

**MUNICIPALITY OF
TRENT HILLS**

WINTER CONTROL QUALITY STANDARDS



Come for a visit. Stay for a lifestyle.

**Municipality of Trent Hills
Public Works Department**

Policy and Procedure

Category: Winter Control Division - Quality Standards

Activity: Winter Maintenance

Reference: Public Works Committee

No.: WC 01-01

Policy In consideration of the extreme weather conditions that may be experienced during the winter season, the Public Works Department will strive to achieve the objectives of the Winter Control Program as approved by Municipal Council, to deliver an efficient and effective winter maintenance program while considering variables such as weather conditions and availability of manpower and equipment.

Objectives

1. To promote public safety and to reduce hazards to motorists and pedestrians that may be experienced as a result of extreme winter weather conditions;
2. To provide safe and passable transportation routes under extreme winter storm conditions for emergency vehicles, school busses and the travelling public;
3. To provide continued access to communities, businesses, industry and facilities.

Winter Season Defined

For the purpose of the Trent Hills Winter Control Quality Standard, winter is that period between November 15th and April 15th of the calendar year.

Winter Conditions

For the purpose of establishing a maintenance standard for the Winter Control Program, winter weather conditions are categorized into three types of storm events, as follows:

Category 1. - Ice/Freezing Rain Storm (sanding/salting activities);

Category 2. - Snow Storm with 0 to 150 mm (6 in.) falling (sanding/salting and/or plowing activities);

Category 3. - Snow Storm with 150 mm (6 in.) or greater falling (plowing activities).

Other factors that may impact the delivery of the program can include wind conditions, temperature (falling or rising), snow type (ie. heavy, wet), traffic, duration of the storm event, intensity of the storm event and other such variables.

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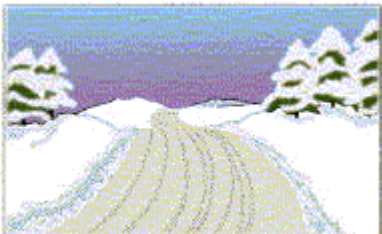
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Service Level Objectives for Road Conditions

| | |
|--|--|
| <p>Bare (Pavement) – road surface completely clear of ice and snow from edge of driving surface to edge of driving surface.</p> |  |
| <p>Centre Bare (Pavement) – road surface clear of ice and snow generally along the centre line of the roadway, approximately 1 metre either side of centreline with localized snow or ice.</p> |  |
| <p>As Bare As Possible (Pavement and Gravel) – sections of road surface clear of ice and snow from edge of driving surface to edge of driving surface with sections remaining covered with ice and snow with localized snow or ice.</p> |  |
| <p>Snow Covered (Pavement and Gravel) – road surface completely covered with a layer of snow from edge of driving surface to edge of driving surface with localized ice.</p> |  |
| <p>Snow Packed (Pavement and Gravel) – road surface covered with layers of packed snow from edge of driving surface to edge of driving surface with localized ice.</p> |  |

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Road Classifications

Roadway classifications have been established in order to prioritize the overall importance of road sections to the municipal transportation network with consideration for the ability of emergency services and residents to travel on safe and passable transportation routes under extreme storm conditions.

| <u>RURAL</u> | <u>URBAN</u> |
|--------------|--------------|
| Arterial | Arterial |
| Collector | Collector |
| Local | Local |
| Low Volume | Public Lanes |
| - | Sidewalks |
| - | Parking Lots |

Urban Centres

For the purpose of the Trent Hills Winter Control Quality Standard, the Town of Campbellford and the Villages of Hastings and Warkworth are defined as urban centres.

