standard for clearing snow accumulation follows.

3.1 Snow Accumulation

The standard for addressing snow accumulation is:

- After becoming aware of the fact that the snow accumulation on a roadway is greater than the depth set out in the table of this section, to deploy resources as soon as practicable to address the snow accumulation; and
- 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 in the table within the time set out in the table:
 - To provide a minimum lane width of the lesser of three meters for each lane or the actual lane width, or
 - On a Class 4 or Class 5 highway with two lanes, to provide a total width of at least five meters. (O. Reg. 47/13, s. 4., 366/18, s. 5 (1).)

If the depth of snow accumulation on a roadway is less than or equal to the depth set out in the Table in this section, the roadway is deemed to be in a state of repair with respect to snow accumulation. (O. Reg. 47/13, s. 4.)

For the purposes of this section, the depth of snow accumulation on a roadway and, if applicable, lane width under subsection (1)(b), 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:

- Patrolling highways.
- Performing highway maintenance activities.
- Supervising staff who perform activities described in paragraph 1 or 2. (O. Reg. 47/13, s. 4., O. Reg. 366/18, s. 5 (2))

The depth of snow accumulation on a roadway and lane width may be determined by:

- Performing an actual measurement;
- Monitoring the weather; or
- Performing a visual estimate. (O. Reg. 47/13, s. 4. O. Reg. 366/18, s. 5 (3).)

For the purposes of this section, addressing snow accumulation on a roadway includes, but is not limited to:

- Plowing the roadway;
- Salting the roadway;
- The application of other chemical or organic agents to the roadway;
- Applying abrasive materials to the roadway; or
- Any combination of the methods described in clauses (a), (b), (b.1) and (c). (O. Reg. 366/18, s. 5 (4).)

This section does not apply to that portion of the roadway designated for parking. (O. Reg. 366/18, s. 5 (4).)

If at any time the municipality declares a significant weather event, then all roadways within the municipality are deemed to be in a state of repair in respect of any snow accumulation present, until the municipality declares the end of a significant weather event.

3.2 Ice Formation

The standard for attempting the prevention of ice formation on roadways is doing the following in the 24-hour period preceding an alleged formation of ice on a roadway:

- Monitor the weather in accordance with section 3.1 of the Minimum Maintenance Standards

- Patrol in accordance with section 3 of the Minimum Maintenance Standards.
- If the municipality determines, as a result of its activities under paragraph 1 or 2 of the Minimum Maintenance Standards, that there is a substantial probability of ice forming on a roadway, treat the roadway to attempt 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. 366/18, s. 8.)
- If the municipality meets the 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:
 - The time that the municipality becomes aware of the fact that the roadway is icy or;
 - The applicable time set out in the Table to this section for treating the roadway to prevent ice formation expires. O. Reg. 366/18, s. 8.

The 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. 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. 366/18, s. 8.

For the purposes of this section, treating a roadway means applying material to the roadway, including but not limited to, salt, sand or any combination of salt and sand. (O. Reg. 366/18, s. 8.)

If at any time a municipality declares a weather emergency, then all roadways within the municipality are deemed to be in a state of repair in respect of any ice present, until the applicable time under the Table to this section expires following the end of the declared weather emergency.

Snow Accumulation:

Class of Highway	Depth	Time
1	2.5 cm	4 hours
2	5 cm	6 hours
3	8 cm	12 hours
4	8 cm	16 hours
5	10 cm	24 hours

Ice Formation Prevention:

Class of Highways	Time
1	6 hours
2	8 hours
3	16 hours
4	24 hours
5	24 hours

Treatment of Icy Roadways:

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

3.3 Sidewalk Responsibility

Sidewalk clearing adjacent to the roadway is the responsibility of Middlesex Centre and will be cleared in accordance with the Minimum Maintenance Standards.

The standard for addressing snow accumulation on a sidewalk after the snow accumulation has ended is:

- to reduce the snow to a depth less than or equal to 8 centimeters within 48 hours; and
- to provide a minimum sidewalk width of 1 metre. (O. Reg. 366/18, s. 15.)

If the depth of snow accumulation on a sidewalk is less than or equal to 8 centimeters, the sidewalk is deemed to be in a state of repair in respect of snow accumulation. (O. Reg. 366/18, s. 15.)

If the depth of snow accumulation on a sidewalk exceeds 8 centimeters while the snow continues to accumulate, the sidewalk is deemed to be in a state of repair with respect to snow accumulation, until 48 hours after the snow accumulation ends. (O. Reg. 366/18, s. 15.)

For the purposes of this section, the depth of snow accumulation on a sidewalk may be determined in the same manner as set out in subsection 4 (4) of the Minimum Maintenance Standards and by the persons mentioned in subsection 4 (3) with necessary modifications. (O. Reg. 366/18, s. 15.)

For the purposes of this section, addressing snow accumulation on a sidewalk includes:

- plowing the sidewalk;
- salting the sidewalk;
- applying abrasive materials to the sidewalk;
- applying other chemical or organic agents to the sidewalk; or
- any combination of the methods described in clauses (a) to (d). (O. Reg. 366/18, s. 15.)

3.4 Plowing Private Property

Private properties and access to private properties are the responsibility of the respective owners.

3.5 Winter Patrol

During the winter maintenance season, the Municipality of Middlesex Centre carries out a winter patrol on a route of representative roads (see Appendix E) three times daily (once per shift) Monday to Friday, and once daily on weekends and holidays, 7 days a week. Between winter events a patrol of representative roads will occur during each scheduled shift and once on weekends and holidays.

The purpose of the patrol is to monitor and record weather and road conditions and mobilize winter maintenance operators and equipment should a winter event be observed, and a winter event response is required.

On the approach of a winter event or during a winter event, the route of representative roads may be modified, insofar as reasonably practicable, depending on the type and severity of the winter event or the direction from which the storm approaches. The patrol person will be familiar with local conditions in their patrol area, and report to a supervisor or lead hand as required to mobilize any required maintenance activities.

