OPERATIONS COMMITTEE AGENDA

Operations Committee Meeting
Monday, August 12, 2019
Tom Davies Square - Council Chamber

COUNCILLOR DEB MCINTOSH, CHAIR

Mark Signoretti, Vice-Chair

9:00 a.m. OPERATIONS COMMITTEE MEETING
COUNCIL CHAMBER

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DECLARATIONS OF PECUNIARY INTEREST AND THE GENERAL NATURE THEREOF

PRESENTATIONS

1. Report dated July 19, 2019 from the General Manager of Growth and Infrastructure regarding Bike Parking Program. **4 - 7**
   (ELECTRONIC PRESENTATION) (FOR INFORMATION ONLY)

   - Joe Rocca, Traffic and Asset Management Supervisor

   (This report provides information regarding the City's new Bike Parking Program, funded in part through the Ontario Municipal Commuter Cycling grant.)

REGULAR AGENDA

MANAGERS' REPORTS

R-1. Report dated July 18, 2019 from the General Manager of Growth and Infrastructure regarding Annual Pedestrian Crossover Program Update. **8 - 15**
(RESOLUTION PREPARED)

(This report provides an update on the Pedestrian Crossover Program, including information on monitoring and compliance of those installed between 2016 and 2018. This report also seeks approval of locations proposed for new pedestrian crossovers to be installed in 2020.)

R-2. Report dated July 18, 2019 from the General Manager of Growth and Infrastructure regarding Traffic Control - Buckingham Drive at Fairmount Drive. **16 - 18**
(RESOLUTION PREPARED)

(This report provides recommendations for appropriate traffic control at the intersection of Buckingham Drive and Fairmount Drive.)

R-3. Report dated July 31, 2019 from the General Manager of Growth and Infrastructure regarding Active Transportation Winter Maintenance Policy. **19 - 27**
(RESOLUTION PREPARED)

(This report provides an overview of recent changes to O. Reg. 239/02 Minimum Maintenance Standards for Municipal Highways that affect the maintenance of pedestrian and cycling facilities and further presents a policy approach for implementation in Greater Sudbury.)

R-4. Report dated July 31, 2019 from the General Manager of Growth and Infrastructure regarding Protocols and Policies to Declare a Significant Weather Event. **28 - 76**
(RESOLUTION PREPARED)

(This report provides procedures for how staff will implement the new significant weather declaration outlined in the most recent update of the minimum maintenance standards to address Operations Committee Resolution OP2019-7.)

MEMBERS' MOTIONS

CORRESPONDENCE FOR INFORMATION ONLY

I-1. Report dated July 18, 2019 from the General Manager of Growth and Infrastructure regarding Right Hand Turn Lane on Municipal Road 80 onto Alexandre Street. **(FOR INFORMATION ONLY)** **77 - 80**

(This report provides recommendations, costs and completion timeline estimates to add a right hand turn lane on the east side of MR 80 leading into Alexandre Street.)

ADDENDUM

CIVIC PETITIONS

QUESTION PERIOD

ADJOURNMENT

Presented To:	Operations Committee
Presented:	Monday, Aug 12, 2019
Report Date	Friday, Jul 19, 2019
Type:	Presentations

For Information Only

Bike Parking Program

Resolution

For Information Only

Relationship to the Strategic Plan / Health Impact Assessment

This initiative falls under the Strategic Objective of 'Create a Healthier Community' and further under the Goal of 'invest in infrastructure to support community recreation with a focus on quality of life'. In addition, delivering a Bike Parking Program would contribute towards the achievement of the Strategic Initiative 6.2.E, which is 'following review of the feedback report accompanying the City's Bronze Award, attain Silver Bicycle Friendly Community Status from Share the Road Cycling Coalition'.

Report Summary

This report will provide the Committee with information regarding the City's new Bike Parking Program, funded in part through the Ontario Municipal Commuter Cycling grant received in 2017/2018.

Signed By

Report Prepared By
Marisa Talarico
Active Transportation Coordinator
Digitally Signed Jul 19, 19

Manager Review
Joe Rocca
Traffic and Asset Management Supervisor
Digitally Signed Jul 19, 19

Financial Implications
Liisa Lenz
Coordinator of Budgets
Digitally Signed Jul 25, 19

Recommended by the Department
Tony Cecutti
General Manager of Growth and Infrastructure
Digitally Signed Jul 25, 19

Recommended by the C.A.O.
Ed Archer
Chief Administrative Officer
Digitally Signed Jul 29, 19

Financial Implications

On December 4, 2017, the City of Greater Sudbury received confirmation of provincial funding in the amount of $1,122,543 from the Ontario Municipal Commuter Cycling Program towards the implementation of approved, eligible cycling infrastructure projects. Under the OMCC program requirements, the City has put forth a municipal contribution of $224,509, from the approved 2018 Cycling Infrastructure Capital Budget, towards the delivery of eligible projects.

Of the funding received by the City, $100,000 was allocated to improve bicycle parking at City-owned facilities, in town centres and to support the delivery of a program for businesses to incentivize private bicycle parking and make secure parking more available for residents who cycle.

Background:

In 2010, the City's Zoning By-law 2010-100Z was amended to require new commercial, retail, institutional and multi-residential developments to provide adequate bicycle parking and this has generally been successful in increasing the supply of private bike racks in the community. However, since that time there has been no similar program to provide bicycle parking for pre-existing developments or publicly-owned facilities.

The Transportation Master Plan for the City of Greater Sudbury, adopted by City Council in late 2016, recommends that the City make the development of supportive infrastructure, such as bicycle parking, a priority during the planning and implementation of cycling facilities. It further recommended that as part of demonstrating leadership, the City should provide bicycle parking facilities at all public buildings and that the City, in collaboration with local partners, should investigate the potential to develop a bicycle parking program whereby bicycle racks would be installed in locations where there is a demonstrated need for bicycle parking.

During the summer of 2017, staff conducted an inventory of bicycle parking at municipally-owned properties across Greater Sudbury and found that less than 10% of all facilities, including administrative buildings, parks and other recreational facilities have adequate bike parking. Improving this percentage is critical to encouraging more residents to access these destinations by bike and to shift more trips away from single occupant vehicles to more sustainable travel modes.

In January 2018, the City of Greater Sudbury was recognized with a Bronze level Bicycle Friendly Community Award from Share the Road Cycling Coalition. By participating in this voluntary evaluation process, staff received valuable feedback on how the community can move towards the Silver level designation. This feedback included a recommendation that the City expand the availability of high-quality bike parking within the community, especially at popular destinations such as the town centres and to ensure that bike parking standards comply with the Association of Pedestrian and Bicycle Professionals (APBP) best practices.

In May 2018, the final Transportation Demand Management (TDM) Plan for Greater Sudbury was presented to the Operations Committee and was approved by Council in June 2018. As part of the development of the City's TDM Plan, a community survey of residents' travel habits was completed by more than 1,500 respondents. When asked what end-of-trip facilities would help promote more cycling in Greater Sudbury, nearly 50% of respondents indicated that bike parking and the lack thereof, was a significant factor in whether residents would choose to cycle as transportation.

Bike Parking Program Overview:

To address existing community infrastructure deficiencies and increase the availability of both public and private secure bike parking in Greater Sudbury, the City requested funds to implement a Bicycle Parking Program from the Ontario Municipal Commuter Cycling Program.

The Bike Parking Program will be delivered in two parts:

1) Upgrading public bike parking across the town centres and at municipally-owned facilities; and

2) Introducing a 'Bike Racks for Businesses' program to incentivize private sector businesses to invest in bike parking for their properties.

Public Bike Parking:

Staff are working with the Parking Services section to identify opportunities for increasing the supply of public bike parking in the Downtown and in other town centres throughout the community. The removal of parking meters in the Downtown core presents an opportunity to install bike racks and increase the supply of conveniently located racks in Downtown, thereby supporting the ability of residents to frequent the area without a vehicle. The bike racks to be installed in the Downtown and town centres would be taken down in the winter months to ensure snow can be removed efficiently and that sidewalks can be more easily maintained.

Staff are also continuing to investigate opportunities to improve bicycle parking at municipal facilities for both staff and visitors. In early 2018, as part of the upgrades to the Tom Davies Square Courtyard, a secured Bicycle Parking Station was installed in the underground parking lot to encourage more staff to ride a bike to work and to-date, this facility has been well-used. In addition a bicycle rack was installed at the Kelly Lake Road Wastewater Treatment Plant, which is also actively being used by staff.

Bike Racks for Businesses:

To incentivize existing businesses throughout the community to improve existing or introduce new bicycle parking for people frequenting their business on two wheels, the City will be making bike racks available at bulk purchase pricing, on a first-come, first-served basis. Based on best practices in bicycle parking as defined by the Association of Pedestrian and Bicycle Professionals, an inverted-U style rack has been selected for this program. Racks will be available for purchase individually or can be purchased in multiples to meet the needs of individual businesses.

The Bike Racks for Businesses program will have three (3) intake periods, where the City will be accepting pre-orders for bike racks. The program intake periods will be, fall 2019 (to commence shortly), spring 2020 and fall 2020. Once the intake period closes and the order is placed, the bike racks are anticipated to arrive within six (6) to eight (8) weeks. Businesses will be required to arrange for pick-up of the racks on a designated date to be communicated in advance and will be responsible for the installation of the racks on their own properties.

This program is being made possible with funding received from the Ontario Municipal Commuter Cycling Program (to be spent by December 2020), which will be used to subsidize the cost of the bike racks. After the final intake period in fall 2020, the program will no longer be available and businesses will be required to provide bike parking at their own effort and expense.

To ensure the success of the Bike Racks for Businesses Program, Transportation and Innovation Services Section staff will work in collaboration with EarthCare Sudbury and Economic Development and Tourism staff to ensure that businesses with which the City has existing partnerships are made aware of this opportunity. Staff will also work closely with Communications and Community Engagement staff to share information with the broader community and to ensure the information is also shared with the Greater Sudbury Chamber of Commerce and local Business Improvement Areas.

Next Steps:

The Request for Proposals to secure a supplier of bike racks for the program has closed and was awarded in July 2019. Details, including specific intake period dates, for the program are being finalized and will be released shortly.

All information regarding the City's Bike Parking Program is available at www.greatersudbury.ca/bikeparking.

Presented To:	Operations Committee
Presented:	Monday, Aug 12, 2019
Report Date	Thursday, Jul 18, 2019
Type:	Managers' Reports

Request for Decision

Annual Pedestrian Crossover Program Update

Resolution

THAT the City of Greater Sudbury implements a pedestrian crossover on Van Horne Street and Shaughnessy Street and prohibits parking and stopping within 30 metres of the pedestrian crossover to be installed;

AND THAT staff be directed to prepare a by-law to amend Traffic and Parking By-Law 2010-1 to implement the recommended changes, as outlined in the report entitled "Annual Pedestrian Crossover Program Update", from the General Manager of Growth and Infrastructure, presented at the Operations Committee meeting on August 12, 2019.

Relationship to the Strategic Plan / Health Impact Assessment

This report refers to “providing quality multimodal transportation alternatives for roads, transit, trails, paths, sidewalks, and connecting neighbourhoods and communities within Greater Sudbury” which is identified in the Strategic Plan under the strategic objective of Create A Healthier Community.

Report Summary

This report presents an update on the City of Greater Sudbury Pedestrian Crossover Program, including information on monitoring and compliance of those pedestrian crossovers installed in previous years. This report also seeks approval of locations proposed for new pedestrian crossovers to be installed in 2020.

Signed By

Report Prepared By
Ryan Purdy
Traffic and Transportation Engineering Analyst
Digitally Signed Jul 18, 19

Manager Review
Joe Rocca
Traffic and Asset Management Supervisor
Digitally Signed Jul 18, 19

Division Review
Akli Ben-Anteur
Project Engineer
Digitally Signed Jul 18, 19

Financial Implications
Apryl Lukezic
Co-ordinator of Budgets
Digitally Signed Jul 23, 19

Recommended by the Department
Tony Cecutti
General Manager of Growth and Infrastructure
Digitally Signed Jul 29, 19

Recommended by the C.A.O.
Ed Archer
Chief Administrative Officer
Digitally Signed Jul 29, 19

Financial Implications

The estimated cost to implement the recommended pedestrian crossovers for 2020 is $100,000. Funding for the new pedestrian crossover will be reviewed as part of the 2020 capital budget prioritization process.

Annual Pedestrian Crossover Program Update

Background:

In May 2016, a report entitled "Pedestrian Crossover Facilities" was presented to Operations Committee. The report provided an overview of this new tool and recommended that an annual report prioritizing the installation of pedestrian crossovers (PXOs) based on existing and anticipated pedestrian volumes be presented to the Committee. This report has been prepared to fulfill that commitment.

In 2017 and 2018, the annual Pedestrian Crossover Program Update report was presented to the Operations Committee highlighting new crossovers to be installed, as well as reporting on monitoring and compliance of previously installed PXOs. As part of that report, staff committed to bring forward future reports to highlight results of analysis conducted to determine whether pedestrian crossovers requested by members of the public were warranted.

This update is being presented at this time, so that potential new pedestrian crossovers locations that were evaluated in 2019 can be approved and installed in 2020.

Monitoring Program Update:

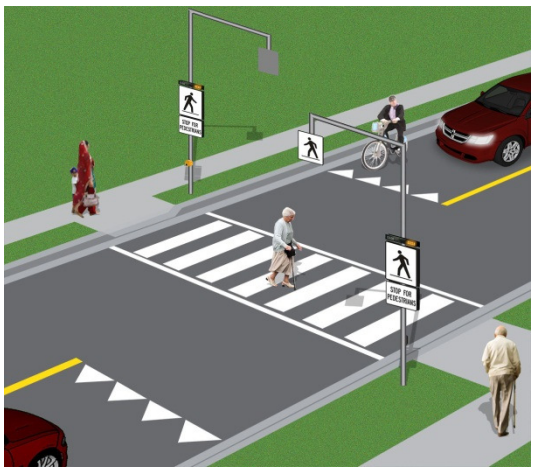
When the Pedestrian Crossover Program for the City was initially developed in 2016, an approach to monitor the success of the program was also planned to ensure the PXOs are achieving their objective of improving pedestrian safety in Greater Sudbury.

To measure motorist compliance, traffic cameras were used to record pedestrian and motorist movements at the various PXOs. To determine motorist compliance, staff were specifically looking for two behaviours: 1) did the approaching motorist stop when a pedestrian was present at the side of the road and 2) did the motorist remain stopped until the pedestrian had completely left the roadway.

Pedestrian compliance is somewhat more difficult to determine, as per the *Highway Traffic Act*, the presence of the 'Stop for Pedestrians' signs are all that is required for motorists to have to stop to allow pedestrians to cross the road. In addition, when flashing beacons are present at the PXO, pedestrians are not required to activate them prior to crossing. Rather, they are required to enter the road only when there would be adequate time for an approaching vehicle to stop. The flashing beacons are a supplemental device which helps draw the attention of motorists that a pedestrian is waiting to cross the road.

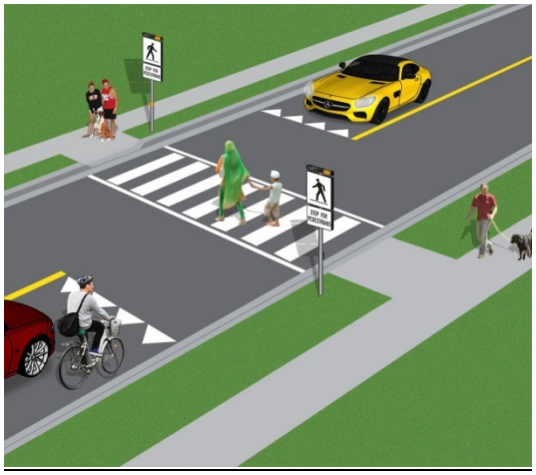
PXO Type B and Type C Compliance

The type B PXO consists of a roadside mounted regulatory and warning signs leading to a crossing in both directions with an overhead sign, a rapid rectangular flashing beacon (RRFB) with Tell Tale on top of the roadside mounted sign and pavement markings prescribed by Ontario Regulation 615 as illustrated in the layout below.