Quality Standard

Priority 1 - Urban Centres

Emergency Vehicle Route & Main Roads

(ie. Bridge St., Oak St., Grand Rd. – Campbellford; Front St. Victoria St., Bridge St., Water St., Hastings; Main St., Old Hastings Rd. – Warkworth; Fire Hall Parking Lots)

1. Surfaces, inclusive of intersections, shall be maintained as **Bare Pavement** through the storm event using assigned workers, equipment and materials suitable to address the variable conditions of the storm event, at the discretion of the Supervisor or designate.
2. Frequency of coverage for maintenance (ie. minimum one pass of the snow plow/sander) shall not exceed two (2) hours from the time of deployment of equipment, except under extreme storm conditions.
3. Sanding/salting operations for Category 1 & 2 storms will commence upon determination by the Supervisor or designate that conditions warrant deployment of resources. Pure salt (100% salt mix) to be applied to traveled surface.
4. Twenty-four hour coverage is maintained for the Emergency Vehicle Route for sanding/salting operations.
5. For Category 3 storms where 150 mm (6 in.) of snow or greater is expected and continues to fall, salting operations will not commence until the Supervisor is satisfied that the storm event has passed.
6. For temperatures lower than where salt is effective, winter grit shall be applied.

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7. Upon satisfactory achievement of road standard for Urban Arterial/Collector roads as determined by the Supervisor or designate, maintenance equipment may commence operations on Urban Local/Public Lane.

Priority 2 - Rural Districts

Main Roads

(ie. 6th Line, 5th Line, Trent River Road - Seymour Ward; Godolphin Rd, Norham Rd., - Percy Ward)

1. Surfaces, inclusive of intersections, shall be maintained **As Bare As Possible** through the storm event using assigned workers, equipment and materials suitable to address the variable conditions of the storm event, at the discretion of the Supervisor or designate.
2. Frequency of coverage for maintenance (ie. minimum one pass of the snow plow/sander) shall not exceed five (5) hours from the time of deployment of equipment, except under extreme storm conditions.
3. Sanding/salting operations for Category 1 & 2 storms will commence upon determination by the Supervisor or designate that conditions warrant deployment of resources. Winter grit (4% grit/salt mix) to be applied to traveled surface.
4. For Category 3 storms where 150 mm (6 in.) of snow or greater is expected and continues to fall, sanding operations will not commence until the Supervisor is satisfied that the storm event has passed.
5. Equipment will not be deployed between the hours of 6 p.m. to 4 a.m., at the discretion of the Supervisor.
6. Upon satisfactory achievement of road standard for Rural Arterial/Collector roads as determined by the Supervisor or designate, maintenance equipment may commence operations on Rural Local/Low Volume roads.

Priority 3 - Urban Centres

Back Roads

(ie. Balaclava St., Russet Rd., Naseby St. – Campbellford; Homewood Ave., Cedar Dr., Bay St. – Hastings)

1. Surfaces, inclusive of intersections, shall be maintained as **Centre Bare** through the storm event using assigned workers, equipment and materials suitable to address the variable conditions of the storm event, at the discretion of the Supervisor or designate.
2. Frequency of coverage for maintenance (ie. minimum one pass of the snow plow/sander) shall not exceed ten (10) hours from the time of deployment of equipment, except under extreme storm conditions.
3. Sanding/salting operations for Category 1 & 2 storms will commence upon determination by the Supervisor or designate that conditions warrant deployment of resources. Pure salt (100% salt mix) to be applied to traveled surface.

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4. For Category 3 storms where 150 mm (6 in.) of snow or greater is expected and continues to fall, salting operations will not commence until the Supervisor is satisfied that the storm event has passed.
5. For temperatures lower than where salt is effective, winter grit shall be applied.
6. Upon satisfactory achievement of road standard for Urban Local/Public Lane roads as determined by the Supervisor or designate, maintenance equipment may commence operations on Priority 4 locations.