The winter patrol schedule parallels the designated winter season.

To determine an effective winter event response and allocate the appropriate resources, the Municipality of Middlesex Centre supplements their general observations with weather information from various sources which includes:

- OGRA Weather Tracking Service
- 8 road monitoring cameras with air temperature

3.6 Parking Lots

The Municipality of Middlesex Centre provides winter maintenances services to two public municipal parking lots: The Arva lot is located at 14352 Medway Road and the Ilderton lot is located east of 13224 Ilderton Road. Maintenance and resources are deployed as quickly as reasonably possible, noting parking lots are not a priority and may not be cleared until well after a snow event has occurred.

Staff also plow and apply sand/salt mixtures to 22 Public Works & Engineering facilities:

Property Name	Site Address	Town/Village
Arva Wastewater Pumping Station	21444 Richmond Street	Arva
Birr Water Treatment Facility	158 Gwendolyn Street	Birr
Delaware Water Tower	11229 Longwoods Road	Delaware
Denfield Water Facility	23856 Denfield Road	Denfield
Ilderton Water Facility	13467 Ilderton Road	Ilderton
Ilderton Water Tower	22821 Hyde Park Road	Ilderton
Ilderton Wastewater Treatment Facility	147 Meadowcreek Drive	Ilderton
Ilderton Pump Station #1	69 Timberwalk Trail	Ilderton
Kilworth Pump Station #1	71A Blackburn Crescent	Kilworth
Kilworth Pump Station #2	248 Edgewater Boulevard	Kilworth
Komoka BPS	171 Queen Street	Komoka
Komoka Water Tower	10073 Oxbow Drive	Komoka
Komoka IPS	166 Railway Avenue	Komoka
Komoka Wastewater Treatment Facility	22280 Komoka Road	Komoka
Komoka Pump Station	22597 Komoka Road	Komoka
Melrose Water Treatment Facility	7 Wynfield Gate	Melrose
Longwoods Enviro Depot	10191 Longwoods Road	Delaware
Denfield Operations Centre	23053 Denfield Road	Denfield
Delaware Operations Centre	805 Gideon Drive	Delaware

3.7 Snow Removal and Disposal

The Municipality of Middlesex Centre has two designated snow disposal sites located at the Enviro Depots (23053 Denfield Road and 10191 Longwoods Road). Both locations have been reviewed and approved by the Ministry of Environment, Conservation and Parks, and are gated, fenced and screened to prevent unwanted dumping.

The Municipality will undertake snow removal when equipment and staffing resources permit to remove sight obstructions and safety hazards as a result of snow plowing

activities (snowbanks and snow piles). Staff may also clear bus stop locations if and when staff and equipment resources permit. These activities are not deemed priority and may take place sometime well after a snow event has occurred.

4.0 Operations

4.1 Staffing and Hours of Work

The Municipality of Middlesex Centre has an employee assigned to each vehicle used for winter operations. Each vehicle is assigned a route for sanding/salting and/or plowing.

The Municipality operates three staggered shifts from Monday to Friday; 5:00am to 1:30pm, 7:30am to 4:00pm and 3:30pm to 12:00am midnight. Qualified staff are also tasked with patrolling during each shift to inspect and document road deficiencies. Staff are also deployed 24/7 as required to address winter storms beyond the aforementioned shifts as deemed necessary by the on-duty supervisor or lead hand. The Transportation Manager may modify shifts as appropriate based on forecast weather conditions.

The Municipality of Middlesex Centre adheres to the hours of service as dictated by the Highway Traffic Safety Act, Reg. 555/06 (Ontario, Canada).

Middlesex Centre currently employs 16 full time equipment operators, 2 mechanics, 2 lead hands, 2 assistant road supervisors, and 1 road supervisor. This is in addition to 5 seasonal operators and 1 part time road patroller. The total staffing complement is as follows:

- Full time equipment operators - 16
- Full time mechanics - 2 (Mechanics can plow snow and operate equipment if required)
- Lead hands - 2
- Assistant road supervisors - 2
- Road supervisor - 1
- Seasonal operators including patroller - 6
- Total available winter maintenance staffing levels - 29

Some of the key responsibilities associated with the management and overseeing of winter operations for the winter season are as below:

- Director of Public Works and Engineering and the Transportation Manager will receive issues and concerns of the citizens regarding snow and ice control efforts and evaluate and make decisions regarding declaration of significant weather events.
- Ensure road closure notices are posted to the municipal website, media releases are sent to local news and radio stations advising of road closures (if required).
- Transportation Supervisor, Assistant Transportation Supervisors, and or Lead Hands will be the authority to which the field staff will communicate the field conditions to and have the day-to-day operational authority for winter maintenance activities. They may also call-in staff or extend shifts as necessary to manage the municipalities roadways in compliance with this plan and the Minimum Maintenance Standards.
- The Transportation Supervisor will be responsible for shift scheduling.
- Assigned staff will be responsible for providing appropriate signage and or barricade in case a road must be closed due to a severe winter storm.

4.2 Winter Material Used Annually

Middlesex Centre uses its own sand aggregate resources in addition to purchased bulk highway course road salt, and calcium chloride for pre-wetting. The sand and salt are stored indoors, with the sand premixed with salt and “pickled” at a rate of 20% salt, 80% sand. The quantities identified below are based off historical information, however they may fluctuate depending on the number and type of winter storm events.

Primary Solid Material	Brand Name or Supplier	Expected Quantity of Material for the Winter Maintenance Season	Comes Pre-Mixed With	In-House Mix Added
Salt (NaCl)	Compass Minerals	1,750 Tonnes	N/A	Mixed with sand 4:1
Sand	Middlesex Centre Aggregate Resource	3,500 Tonnes	N/A	Mixed with salt 4:1
Calcium Chloride Solution	Da-Lee	107, 250 Litres	N/A	35% Calcium Chloride

*Suppliers may change depending on municipal needs or availability or quality of products.