This system uses both the side mounted and overhead regulatory signs. This type of PXO is designed for medium volume, speed less than 60 km/h, single or multilane roadway, such as major collectors, arterial and high volume multilane roundabouts

Type C consists of regulatory and warning signs, RRFB and pavement markings prescribed by Ontario Regulation 615 as illustrated in the layout below. The system uses only side mounted regulatory signs. This type of PXO is designed for medium volume, speed limited less than 60 km/h, single lane roadway such as major collectors and low volume multilane roundabouts.



Staff reviewed 9 Type B and Type C crossings to measure vehicle and pedestrian compliance. Table 1 below shows the results for each location.

Table 1. Type B and Type C Locations Monitored for Pedestrian and Motorist Compliance in 2018/2019

Type B and C Pedestrian Crossing Locations			
Type	Location	Vehicle Compliance	Pedestrian Compliance
B	MR24 @ South of Jacobson Drive (Lively)	64%	98%
B	Walford Road @ Ramsey View Court	62%	90%
C	Brady Street @ Shaughnessy Street	76%	90%
C	Elm Street @ Transit Terminal / Rainbow Centre	80%	92%
C	Kathleen Street @ East of Burton Street	60%	70%
C	Riverside Drive @ East of Cross Street	43%	49%
C	Southview Drive @ Stephen Street	44%	79%
C	Bouchard Street @ Marcel Street	63%	88%
C	York Street @ Hillsdale Crescent	72%	50%

PXO Type D Compliance

Type D crossing consists of regulatory and warning signs, and pavement markings prescribed by Ontario Regulation 615 as illustrated in the layout below. The system uses only side mounted regulatory signs and does not require flashing beacons. This type of PXO is designed for medium to low volume, low speed, single lane roadway, such as collector, single lane roundabouts and right turn channelized.

The 2018 Pedestrian Crossover Program Update showed lower vehicle compliance at Type D crossings. In an effort to improve compliance at

Type D PXOs, staff trialed a new flexible bollard as shown in the picture below.

The bollard is set up in the middle of the street to increase the visibility of the crossover and to remind motorists to yield to pedestrians. Staff compared the compliance at all Type D locations before and after the installation of the bollards to see if they were effective. The table below shows the results for each location.

Table 2. Type D Locations Monitored for Motorist Compliance in 2018/2019

Type D Pedestrian Crossing Locations – Vehicle Compliance			
Type	Location	Vehicle Compliance 2018	Vehicle Compliance 2019
D	Elgin Street @ Nelson Street	30%	22%
D	Elgin Street @ Shaughnessy Street	48%	51%
D	Bond Street @ Murray Street	38%	54%
D	Madison Avenue @ Sagebrush Place	N/A	30%
D	Algonquin Road @ Tuscany Trail	N/A	39%

Due to the low vehicle compliance at a number of PXO locations, staff conducted a more detailed review of driver behavior at Type B, C and D

locations. The data shows the majority of vehicle non-compliance occurs when a pedestrian is standing on the tactile warning panel waiting to cross.

Pedestrian Crossing Locations With Low Vehicle Compliance		
Location	Pedestrians waiting on tactile warning panel *	Pedestrians crossing the road *
Elgin Street @ Nelson Street	94% (30)	6% (2)
Elgin Street @ Shaughnessy Street	60% (17)	40% (11)
Bond Street @ Murray Street	50% (1)	50% (1)
Madison Avenue @ Sagebrush Place	57% (4)	43% (3)
Algonquin Road @ Tuscany Trail	90% (9)	10% (1)
Southview Drive @ Stephen Street	90% (27)	10% (3)
Riverside Drive @ Armoury Trail	88% (7)	12% (1)

* Number of pedestrians in parentheses.

Pedestrian Collisions

During the past year, the first two collisions involving a pedestrian at a pedestrian crossover occurred. One occurred on Elm Street near the transit depot and the other occurred on Brady Street at Shaughnessy Street.

On Brady Street, the pedestrian who was struck had waited for the curb lane of traffic to stop before starting to cross. As they crossed into the inside lane a vehicle failed to yield and struck the pedestrian. The pedestrian suffered injuries from the collision.

On Elm Street, the pedestrian was struck while crossing the inside lane by a vehicle travelling eastbound that failed to yield.

All collisions involving pedestrians are concerning to staff. Staff will continue to monitor the safety of pedestrians at all PXOs and explore various countermeasures as appropriate.

Education Strategy

Based on the reported collisions and the results of the compliance studies, staff have begun working with Corporate Communications and Greater Sudbury

Police Services to create an education strategy to be released in the fall of 2019. The strategy will focus on reinforcing the rules for pedestrian crossovers.

2020 Pedestrian Crossover Locations:

In 2019, staff received one request for a pedestrian crossovers to be installed throughout the community. Staff proceeded to complete the warrant process for these requested crossings to determine whether they met the guidelines outlined in Book 15 of the Ontario Traffic Manual. Analysis concluded that the one the requested PXO is warranted and staff recommend implementation of the PXO at the following location in 2020:

Table 2: Pedestrian Crossings which Qualify for a Pedestrian Crossover

Intersection	Pedestrian Volume	Vehicular Volume	Raised Refuge	Number of Lanes	Type
Van Horne Street at Shaughnessy Street	509	3277	No	3	B

New PXO Requests:

Requests for pedestrian crossings received since implementation of the initial program launch continue to be reviewed by staff on an ongoing basis. Staff regularly conduct sight line analyses and complete traffic counts to determine if PXOs are warranted at any of the requested locations. Staff will continue to bring forward an annual update report which will outline any additional warranted pedestrian crossovers.

Next Steps:

Staff will continue to work with Corporate Communications and Greater Sudbury Police Services to develop public communication materials to inform drivers and pedestrians of new locations for the pedestrian crossovers.

It was also brought to staff's attention that playgrounds that have been identified in the Playground Revitalization Report (http://agendasonline.greatersudbury.ca/index.cfm?pg=agenda&action=navigator&id=1155&itemid=13213&lang=en) should be reviewed after the revitalization work has been completed due to the expected increased volume of pedestrians who will be trying to walk to these facilities. Staff will work with Leisure Services to see if any increase in use of revitalizing parks results in a warranted pedestrian crossover.

Presented To:	Operations Committee
Presented:	Monday, Aug 12, 2019
Report Date	Thursday, Jul 18, 2019
Type:	Managers' Reports

Request for Decision

Traffic Control - Buckingham Drive at Fairmount Drive

Resolution

THAT the City of Greater Sudbury controls the intersection of Buckingham Drive and Fairmount Drive with a Yield sign facing northbound traffic;

AND THAT staff be directed to prepare a by-law to amend Traffic and Parking By-Law 2010-1 in the City of Greater Sudbury to implement the recommended changes, as outlined in the report entitled "Traffic Control – Buckingham Drive and Fairmount Drive", from the General Manager of Growth and Infrastructure, presented at the Operations Committee meeting on August 12, 2019.

Relationship to the Strategic Plan / Health Impact Assessment

This report refers to operational matters.

Report Summary

This report will provide recommendations for appropriate traffic control at the intersection of Buckingham Drive and Fairmount Drive.

Financial Implications

Recommendations of this report may be carried out within existing approved operating budget.

Signed By

Report Prepared By
Soutsay Boualavong
Traffic/Trans Eng Analyst
Digitally Signed Jul 18, 19

Manager Review
Joe Rocca
Traffic and Asset Management Supervisor
Digitally Signed Jul 18, 19

Division Review
Akli Ben-Anteur
Project Engineer
Digitally Signed Jul 18, 19

Financial Implications
Jim Lister
Manager of Financial Planning and Budgeting
Digitally Signed Jul 24, 19

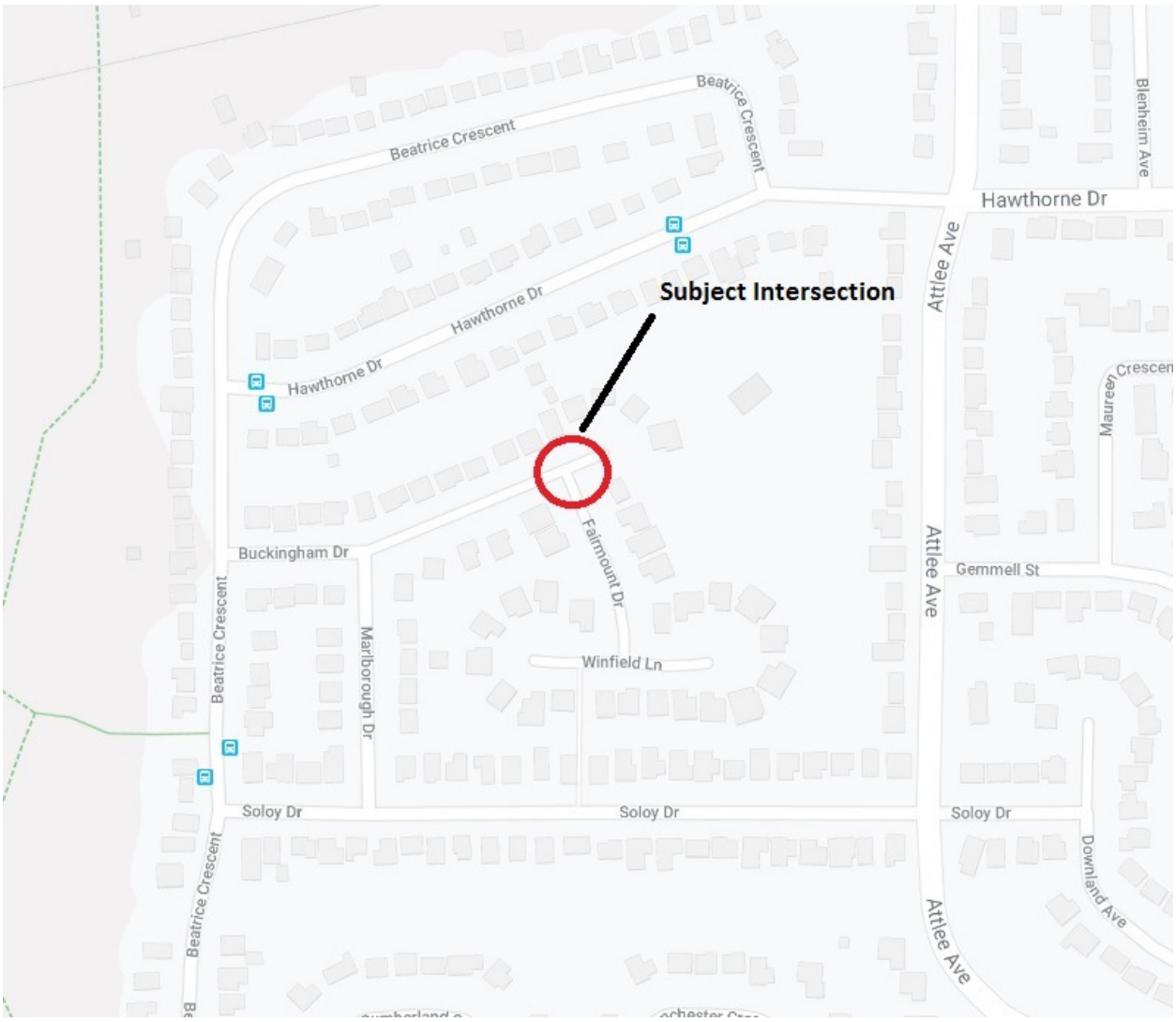
Recommended by the Department
Tony Cecutti
General Manager of Growth and Infrastructure
Digitally Signed Jul 26, 19

Recommended by the C.A.O.
Ed Archer
Chief Administrative Officer
Digitally Signed Jul 29, 19

Traffic Control – Buckingham Drive and Fairmount Drive

Background

The Transportation and Innovation Services section has received a request to review the traffic control at the intersection of Buckingham Drive and Fairmount Drive in New Sudbury.



Fairmount Drive intersects Buckingham Drive forming a "T" intersection. Currently, the intersection is controlled by a Stop sign facing northbound traffic on Fairmount Drive. Traffic volumes are low at this intersection with adequate sight lines in all directions. A Yield sign is appropriate when the traffic volume is low, sight lines are good and stopping is not always

required. It is recommended that the existing Stop sign be changed to a Yield sign facing northbound traffic on Fairmount Drive.

Presented To:	Operations Committee
Presented:	Monday, Aug 12, 2019
Report Date	Wednesday, Jul 31, 2019
Type:	Managers' Reports

Request for Decision

Active Transportation Winter Maintenance Policy

Resolution

THAT the City of Greater Sudbury approves the active transportation winter maintenance policy for designated cycling facilities, sidewalks and off-road/recreational trails, as outlined in the report entitled "Active Transportation Winter Maintenance Policy", from the General Manager of Growth and Infrastructure, presented at the Operations Committee meeting on August 12, 2019.

Relationship to the Strategic Plan / Health Impact Assessment

This report refers to operational matters.

Report Summary

This report presents an overview of recent changes to O. Reg. 239/02 Minimum Maintenance Standards for Municipal Highways that affect the maintenance of pedestrian and cycling facilities. Furthermore, the intent of the report is to establish an Active Transportation winter maintenance policy for implementation in Greater Sudbury. The policy, if approved will provide clear direction for staff on the process necessary to establish our winter maintenance plan for infrastructure identified in our Active Transportation Plan.

Signed By

Report Prepared By
Marisa Talarico
Active Transportation Coordinator
Digitally Signed Jul 31, 19

Division Review
Randy Halverson
Director of Linear Infrastructure Services
Digitally Signed Jul 31, 19

Financial Implications
Jim Lister
Manager of Financial Planning and Budgeting
Digitally Signed Jul 31, 19

Recommended by the Department
Tony Cecutti
General Manager of Growth and Infrastructure
Digitally Signed Jul 31, 19

Recommended by the C.A.O.
Ed Archer
Chief Administrative Officer
Digitally Signed Jul 31, 19

The policy is designed to be flexible and allow for minor changes brought forward by the public and supported by either staff or Council as long as the changes can be implemented within existing budgets. The policy will address active transportation infrastructure winter maintenance on a go forward basis and won’t change our current winter maintenance plans in a significant way.

Any change to active transportation winter maintenance that creates service level or budget change will be presented to Council for deliberation in the form of a business case as part of the annual budget process.

Financial Implications

There are no financial implications associated with this report. Any proposed service level/budget changes will be subject to Council's review and approval via annual budgets.

Active Transportation Winter Maintenance Policy

Background:

The City of Greater Sudbury is committed to building and maintaining a pedestrian friendly community. The City recognizes the importance of clearing sidewalks and enabling residents to maintain healthy, active lifestyles and in providing safe access to Greater Sudbury Transit services and designations such as school, work and commercial areas.

Within the last term of Council, one previous report was presented to the Operations Committee and one report was presented to the Finance and Administration Committee, outlining various facets of how the City manages the winter maintenance of sidewalks. Presented below is a summary of these reports:

1) Sidewalk Winter Maintenance Report (September 20, 2016)

This report presented an overview of the sidewalk maintenance practices at the time the report was written and provided the Finance and Administration Committee with options, including budget impacts, for how winter maintenance could be performed:

- Option A) Maintaining what was the status quo at the time; or
- Option B) Maintaining all sidewalks on priority routes and arterial roads, in addition to Option A; or
- Option C) Maintaining one-side of all two-sided sidewalks in addition to both Option A and B; or
- Option D) Maintain all sidewalks

At the time, the Finance and Administration Committee referred the report to budget discussions for the 2017 budget. During budget discussions, Option C was selected as the preferred approach for the winter maintenance of sidewalks in Greater Sudbury.