Priority 3 - Rural Districts

Back Roads/Low Volume Roads

(ie. 2nd Line East, Goacher Rd., 14th Line East - Seymour Ward; Crestview Rd., Morrow Rd., Silver Heights Dr., Sandy Flats Rd. – Percy Ward)

1. Surfaces, inclusive of intersections, shall be maintained **As Bare As Possible** through the storm event using assigned workers, equipment and materials suitable to address the variable conditions of the storm event, at the discretion of the Supervisor or designate.
2. Frequency of coverage for maintenance (ie. minimum one pass of the snow plow/sander) shall not exceed ten (10) hours from the time of deployment of equipment, except under extreme storm conditions.
3. Sanding/salting operations for Category 1 & 2 storms will commence upon determination by the Supervisor or designate that conditions warrant deployment of resources. Winter grit (4% grit/salt mix) to be applied to traveled surface.
4. For Category 3 storms where 150 mm (6 in.) of snow or greater is expected and continues to fall, sanding operations will not commence until the Supervisor is satisfied that the storm event has passed.
5. Equipment will not be deployed between the hours of 6 p.m. to 4 a.m., at the discretion of the Supervisor.
6. Upon satisfactory achievement of road standard for Rural Local/Low Volume roads as determined by the Supervisor or designate, maintenance equipment may commence operations on other roads as assigned for maintenance by the Supervisor.

Priority 4

Sidewalks

1. Surfaces shall be maintained **As Bare As Possible** through the storm event using assigned workers, equipment and materials suitable to address the variable conditions of the storm event, at the discretion of the Supervisor or designate.
2. Frequency of coverage for maintenance (ie. minimum one pass of the snow blower) shall not exceed twenty-four (24) hours from the time of deployment of equipment, except under extreme storm conditions.
3. Sanding/salting operations for Category 1 & 2 storms will commence upon determination by the Supervisor or designate that conditions warrant deployment of resources. Winter grit

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(4% grit/salt mix) or pure salt (100% salt mix) to be applied to traveled surface, depending on conditions as determined by the Supervisor.

4. For Category 3 storms where 150 mm (6 in.) of snow or greater is expected and continues to fall, sanding operations will not commence until the Supervisor is satisfied that the storm event has passed.
5. Equipment will not be deployed between the hours of 6 p.m. to 4 a.m., at the discretion of the Supervisor.
6. Sidewalks maintained by the Municipality that are located in the vicinity of schools, hospitals and high traffic generators shall be maintained as the first priority with sidewalks in other areas maintained afterwards.

Priority 4

Parking Lots/Lanes

1. Surfaces shall be maintained **As Bare As Possible** through the storm event using assigned workers, equipment and materials suitable to address the variable conditions of the storm event, at the discretion of the Supervisor or designate.
2. Frequency of coverage for maintenance (ie. minimum one pass of the snow plow/sander) shall not exceed twenty-four (24) hours from the time of deployment of equipment, except under extreme storm conditions.
3. Sanding/salting operations for Category 1 & 2 storms will commence upon determination by the Supervisor or designate that conditions warrant deployment of resources. Winter grit (4% grit/salt mix) or pure salt (100% salt mix) to be applied to traveled surface.
4. For Category 3 storms where 150 mm (6 in.) of snow or greater is expected and continues to fall, sanding operations will not commence until the Supervisor is satisfied that the storm event has passed.
5. Equipment will not be deployed between the hours of 6 p.m. to 4 a.m., at the discretion of the Supervisor.

General

Preseason Preparation

1. Winter maintenance equipment shall be set up for operation prior to November 1st and operated to ensure proper working order.
2. Supervisors and Operators shall review routes to become familiar with road alignments and new hazards and conditions that may have developed since the previous winter season, such as mail boxes, driveway entrances, deteriorating road surfaces, manholes, etc.
3. Small amounts of sand may be placed in 'sand boxes' on steep hills for use in emergencies by motorists. Sand boxes must be visibly marked and located in safe locations.

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Snow Dumps

1. Snow dump locations shall be reviewed annually to determine availability and functionality relative to any change in operations.
2. Snow dump locations are as follows:
 - Hastings Public Works Depot
 - Campbellford Public Works Depot
 - Municipal Industrial Park
 - Percy Fairgrounds
 - William Thompson Private Property, Cty. Rd. 38

Communications

1. All maintenance staff to be equipped with a pager to ensure immediate response to call out in the event of winter storm conditions.
2. Cellular phones shall be provided to Supervisors and staff working on weekend standby.
3. All maintenance vehicles shall be equipped with two-way radio equipment.