4.3 Application Rates

Pre-wetting: Salt/sand is pre-wet as it is being applied using a 35% calcium chloride solution anti-icing liquid at a rate of 30 L/tonne.

Direct Liquid Application: Direct liquid application is used for anti-icing purposes depending on pavement conditions, weather conditions, forecast weather, and other factors. Anti-icing solution is applied at a rate of 100 liters per lane kilometre.

Salt: Depending on the circumstance staff may add extra salt to the premixed pickled sand, and or apply salt directly to roadways when road and weather conditions warrant.

Minimum Sand/Salt Mix Application Rate (Kilograms/ Centre Line -Kilometer)

	0.0° to -5.0° Celsius	-5.0° to -10.0° Celsius	-10.0° to -18.0° Celsius
Frost	250	300	350
Light Snow	250	300	350
Heavy Snow	250	300	350
Freezing Rain	250	300	350

*Staff may also use a blast rate of 600 kgs/per center line kilometer for problem locations that require additional material.

4.4 Equipment – Winter Maintenance Fleet

The Municipality of Middlesex Centre provides winter maintenance services on 19 routes with the equipment listed in Appendix D.

Consisting of:

- 14 pieces of combination road plowing and de-icing equipment
- 1 one-ton truck with plow and sander
- 1 ¾ ton truck with plow and sander
- 5 road graders
- 3 front-end loaders
- 2 rubber tire backhoes; and,
- 2 sidewalk plows

Fleet Services

The Municipality of Middlesex Centre has:

- 2 in-house mechanic(s) available
- Contract services are available if needed.

Facilities with mechanics include:

- Denfield Operations Centre

The shifts for the above mechanics are as below:

- 7:30am – 4:00pm, Monday to Friday

4.5 Winter Maintenance Facilities

The Municipality of Middlesex Centre provides winter maintenance services from the winter maintenance facilities listed below.

DENFIELD OPERATIONS CENTRE

Facility Type: Patrol Yard

Facility Address: 23053 Denfield Road, Ilderton, Ontario, Canada. N0M 2A0

Facility Phone: 519-666-1900

Number of Front-end Loaders: 2

Year Built: 2011

Design and Logistics:

- All materials are handled in a designated area characterized by an impermeable surface.
- Equipment is in place to prevent overloading of trucks.
- System is in place for collection and/or treatment of wastewater from cleaning of trucks.
- Control and diversion of external waters (not impacted by salt) is in place.
- Ongoing clean-up of the site surfaces and spilled material is swept up quickly.
- Risk management and emergency measures plans are in place.

Material Storage Details:

- Material is stored inside the salt/sand shed.
- The salt/sand shed presently stores approximately:
 - Salt – 660.0 Tonnes
 - Sand – 3300.0 Tonnes

Equipment Storage Details:

- Snowplows, Graders, Pickup Trucks, Front End Loaders, Backhoes.
- Total Number of Bays: 18 (1 dedicated for washing - 2 dedicated for Mechanics), 5 additional bays located in a cold storage shed.
- Equipment washing details.

Miscellaneous Material Details:

- Granular material stored on site at rear of building.

DELAWARE OPERATIONS CENTRE

Facility Type: Patrol Yard

Facility Address: 805 Gideon Drive, London, Ontario, Canada. N6P 1P2.

Facility Phone: 519-666-0190

Number of Front-end Loaders: 1

Year Built: 2011

Design and Logistics:

- All materials are handled in a designated area characterized by an impermeable surface.
- Equipment is in place to prevent overloading of trucks.
- System is in place for collection and/or treatment of wastewater from cleaning of trucks.
- Control and diversion of external waters (not impacted by salt) is in place.
- Ongoing clean-up of the site surfaces and spilled material is swept up quickly.
- Risk management and emergency measures plans are in place.

Material Storage Details:

- Material is stored inside the salt/sand shed.

- The salt/sand shed presently stores approximately:
 - Salt -340.0 Tonnes
 - Sand– 1700.0 Tonnes

Equipment Storage Details:

- Equipment is stored indoors.
- Total Number of Bays: 6 (1 dedicated for washing - 1 with oil-and-grit separators).

4.6 Salt Vulnerable Areas

Middlesex Centre has two Municipal drinking water systems that draw from ground water sources, located in Melrose and Birr. To minimize the effects of chlorides on the water supply staff will use electronic spreader controls to minimize the application rates in these areas, in addition to ongoing water quality monitoring.

4.7 Communications

Maintaining reliable internal communications is a critical component of winter operations. The Municipality of Middlesex Centre uses the following:

- All winter maintenance vehicles are equipped with two-way radio communications.

All citizen issues concerning snow and ice control efforts will be routed to the Transportation Manager or Transportation Supervisor for follow up and responses.

The Municipality provides external communication with the public via:

- Information posted on the Municipality's website: <https://middlesexcentre.ca> or <https://middlesexcentre.ca/roads>

4.8 Boundary Street Jurisdiction and Responsibility

Middlesex Centre maintains boundary agreements with adjacent municipalities to ensure all boundary roads are maintained in accordance with O.Reg. 239/02 Minimum Maintenance Standards for Municipal Highways.

- City of London
- North Middlesex
- Strathroy Caradoc
- Thames Centre
- Southwold

4.9 Callout Procedures

Operational decisions will be made by the Supervisor on call or designate with the aid of available forecasting, road cameras, Winter Maintenance Policy, MMS, patrolling etc. However, it should be emphasized that decisions will be subjective and external input, whether in this policy or elsewhere, merely acts as an aid in determining if a call out of staff and equipment by the Supervisor on call or designate respond to a winter event is warranted.

The patrol person shall inform the Road Supervisor or designate of changing road and weather conditions observed in the field. When a winter event response is required the Supervisor on call or designate will contact staff by phone.