This report may be read in its entirety at: https://agendasonline.greatersudbury.ca/index.cfm?pg=agenda&action=navigator&id=974&itemid=12112&lang=en(September 20, 2016);

2) Enhanced Sidewalk Winter Maintenance Plan (August 21, 2017)

This report presented an overview of the winter sidewalk maintenance quality standard at the time the report was written, as well as the highlights of potentially forthcoming changes to the O.Reg. 232/02 Minimum Maintenance Standards for Municipal Highways and the impacts these changes may have on the City's winter control practices. Further, the report outlined some community feedback received and further potential options for the enhancement of sidewalk winter maintenance practices.

This report may be read in its entirety at: https://agendasonline.greatersudbury.ca/index.cfm?pg=agenda&action=navigator&id=1145&itemid=13719&lang=en(August 21, 2017).

Recent Amendments to O.Reg. 239/02 Minimum Maintenance Standards for Municipal Highways:

As of May 3, 2018, substantive changes to the Minimum Maintenance Standards for Municipal Highways, O. Reg. 239/02 came into force and effect. The most notable changes impacting the maintenance of active transportation facilities are:

1. The introduction of winter maintenance standards, including patrol obligations, for sidewalks;
2. The introduction of winter maintenance standards for bicycle lanes;
3. The ability for municipalities to declare a "significant weather event" with implications for winter maintenance on roadways, bicycle lanes and sidewalks during the duration of the event

Bicycle Lanes / Designated Cycling Facilities

The Minimum Maintenance Standards (MMS) now provide a definition for a 'bicycle lane' which includes a portion of the roadway with marked or buffered lanes, whether for the exclusive or preferential use of cyclists. Designated cycling facilities in Greater Sudbury, including Bicycle Lanes, are included in Schedule "T" of the Traffic and Parking By-law 2010-1.

The MMS now include specific sections outlining winter maintenance standards for snow accumulation in bicycle lanes. Table 1 compares the new snow accumulation depth standards for bicycle lanes as compared with the existing standards for roadways. Snow accumulation standards for bicycle lanes is lower than for the adjacent roadways in which they are contained, so where maintenance is performed on the roadway and bicycle lane concurrently, both standards should be satisfied. It should also be noted that the time period begins *after* snow accumulation has ended.

While there is no specific section dealing with ice formation on bicycle lanes, the section which sets out the standards for ice formation on roadways does note in section 5(5) that "this section applies in respect of ice formation on bicycle lanes on a roadway, but does not apply to other types of bicycle facilities". The current MMS defines 'bicycle facilities' as the on-road and in-boulevard cycling facilities listed in Book 18 of the Ontario Traffic Manual.

Table 1: Snow accumulation for Bicycle Lanes

Class of Highway or Adjacent Highway	Depth of Snow Accumulation	Time for Bicycle Lanes	Time for Roadways
1	2.5 cm	8 hours	4 hours
2	5 cm	12 hours	6 hours
3	8 cm	24 hours	12 hours
4	8 cm	24 hours	16 hours
5	10 cm	24 hours	24 hours

Sidewalks

The MMS now also includes specific sections dealing with sidewalk winter maintenance. Section 16.3 provides that snow accumulation on sidewalks shall be reduced to less than or equal to eight (8) centimetres within 48 hours of the end of a snow event. The section further provides a standard of a minimum maintained width of one metre. Notably, the section does not require clearing to bare pavement; rather simply reducing the depth to less than or equal to eight (8) centimetres.

Section 16.5 also sets out standards with respect to ice formation on sidewalks. It requires that municipalities monitor weather in accordance with section 3.1, and to "treat the sidewalk if practicable to prevent ice formation or improve traction within 48 hours if the municipality determines that there is a substantial probability of ice forming on a sidewalk, starting from the time that the municipality determines the appropriate time to deploy resources for that purpose". This standard still leaves the municipality with discretion in terms of the deployment of resources during such events.

Section 16.7 for the first time introduces standards for winter sidewalk patrols, which are to be conducted by the municipality where "the weather monitoring referred to in section 3.1 indicates that there is a substantial probability of snow accumulation on sidewalks in excess of eight (8) cm, ice formation on sidewalks or icy sidewalks." The patrols are to be conducted on sidewalks that the municipality selects "as representative of its sidewalks at intervals deemed necessary by the municipality." There is no expectation that *all* sidewalks are to be patrolled; rather, this section appears to promote the reasonable practice of inspecting "representative" sidewalks for winter maintenance conditions.

Off-road / Recreational Trails

The MMS do not apply to off-road trails or facilities that exist outside of the municipal right-of-way.

Risk Mitigation for Winter Maintenance

According to Section 44(1) of the Municipal Act, 2001, municipalities are obligated to maintain highways and bridges within their jurisdiction in a reasonable state of repair. While sidewalks are not defined specifically in the Municipal Act, the case law indicates that the sidewalk is a portion of the highway which a municipality must keep in a reasonable state of repair.

The defence outlined in Section 44(3) states that a municipality is not liable for failing to keep a highway or bridge in a reasonable state of repair if: a) it did not know and could not reasonable have been expected to have known about the state of repair of the highway or bridge; b) it took reasonable steps to prevent the default from arising; or c) at the time the cause of action arose, minimum standards established under subsection (4) applied to the highway or bridge and to the alleged default and those standards have been met.

Further, with respect to sidewalks, Section 44(9) indicates that except in the case of gross negligence, a municipality is not liable for a personal injury caused by snow or ice on a sidewalk.

The City of Greater Sudbury does not currently maintain all 440+ km of sidewalks, bicycle lanes and other designated cycling facilities throughout the winter months. To minimize liability and to ensure that the City takes reasonable steps to prevent incidents from arising, it is recommended that the sidewalks and cycling facilities which are not maintained should be closed by municipal by-law each year and advertised to the public, similarly to the current municipal practice of prohibiting Overnight Parking during the winter months from December 1 to March 31.

Proposed Approach to Active Transportation Winter Maintenance:

This report represents the first comprehensive review of the City's winter maintenance practices for active transportation infrastructure from a mobility perspective. To align with the changes to the MMS and ensure that the City's winter maintenance practices designated cycling facilities, sidewalks and off-road/recreational trails are meeting the needs of residents, staff are proposing the following approach for the Committee's consideration.

Bicycle Lanes / Designated Cycling Facilities

The City of Greater Sudbury currently has approximately 21 km of designated cycling facilities and this number is growing each year with the completion of additional capital projects. Cycling facilities in Greater Sudbury are currently not well-connected, which would pose challenges for planning for cost-effective winter maintenance.

Until such time as the City reaches a point where there is a critical mass of residents who are interested in riding all year long, warranting the investment in maintenance of cycling facilities for all seasons, it is recommended that all designated cycling facilities (including Bicycle Lanes), as identified in Schedule "T" of the Traffic and Parking By-law 2010-1 be closed by by-law for a specified period of time, annually (i.e. December 1 to March 31).

Closing cycling lanes by by-law on an annual basis would be consistent with the current operating practice, would result in a process that is consistent with the provincial standards, and would have no financial implications.

Sidewalks

The City's current sidewalk winter maintenance practices have evolved over a number of years, resulting in the current service levels and routes. To modernize the delivery of this essential service and to ensure ongoing financial prudence, a documented policy approach and criteria for determining which sidewalks should be maintained throughout the winter, on a go forward basis, are being presented here for the Committee's consideration. Where appropriate, the criteria presented here aim to be in line with those used in the City's Sidewalk Priority Index, which is an objective tool used by staff to prioritize where new sidewalks should be constructed to fill gaps in the City's existing pedestrian infrastructure network.

In addition, reviewing current sidewalk maintenance practices annually will allow our operations to align services with items such as the forthcoming route restructuring of the Transit Action Plan. Furthermore, the policy is designed to be flexible and allow for minor changes brought forward by the public and supported by either staff or Council as long as the changes can be implemented within existing budgets.
Criteria identified in table 2 will be applied in sequential order and staff will use professional judgment to make decisions where more than one criterion may apply to a road segment. Ultimately, sidewalk winter maintenance routes will be planned to ensure they are connected and provide for the most efficient and cost-effective route. The impact for the 2019/20 winter season will be consistent with existing efforts. Any change that would impact service levels/budgets will be brought to Council's attention during the budget process.

Table 2: Criteria for planning Sidewalk Winter Maintenance Routes

Criteria:			**Maintenance Approach:**
1	Road Classification	Primary/Secondary Arterial	• All connected sidewalks will be maintained.
		Collector/Tertiary Arterial	• All connected sidewalks will be maintained.
		Local	• • Where a local road has sidewalks on both

Criteria:		Maintenance Approach:
		sides, a minimum of one side of the road will be maintained.
2	Pedestrian Connections to Greater Sudbury Transit Stops	• All sidewalks will be maintained.
3	Pedestrian Path / Cut-through	• Pedestrian paths/cut-throughs will be maintained where they provide connections between destinations* or form part of a connected maintenance route.
4	Crescents	• Sidewalks will not be maintained unless it will form part of an efficient connected maintenance route or there is access to a pedestrian path/cut-through which would connect to a destination*.
5	Dead-end roads / Cul-de-sacs	• Sidewalks will not be maintained unless there is a pedestrian path/cut-through at the dead-end/cul-de-sac which would connect to a destination* or form part of a connected maintenance route.
6	Roadway Geometry (i.e. width, curves, hills, etc)	• Where deemed necessary for safety purposes related to roadway geometry, regardless of whether the sidewalk is located on a dead-end road/cul-de-sac, it will be maintained.
7	Connected Routes	• Where deemed necessary for the purpose of creating an efficient, connected maintenance route, regardless of whether the sidewalk is located on a dead-end road/cul-de-sac or crescent, it will be maintained.

**Destinations may include hospitals, schools, etc.*

As noted previously, sidewalk routes should be re-evaluated annually to ensure new segments of sidewalk added through either the roads capital program or development processes are incorporated into the existing sidewalk winter maintenance routes in accordance with the criteria and approach presented in Table 2.

This proposed policy and approach will ensure that the right sidewalks are being maintained to enable residents to access destinations and continuous travel paths.

Off-road / Recreational Trails

To be considered for winter maintenance, off-road trails must be constructed to a standard which is able to accommodate municipal tractors and other winter maintenance equipment without causing degradation to the trail. The surface of

the trail should be asphalt or similar hard surface and must be of sufficient width to accommodate the appropriate equipment.

It is not recommended that trails that are a soft surface (i.e. natural or granular material) be maintained in the winter months, as there are a number of challenges with maintaining these trails. For example, the majority of the off-road/recreational trails in Greater Sudbury have not been constructed to a standard (i.e. width) that could accommodate a municipal tractor or other maintenance equipment, which would likely result in damage to the trails resulting in increased maintenance costs in the summer months.

Currently, only the Jim Gordon Boardwalk and the Ramsey Lake Road Path, which are both hard-surfaced and appropriate widths, are maintained during the winter months.

Summary of Policy Recommendations:

1) It is recommended that designated cycling facilities be closed by by-law, seasonally during the winter months;

2) It is recommended that any changes to existing sidewalk winter maintenance routes be consistent with the criteria established in Table 2;

3) It is recommended that the winter sidewalk maintenance routes and off-road recreational trail routes be approved annually, through Operations Committee, subject to the Annual Budget Process if any changes result in a service level change and/or changes in budget.

Next Steps:

If approved, this policy will be applied for the forthcoming 2019/2020 winter control season and specific details (i.e. sidewalk plow routes) will be presented to the Operations Committee in October of this year (and prior to budget deliberations each subsequent year), for the Committee's consideration and discussion prior to the winter control season commencing. Any proposed service level/budget changes, resulting from the application of this policy, will be brought to Council's attention during budget deliberations.

To ensure the public is made aware of any approved changes to the winter maintenance of active transportation facilities, staff will work with Communications and Community Engagement staff to ensure all relevant information, including lists of closed sidewalks and cycling facilities, will be posted to the City's website and will be communicated by Public Service Announcement each year.

Presented To:	Operations Committee
Presented:	Monday, Aug 12, 2019
Report Date	Wednesday, Jul 31, 2019
Type:	Managers' Reports

Request for Decision

Protocols and Policies to Declare a Significant Weather Event

Resolution

THAT the City of Greater Sudbury amends its current Winter Control Policy to include the process for the “Declaration of Significant Weather Event” as per the procedures outlined in O.Reg 239/02 (May 3, 2018), Minimum Maintenance Standards as outlined in the report entitled "Protocols and Policies to Declare a Significant Weather Event", from the General Manager of Growth and Infrastructure, presented at the Operations Committee meeting on August 12, 2019.

Signed By

Report Prepared By
Tony De Silva
Roads Operations Engineer
Digitally Signed Jul 31, 19

Division Review
Randy Halverson
Director of Linear Infrastructure Services
Digitally Signed Jul 31, 19

Financial Implications
Jim Lister
Manager of Financial Planning and Budgeting
Digitally Signed Jul 31, 19

Recommended by the Department
Tony Cecutti
General Manager of Growth and Infrastructure
Digitally Signed Jul 31, 19

Recommended by the C.A.O.
Ed Archer
Chief Administrative Officer
Digitally Signed Jul 31, 19

Relationship to the Strategic Plan / Health Impact Assessment

This report refers to operational matters.

Report Summary

The purpose of this report is to identify a change to the Winter Control Policy as it relates to winter maintenance of roads, bicycle lanes and sidewalks. The recently amended Provincial Minimum Maintenance Standards (MMS) allows a Municipality to declare a “Significant Weather Event” (SWE) when it is determined by the Municipality that a winter event is too significant for a Municipality to manage the event within the timelines outlined in the MMS.

The declaration of a “Significant Weather Event” combined with associated communications, will create a greater awareness among road users of potential hazards that may be encountered during the weather event, allows the public to understand how the weather event affects maintenance response times, and reduces the City’s financial risks during the period of the declaration.

Financial Implications

There are no additional costs to implement the policy amendments, however, these policy amendments can

reduce the City's risk during significant weather events.

BACKGROUND

Section 44 of the Municipal Act defines municipalities role as it relates to maintenance of bridges and highways (see appendix A for details). Furthermore, section 44 allows the Ministry of Transportation to make regulations establishing minimum standards for repairs of highways/bridges or any class of them. In 2002, the Minimum Maintenance Standards (MMS) were established (see appendix B for details). The purpose of MMS is to clarify the scope of the statutory defense available to a municipality under clause 44 (3) (c) of the Act. The MMS is reviewed and amended every five years with the latest changes occurring on May 3, 2018.

Much like the rest of the province, Sudbury has experienced more intense and unusual weather conditions in recent times. One important amendment to the MMS addresses these changes in weather by allowing Municipalities to declare a "Significant Weather Event" (SWE) with implications on winter maintenance on roadways, bicycle lanes and sidewalks during the duration of such an event. A "significant weather event" is defined as an approaching or occurring weather hazard with the potential to pose a significant danger to users of the highways within a municipality. A "weather hazard" means the weather hazards determined by Environment Canada as meeting the criteria for the issuance of an alert under its Public Weather Alerting Program (see appendix C for details).

The recent amendments allow Municipalities to communicate the declaration of the beginning and end of a SWE to the public in one or more of the following mediums:

- By posting it on the Municipality's website;
- Announcing it via social media;
- By press release;
- Through a police service; or
- Through any other notification method required in a Municipal by-law.

Declaring a SWE does not absolve the City from conducting its normal response to a winter event as outlined in its winter control policy. However, it is intended to notify its citizens that due to the severe nature of the winter event, the City may not be able to meet the service timelines outlined in its winter control policy. In addition, people who use the roads during a significant weather event would become aware of hazards created by the weather.