Prior to Storm Event

1. Weather monitoring to be conducted on a regular basis through the gathering of information via the following available sources
 - Environment Canada Weather monitoring channel, Peterborough (Harwood Site) VHF 162.55 mhz;
 - Environment Canada Public Weather Recording, Phone 743-5852;
 - Environment Canada Web sites:
 - <http://weather.ec.gc.ca/forecast/ypq.html> (Peterborough)
 - <http://weather.ec.gc.ca/forecast/ytr.html> (Trenton)
 - <http://weather.ec.gc.ca/text/fpcn11.woz.htm>.
2. Inspect equipment to ensure proper working order. Have any breakdown repaired immediately.
3. Organize or call out operators according to conditions. Under certain conditions, it may be beneficial to apply deicers immediately before precipitation begins.
4. Continue road patrolling as the storm begins, to direct and monitor effectiveness of winter maintenance operations and to relay road and weather information.
5. Ensure that there is adequate salt and sand available.

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During Storm Event

1. Conduct road inspections to monitor weather and road conditions.
2. Predetermined routes for plowing, sanding and salting shall be followed in all instances except in cases of extreme emergency or critical situations, upon determination by Supervisor or designate.
3. Spot sanding and salting shall be carried out at bridges, intersections, hills, curves and other locations, as required. Operators shall use judgement to address well known areas of continuous problem and concern.
4. Special attention and priority shall be given to roads leading to emergency services, such as hospitals, fire stations and police stations, etc. and for roads with steep gradients (ie. greater than 10%).
5. Generally, accumulation of precipitation is to be plowed to the right of the traveled portion of the roadway.
6. Vehicle operating speeds shall be set at the discretion and judgement of the Operator based on storm conditions.
7. Once equipment has been deployed operations shall continue until the prescribed level of service is achieved.
8. Equipment may be deployed prior to the accumulation of the specified snow depth if the roads are hazardous, slippery or ice or slush is developing.
9. The Supervisor or designate shall have the authority to pull municipal equipment off the road during the most extreme conditions (ie. white outs, ice storms, etc.) at his discretion.

After Storm Event

1. Continue road patrolling to determine extent and priority of clean up operations required, as well as driving conditions that may require additional operations.

Between Storm Events

1. Continue road patrol inspections to ensure clean up operations are adequate.
2. Check and clear drainage facilities.
3. Check snow fence locations.
4. Check and clear signs, highway markers and fire hydrants.
5. Clean-up and winging will be carried out principally during regularly scheduled shifts after the storm, at the discretion of the Supervisor or designate.
6. Push back snow at intersections to improve site lines.
7. Note any damage that may have resulted from previous storms.

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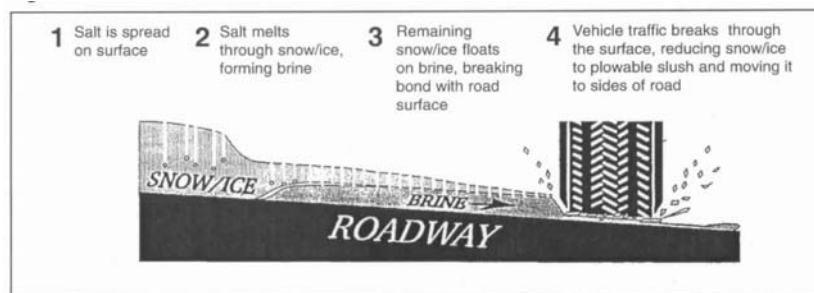
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Snow Removal

1. Snow removal will be conducted in the business districts, along urban arterial and collector roadways primarily and in school areas when, at the determination of the Supervisor or designate, snow bank conditions impede the movement of pedestrians or when snow banks exceed 1.0 metres in height.
2. Snow removal shall be conducted outside of peak traffic hours.
3. Snow removal in residential conditions will be conducted in residential neighbourhoods only under extreme winter conditions.