4.10 Road Closure and Procedures

In the event that a road must be closed due to a severe winter storm, Ontario Provincial Police will request signs be placed to close the road. Appropriate signage and barricades will be available at the patrol yard and placed on the applicable roadways by staff. Upon receiving a request from Ontario Provincial Police to close a road to traffic, staff will post a road closure notice to the municipal website and issue a notice to emergency services.

Roads will be deemed to be closed once the signs and barricades are placed. When it is physically impossible to place signs and barricades to close a road, the Director of Public Works and Engineering and or Transportation Manager, will advise the Ontario Provincial Police, and Emergency Services in addition to posting closures to the municipal website and sharing with media as needed/required.

4.11 Towing Illegally Parked Vehicles – Declaration Emergency Parking Ban

Vehicles are prohibited from parking overnight on roadways between the hours of 2am and 7am. Parking during emergencies such as, but not limited to, snowfall events may also be prohibited by the Director of Public Works & Engineering or designate as found in the Municipality's [Parking and Traffic By-law](#).

4.12 Operating Instructions and Safety Rules

All individuals (full time staff or contract staff) shall abide by standard operating procedures, operator manuals, and applicable legislation when operating vehicles, and equipment, or undertaking winter maintenance activities.

4.13 Significant Weather Event

The Minimum Maintenance Standards provide for municipal declaration(s) of a significant weather event. When a significant weather event is declared, roadways are considered

to be in a state of repair. This allows the Municipality more time to meet the minimum maintenance standards.

The Director of Public Works and Engineering and the Transportation Manager have delegated authority to declare significant weather events. This is typically done in consultation with the Transportation Supervisor or designate. The declaration will typically follow the same layout and form as found in Appendix A.

The Municipality has used and will continue to use this provision of the Minimum Maintenance Standard as needed with frequency depending on the severity of the weather event(s).

In a very general sense, the declaration of a significant weather event places the timelines and criteria of the Minimum Maintenance Standards on hold until the event is declared over, at which point the roads will have been brought up to a level compliant with the Minimum Maintenance Standards.

4.14 Plow Routes

Please see Appendix B for plow and salt/sand routes. The routes are optimized to maximize fleet utilization and to maximize plow down and material application time. Routes may be amended from time to time due to equipment breakdowns, and or to better utilize resources.

4.15 Sidewalk Plow Routes

Please see Appendix C for sidewalk plow routes. The routes are optimized to maximize fleet utilization and to maximize plow down and material application time. Routes may be amended from time to time due to equipment breakdowns, and or to better utilize resources.

4.16 Mailboxes

Property owners are reminded to avoid installing mailboxes where they can be damaged by plowing operations. [Canada Post](#) can provide guidelines concerning the proper distances mailboxes should be placed from road surfaces.

The Municipality will repair or replace a damaged or destroyed mailbox if the damage is deemed to result from a direct hit by plow equipment. Mailboxes damaged by snow load off the plow equipment will not be eligible for repair or replacement by the municipality. The responsibility for maintaining mailboxes lies with the owner of the mailbox. Mailbox owners are required to repair their own mailboxes that have been damaged by snow impact. They are reminded to re-attach the mailbox securely to prevent this from happening again.

To report a damaged mailbox, residents should contact the Municipality at 519-666-0190 or publicworks@middlesexcentre.ca.

An inspection, assessment and recommendation will be made by the Transportation Supervisor or designate. Mailboxes replaced by the Municipality will be a basic mailbox, not necessarily the same as the original mailbox. Damaged posts will be replaced by temporary posts with permanent repairs undertaken in the spring once the frost is out of the ground.

4.17 Damaged Curbs, Driveways, Sod, Sprinklers, Hockey and Basketball nets Etc.

If damage occurs to sod, curbs, driveways, etc., residents should contact the Municipality at 519-666-0190 or publicworks@middlesexcentre.ca. An inspection, assessment and recommendation will be made by the road supervisor.

Sod damage will not be repaired until the winter maintenance season is over. Damaged private driveways and curbs will only be repaired with asphalt.

Sprinklers, basketball and or hockey nets located within the municipal boulevard and right of way that are damaged as a result of plowing activities and require repairs are the responsibility of the respective property owner. In the event sprinklers are damaged that are located on private property, residents should contact the Municipality at 519-666-0190 or publicworks@middlesexcentre.ca for a review by municipal staff and to schedule repairs (if required).

4.18 Winter Maintenance Resource Sharing

The County of Middlesex and some of the surrounding lower tier municipalities have in place an agreement/understanding, that in the event one or more of either the County or a lower tier municipality find themselves in a situation where staffing levels are inadequate to meet the requirements of the legislated Minimum Maintenance Standards that staff, equipment, & materials would be shared (if available) to collectively assist each other as needed. Respective municipal staff would track the date and time of request, location of request assistance, and the; equipment time, staff time, and material used if the municipality is asked for assistance. Following the winter maintenance season invoices would be issued by the respective municipalities for reimbursement of the costs associated with these activities.

A supervisory contact list and mapping information has been shared with each other in the event the sharing of resources is required.

5.0 Decommissioning Winter Operations

After the winter season concludes, the Municipality of Middlesex Centre undertakes the following tasks to decommission winter operations:

5.1 One Week After the Winter Season Ends

One week after the winter season ends:

- Continue monitoring and recording weather forecasts.
- Assign night patrol shift if forecast indicates an overnight winter event is probable.
- Decommission 50% of the fleet.

5.2 Two Weeks after the Winter Season Ends

Two weeks after the winter season ends:

- Cease all winter highway maintenance operations.
- Decommission the remainder of the equipment providing weather forecasts warrant the decommissioning.

Review of Plan

The Transportation Manager and or the Director of Public Works and Engineering shall review this plan annually.

Appendix A: Significant Weather Event Declaration

MUNICIPALITY OF MIDDLESEX CENTRE DECLARES SIGNIFICANT WEATHER EVENT

Middlesex Centre, ON: Due to current and forecasted weather conditions that are impacting roads owned and operated by Middlesex Centre, the Municipality is declaring a Significant Weather Event commencing at [insert time] on [insert date] pursuant to O. Reg. 239/02.