The standard for addressing snow accumulations during the declaration of a significant weather event is outlined in the MMS as follows:

a) monitor the weather in accordance with Section 3:1 of the MMS

b) if deemed practicable by the Municipality, to deploy resources to address snow accumulation on roadways, starting from the time the municipality deems appropriate to do so

Similar to ensuring that the City meets the MMS, the Overall Responsible Superintendent (ORS) will be responsible for declaring a SWE when required. This decision will be based on Environment Canada's weather hazard warnings and our Standard Operating Procedure.

From a Risk Management perspective, the declaration of a SWE also provides the City with an additional legal defense if necessary. It does not however absolve the City from liability.

Should council approve the recommendation in this report, staff will take the following actions:

- develop a modified communication plan for implementation during the winter of 2019/2020; and,
- develop a standard operating procedure for notification protocols and to declare the significant weather event

RESOURCES

Appendix A: Municipal Act - Section 44, Maintenance

Appendix B: O.Reg 239/02 (May 2018) - Minimum Maintenance Standards

Appendix C: Environment Canada – Public Weather Alerting Program

Maintenance

44 (1) The municipality that has jurisdiction over a highway or bridge shall keep it in a state of repair that is reasonable in the circumstances, including the character and location of the highway or bridge. 2001, c. 25, s. 44 (1).

Liability

(2) A municipality that defaults in complying with subsection (1) is, subject to the *Negligence Act*, liable for all damages any person sustains because of the default. 2001, c. 25, s. 44 (2).

Defence

(3) Despite subsection (2), a municipality is not liable for failing to keep a highway or bridge in a reasonable state of repair if,

(a) it did not know and could not reasonably have been expected to have known about the state of repair of the highway or bridge;

(b) it took reasonable steps to prevent the default from arising; or

(c) at the time the cause of action arose, minimum standards established under subsection (4) applied to the highway or bridge and to the alleged default and those standards have been met. 2001, c. 25, s. 44 (3).

Regulations

(4) The Minister of Transportation may make regulations establishing minimum standards of repair for highways and bridges or any class of them. 2001, c. 25, s. 44 (4).

General or specific

(5) The minimum standards may be general or specific in their application. 2001, c. 25, s. 44 (5).

Adoption by reference

(6) A regulation made under subsection (4) may adopt by reference, in whole or in part, with such changes as the Minister of Transportation considers desirable, any code, standard or guideline, as it reads at the time the regulation is made or as it is amended from time to time, whether before or after the regulation is made. 2001, c. 25, s. 44 (6).

(7) REPEALED: 2002, c. 24, Sched. B, s. 25.

Untravelled portions of highway

(8) No action shall be brought against a municipality for damages caused by,

(a) the presence, absence or insufficiency of any wall, fence, rail or barrier along or on any highway; or

(b) any construction, obstruction or erection, or any siting or arrangement of any earth, rock, tree or other material or object adjacent to or on any untravelled portion of a highway, whether or not an obstruction is created due to the construction, siting or arrangement. 2001, c. 25, s. 44 (8).

Sidewalks

(9) Except in case of gross negligence, a municipality is not liable for a personal injury caused by snow or ice on a sidewalk. 2001, c. 25, s. 44 (9).

Notice

(10) No action shall be brought for the recovery of damages under subsection (2) unless, within 10 days after the occurrence of the injury, written notice of the claim and of the injury complained of, including the date, time and location of the occurrence, has been served upon or sent by registered mail to,

(a) the clerk of the municipality; or

(b) if the claim is against two or more municipalities jointly responsible for the repair of the highway or bridge, the clerk of each of the municipalities. 2001, c. 25, s. 44 (10); 2017, c. 10, Sched. 1, s. 4.

Exception

(11) Failure to give notice is not a bar to the action in the case of the death of the injured person as a result of the injury. 2001, c. 25, s. 44 (11).

Same

(12) Failure to give notice or insufficiency of the notice is not a bar to the action if a judge finds that there is reasonable excuse for the want or the insufficiency of the notice and that the municipality is not prejudiced in its defence. 2002, c. 24, Sched. B, s. 42.

(13) REPEALED: 2002, c. 24, Sched. B, s. 42.

No responsibility for acts of others

(14) Nothing in this section imposes any obligation or liability on a municipality for an act or omission of a person acting under a power conferred by law over which the municipality had no control unless,

(a) the municipality participated in the act or omission; or

(b) the power under which the person acted was a by-law, resolution or licence of the municipality. 2001, c. 25, s. 44 (14).

No liability

(15) A municipality is not liable for damages under this section unless the person claiming the damages has suffered a particular loss or damage beyond what is suffered by that person in common with all other persons affected by the lack of repair. 2001, c. 25, s. 44 (15).

Municipal Act, 2001
Loi de 2001 sur les municipalités

ONTARIO REGULATION 239/02
MINIMUM MAINTENANCE STANDARDS FOR MUNICIPAL HIGHWAYS

Consolidation Period: From May 3, 2018 to the e-Laws currency date.

Last amendment: 366/18.

Legislative History: 288/03, 613/06, 23/10, 47/13, 366/18.

This Regulation is made in English only.

Definitions

1. (1) In this Regulation,

"bicycle facility" means the on-road and in-boulevard cycling facilities listed in Book 18 of the Ontario Traffic Manual;

"bicycle lane" means,

(a) a portion of a roadway that has been designated by pavement markings or signage for the preferential or exclusive use of cyclists, or

(b) a portion of a roadway that has been designated for the exclusive use of cyclists by signage and a physical or marked buffer;

"cm" means centimetres;

"day" means a 24-hour period;

"encroachment" means anything that is placed, installed, constructed or planted within the highway that was not placed, installed, constructed or planted by the municipality;

"ice" means all kinds of ice, however formed;

"motor vehicle" has the same meaning as in subsection 1 (1) of the *Highway Traffic Act*, except that it does not include a motor assisted bicycle;

"non-paved surface" means a surface that is not a paved surface;

"Ontario Traffic Manual" means the Ontario Traffic Manual published by the Ministry of Transportation, as amended from time to time;

"paved surface" means a surface with a wearing layer or layers of asphalt, concrete or asphalt emulsion;

"pothole" means a hole in the surface of a roadway caused by any means, including wear or subsidence of the road surface or subsurface;

"roadway" has the same meaning as in subsection 1 (1) of the *Highway Traffic Act*;

"shoulder" means the portion of a highway that provides lateral support to the roadway and that may accommodate stopped motor vehicles and emergency use;

"sidewalk" means the part of the highway specifically set aside or commonly understood to be for pedestrian use, typically consisting of a paved surface but does not include crosswalks, medians, boulevards, shoulders or any part of the sidewalk where cleared snow has been deposited;

"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;

"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:

1. Newly-fallen snow.
2. Wind-blown snow.
3. Slush;

"substantial probability" means a significant likelihood considerably in excess of 51 per cent;

"surface" means the top of a sidewalk, roadway or shoulder;

"utility" includes any air, gas, water, electricity, cable, fiber-optic, telecommunication or traffic control system or subsystem, fire hydrants, sanitary sewers, storm sewers, property bars and survey monuments;

"utility appurtenance" includes maintenance holes and hole covers, water shut-off covers and boxes, valves, fittings, vaults, braces, pipes, pedestals, and any other structures or items that form part of or are an accessory part of any utility;

"weather" means air temperature, wind and precipitation.

"weather hazard" means the weather hazards determined by Environment Canada as meeting the criteria for the issuance of an alert under its Public Weather Alerting Program. O. Reg. 239/02, s. 1 (1); O. Reg. 23/10, s. 1 (1); O. Reg. 47/13, s. 1; O. Reg. 366/18, s. 1 (1, 2).

(2) For the purposes of this Regulation, every highway or part of a highway under the jurisdiction of a municipality in Ontario is classified in the Table to this section as a Class 1, Class 2, Class 3, Class 4, Class 5 or Class 6 highway, based on the speed limit applicable to it and the average daily traffic on it. O. Reg. 239/02, s. 1 (2); O. Reg. 366/18, s. 1 (3).

(3) For the purposes of subsection (2) and the Table to this section, the average daily traffic on a highway or part of a highway under municipal jurisdiction shall be determined,

(a) by counting and averaging the daily two-way traffic on the highway or part of the highway; or

(b) by estimating the average daily two-way traffic on the highway or part of the highway. O. Reg. 239/02, s. 1 (3); O. Reg. 23/10, s. 1 (2); O. Reg. 366/18, s. 1 (3).

(4) For the purposes of this Regulation, unless otherwise indicated in a provision of this Regulation, a municipality is deemed to be aware of a fact if, in the absence of actual knowledge of the fact, circumstances are such that the municipality ought reasonably to be aware of the fact. O. Reg. 366/18, s. 1 (4).

TABLE
CLASSIFICATION OF HIGHWAYS

Column 1 Average Daily Traffic (number of motor vehicles)	Column 2 91 - 100 km/h speed limit	Column 3 81 - 90 km/h speed limit	Column 4 71 - 80 km/h speed limit	Column 5 61 - 70 km/h speed limit	Column 6 51 - 60 km/h speed limit	Column 7 41 - 50 km/h speed limit	Column 8 1 - 40 km/h speed limit
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
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

O. Reg. 366/18, s. 1 (5).

Application

2. (1) This Regulation sets out the minimum standards of repair for highways under municipal jurisdiction for the purpose of clause 44 (3) (c) of the Act. O. Reg. 288/03, s. 1.

(2) REVOKED: O. Reg. 23/10, s. 2.

(3) This Regulation does not apply to Class 6 highways. O. Reg. 239/02, s. 2 (3).

Purpose

2.1 The purpose of this Regulation is to clarify the scope of the statutory defence available to a municipality under clause 44 (3) (c) of the Act by establishing maintenance standards which are non-prescriptive as to the methods or materials to be used in complying with the standards but instead describe a desired outcome. O. Reg. 366/18, s. 2.

MAINTENANCE STANDARDS

Patrolling

3. (1) The standard for the frequency of patrolling of highways to check for conditions described in this Regulation is set out in the Table to this section. O. Reg. 23/10, s. 3 (1); O. Reg. 366/18, s. 3 (2).

(2) If it is determined by the municipality that the weather monitoring referred to in section 3.1 indicates that there is a substantial probability of snow accumulation on roadways, ice formation on roadways or icy roadways, the standard for patrolling highways is, in addition to that set out in subsection (1), to patrol highways that the municipality selects as representative of its highways, at intervals deemed necessary by the municipality, to check for such conditions. O. Reg. 47/13, s. 2; O. Reg. 366/18, s. 3 (2).

(3) Patrolling a highway consists of observing the highway, either by driving on or by electronically monitoring the highway, and may be performed by persons responsible for patrolling highways or by persons responsible for or performing highway maintenance activities. O. Reg. 23/10, s. 3 (1).

(4) This section does not apply in respect of the conditions described in section 10, subsections 11 (0.1) and 12 (1) and section 16.1, 16.2, 16.3 or 16.4. O. Reg. 23/10, s. 3 (1); O. Reg. 366/18, s. 3 (3).

TABLE
PATROLLING FREQUENCY

Class of Highway	Patrolling Frequency
1	3 times every 7 days
2	2 times every 7 days
3	once every 7 days
4	once every 14 days
5	once every 30 days

O. Reg. 239/02, s. 3, Table; O. Reg. 23/10, s. 3 (2).

Weather monitoring

3.1 (1) From October 1 to April 30, the standard is to monitor the weather, both current and forecast to occur in the next 24 hours, once every shift or three times per calendar day, whichever is more frequent, at intervals determined by the municipality. O. Reg. 47/13, s. 3; O. Reg. 366/18, s. 4.

(2) From May 1 to September 30, the standard is to monitor the weather, both current and forecast to occur in the next 24 hours, once per calendar day. O. Reg. 47/13, s. 3; O. Reg. 366/18, s. 4.

Snow accumulation, roadways

4. (1) Subject to section 4.1, the standard for addressing snow accumulation on roadways is,

(a) after becoming aware of the fact that the snow accumulation on a roadway is greater than the depth set out in the Table 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 in the Table within the time set out in the Table,

(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; O. Reg. 366/18, s. 5 (1).

(2) If the depth of snow accumulation on a roadway is less than or equal to the depth set out in the Table 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 and, if applicable, lane width under clause (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:

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; O. Reg. 366/18, s. 5 (2).

(4) The depth of snow accumulation on a roadway and lane width 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; O. Reg. 366/18, s. 5 (3).

(5) For the purposes of this section, addressing snow accumulation on a roadway includes,

(a) plowing the roadway;

(b) salting the roadway;

(c) applying abrasive materials to the roadway;

(d) applying other chemical or organic agents to the roadway;

(e) any combination of the methods described in clauses (a) to (d). O. Reg. 366/18, s. 5 (4).

(6) This section does not apply to that portion of the roadway,

(a) designated for parking;

(b) consisting of a bicycle lane or other bicycle facility; or

(d) used by a municipality for snow storage. O. Reg. 366/18, s. 5 (4).

TABLE
SNOW ACCUMULATION - ROADWAYS

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

O. Reg. 47/13, s. 4; O. Reg. 366/18, s. 5 (5).

Snow accumulation on roadways, significant weather event

4.1 (1) If a municipality declares a significant weather event relating to snow accumulation, the standard for addressing snow accumulation on roadways until the declaration of the end of the significant weather event is,

(a) to monitor the weather in accordance with section 3.1; and

(b) if deemed practicable by the municipality, to deploy resources to address snow accumulation on roadways, starting from the time that the municipality deems appropriate to do so. O. Reg. 366/18, s. 7.

(2) If the municipality complies with subsection (1), all roadways within the municipality are deemed to be in a state of repair with respect to snow accumulation until the applicable time in the Table to section 4 expires following the declaration of the end of the significant weather event by the municipality. O. Reg. 366/18, s. 7.

(3) Following the end of the weather hazard in respect of which a significant weather event was declared by a municipality under subsection (1), the municipality shall,

(a) declare the end of the significant weather event when the municipality determines it is appropriate to do so; and

(b) address snow accumulation on roadways in accordance with section 4. O. Reg. 366/18, s. 7.

Snow accumulation, bicycle lanes

4.2 (1) Subject to section 4.3, the standard for addressing snow accumulation on bicycle lanes is,

(a) after becoming aware of the fact that the snow accumulation on a bicycle lane is greater than the depth set out in the Table 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 in the Table to this section to provide a minimum bicycle lane width of the lesser of 1 metre or the actual bicycle lane width. O. Reg. 366/18, s. 7.

(2) If the depth of snow accumulation on a bicycle lane is less than or equal to the depth set out in the Table to this section, the bicycle lane is deemed to be in a state of repair in respect of snow accumulation. O. Reg. 366/18, s. 7.

(3) For the purposes of this section, the depth of snow accumulation on a bicycle lane and, if applicable, lane width under clause (1) (b), may be determined in the same manner as set out in subsection 4 (4) and by the persons mentioned in subsection 4 (3), with necessary modifications. O. Reg. 366/18, s. 7.

(4) For the purposes of this section, addressing snow accumulation on a bicycle lane includes,

(a) plowing the bicycle lane;

(b) salting the bicycle lane;

(c) applying abrasive materials to the bicycle lane;

(d) applying other chemical or organic agents to the bicycle lane;

(e) sweeping the bicycle lane; or

(f) any combination of the methods described in clauses (a) to (e). O. Reg. 366/18, s. 7.

