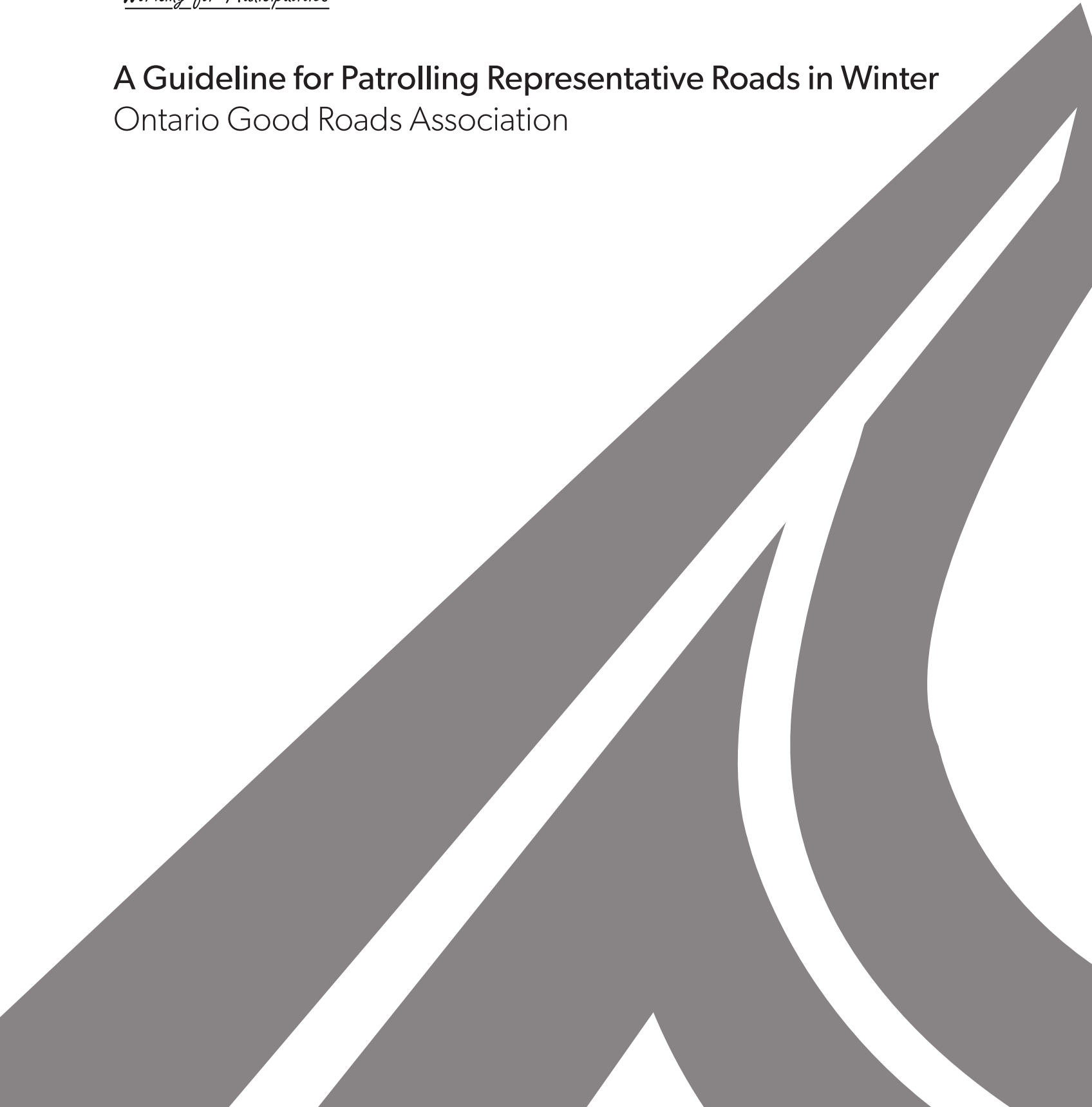




*Working for Municipalities*

# A Guideline for Patrolling Representative Roads in Winter

Ontario Good Roads Association



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### Rationale

A patroller is required to observe both weather and road conditions either in the field or electronically to determine if a winter event response to a winter event is required (typically a municipality using electronic surveillance will supplement the electronic information with field observations). A patroller does not normally need to patrol all roads to determine whether a winter event response is required. This document sets out suggestions for selecting a route of representative roads.

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### Definitions:

**Electronic Surveillance..** means the monitoring and recording of road and weather conditions using RWIS information supplemented with local weather forecasts and/or a value added meteorological service. Electronic surveillance is a tool to supplement field observations to determine if a winter event response is required to a winter event.

**Maintenance Class..** means a class 1, 2, 3, 4, 5 or 6 road designated as such by posted speed and traffic volume in accordance with O.Reg. 239/02 or O.Reg 612/06 as amended from time to time.

**MMS. .** means Ontario Regulation 239/02, Minimum Maintenance Standards for Municipal Highways or Ontario Regulation 612/06 Minimum Maintenance Standards for Highways in the City of Toronto

**Patroller..** means a person that is either a dedicated winter patroller or a person whose duties include winter patrolling

**Patrolling Representative Roads..** means the field observation and recording of road and weather conditions on select roads within a municipal jurisdiction to determine if a winter event response is required to a winter event. Patrolling may or may not be supplemented by electronic surveillance.