Updates will be provided as conditions change.

The Public Works Department is currently engaged in full winter operations on Middlesex Centre roads and sidewalks.

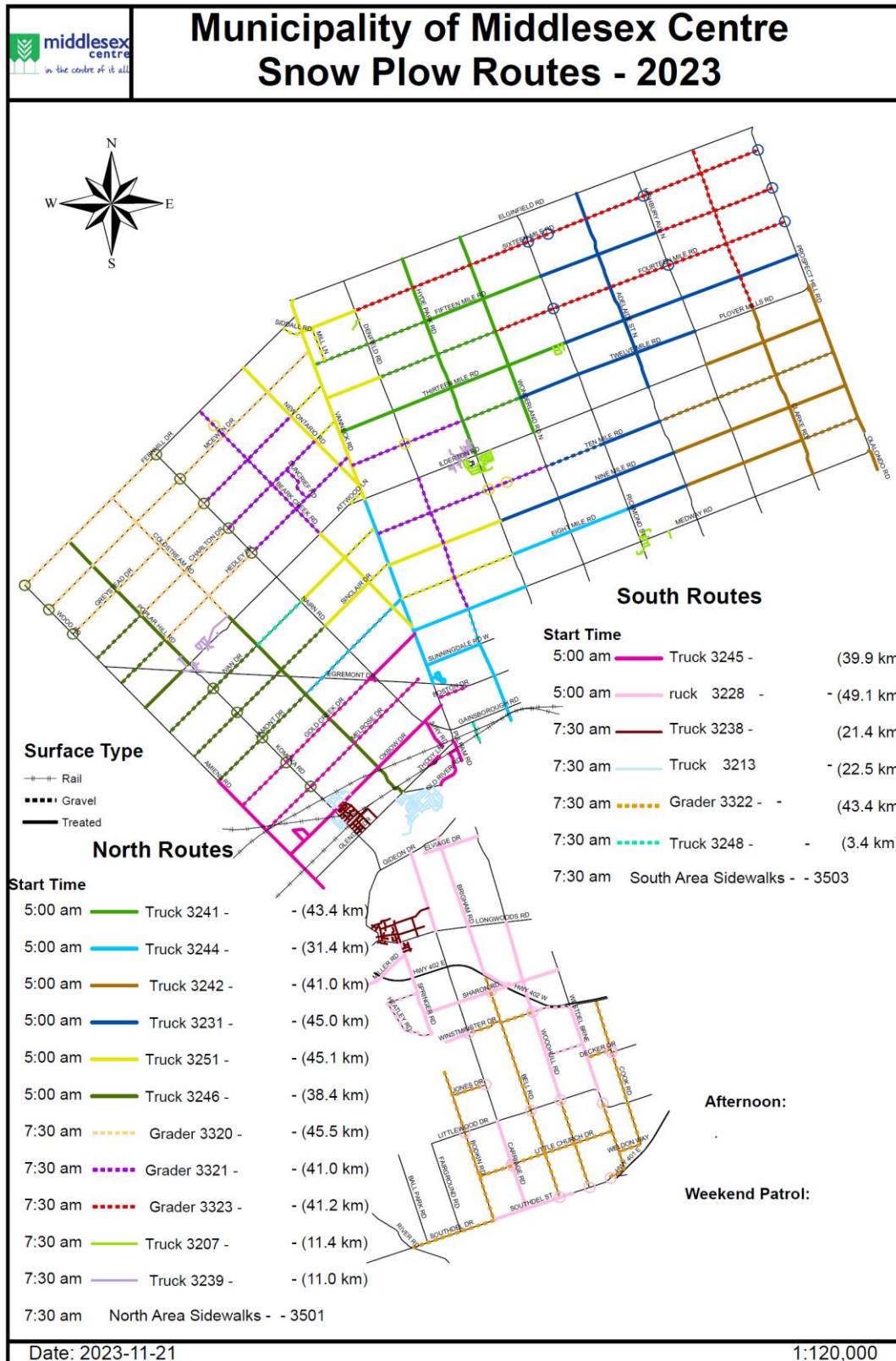
This declaration is to notify the public that due to the current or forecasted conditions, extreme caution is to be observed when travelling on roads maintained by Middlesex Centre. It may take longer than usual to bring the roads and sidewalks back to optimal condition.

During this event, municipal roads and sidewalks are considered to be in a state of repair. Crews are undertaking winter maintenance operations. Please take caution when outdoors and travel will become hazardous and is not advised.