TABLE
SNOW ACCUMULATION – BICYCLE LANES

Column 1 Class of Highway or Adjacent Highway	Column 2 Depth	Column 3 Time
1	2.5 cm	8 hours
2	5 cm	12 hours
3	8 cm	24 hours
4	8 cm	24 hours
5	10 cm	24 hours

O. Reg. 366/18, s. 7.

Snow accumulation on bicycle lanes, significant weather event

4.3 (1) If a municipality declares a significant weather event relating to snow accumulation, the standard for addressing snow accumulation on bicycle lanes until the declaration of the end of the significant weather event is,

(a) to monitor the weather in accordance with section 3.1; and

(b) if deemed practicable by the municipality, to deploy resources to address snow accumulation on bicycle lanes, starting from the time that the municipality deems appropriate to do so. O. Reg. 366/18, s. 7.

(2) If the municipality complies with subsection (1), all bicycle lanes within the municipality are deemed to be in a state of repair with respect to snow accumulation until the applicable time in the Table to section 4.2 expires following the declaration of the end of the significant weather event by the municipality. O. Reg. 366/18, s. 7.

(3) Following the end of the weather hazard in respect of which a significant weather event was declared by a municipality under subsection (1), the municipality shall,

(a) declare the end of the significant weather event when the municipality determines it is appropriate to do so; and

(b) address snow accumulation on bicycle lanes in accordance with section 4.2. O. Reg. 366/18, s. 7.

Ice formation on roadways and icy roadways

5. (1) The standard for 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:

1. Monitor the weather in accordance with section 3.1.
2. Patrol in accordance with section 3.
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, if practicable, to prevent ice formation within the time set out in Table 1 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.

(2) 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 applicable time set out in Table 2 to this section expires after the municipality becomes aware of the fact that the roadway is icy. O. Reg. 366/18, s. 8.

(3) Subject to section 5.1, the standard for treating icy roadways is to treat the icy roadway within the time set out in Table 2 to this section, and an icy roadway is deemed to be in a state of repair until the applicable time set out in Table 2 to this section expires after the municipality becomes aware of the fact that a roadway is icy. O. Reg. 366/18, s. 8.

(4) 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.

(5) For greater certainty, this section applies in respect of ice formation on bicycle lanes on a roadway, but does not apply to other types of bicycle facilities. O. Reg. 366/18, s. 8.

TABLE 1
ICE FORMATION PREVENTION

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

O. Reg. 366/18, s. 8.

TABLE 2
TREATMENT OF ICY ROADWAYS

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

O. Reg. 366/18, s. 8.

Icy roadways, significant weather event

5.1 (1) If a municipality declares a significant weather event relating to ice, the standard for treating icy roadways until the declaration of the end of the significant weather event is,

(a) to monitor the weather in accordance with section 3.1; and

(b) if deemed practicable by the municipality, to deploy resources to treat icy roadways, starting from the time that the municipality deems appropriate to do so. O. Reg. 366/18, s. 8.

(2) If the municipality complies with subsection (1), all roadways within the municipality are deemed to be in a state of repair with respect to any ice which forms or may be present until the applicable time in Table 2 to section 5 expires after the declaration of the end of the significant weather event by the municipality. O. Reg. 366/18, s. 8.

(3) Following the end of the weather hazard in respect of which a significant weather event was declared by a municipality under subsection (1), the municipality shall,

(a) declare the end of the significant weather event when the municipality determines it is appropriate to do so; and

(b) treat icy roadways in accordance with section 5. O. Reg. 366/18, s. 8.

Potholes

6. (1) If a pothole exceeds both the surface area and depth set out in Table 1, 2 or 3 to this section, as the case may be, the standard is to repair the pothole within the time set out in Table 1, 2 or 3, as appropriate, after becoming aware of the fact. O. Reg. 239/02, s. 6 (1); O. Reg. 366/18, s. 8 (1).

(1.1) For the purposes of this section, the surface area and depth of a pothole may be determined in accordance with subsections (1.2) and (1.3), as applicable, 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. 366/18, s. 8 (2).

(1.2) The depth and surface area of a pothole may be determined by,

(a) performing an actual measurement; or

(b) performing a visual estimate. O. Reg. 366/18, s. 8 (2).

(1.3) For the purposes of this section, the surface area of a pothole does not include any area that is merely depressed and not yet broken fully through the surface of the roadway. O. Reg. 366/18, s. 8 (2).

(2) A pothole is deemed to be in a state of repair if its surface area or depth is less than or equal to that set out in Table 1, 2 or 3, as appropriate. O. Reg. 239/02, s. 6 (2); O. Reg. 47/13, s. 6.

TABLE 1
POTHOLES ON PAVED SURFACE OF ROADWAY

Class of Highway	Surface Area	Depth	Time
1	600 cm²	8 cm	4 days
2	800 cm²	8 cm	4 days
3	1000 cm²	8 cm	7 days
4	1000 cm²	8 cm	14 days
5	1000 cm²	8 cm	30 days

O. Reg. 239/02, s. 6, Table 1.

TABLE 2
POTHOLES ON NON-PAVED SURFACE OF ROADWAY

Class of Highway	Surface Area	Depth	Time
3	1500 cm²	8 cm	7 days
4	1500 cm²	10 cm	14 days
5	1500 cm²	12 cm	30 days

O. Reg. 239/02, s. 6, Table 2.

TABLE 3
POTHOLES ON PAVED OR NON-PAVED SURFACE OF SHOULDER

Class of Highway	Surface Area	Depth	Time
1	1500 cm²	8 cm	7 days
2	1500 cm²	8 cm	7 days
3	1500 cm²	8 cm	14 days
4	1500 cm²	10 cm	30 days
5	1500 cm²	12 cm	60 days

O. Reg. 239/02, s. 6, Table 3.

Shoulder drop-offs

7. (1) If a shoulder drop-off is deeper than 8 cm, for a continuous distance of 20 metres or more, the standard is to repair the shoulder drop-off within the time set out in the Table to this section after becoming aware of the fact. O. Reg. 366/18, s. 9 (1).

(2) A shoulder drop-off is deemed to be in a state of repair if its depth is less than 8 cm. O. Reg. 366/18, s. 9 (1).

(3) In this section,

"shoulder drop-off" means the vertical differential, where the paved surface of the roadway is higher than the surface of the shoulder, between the paved surface of the roadway and the paved or non-paved surface of the shoulder. O. Reg. 239/02, s. 7 (3).

TABLE
SHOULDER DROP-OFFS

Class of Highway	Time
1	4 days
2	4 days
3	7 days
4	14 days
5	30 days

O. Reg. 366/18, s. 9 (2).

Cracks

8. (1) If a crack on the paved surface of a roadway is greater than 5 cm wide and 5 cm deep for a continuous distance of three metres or more, the standard is to repair the crack within the time set out in the Table to this section after becoming aware of the fact. O. Reg. 366/18, s. 10 (1).

(2) A crack is deemed to be in a state of repair if its width or depth is less than or equal to 5 cm. O. Reg. 366/18, s. 10 (1).

TABLE
CRACKS

Column 1 Class of Highway	Column 2 Time
1	30 days
2	30 days
3	60 days
4	180 days
5	180 days

O. Reg. 366/18, s. 10 (2).

Debris

9. (1) If there is debris on a roadway, the standard is to deploy resources, as soon as practicable after becoming aware of the fact, to remove the debris. O. Reg. 239/02, s. 9 (1); O. Reg. 366/18, s. 11.

(2) In this section,

"debris" means any material (except snow, slush or ice) or object on a roadway,

(a) that is not an integral part of the roadway or has not been intentionally placed on the roadway by a municipality, and

(b) that is reasonably likely to cause damage to a motor vehicle or to injure a person in a motor vehicle. O. Reg. 239/02, s. 9 (2); O. Reg. 47/13, s. 9.

Luminaires

10. (0.1) REVOKED: O. Reg. 366/18, s. 12.

(1) The standard for the frequency of inspecting all luminaires to check to see that they are functioning is once per calendar year, with each inspection taking place not more than 16 months from the previous inspection. O. Reg. 366/18, s. 12.

(2) For conventional illumination, if three or more consecutive luminaires on the same side of a highway are not functioning, the standard is to repair the luminaires within the time set out in the Table to this section after becoming aware of the fact. O. Reg. 366/18, s. 12.

(3) For conventional illumination and high mast illumination, if 30 per cent or more of the luminaires on any kilometre of highway are not functioning, the standard is to repair the luminaires within the time set out in the Table to this section after becoming aware of the fact. O. Reg. 366/18, s. 12.

(4) Despite subsection (2), for high mast illumination, if all of the luminaires on consecutive poles on the same side of a highway are not functioning, the standard is to deploy resources as soon as practicable after becoming aware of the fact to repair the luminaires. O. Reg. 366/18, s. 12.

(5) Despite subsections (1), (2) and (3), for conventional illumination and high mast illumination, if more than 50 per cent of the luminaires on any kilometre of a Class 1 highway with a speed limit of 90 kilometres per hour or more are not functioning, the standard is to deploy resources as soon as practicable after becoming aware of the fact to repair the luminaires. O. Reg. 366/18, s. 12.

(6) Luminaires are deemed to be in a state of repair,

(a) for the purpose of subsection (2), if the number of non-functioning consecutive luminaires on the same side of a highway does not exceed two;

(b) for the purpose of subsection (3), if more than 70 per cent of luminaires on any kilometre of highway are functioning;

(c) for the purpose of subsection (4), if one or more of the luminaires on consecutive poles on the same side of a highway are functioning;

(d) for the purpose of subsection (5), if more than 50 per cent of luminaires on any kilometre of highway are functioning. O. Reg. 366/18, s. 12.

(7) In this section,

"conventional illumination" means lighting, other than high mast illumination, where there are one or more luminaires per pole;

"high mast illumination" means lighting where there are three or more luminaires per pole and the height of the pole exceeds 20 metres;

"luminaire" means a complete lighting unit consisting of,

(a) a lamp, and

(b) parts designed to distribute the light, to position or protect the lamp and to connect the lamp to the power supply. O. Reg. 239/02, s. 10 (7).

TABLE
LUMINAIRES

Class of Highway	Time
1	7 days
2	7 days
3	14 days
4	14 days
5	14 days

Signs

11. (0.1) The standard for the frequency of inspecting signs of a type listed in subsection (2) to check to see that they meet the retro-reflectivity requirements of the Ontario Traffic Manual is once per calendar year, with each inspection taking place not more than 16 months from the previous inspection. O. Reg. 23/10, s. 7 (1); O. Reg. 47/13, s. 11 (1); O. Reg. 366/18, s. 13.

(0.2) A sign that has been inspected in accordance with subsection (0.1) is deemed to be in a state of repair with respect to the retro-reflectivity requirements of the Ontario Traffic Manual until the next inspection in accordance with that subsection, provided that the municipality does not acquire actual knowledge that the sign has ceased to meet these requirements. O. Reg. 47/13, s. 11 (2).

(1) If any sign of a type listed in subsection (2) is illegible, improperly oriented, obscured or missing, the standard is to deploy resources as soon as practicable after becoming aware of the fact to repair or replace the sign. O. Reg. 239/02, s. 11 (1); O. Reg. 23/10, s. 7 (2); O. Reg. 366/18, s. 13.

(2) This section applies to the following types of signs:

1. Checkerboard.
2. Curve sign with advisory speed tab.
3. Do not enter.

3.1 Load Restricted Bridge.

3.2 Low Bridge.

3.3 Low Bridge Ahead.

4. One Way.
5. School Zone Speed Limit.
6. Stop.
7. Stop Ahead.
8. Stop Ahead, New.
9. Traffic Signal Ahead, New.
10. Two-Way Traffic Ahead.
11. Wrong Way.
12. Yield.
13. Yield Ahead.
14. Yield Ahead, New. O. Reg. 239/02, s. 11 (2); O. Reg. 23/10, s. 7 (3).

Regulatory or warning signs

12. (1) The standard for the frequency of inspecting regulatory signs or warning signs to check to see that they meet the retro-reflectivity requirements of the Ontario Traffic Manual is once per calendar year, with each inspection taking place not more than 16 months from the previous inspection. O. Reg. 23/10, s. 8; O. Reg. 47/13, s. 12 (1); O. Reg. 366/18, s. 13.

(1.1) A regulatory sign or warning sign that has been inspected in accordance with subsection (1) is deemed to be in a state of repair with respect to the retro-reflectivity requirements of the Ontario Traffic Manual until the next inspection in accordance with that subsection, provided that the municipality does not acquire actual knowledge that the sign has ceased to meet these requirements. O. Reg. 47/13, s. 12 (2).

(2) If a regulatory sign or warning sign is illegible, improperly oriented, obscured or missing, the standard is to repair or replace the sign within the time set out in the Table to this section after becoming aware of the fact. O. Reg. 23/10, s. 8; O. Reg. 366/18, s. 13.

(3) In this section,

"regulatory sign" and "warning sign" have the same meanings as in the Ontario Traffic Manual, except that they do not include a sign listed in subsection 11 (2) of this Regulation. O. Reg. 23/10, s. 8.

TABLE
REGULATORY AND WARNING SIGNS

Class of Highway	Time
1	7 days
2	14 days

3	21 days
4	30 days
5	30 days

O. Reg. 239/02, s. 12, Table.

Traffic control signal systems

13. (1) If a traffic control signal system is defective in any way described in subsection (2), the standard is to deploy resources as soon as practicable after becoming aware of the defect to repair the defect or replace the defective component of the traffic control signal system. O. Reg. 239/02, s. 13 (1); O. Reg. 366/18, s. 13.

(2) This section applies if a traffic control signal system is defective in any of the following ways:

1. One or more displays show conflicting signal indications.
2. The angle of a traffic control signal or pedestrian control indication has been changed in such a way that the traffic or pedestrian facing it does not have clear visibility of the information conveyed or that it conveys confusing information to traffic or pedestrians facing other directions.
3. A phase required to allow a pedestrian or vehicle to safely travel through an intersection fails to occur.
4. There are phase or cycle timing errors interfering with the ability of a pedestrian or vehicle to safely travel through an intersection.
5. There is a power failure in the traffic control signal system.
6. The traffic control signal system cabinet has been displaced from its proper position.
7. There is a failure of any of the traffic control signal support structures.
8. A signal lamp or a pedestrian control indication is not functioning.
9. Signals are flashing when flashing mode is not a part of the normal signal operation. O. Reg. 239/02, s. 13 (2).

(3) Despite subsection (1) and paragraph 8 of subsection (2), if the posted speed of all approaches to the intersection or location of the non-functioning signal lamp or pedestrian control indication is less than 80 kilometres per hour and the signal that is not functioning is a green or a pedestrian "walk" signal, the standard is to repair or replace the defective component by the end of the next business day. O. Reg. 239/02, s. 13 (3); O. Reg. 366/18, s. 13.

(4) In this section and section 14,

"cycle" means a complete sequence of traffic control indications at a location;

"display" means the illuminated and non-illuminated signals facing the traffic;

"indication" has the same meaning as in the *Highway Traffic Act*;

"phase" means a part of a cycle from the time where one or more traffic directions receive a green indication to the time where one or more different traffic directions receive a green indication;

"power failure" means a reduction in power or a loss in power preventing the traffic control signal system from operating as intended;

"traffic control signal" has the same meaning as in the *Highway Traffic Act*;

"traffic control signal system" has the same meaning as in the *Highway Traffic Act*. O. Reg. 239/02, s. 13 (4).

Traffic control signal system sub-systems

14. (1) The standard is to inspect, test and maintain the following traffic control signal system sub-systems once per calendar year, with each inspection taking place not more than 16 months from the previous inspection:

1. The display sub-system, consisting of traffic signal and pedestrian crossing heads, physical support structures and support cables.
2. The traffic control sub-system, including the traffic control signal cabinet and internal devices such as timer, detection devices and associated hardware, but excluding conflict monitors.
3. The external detection sub-system, consisting of detection sensors for all vehicles, including emergency and railway vehicles and pedestrian push- buttons. O. Reg. 239/02, s. 14 (1); O. Reg. 47/13, s. 13 (1); O. Reg. 366/18, s. 13.