**Road Weather Information System (RWIS).** . means a weather station located along a highway that provides local pavement and meteorological data.

**Rural Road System..** typically means roads in a rural environment where development is sparse or where development is less than 50% of the frontage including developed areas extending less than 300m of one side of the road or 200m on both sides and no curb and gutter.

**Susceptible Area..** means a road section with a steep hill, sharp curve or other areas or structures prone to drifting snow and/or slippery conditions A steep hill is a hill where the percent longitudinal grade is greater than the design criteria. A sharp curve is a curve with a speed advisory  $\geq 20$ km/h less than posted speed.

**Urban Road System..** means roads in an urban environment where curb and gutter or curb exists on both sides of the road with or served by storm sewers or where curb and gutter or curb exists on one side of the road with or served by storm sewers or for subdivisions where the majority of lot frontages are less than 30m.

**Winter Event..** is a weather condition affecting roads such as snowfall, wind-blown snow, sleet, 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 Patrol.** . means the field observation of weather and road conditions.

**Winter Season..** means the season when the municipality performs winter highway maintenance as identified in policy

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## Equipment

Every patroller should be equipped with the following:

1. Training as to what is a winter event and winter event response, what is the route of *representative roads* to be patrolled between winter events, their duties during a winter

event, record keeping requirements and callout procedures, plus any and all other policy and procedures for winter highway operations. Training on the interpretation of the weather information and the de-icing chemicals to be applied for the forecasted weather conditions is also required.

2. A vehicle equipped with a pavement thermometer, and ambient air temperature thermometer and two way communications.
3. Access to local weather forecasts (local radio station, computer at office with internet access, etc) that includes information on air temperature, wind direction and speed and dew point.
4. A map of the entire road system showing all plow routes and a map (or text document) of the *representative roads* and susceptible areas to be patrolled.
5. A method of recording weather and road conditions observed.

#### Equipment – Optional Electronic Surveillance

Any person monitoring a road system electronically must be equipped with the following:

1. Training as to what is a winter event and winter event response. Training on the interpretation of weather forecasts and RWIS information. Training on record keeping requirements and callout procedures plus any and all other policy and procedures for winter highway operations.
2. A computer with access to high speed internet.
3. Access to RWIS station or stations.
4. If available, access to GPS/AVL data.
5. Access to local weather forecasts that includes information on ambient air temperature, wind direction, wind speed and dew point.

#### Patrolling Representative Roads

Upon the observation of a winter event or the forecast of an approaching winter event, a patroller will patrol a route of representative roads. The route of representative roads should provide a geographical representation of the municipality. Depending on the maintenance class of the roads, if steep hills, sharp curves, areas or structures prone to drifting snow and icy conditions exist on a road section, the route of representative roads must include some or all of these susceptible areas (Table 1). The patroller may need to alter the patrol based on the weather forecast by patrolling either more roads or more susceptible areas than set out in Table 1 and/or increase the interval of patrol.

The technologies used by the municipality (anti-icing, pre-wetting, etc) will determine the appropriate response. The patroller, upon the observation of a winter event, should initiate call out procedures and follow any and all policy and procedures included in the municipality's winter operations plan.

### During a Storm

The patroller should confirm that the level of service provided by the municipality in policy has been attained. If the storm is of long duration and/or heavy accumulation the patroller should monitor roads for deteriorating conditions at an interval that enables compliance with MMS.

Table 1

Maintenance Class	Minimum % of road class to be patrolled to check for conditions as described in sections 4 and 5 of MMS	Minimum % of road sections with a susceptible areas to include in the patrol	If RWIS information is available to the patroller
Class 1	25%	100%	Reduce to 10% but include 100% of road sections with a susceptible area
Class 2	25%	100%	Reduce to 10% but include 100% of road sections with a susceptible area
Class 3	25%	50%	Reduce to 10% but include 50% of road sections with a susceptible area
Class 4	10%	25%	Reduce to 0% but include 25% of road sections with a susceptible area
Class 5	0%	25%	Reduce to 0% of susceptible areas
Class 6	0%	10%	Reduce to 0% of susceptible areas

NOTE: The percent reduction of roads patrolled per maintenance class as shown in Table 1 represents the percent reduction per patrol.

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### Limitations on Implementing this Practice

Implementation of this practice may also require municipalities to improve their training of the patroller, improve their record keeping capabilities and appoint a person to assume the duties of the patroller.

Some municipalities currently provide winter patrol that exceeds this practice. It is not the intent of this practice to reduce the number of roads patrolled in winter.

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## Benefits

For some municipalities winter patrolling is a random activity. Adoption of this guideline will allow municipalities to verify that winter patrol is a scheduled activity that meets certain minimum requirements.

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## Winter Operations Reference Documents

1. A Guideline for Weather Monitoring – OGRA 2012
2. A Guideline for Preparing for and Decommissioning Winter Operations – OGRA 2012
3. A Guideline for Training Patrol Staff – OGRA 2012
4. A Guideline for Developing a Level of Service Policy – OGRA 2012
5. Winter Operations Template – OGRA 2012

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