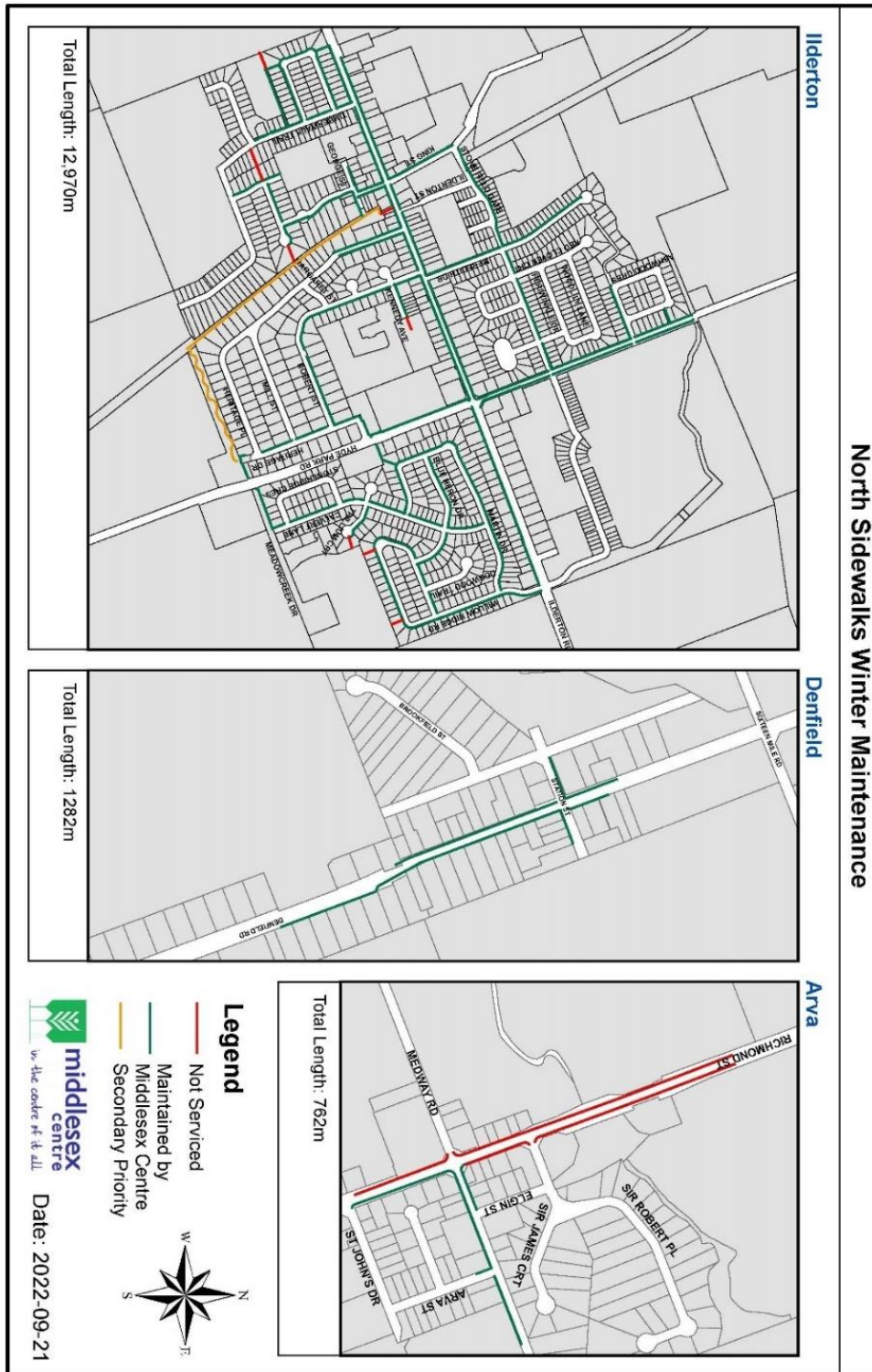
MUNICIPALITY OF MIDDLESEX CENTRE DECLARES SIGNIFICANT WEATHER EVENT OVER

Middlesex Centre, ON: The Significant Weather Event in respect to current and forecast weather conditions commencing at [insert time] on [insert date] pursuant to O. Reg. 239/02, is declared over as of [end time] on [end date] by the Municipality of Middlesex Centre.

Appendix B: Plow & Salt/Sand Routes



Appendix C: Sidewalk Plow Routes



South Sidewalks Winter Maintenance



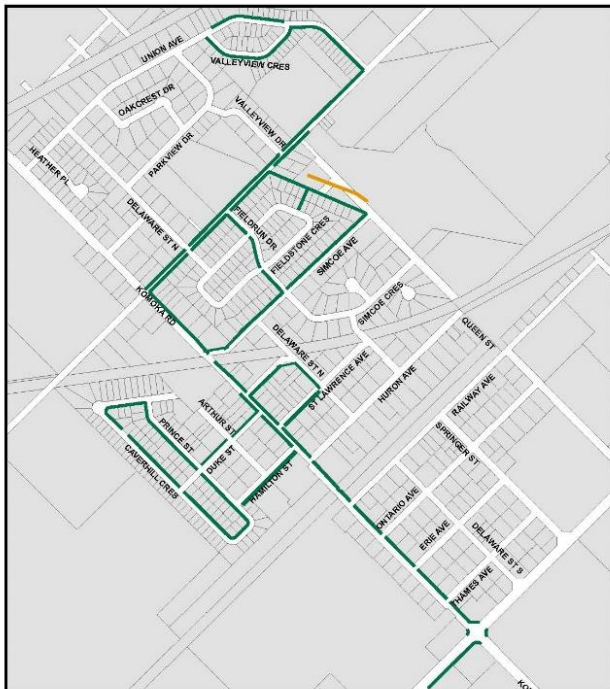
Kilworth

Total Length: 7302m



Delaware

Total Length: 7414m

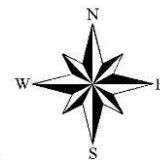


Komoka

Total Length: 7095m

Legend

- Not Serviced
- Maintained by Middlesex Centre
- Secondary Priority



Date: 2023-08-30

Appendix D: Winter Maintenance Equipment Listing

Equipment Unit #	Type	Electronic Controller Installed	Calibration Date	Pre-Wet Capability	Anti- Icing Capacity	Infrared Thermometer installed	Automated Vehicle Location (AVL)
3201	1 Tonne Truck	Y	N/A	N	N	N	Y
3207	Single Axle	Y	2023 Nov 9	Y	N	N	Y
3213	Single Axle	Y	2023 Nov 9	Y	N	N	Y
3224	Tandem Axle	Y	2023 Nov 9	Y	N	N	Y
3228	Tri Axle	Y	2023 Nov 9	Y	N	N	Y
3231	Tri Axle	Y	2023 Nov 9	Y	N	N	Y
3235	Tandem Axle	Y	2023 Nov 9	Y	N	N	Y
3238	Single Axle	Y	2023 Nov 9	Y	N	N	Y
3239	Single Axle	Y	2023 Nov 9	Y	N	N	Y
3241	Tandem Axle	Y	2023 Nov 9	Y	Y	N	Y
3242	Tandem Axle	Y	2023 Nov 9	Y	N	N	Y
3244	Tandem Axle	Y	2023 Nov 9	Y	N	N	Y
3245	Tandem Axle	Y	2023 Nov 9	Y	Y	N	Y
3246	Tandem Axle	Y	2023 Nov 9	Y	N	N	Y
3248	¾ Tonne Truck	Y	N/A	N	N	Y	Y
3251	Tandem Axle	Y	2023 Nov 9	Y	N	Y	Y
3319 Grader	Grader	Y	2023 Nov 9	N	N	N	Y
3320 Grader	Grader	Y	2023 Nov 9	N	N	N	Y
3321 Grader	Grader	Y	2023 Nov 9	N	N	N	Y
3322 Grader	Grader	Y	2023 Nov 9	N	N	N	Y
3323 Grader	Grader	Y	2023 Nov 9	N	N	N	Y
3501	Sidewalk Plow	Y	2023 Nov 9	N	N	N	Y
3503	Sidewalk Plow	Y	2023 Nov 9	N	N	N	Y
3502	Loader	N	Oct	N	N	N	N
3508	Loader	N		N	N	N	N
3518	Loader	N		N	N	N	N