(1.1) A traffic control signal system sub-system that has been inspected, tested and maintained in accordance with subsection (1) is deemed to be in a state of repair until the next inspection in accordance with that subsection, provided that the municipality does not acquire actual knowledge that the traffic control signal system sub-system has ceased to be in a state of repair. O. Reg. 47/13, s. 13 (2).

(2) The standard is to inspect, test and maintain conflict monitors every five to seven months and at least twice per calendar year. O. Reg. 239/02, s. 14 (2); O. Reg. 47/13, s. 13 (3); O. Reg. 366/18, s. 13.

(2.1) A conflict monitor that has been inspected, tested and maintained in accordance with subsection (2) is deemed to be in a state of repair until the next inspection in accordance with that subsection, provided that the municipality does not acquire actual knowledge that the conflict monitor has ceased to be in a state of repair. O. Reg. 47/13, s. 13 (4).

(3) In this section,

"conflict monitor" means a device that continually checks for conflicting signal indications and responds to a conflict by emitting a signal. O. Reg. 239/02, s. 14 (3).

Bridge deck spalls

15. (1) If a bridge deck spall exceeds both the surface area and depth set out in the Table to this section, the standard is to repair the bridge deck spall within the time set out in the Table after becoming aware of the fact. O. Reg. 239/02, s. 15 (1); O. Reg. 366/18, s. 13.

(2) A bridge deck spall is deemed to be in a state of repair if its surface area or depth is less than or equal to that set out in the Table. O. Reg. 239/02, s. 15 (2); O. Reg. 47/13, s. 14.

(3) In this section,

"bridge deck spall" means a cavity left by one or more fragments detaching from the paved surface of the roadway or shoulder of a bridge. O. Reg. 239/02, s. 15 (3).

TABLE
BRIDGE DECK SPALLS

Class of Highway	Surface Area	Depth	Time
1	600 cm²	8 cm	4 days
2	800 cm²	8 cm	4 days
3	1,000 cm²	8 cm	7 days
4	1,000 cm²	8 cm	7 days
5	1,000 cm²	8 cm	7 days

O. Reg. 239/02, s. 15, Table.

Roadway surface discontinuities

16. (1) If a surface discontinuity on a roadway, other than a surface discontinuity on a bridge deck, exceeds the height set out in the Table to this section, the standard is to repair the surface discontinuity within the time set out in the Table after becoming aware of the fact. O. Reg. 23/10, s. 9; O. Reg. 366/18, s. 13.

(1.1) A surface discontinuity on a roadway, other than a surface discontinuity on a bridge deck, is deemed to be in a state of repair if its height is less than or equal to the height set out in the Table to this section. O. Reg. 47/13, s. 15.

(2) If a surface discontinuity on a bridge deck exceeds five centimetres, the standard is to deploy resources as soon as practicable after becoming aware of the fact to repair the surface discontinuity on the bridge deck. O. Reg. 23/10, s. 9; O. Reg. 366/18, s. 13.

(2.1) A surface discontinuity on a bridge deck is deemed to be in a state of repair if its height is less than or equal to five centimetres. O. Reg. 47/13, s. 15.

(3) In this section,

"surface discontinuity" means a vertical discontinuity creating a step formation at joints or cracks in the paved surface of the roadway, including bridge deck joints, expansion joints and approach slabs to a bridge. O. Reg. 23/10, s. 9.

TABLE
SURFACE DISCONTINUITIES

Class of Highway	Height	Time
1	5 cm	2 days
2	5 cm	2 days
3	5 cm	7 days
4	5 cm	21 days
5	5 cm	21 days

O. Reg. 239/02, s. 16, Table.

Sidewalk surface discontinuities

16.1 (1) The standard for the frequency of inspecting sidewalks to check for surface discontinuity is once per calendar year, with each inspection taking place not more than 16 months from the previous inspection. O. Reg. 23/10, s. 10; O. Reg. 47/13, s. 16 (1); O. Reg. 366/18, s. 13.

(1.1) A sidewalk that has been inspected in accordance with subsection (1) is deemed to be in a state of repair with respect to any surface discontinuity until the next inspection in accordance with that subsection, provided that the municipality does not acquire actual knowledge of the presence of a surface discontinuity in excess of two centimetres. O. Reg. 47/13, s. 16 (2).

(2) If a surface discontinuity on or within a sidewalk exceeds two centimetres, the standard is to treat the surface discontinuity within 14 days after acquiring actual knowledge of the fact. O. Reg. 366/18, s. 14.

(2.1) REVOKED: O. Reg. 366/18, s. 14.

(3) A surface discontinuity on or within a sidewalk is deemed to be in a state of repair if it is less than or equal to two centimetres. O. Reg. 366/18, s. 14.

(4) For the purpose of subsection (2), treating a surface discontinuity on or within a sidewalk means taking reasonable measures to protect users of the sidewalk from the discontinuity, including making permanent or temporary repairs, alerting users' attention to the discontinuity or preventing access to the area of discontinuity. O. Reg. 366/18, s. 14.

(5) In this section,

"surface discontinuity" means a vertical discontinuity creating a step formation at any joint or crack in the surface of the sidewalk or any vertical height difference between a utility appurtenance found on or within the sidewalk and the surface of the sidewalk. O. Reg. 366/18, s. 14.

Encroachments, area adjacent to sidewalk

16.2 (1) The standard for the frequency of inspecting an area adjacent to a sidewalk to check for encroachments is once per calendar year, with each inspection taking place not more than 16 months from the previous inspection. O. Reg. 366/18, s. 15.

(2) The area adjacent to a sidewalk that has been inspected in accordance with subsection (1) is deemed to be in a state of repair in respect of any encroachment present. O. Reg. 366/18, s. 15.

(3) For greater certainty, the area adjacent to a sidewalk begins at the outer edges of a sidewalk and ends at the lesser of the limit of the highway, the back edge of a curb if there is a curb and a maximum of 45 cm. O. Reg. 366/18, s. 15.

(4) The area adjacent to a sidewalk is deemed to be in a state of repair in respect of any encroachment present unless the encroachment is determined by a municipality to be highly unusual given its character and location or to constitute a significant hazard to pedestrians. O. Reg. 366/18, s. 15.

(5) If a municipality determines that an encroachment is highly unusual given its character and location or constitutes a significant hazard to pedestrians, the standard is to treat the encroachment within 28 days after making such a determination, and the encroachment is deemed in a state of repair for 28 days from the time of the determination by the municipality. O. Reg. 366/18, s. 15.

(6) For the purpose of subsection (4), treating an encroachment means taking reasonable measures to protect users, including making permanent or temporary repairs, alerting users' attention to the encroachment or preventing access to the area of the encroachment. O. Reg. 366/18, s. 15.

Snow accumulation on sidewalks

16.3 (1) Subject to section 16.4, the standard for addressing snow accumulation on a sidewalk after the snow accumulation has ended is,

a) to reduce the snow to a depth less than or equal to 8 centimetres within 48 hours; and

b) to provide a minimum sidewalk width of 1 metre. O. Reg. 366/18, s. 15.

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

(3) If the depth of snow accumulation on a sidewalk exceeds 8 centimetres 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.

(4) 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) and by the persons mentioned in subsection 4 (3) with necessary modifications. O. Reg. 366/18, s. 15.

(5) For the purposes of this section, addressing snow accumulation on a sidewalk includes,

(a) plowing the sidewalk;

(b) salting the sidewalk;

(c) applying abrasive materials to the sidewalk;

(d) applying other chemical or organic agents to the sidewalk; or

(e) any combination of the methods described in clauses (a) to (d). O. Reg. 366/18, s. 15.

Snow accumulation on sidewalks, significant weather event

16.4 (1) If a municipality declares a significant weather event relating to snow accumulation, the standard for addressing snow accumulation on sidewalks until the declaration of the end of the significant weather event is,

(a) to monitor the weather in accordance with section 3.1; and

(b) if deemed practicable by the municipality, to deploy resources to address snow accumulation on sidewalks starting from the time that the municipality deems appropriate to do so. O. Reg. 366/18, s. 15.

(2) If the municipality complies with subsection (1), all sidewalks within the municipality are deemed to be in a state of repair with respect to any snow present until 48 hours following the declaration of the end of the significant weather event by the municipality. O. Reg. 366/18, s. 15.

(3) Following the end of the weather hazard in respect of which a significant weather event was declared by a municipality under subsection (1), the municipality shall,

(a) declare the end of the significant weather event when the municipality determines it is appropriate to do so; and

(b) address snow accumulation on sidewalks in accordance with section 16.3. O. Reg. 366/18, s. 15.

Ice formation on sidewalks and icy sidewalks

16.5 (1) Subject to section 16.6, the standard for the prevention of ice formation on sidewalks is to,

(a) monitor the weather in accordance with section 3.1 in the 24-hour period preceding an alleged formation of ice on a sidewalk; and

(b) treat the sidewalk if practicable to prevent ice formation or improve traction within 48 hours if the municipality determines that there is a substantial probability of ice forming on a sidewalk, starting from the time that the municipality determines is the appropriate time to deploy resources for that purpose. O. Reg. 366/18, s. 15.

(2) If ice forms on a sidewalk even though the municipality meets the standard set out in subsection (1), the sidewalk is deemed to be in a state of repair in respect of ice until 48 hours after the municipality first becomes aware of the fact that the sidewalk is icy. O. Reg. 366/18, s. 15.

(3) The standard for treating icy sidewalks after the municipality becomes aware of the fact that a sidewalk is icy is to treat the icy sidewalk within 48 hours, and an icy sidewalk is deemed to be in a state of repair for 48 hours after it has been treated. O. Reg. 366/18, s. 15.

(4) For the purposes of this section, treating a sidewalk means applying materials including salt, sand or any combination of salt and sand to the sidewalk. O. Reg. 366/18, s. 15.

Icy sidewalks, significant weather event

16.6 (1) If a municipality declares a significant weather event relating to ice, the standard for addressing ice formation or ice on sidewalks until the declaration of the end of the significant weather event is,

(a) to monitor the weather in accordance with section 3.1; and

(b) if deemed practicable by the municipality, to deploy resources to treat the sidewalks to prevent ice formation or improve traction, or treat the icy sidewalks, starting from the time that the municipality deems appropriate to do so. O. Reg. 366/18, s. 15.

(2) If the municipality complies with subsection (1), all sidewalks within the municipality are deemed to be in a state of repair with respect to any ice which forms or is present until 48 hours after the declaration of the end of the significant weather event by the municipality. O. Reg. 366/18, s. 15.

(3) Following the end of the weather hazard in respect of which a significant weather event was declared by a municipality under subsection (1), the municipality shall,

(a) declare the end of the significant weather event when the municipality determines it is appropriate to do so; and

(b) address the prevention of ice formation on sidewalks or treat icy sidewalks in accordance with section 16.5. O. Reg. 366/18, s. 15.

Winter sidewalk patrol

16.7 (1) If it is determined by the municipality that the weather monitoring referred to in section 3.1 indicates that there is a substantial probability of snow accumulation on sidewalks in excess of 8 cm, ice formation on sidewalks or icy sidewalks, the standard for patrolling sidewalks is to patrol sidewalks that the municipality selects as representative of its sidewalks at intervals deemed necessary by the municipality. O. Reg. 366/18, s. 15.

(2) Patrolling a sidewalk consists of visually observing the sidewalk, either by driving by the sidewalk on the adjacent roadway or by driving or walking on the sidewalk or by electronically monitoring the sidewalk, and may be performed by persons responsible for patrolling roadways or sidewalks or by persons responsible for or performing roadway or sidewalk maintenance activities. O. Reg. 366/18, s. 15.

Closure of a highway

16.8 (1) When a municipality closes a highway or part of a highway pursuant to its powers under the Act, the highway is deemed to be in a state of repair in respect of all conditions described in this Regulation from the time of the closure until the highway is re-opened by the municipality. O. Reg. 366/18, s. 15.

(2) For the purposes of subsection (1), a highway or part of a highway is closed on the earlier of,

(a) when a municipality passes a by-law to close the highway or part of the highway; and

(b) when a municipality has taken such steps as it determines necessary to temporarily close the highway or part of a highway. O. Reg. 366/18, s. 15.

Declaration of significant weather event

16.9. A municipality declaring the beginning of a significant weather event or declaring the end of a significant weather event under this Regulation shall do so in one or more of the following ways:

1. By posting a notice on the municipality's website.
2. By making an announcement on a social media platform, such as Facebook or Twitter.
3. By sending a press release or similar communication to internet, newspaper, radio or television media.
4. By notification through the municipality's police service.
5. By any other notification method required in a by-law of the municipality. O. Reg. 366/18, s. 15.

REVIEW OF REGULATION

Review

17. (1) The Minister of Transportation shall conduct a review of this Regulation and Ontario Regulation 612/06 (Minimum Maintenance Standards for Highways in the City of Toronto) made under the *City of Toronto Act, 2006* every five years. O. Reg. 613/06, s. 2.

(2) Despite subsection (1), the first review after the completion of the review started before the end of 2007 shall be started five years after the day Ontario Regulation 23/10 is filed. O. Reg. 23/10, s. 11.

18. OMITTED (PROVIDES FOR COMING INTO FORCE OF PROVISIONS OF THIS REGULATION). O. Reg. 239/02, s. 18.

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Arctic outflow

Table 1. Alerting parameters Environment Canada uses for issuing an Arctic Outflow Warning

Alert type	Location	Threshold criteria
Warning	Coastal British Columbia regions only	Any combination of wind speed and temperature giving a wind chill of -20 or lower for 6 hours or more. A separate Wind Warning is not required.

Blizzard

Table 2. Alerting parameters Environment Canada uses for issuing a Blizzard Warning

Alert type	Location	Threshold criteria
Warning	National, except North of the tree line	When winds of 40 km/hr or greater are expected to cause widespread reductions in visibility to 400 metres or less, due to blowing snow, or blowing snow in combination with falling snow, for at least **4 hours**.
Warning	North of the tree line	Same as above, except conditions are expected to last for at least **6 hours**.

Blowing snow

Table 3. Alerting parameters Environment Canada uses for issuing a Blowing Snow Advisory

Alert type	Location	Threshold criteria
Advisory	National, south of tree line	When blowing snow, caused by winds of at least 30 km/h, is expected to reduce visibility to 800 metres or less for at least 3 hours.

Dust storm

Table 4. Alerting parameters Environment Canada uses for issuing a Dust Storm Warning

Alert type	Location	Threshold criteria
Warning	Alberta, Saskatchewan and Manitoba (ONLY)	When blowing dust is expected to occur, reducing visibility to 800 metres or less for one hour or more.

Extreme cold

Table 5. Alerting parameters Environment Canada uses for issuing an Extreme Cold Warning

Alert type	Location	Threshold criteria
Warning	South-central and Southwestern Ontario	Issued when the temperature or wind chill is expected to reach minus 30°C for at least two hours.
Warning	Southeastern Ontario, Southern Interior and Coastal B.C., Atlantic Canada except Labrador	Issued when the temperature or wind chill is expected to reach minus 35°C for at least two hours.
Warning	Western, Central and Eastern Quebec	Issued when the temperature or wind chill is expected to reach minus 38°C for at least two hours.
Warning	Central Interior B.C., Northern Ontario, Prairies - Alberta, Southern Saskatchewan, Southern Manitoba	Issued when the temperature or wind chill is expected to reach minus 40°C for at least two hours.
Warning	Far Northern Ontario, northern Saskatchewan, northern Manitoba, Northern B.C., Labrador	Issued when the temperature or wind chill is expected to reach minus 45°C for at least two hours.
Warning	Northern Quebec	Issued when the temperature or wind chill is expected to reach minus 48°C for at least two hours.
Warning	Yukon, NWT (except Paulatuk, Sachs Harbour and Ulukhaktok), Baffin Island (except Igloolik and Hall Beach), extreme northeast Manitoba	Issued when the temperature or wind chill is expected to reach minus 50°C for at least two hours.