Salt

1. Salt used for winter maintenance shall conform to OPSS 531 and shall be stored indoors.
2. The use of salt is to be limited, in terms of both quantity and frequency, to that which is necessary to prevent snow and ice from sticking to the pavement or to remove ice, once formed on the pavement.
3. Salt applied to snow, forms a brine mixture. This reduces the possibility of the snow sticking to, or packing on, the pavement. It also prevents ice build-up and allows the plow to remove the snow easier. Salt, assisted by sun, traffic and warmer daytime temperatures, is also used as a melting agent to eliminate icy conditions.
4. As the temperature decreases, the effectiveness of the salt reduces until it becomes ineffective. Normally, salt should not be applied when the temperature is below -12°C . However, in the presence of sun and/or heavy traffic volume, which creates a higher road surface temperature, salt can be effective down to a temperature of -18°C .
5. In general, salt should be applied a minimum of 0.5 hours in advance of plowing to prevent the salt from being pushed off before it has had a chance to work. This is consistent with salt being used to assist in the plowing operations. The lower the temperature, the longer it will take for the salt to work.
6. If the pavement is dry and the snow is not packing, salting is not recommended.
7. Generally, 100% salt is not to be applied to gravel and surface treated roads.



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Winter Grit

1. Generally, grit used for winter maintenance shall be a 4% mix ratio of sand to salt and shall be stored indoors.
2. The use of grit is to be limited, in terms of both quantity and frequency, to that which is necessary to address road conditions at the judgement of the Operator.
3. Generally, grit is only to be applied to hot mix asphalt roads when it is determined that salt will be ineffective to address road conditions.

Road Patrol

1. Daily road patrols will be conducted along key traffic corridors and reports (Appendix) on road conditions will be completed for the duration of the winter season, every day of the week.
2. During the regular work week, the Supervisor or designate shall complete road patrols and reports.
3. A weekend standby schedule will be established for the duration of the winter season to accommodate patrol activities.
4. Staff working weekend standby shall inspect road conditions and complete reports in relation to standard.
5. Staff shall use judgement and discretion in determining resources required to address road conditions for the purpose of calling out required resources.

Mail Boxes

1. The Municipality will consider repair/replacement of a damaged mailbox if the damage caused is clearly the result of an impact by a plow operated by the Municipality.
2. The Municipality will not replace or repair mailboxes damaged by the impact of snow propelled by a plow when plowing snow during a snowfall event.
3. Even if impacted by a plow, the Municipality will not replace a mailbox assembly that has been constructed or installed in a manner that interferes with routine snow removal or in a manner which clearly presents an unacceptable risk to snow removal operations or the traveling public.
4. Owners are encouraged to contact Canada Post for installation specifications for new mailbox installations.

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Sand/Salt/Winter Grit Pick-up

1. Free supplies of sand, winter grit and salt are not provided for pick-up by the general public or by private enterprise.

Guideline

This policy and procedure has been established as a guideline document for use by the Council of the Municipality of Trent Hills, Staff and Management in the delivery of the Winter Control Program. It is acknowledged that conditions and events may occur from time to time that may impact or prevent the achievement of the desired service level. The Department and Supervisor or designates, at their discretion, may be required to work with available resources, equipment and manpower to ensure that best efforts are utilized in the delivery of the winter maintenance services. Motorists and the travelling public may be required to adjust travelling habits to suit varying weather and road conditions.

Summary Tables for Storm Event Conditions

| Priority | Minimum Accumulation before Plowing | Frequency of Coverage | Materials | Objective for Storm Event Situation |
|--|--|------------------------------|----------------------|--|
| 1 – Urban Centres Emergency Vehicle Route & Main Roads | 150 mm | 2 hours | 100 %Salt | Bare pavement |
| 2 - Rural Districts Mains | 150 mm | 5 hours | Grit Mix | As Bare as Possible |
| 3 – Urban Centres Back Roads | 150 mm | 10 hours | 100 %Salt | Centre Bare |
| 3 – Rural Back Roads /Low Volume | 150 mm | 10 hours | Grit Mix | As Bare as Possible |
| 4 – Sidewalks/ Parking Lots/ Lanes/Other | 150 mm | 24 hours | 100 %Salt / Grit Mix | As Bare as Possible |