Equipment Unit #	Type	Electronic Controller Installed	Calibration Date	Pre-Wet Capability	Anti- Icing Capacity	Infrared Thermometer installed	Automated Vehicle Location (AVL)
3416	Backhoe	N	N/A	N	N	N	N
3412	Backhoe	N	N/A	N	N	N	N

All equipment and trucks are equipped with two-way radios for communication, all trucks, graders, and sidewalk plows are also equipped with GPS

Appendix E: Representative Winter Patrol Route



Appendix F: Winter Maintenance FAQs

Snow Safety Tips & Etiquette

- Be a good neighbor. Please lend a helping hand to those who may not be physically able to shovel.
- To help keep your children safe, please don't let them play in the snow piles or on the snowbanks at the side of the road.
- When you are clearing snow, please pile it on your property and do not throw it back onto the sidewalk or street.
- Please place your garbage bins, and blue bins on a cleared area not on the roadway or sidewalk. Do not place them on the top of snow piles. For more information, contact Bluewater Recycling Association at 1-800-265-9799.
- You can help prevent street flooding and icing by clearing snow away from storm sewer catch basins. When the weather turns warmer and snow begins to melt, it is important that the runoff water gets into the storm sewer. If the catch basin is fully or even partially obstructed by a build-up of snow and ice, street flooding can occur. Should the temperature drop again after the flooding, the street can become icy.
- Residents are asked to please remove snow around all municipal fire hydrants in a timely manner without damaging the hydrant. Hydrants are also to be cleared of any shrubs or hedges. It is imperative that all fire hydrants are easily accessible to the Fire Department.
- If you need help or require assistance clearing your driveway, we suggest you consider contacting Snow Angels. Or if you are able, registering with Snow Angels is a great way to help others in our community.

Things you can do to help:

1. When you shovel your driveway, place the snow on the "downstream" (right side) of your driveway, this will help reduce the size of the windrow left on your driveway the next time the plow comes by.
2. Observe and comply with Property Standards and Right of Way By-laws. (Municipality of Middlesex Centre, Page 2).
3. Don't park overnight on any municipal street or road. The municipal parking bylaw does not allow parking on municipal roads between Labour Day and Victoria Day, from 2am to 7am.
4. Don't push snow from a driveway or parking lot onto a municipal street or sidewalk.

5. Don't park your vehicle at the end of your driveway in a way that would impede municipal plows.
6. Try to keep the catch basin adjacent to your property free from ice and snow to help prevent localized flooding.
7. Don't place garbage bins or recycling bins where they can be buried, damaged or interfere with snow removal.
8. Avoid installing mailboxes where they can be damaged by plowing operations. Canada Post can provide guidelines concerning the proper distances mailboxes should be placed from road surfaces.

FREQUENTLY ASKED QUESTIONS (FAQS)

Why does the snowplow leave such a pile of snow across my driveway after I've just shoveled it out?

The plows are designed to remove snow from the road and deposit it on the boulevard. Driveways form part of the boulevard. The Municipality does not have the resources to remove the snow from driveways. We appreciate that this can be frustrating, however, we ask for your cooperation in clearing the snow without placing it on the roadway, as this is dangerous and in contravention of the Highway Traffic Act and the municipality's [Right of Way By-law](#). When you shovel your driveway, place the snow "downstream" (right side) to reduce the likelihood your driveway will be filled in the next time the plow comes by.

When will my street be plowed?

Where your street lies in relation to where the plow starts and the road classification, determines the time it takes a plow to get there. The Municipality's Winter Maintenance Plan aims to provide safe roads and sidewalks during the winter season at an affordable cost. The Municipality has a 24/7 response team equipped with: 16 pieces of combination road plowing and de-icing equipment, 5 road plowing graders, 3 front-end loaders, 2 rubber-tired backhoes, and 2 sidewalk machines. The response team maintains the Municipality's 603 centreline kms of roadway, and 36 kms of sidewalks. The Municipality also tracks weather conditions and deploys road temperature sensors outfitted to its fleet which monitors our roads for snow and ice detection.

We have an established plan and routes for clearing snow and ask that you refrain from calling during the first day of a snow event.

- After the snowfall ends, it can take 8-12 hours to clear priority roads, and approximately 24 hours for all municipal roads.

- A larger or continuous snowfall event may extend the time necessary to clear snow from local streets and cul-de-sacs. The Municipality follows the provincially prescribed standards for winter maintenance (Minimum Maintenance Standards for Municipal Highways, O. Reg. 239/02). Roads are categorized into five main classes. Class 1, 2 and 3 or priority roads, which include arterial and some secondary collectors, take first priority. Classes 4 and 5, which include local urban streets, rural side roads and cul-de-sacs, have less priority. Priority roads carry the higher volumes of traffic and are most easily identified as main (arterial) roads or secondary collector roads. These are the roads people use to get to business areas and in and out of the Municipality. The 'other' roads are primarily residential or secondary routes, and these are systematically plowed after the 'priority' routes are completed.