Table 5. Alerting parameters Environment Canada uses for issuing an Extreme Cold Warning

Alert type	Location	Threshold criteria
Warning	Nunavik	Issued when the temperature or wind chill is expected to reach minus 52°C for at least two hours.
Warning	NWT (Paulatuk, Sachs Harbour and Ulukhaktok only), Baffin Island (Igloolik and Hall beach only) Western and Northern Nunavut	Issued when the temperature or wind chill is expected to reach minus 55°C for at least two hours.

Flash freeze

Table 6. Alerting parameters Environment Canada uses for issuing a Flash Freeze Warning

Alert type	Location	Threshold criteria
Warning	National, except Nunavik*	When significant ice is expected to form on roads, sidewalks or other surfaces over much of a region because of the freezing of residual water from either melted snow, or falling/fallen rain due to a rapid drop in temperatures.

*No alert of this type exists for this region at this moment.

Fog

Table 7. Alerting parameters Environment Canada uses for issuing a Fog Advisory

Alert type	Location	Threshold criteria
Advisory	Newfoundland and Labrador, New Brunswick, Nova Scotia and Prince Edward Island	When low visibilities in fog are expected for at least **18 hours**.
Advisory	Elsewhere National, except Nunavik*	When low visibilities in fog are expected for at least **six hours**.

*No alert of this type exists for this region at this moment.

Freezing drizzle

Table 8. Alerting Parameters Environment Canada uses for issuing a Freezing Drizzle Advisory

Alert type	Location	Threshold criteria
Advisory	National, except Nunavik*	When a period of freezing drizzle is expected for at least **eight hours**.

*No alert of this type exists for this region at this moment.

Freezing rain

Table 9. Alerting Parameters Environment Canada uses for issuing a Freezing Rain Warning

Alert type	Location	Threshold criteria
Warning	British Columbia, Yukon, Alberta, Saskatchewan, Manitoba, Northwest Territories, Nunavut, Ontario and Quebec (except Nunavik*)	When freezing rain is expected to pose a hazard to transportation or property; **Or** When freezing rain is expected for at least **two hours**.
Warning	Nova Scotia, New Brunswick, Prince Edward Island, Magdalen Islands, Newfoundland and Labrador	When freezing rain is expected to pose a hazard to transportation or property; **Or** When freezing rain is expected for at least **four hours**.

*No alert of this type exists for this region at this moment.

Frost

Table 10. Alerting parameters Environment Canada uses for issuing a Frost Advisory

Alert type	Location	Threshold criteria

Table 10. Alerting parameters Environment Canada uses for issuing a Frost Advisory

Alert type	Location	Threshold criteria
Advisory	Southern portions of Canada except British Columbia	Issued during the growing season when widespread frost formation is expected over an extensive area. Surface temperatures are expected to fall near freezing in the overnight period.

Heat

Table 11. Alerting parameters Environment Canada uses for issuing a Heat Warning

Alert type	Location	Threshold criteria
Warning	Alberta - Extreme south (including Pincher Creek, Cardston, Lethbridge, and Medicine Hat)	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 32°C or warmer and nighttime minimum temperatures are expected to fall to 16°C or warmer.
Warning	Alberta - Remainder of Alberta (including the Cities of Edmonton, Red Deer and Calgary)	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 29°C or warmer and nighttime minimum temperatures are expected to fall to 14°C or warmer.

Table 11. Alerting parameters Environment Canada uses for issuing a Heat Warning

Alert type	Location	Threshold criteria
Warning	British Columbia – Northeast – Northern Interior, Central Interior, including Chilcotin, Cariboos, Prince George, North Thompson, and North Columbia, BC Peace, Bulkley Valley and the Lakes and Fort Nelson	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 29°C or warmer and nighttime minimum temperatures are expected to fall to 14°C or warmer.
Warning	British Columbia – Northwest – Central and Northern Coast (inland and coastal regions), Northern Vancouver Island, and northwestern BC	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 28°C or warmer and nighttime minimum temperatures are expected to fall to 13°C or warmer.
Warning	British Columbia – Southeast – Fraser Valley, Southern interior (including South Thompson and Okanagan), Kootenays, and Columbias (south)	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 35°C or warmer and nighttime minimum temperatures are expected to fall to 18°C or warmer.
Warning	British Columbia – Southwest – Metro Vancouver, Howe Sound, Whistler, Sunshine Coast, Vancouver Island (except northern sections)	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 29°C or warmer and nighttime minimum temperatures are expected to fall to 16°C or warmer.
Warning	Manitoba - North	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 29°C or warmer and nighttime minimum temperatures are expected to fall to 16°C or warmer. Or

Table 11. Alerting parameters Environment Canada uses for issuing a Heat Warning

Alert type	Location	Threshold criteria
		Issued when 2 or more consecutive days of humidex values are expected to reach 34 or higher.
Warning	Manitoba - South	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 32°C or warmer and nighttime minimum temperatures are expected to fall to 16°C or warmer. Or Issued when 2 or more consecutive days of humidex values are expected to reach 38 or higher.
Warning	New Brunswick	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 30°C or warmer and nighttime minimum temperatures are expected to fall to 18°C or warmer. Or Issued when 2 or more consecutive days of humidex values are expected to reach 36 or higher.
Warning	Newfoundland and Labrador	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 26°C or warmer and nighttime minimum temperatures are expected to fall to 15°C or warmer. Or Issued when 2 or more consecutive days of humidex values are expected to

Table 11. Alerting parameters Environment Canada uses for issuing a Heat Warning

Alert type	Location	Threshold criteria
		reach 34 or higher.
Warning	Northwest Territories	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 29°C or warmer and nighttime minimum temperatures are expected to fall to 14°C or warmer.
Warning	Nova Scotia	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 29°C or warmer and nighttime minimum temperatures are expected to fall to 16°C or warmer. Or Issued when 2 or more consecutive days of humidex values are expected to reach 36 or higher.
Warning	Nunavut	No Heat Warning Program at this time.
Warning	Ontario - extreme southwest (Essex and Chatham-Kent Counties)	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 31°C or warmer and nighttime minimum temperatures are expected to fall to 21°C or warmer. Or Issued when 2 or more consecutive days of humidex values are expected to

Table 11. Alerting parameters Environment Canada uses for issuing a Heat Warning

Alert type	Location	Threshold criteria
		reach 42 or higher.
Warning	Ontario - North	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 29°C or warmer and nighttime minimum temperatures are expected to fall to 18°C or warmer. Or Issued when 2 or more consecutive days of humidex values are expected to reach 36 or higher.
Warning	Ontario - remainder of southern Ontario (including the District of Parry Sound)	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 31°C or warmer and nighttime minimum temperatures are expected to fall to 20°C or warmer. Or Issued when 2 or more consecutive days of humidex values are expected to reach 40 or higher.
Warning	Prince Edward Island	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 27°C or warmer and nighttime minimum temperatures are expected to fall to 18°C or warmer. Or Issued when 2 or more consecutive days of humidex values are expected to

Table 11. Alerting parameters Environment Canada uses for issuing a Heat Warning

Alert type	Location	Threshold criteria
		reach 35 or higher.
Warning	Quebec, except Nunavik*	Issued when the humidex value is 40 or higher and when the temperature is 30°C or warmer, and both conditions persist for at least one hour. Or Issued when temperature is 40°C or warmer.
Warning	Saskatchewan - North and Central (including Meadow Lake, The Battlefords, Prince Albert, and Hudson Bay)	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 29°C or warmer and nighttime minimum temperatures are expected to fall to 14°C or warmer. Or Issued when 2 or more consecutive days of humidex values are expected to reach 34 or higher.
Warning	Saskatchewan - South	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 32°C or warmer and nighttime minimum temperatures are expected to fall to 16°C or warmer. Or Issued when 2 or more consecutive days of humidex values are expected to reach 38 or higher.

Table 11. Alerting parameters Environment Canada uses for issuing a Heat Warning

Alert type	Location	Threshold criteria
Warning	Yukon Territory	Issued when 2 or more consecutive days of daytime maximum temperatures are expected to reach 28°C or warmer and nighttime minimum temperatures are expected to fall to 13°C or warmer.

*No alert of this type exists for this region at this moment.

Hurricane

Table 12. Alerting Parameters Environment Canada uses for issuing a Hurricane Watch and/or Warning

Alert type	Location	Threshold criteria
Watch	National, including all coastal and inland regions	When, within the following 36 hours, a hurricane or a developing hurricane is expected to pose a possible threat, with the risk of hurricane force winds (average sustained winds of 118 km/h or higher) threatening the area.
Warning	National, including all coastal and inland	When hurricane-force gales (average sustained winds of 118 km/h or higher) caused by a hurricane, or a strong tropical stormthat may strengthen to hurricane force before making landfall, are expected to occur in 24 hours or less. It may also include areas where storm

Table 12. Alerting Parameters Environment Canada uses for issuing a Hurricane Watch and/or Warning

Alert type	Location	Threshold criteria
	regions	surge or exceptionally high waves are expected, even though winds may be less than hurricane force.

Rainfall

Table 13. Alerting parameters for a Short Duration Rainfall (Heavy Downpour) Warning

Alert type	Location	Threshold criteria
Warning	Alberta, Saskatchewan, Manitoba, Ontario, and Quebec (except Nunavik*)	When 50 mm or more of rain is expected within one hour.
Warning	Interior dry sections of British Columbia	When 15 mm or more of rain is expected within one hour.
Warning	Remaining sections of British Columbia, Yukon, Northwest Territories, Nunavut,	When 25 mm or more of rain is expected

Table 13. Alerting parameters for a Short Duration Rainfall (Heavy Downpour) Warning

Alert type	Location	Threshold criteria
	New Brunswick, Prince Edward Island, Nova Scotia, Newfoundland and Labrador	within one hour.

Table 14. Alerting parameters Environment Canada uses for issuing a Long Duration Rainfall Warning in the Summer

Alert type	Location	Threshold criteria
Warning	National, except Nunavik* and portions of British Columbia, as specified below	When 50 mm or more of rain is expected within 24 hours; or When 75 mm or more of rain is expected within 48 hours.
Warning	NEW - Interior dry sections of British Columbia	When 25 mm or more of rain is expected within 24 hours.
Warning	Inland Vancouver Island, West Vancouver Island, North Vancouver Island, Central Coast - coastal sections,	When 100 mm or more of rain is expected

Table 13. Alerting parameters for a Short Duration Rainfall (Heavy Downpour) Warning

Alert type	Location	Threshold criteria
	and North Coast - coastal sections	within 24 hours.

Table 15. Alerting parameters Environment Canada uses for issuing a Long Duration Rainfall Warning in the Winter

Alert type	Location	Threshold criteria
Warning	National, except Nunavik* and British Columbia	When 25 mm or more of rain is expected within 24 hours.
Warning	British Columbia, except except Inland Vancouver Island, West Vancouver Island, North Vancouver Island, Central Coast - coastal sections, and North Coast - coastal sections	When 50 mm or more of rain is expected within 24 hours; or When 75 mm or more of rain is expected within 48 hours.
Warning	Inland Vancouver Island, West Vancouver Island, North Vancouver Island,	When 100 mm or more of rain is expected within 24

Table 15. Alerting parameters Environment Canada uses for issuing a Long Duration Rainfall Warning in the Winter

Alert type	Location	Threshold criteria
	Central Coast - coastal sections, and North Coast - coastal sections	hours.

Table 16. Alerting parameters Environment Canada uses for issuing a Long Duration Rainfall Warning during a Thaw Only

Alert type	Location	Threshold criteria
Warning	Interior British Columbia, Fort Nelson, Muncho Lake Park - Stone Mountain Park, Dease Lake, Cassiar Mountains, and Atlin	When 25 mm or more of rain is expected to within 24 hours.

*No alert of this type exists for this region at this moment.

Severe thunderstorm

Table 17. Alerting parameters Environment Canada uses for issuing a Severe Thunderstorm Watch and/or Warning

Alert type	Location	Threshold criteria
Watch	National, except Nunavik*	When conditions are favourable for the development of severe thunderstorms with one or more of the following conditions: • Wind gusts of 90 km/h or greater, which could cause structural wind damage; • Hail of two centimeters (cm) or larger in diameter; or • Heavy rainfall, as per rainfall criteria, excluding those for winter and during thaw (see above).
Warning	National, except Nunavik*	When there is evidence based on radar, satellite pictures, or from a reliable spotter that any one or more of the following three weather conditions is imminent or occurring: • Wind gusts of 90 km/h or greater, which could cause structural wind damage; • Hail of two centimeters (cm) or larger in diameter; or • Heavy rainfall, as per rainfall criteria, excluding those for winter and during thaw (see above).

*No alert of this type exists for this region at this moment.

Snowfall

Table 18. Alerting parameters Environment Canada uses for issuing a Snowfall Warning

Alert type	Location	Threshold criteria

Table 18. Alerting parameters Environment Canada uses for issuing a Snowfall Warning

Alert type	Location	Threshold criteria
Warning	Newfoundland and Labrador, New Brunswick, Nova Scotia, Prince Edward Island, Magdalen Islands, Quebec (except Nunavik*), Ontario and the following regrions of British Columbia: Whistler, Howe Sound, Inland Vancouver Island, North Columbia, West Columbia, Kinbasket, Elk Valley, Yoho Park - Kootenay Park, North Coast - Inland Sections, West Kootenay, Arrow Slocan Lakes, Kootenay Lake, Cassiar Mountains	When 15 cm or more of snow falls within 12 hours or less.
Warning	British Columbia: Southern and Central Coast - coastal sections	When 10 cm or more of snow falls within 12 hours or less; or When five cm or more of snow falls within six hours or less.
Warning	Haines Skagway roads, Yukon / British Columbia	When 20 cm or more of snow falls within 24 hours or less.
Warning	Alberta, Saskatchewan, Manitoba, Northwest Territories, Nunavut, Yukon, and all remaining areas of British Columbia	When 10 cm or more of snow falls within 12 hours or less.

*No alert of this type exists for this region at this moment.

Snow squall

Table 19. Alerting parameters Environment Canada uses for issuing a Snow Squall Watch

Alert type	Location	Threshold criteria
Open-Water		
Watch	National, except Nunavik*	When conditions are favourable for the development of open water snow squall down wind of large bodies of water, like the Great Lakes, with one or more of the following conditions: • Localized, intense snowfall producing snowfall amounts of 15 cm or more in 12 hours or less. • Reduced visibility (less than 400 metres) caused by heavy snow with or without blowing snow for 3 hours or more. Note that local snow accumulations may be significant.
Frontal		
Watch	National, except Nunavik*	When conditions are favourable for the development of brief periods of very poor visibilities caused by heavy snow and blowing snow.

*No alert of this type exists for this region at this moment.

Table 20. Alerting parameters Environment Canada uses for issuing a Snow Squall Warning

Alert type	Location	Threshold criteria
Open-Water		
Warning	National, except Nunavik*	When, down wind of large bodies of water, like the Great Lakes, snow squalls are imminent or occurring with one or more of the following conditions being produced: • Localized, intense snowfall producing snowfall amounts of 15 cm or more in 12 hours or less. • Reduced visibility (less than 400 metres) caused by heavy snow with or without blowing snow for 3 hours or more. Note that local snow accumulations may be significant.
Frontal		
Warning	National, except Nunavik*	When there is a brief period (less than one hour) of very poor visibility (400 m or less), caused by heavy snow and blowing snow, and accompanied by strong, gusty winds of 45 km/h or greater, is expected to occur with the passage of a cold front.

*No alert of this type exists for this region at this moment.

Storm surge

Table 21. Alerting parameters Environment Canada uses for issuing a Storm Surge Warning

Alert type	Location	Threshold criteria

Table 21. Alerting parameters Environment Canada uses for issuing a Storm Surge Warning

Alert type	Location	Threshold criteria
Warning	Nova Scotia, New Brunswick, Prince Edward Island, Newfoundland and Labrador, Quebec - along the St. Lawrence and Gulf of St. Lawrence coastal areas and the Magdalen Islands	Issued for abnormally high water levels and high waves (storm surge or storm tide) caused by storms, which have the potential to cause coastal flooding. This usually occurs when astronomical tides are at their maximum.

Tornado

Table 22. Alerting parameters Environment Canada uses for issuing a Tornado Watch and/or Warning

Alert type	Location	Threshold criteria
Watch	National, except Nunavik*	When conditions are favourable for the development of severe thunderstorms with one or more tornadoes.
Warning	National, except Nunavik*	When a tornado has been reported; or when there is evidence based on radar, or from a reliable spotter that a tornado is imminent.

*No alert of this type exists for this region at this moment.

Tropical storm

Table 23. Alerting parameters Environment Canada uses for issuing a Tropical Storm Watch and/or Warning

Alert type	Location	Threshold criteria
Watch	National, including all coastal and inland regions	When, within the following 36 hours, a tropical storm or a developing tropical storm is expected to pose a possible threat, with the risk of tropical-storm force winds (average sustained winds of 63-117 km/h) threatening the area. This watch could be issued for: • A tropical storm; or • A hurricane that might approach an area but be far enough away that it is expected to bring gales that are less than hurricane force (118 km/h or higher).
Warning	National, including all coastal and inland regions	When coastal and/or coastal winds of 63 to 117 km/h caused by a tropical cyclone are expected to occur.

Tsunami

Table 24. Alerting parameters Environment Canada uses for issuing a Tsunami Alert

Alert type	Location	Threshold criteria
Advisory	**East Coast** : Coastal areas of Nova Scotia, New Brunswick, Prince Edward Island, Newfoundland and Labrador, and areas of Quebec adjacent to the St. Lawrence River estuary and Gulf of St. Lawrence	A tsunami advisory indicates a tsunami with the potential to produce strong currents or waves and is dangerous to those in or very near the water is

Table 24. Alerting parameters Environment Canada uses for issuing a Tsunami Alert

Alert type	Location	Threshold criteria
	West Coast : Coastal areas and inlets of British Columbia	imminent, expected, or occurring. Large inundations are not expected in areas under advisory status. Note: Tsunami advisories are issued in partnership with provincial and federal organizations in response to a mesage from the National Tsunami Warning Center.
Warning	**East Coast** : Coastal areas of Nova Scotia, New Brunswick, Prince Edward Island, Newfoundland and Labrador, and areas of Quebec adjacent to the St. Lawrence River estuary and Gulf of St. Lawrence **West Coast** : Coastal areas and inlets of British Columbia	A tsunami warning indicates that a tsunami is imminent, expected, or occurring and that coastal locations in the warned area should expect widespread flooding. Note: Tsunami warnings are issued in partnership with provincial and federal organizations in response to a mesage from the National Tsunami Warning Center.
Watch	**East Coast** : Coastal areas of Nova Scotia, New Brunswick, Prince Edward Island, Newfoundland and Labrador, and areas of Quebec adjacent to the St. Lawrence River estuary and Gulf of St. Lawrence **West Coast** : Coastal areas and inlets of British Columbia	A tsunami watch is an early alert issued to areas which may later be impacted by a tsunami. Note: Tsunami watches are issued in partnership with provincial and federal organizations in response to a mesage from the National Tsunami Warning Center.

Weather

Table 25. Alerting parameters Environment Canada uses for issuing a Weather Advisory and/or Warning

Alert type	Location	Threshold criteria
Advisory	National, except Nunavik*	A generic weather advisory. One example might be on days when funnel clouds are expected, but a Tornado alert would not be appropriate.
Warning	National, except Nunavik*	A generic weather warning may be issued for extreme weather events for which there is no suitable warning type, because they rarely occur. A generic weather warning may also be issued for other weather events during situations where the environment is vulnerable due to pre-existing conditions and any further weather could result in a significant hazard. For example: 50 km/h winds following an ice storm which could cause structural wind damage. A generic weather warning may also be issued for situations where the event is not expected to reach warning criteria values, but there is a special reason for the warning. For example: the first event of the season, or an off-season event.

*No alert of this type exists for this region at this moment.

Wind

Table 26. Alerting parameters Environment Canada uses for issuing a Wind Warning

Alert type	Location	Threshold criteria

Table 26. Alerting parameters Environment Canada uses for issuing a Wind Warning

Alert type	Location	Threshold criteria
Warning	**National** **Including:** Les Suêtes (The warning covers only the coast of the "INVERNESS COUNTY - MABOU AND NORTH" forecast region in Nova Scotia)	70 km/h or more sustained wind; and/or Gusts to 90 km/h or more.
Warning	**Except:** **Alberta** Crowsnest Pass - Pincher Creek - Waterton Lakes Nat. Park Cardston - Fort Macleod - Magrath City of Lethbridge; **Newfoundland and Labrador, including:** Wreckhouse Winds (The warning covers only the Wreckhouse area of the West Coast of Newfoundland) **Yukon** Dempster **British Columbia** Western Vancouver Island	80 km/h or more sustained wind; and/or Gusts to 100 km/h or more.
Warning	**Except:** **British Columbia** North Vancouver Island	90 km/h or more sustained wind; and/or

Table 26. Alerting parameters Environment Canada uses for issuing a Wind Warning

Alert type	Location	Threshold criteria
	Central Coast - coastal sections North Coast - coastal sections Haida Gwaii	Gusts to 110 km/h or more.

Winter storm**

Table 27. Alerting parameters Environment Canada uses for issuing a Winter Storm Watch and/or Warning

Alert type	Location	Threshold criteria
Watch	National, except Nunavik*	When conditions are favourable for the development of severe and potentially dangerous winter weather, including: • A blizzard; • A major snowfall (25 cm or more within a 24 hour period); and • A significant snowfall (snowfall warning criteria amounts) combined with other winter weather hazard types such as: freezing rain, rainfall (over coastal BC only), strong winds, blowing snow and/or extreme wind chill.
Warning	National, except	When severe and potentially dangerous winter weather conditions are expected, including:

Table 27. Alerting parameters Environment Canada uses for issuing a Winter Storm Watch and/or Warning

Alert type	Location	Threshold criteria
	Nunavik*	• A major snowfall (25 cm or more within a 24 hour period); and • A significant snowfall (snowfall warning criteria amounts) combined with other cold weather precipitation types such as: freezing rain, strong winds, blowing snow and/or extreme cold. Blizzard conditions may be part of an intense winter storm, in which case a blizzard warning is issued instead of a winter storm warning.

*No alert of this type exists for this region at this moment.
**Winter storm conditions are not necessarily restricted to the winter season, and may occur in the late autumn and early spring, as well.

Additional information in all alerts

The alert statements will include impact and call-to-action statements, designed to help Canadians be more aware of the risk of severe weather. This will allow them to take appropriate action to protect themselves, their families and their property.

A Call to Action statement provides information on how Canadians can protect themselves, family or property in this specific set of circumstances - some examples of a Call to Action statement are:

- **Strong winds can cause unusually high waves. Keep a safe distance from the waterfront to avoid being swept away.**
- **It is recommended to stay indoors. If this is not possible, limit time spent outdoors and exposure to the cold as much as possible to reduce the risk of frostbite and hypothermia.**
- **Public Safety Canada encourages everyone to make an emergency plan and get an emergency kit with drinking water, food, medicine, a first-aid kit and a flashlight.**

An Impact statement is designed to indicate what could happen if the forecast conditions occur - some examples of an Impact statement are:

- **Surfaces such as highways, roads, walkways and parking lots will become icy, slippery and extremely hazardous.**
- **Be prepared for winter conditions at higher elevations.**

Twitter hashtags, such as #bcstorm and #ONstorm will also be included in the alert statements so that Canadians can report local severe weather observations to Environment Canada. Note that hashtags are case-insensitive.

Presented To:	Operations Committee
Presented:	Monday, Aug 12, 2019
Report Date	Thursday, Jul 18, 2019
Type:	Correspondence for Information Only

For Information Only

Right Hand Turn Lane on Municipal Road 80 onto Alexandre Street

Resolution

For Information Only

Relationship to the Strategic Plan / Health Impact Assessment

This report refers to operational matters.

Report Summary

This report provides recommendations, preliminary construction costs and completion timeline estimates to add a right hand turn lane on the east side of MR 80 leading onto Alexandre Street.

Financial Implications

There are no financial implications associated with this report.

Signed By

Report Prepared By
Joe Rocca
Traffic and Asset Management Supervisor
Digitally Signed Jul 18, 19

Division Review
Akli Ben-Anteur
Project Engineer
Digitally Signed Jul 18, 19

Financial Implications
Jim Lister
Manager of Financial Planning and Budgeting
Digitally Signed Jul 24, 19

Recommended by the Department
Tony Cecutti
General Manager of Growth and Infrastructure
Digitally Signed Jul 29, 19

Recommended by the C.A.O.
Ed Archer
Chief Administrative Officer
Digitally Signed Jul 29, 19

Right Turn Lane on Municipal Road 80 onto Alexandre Street

Background:

At the April 9, 2019 City Council Meeting, resolution CC2019-118 was passed, directing staff to review whether a right turn lane is warranted for northbound traffic on Municipal Road 80 (M.R. 80) at the intersection of Alexandre Street in Val Caron. In this area, M.R. 80 is a five lane cross section, with two lanes in each direction and a two way centre left turn lane. The posted speed limit is 70 km/h and there are approximately 14,500 vehicles which travel through this area each day (Figure 1).

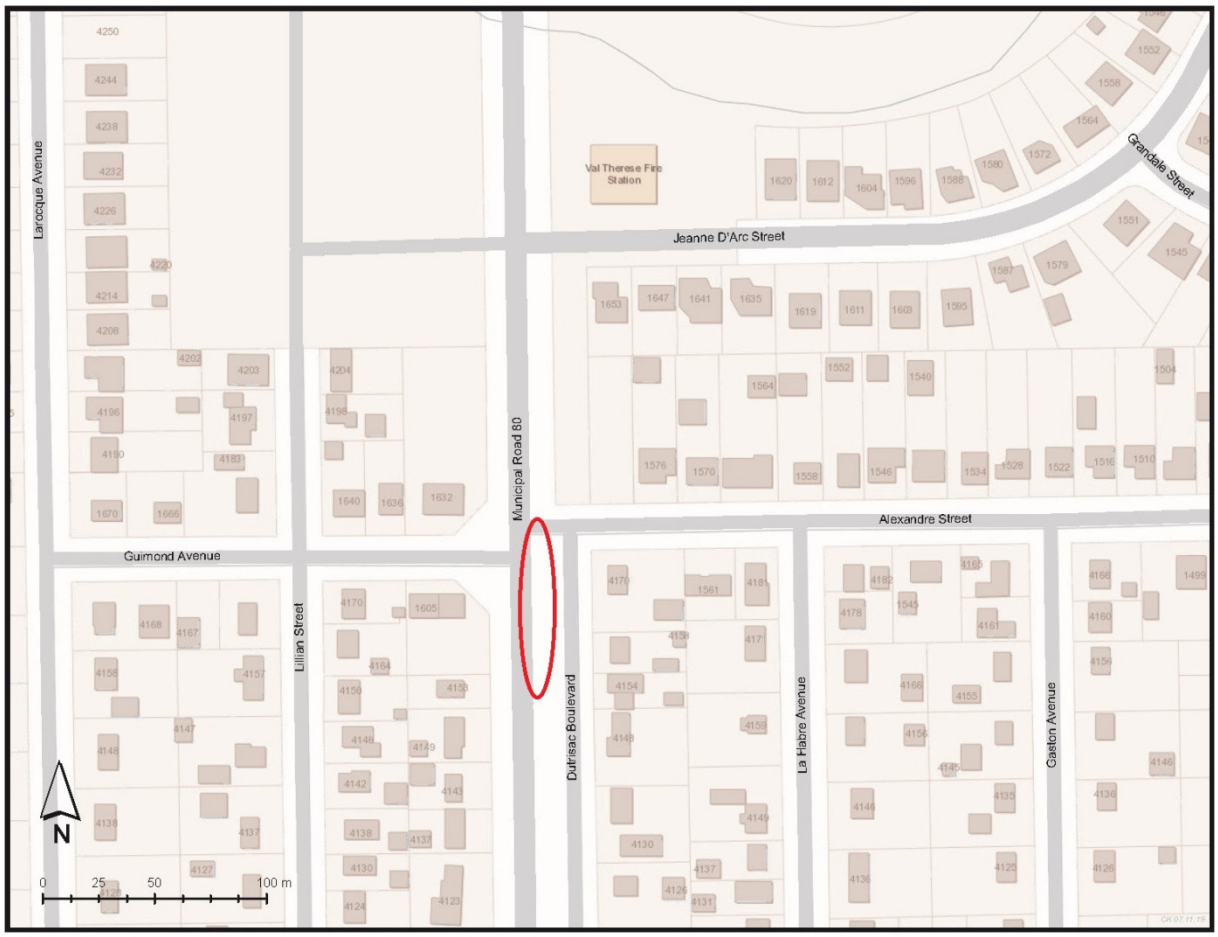

Figure 1: Overview of Location

Dedicated right turn lanes are typically provided at intersections where the volume of decelerating vehicles compared to the through traffic volume causes undue hazard. Although no formal right turn lane warrant exists, the general approach taken by most jurisdictions is to install a right turn lane when the volume of right-turning traffic is 10% to 20% of the total

approaching volume during the peak hour of vehicle volume or when there is an identified pattern of collisions related to right turning vehicles. Analysis of both the volume and collisions at the intersection of Alexandre Street is presented here for the Committee's consideration.

Volume Analysis:

To determine the volume of right turning vehicles at this intersection, a turning movement count was conducted on Thursday, May 2, 2019. From this count, it was determined that the peak hour of traffic was between 4 PM and 5 PM. During this time, there were a total of 26 vehicles which turned right onto Alexandre Street and 1,175 vehicles which continued past this intersection on M.R. 80. The 26 right-turning vehicles represents just over 2% of the total approaching volume during the peak hour and is significantly less than the lowest end of the threshold (10-20%) that is typically used by other jurisdictions to warrant the installation of a right turn lane.

Collision Analysis:

When reviewing collisions history at intersections, staff typically examine the most recent five years of collision reports for any trends. In line with this approach, the collision history at this intersection from 2015 to 2019 year to date was reviewed. During this time period, a total of two collisions were reported at this intersection and neither involved a right turning vehicle.

Cost Estimate for Installation/Timeline for Completion:

Staff completed a preliminary design and construction cost estimate to install a right turn lane at this intersection, as directed by Council. In order to install a right turn lane on M.R. 80 at Alexandre Street, the road would need to be urbanized on the east side, by filling in the adjacent ditch and constructing curb and gutter and a storm sewer system. Also, due to the proximity of M.R. 80 to Dutrisac Boulevard, Dutrisac Boulevard would also need to be urbanized on the west side of the road including curb and gutter and a storm sewer system. The estimated cost to complete this work is $900,000. If directed by City Council, funding for the project could be added to the Roads capital budget as part of the 2020 budget process. It is estimated the work could be completed within a single construction season.

Conclusion:

Based on the low volume of right turning traffic, minimal collision history and estimated cost of installation, staff do not recommend the installation of a right turn lane at the intersection of M.R. 80 and Alexandre Street.