When can I expect my sidewalk to be cleared?

Sidewalks are cleared after snow accumulates in excess of eight centimetres. Sidewalk clearing is generally completed within 24 - 48 hours after the end of the storm; however, when we have a heavy snowfall, or successive winter events back-to-back, it will take longer to clear all sidewalks. Sidewalks are cleared to a snow packed condition, as the snow equipment does not allow for clearing down to bare pavement.

I've shovelled my driveway, and a day or two later the plow truck filled it back in – why?

In a major snowstorm the trucks do not initially perform a full road width plowing. This is the most efficient and effective way to get the Municipality moving. Crews return a day or two later to perform "clean-up operations". This completely opens the street for maximum efficiency, moves remaining snow onto boulevards, clears catch basins for potential water runoff, allows on street parking, and creates storage space for the next storm.

Is salt dangerous to the environment?

Environment Canada does not ban the use of road salt as it is not harmful to humans but has declared it as CEPA* Toxic (i.e., toxic to the environment). Road authorities take action by improving their own management of road salt by metering salt distribution and pre-wetting to reduce the environmental effects.

We report our salt usage on an annual basis and continually review our winter control operations and evaluate new technologies and processes to reduce the amount of road salt required in managing snow and ice. Annual usage of road salt varies year to year depending on the weather conditions encountered throughout the winter maintenance season.

*Canadian Environmental Protection Act.

I live on a corner lot. Why do I end up with an excessive amount of snow at the bottom of my driveway?

Residents living on corner lots or the first on the right of an intersection usually get more snow deposited in their driveways. When the snowplow turns right it sweeps a much larger area of the road than when it is traveling in a straight line also the snow does not discharge from the plow truck. Turning right effectively makes the plow push most of the snow ahead instead of moving it from the centre of the road to the side. The first property and driveway encountered after the plow straightens out usually gets more snow than others in the immediate area. We appreciate that this can be frustrating, and we appreciate your cooperation.

I live on a court. When will the pile of snow in the centre of the court be removed?

The snow piles in the centre of courts are removed by front-end loaders. This will be done when staff and equipment resources permit following the snow removal as part of the "clean-up operations".

Why doesn't the plow do a better job clearing the centre of a cul-de-sac?

It is very difficult for our larger plow units to maneuver in the centre of a cul-de-sac to clear all the snow. We will use smaller plows or front-end loaders, depending on availability, if a significant amount of snow accumulates.

What if a municipal plow damages my...

Sod: Sod damage is the result of two factors: The plow operator may have difficulty finding the sidewalk or the edge of the road under a blanket of snow, or if the ground is not frozen. Once a path is cleared, subsequent trips by the sidewalk plow are made easier. If the sod was damaged during the first pass of the season, then the damage may not be discovered until the snow melts. The cost to repair sod damage is relatively minor because we have found that homeowners will repair the damage in front of their property before the municipal crews arrive. This is a tremendous help because municipal staff typically don't repair sod damage until the winter season is over.

To report sod damage for repair in the spring please contact the Municipality at 519-666-0190 or publicworks@middlesexcentre.ca.

Driveway or Curbs: The Municipality owns the boulevard area and will use asphalt to repair any damage caused by municipal plows. The municipality will not restore driveway boulevards that are damaged during winter control operations, finished with interlocking brick, patterned concrete or concrete/wood curbs. To report damage to driveways or curbs, please contact the municipality at 519- 666-0190 or publicworks@middlesexcentre.ca. An inspection, assessment and recommendation will be made by the road supervisor.

Mailbox: The Municipality will repair or replace a damaged or destroyed mailbox if the damage is deemed to result from a direct hit by plow equipment. Mailboxes damaged by snow load coming off the plow equipment will not be eligible for repair or replacement by the Municipality. The responsibility for maintaining mailboxes lies with the owner of the mailbox. Mailbox owners are required to repair their own mailboxes that have been damaged by snow impact. Please re-attach the mailbox securely to prevent this from happening again.

To report a damaged mailbox, please contact the Municipality at 519-666-0190 or publicworks@middlesexcentre.ca. An inspection, assessment and recommendation will be made by the road supervisor.

Mailboxes replaced by the Municipality will be a basic mailbox, not necessarily the same as the original mailbox. Damaged posts will be replaced by temporary posts with permanent repairs undertaken in the spring once the frost is out of the ground.

Sprinklers: Sprinklers located within the municipal boulevard and right of way that are damaged because of plowing activities are the responsibility of the respective property owner for any repairs that may be required.

In the event sprinklers are damaged that are located on private property please contact the Municipality at 519-666-0190 or publicworks@middlesexcentre.ca for a review by municipal staff and to schedule repairs (if required).

Basketball and or Hockey Net: Nets located within the municipal boulevard and right of way that are damaged because of plowing activities are the responsibility of the respective property owner for any repairs or replacements that may be required.

Why was my street missed?

Severe weather conditions, mandatory working regulations, too many vehicles parked on the street, and other factors may delay our ability to clear all municipal roads and sidewalks of snow and ice. Even when all the equipment is at work, heavy or drifting snow may re-cover streets and sidewalks before repeat clearing is possible. We ask that you give us time to manage large snow events.

New/Unassumed Subdivisions:

Some newly built roads in unassumed subdivisions may not receive winter control services by the Municipality. These unassumed roads and sidewalks are the responsibility of the developer/builder to maintain. The Municipality offers winter maintenance activities to developers/builders for a set fee; however, they are not required to use the municipal service.

Who is responsible for clearing snow around Canada Post Community Mailboxes?

Canada Post is responsible for clearing the snow and ice around the community mailboxes. Contact Canada Post at 1-800-267-1177 for more information.

What are my responsibilities?

Property owners are responsible for clearing snow and ice from their walkways, driveways, ramps, loading docks, parking areas, as well as outdoor stairs and landings in accordance with the Property Standards By-law and the Right of Way By-law. Family members, visitors and other service personnel will thank you for providing a safe path to your door.