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<b>TO:</b>	<b>CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON NOVEMBER 3, 2015</b>
<b>FROM:</b>	<b>JOHN BRAAM, P.ENG. MANAGING DIRECTOR, ENVIRONMENTAL &amp; ENGINEERING SERVICES AND CITY ENGINEER &amp; WILLIAM C. COXHEAD MANAGING DIRECTOR, PARKS AND RECREATION</b>
<b>SUBJECT:</b>	<b>WINTER MAINTENANCE PROGRAM ENHANCEMENTS</b>

<b>RECOMMENDATION</b>
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That on the recommendation of the Managing Director, Environmental & Engineering Services and City Engineer and the Managing Director - Parks & Recreation, the following actions **BE TAKEN** with respect to the proposed Winter Maintenance Program Enhancements:

- a) the information report **BE RECIEVED** for information; and
- b) the Winter Maintenance Program Enhancements **BE CONSIDERED** for implementation as part of the 2016 Multi Year Budgeting process.

<b>PREVIOUS REPORTS PERTINENT TO THIS MATTER</b>
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Environment and Transportation Committee – April 14, 2003 – Minimum Maintenance Standards for Municipal Highways

Environment and Transportation Committee – June 7, 2004 – Walkway Winter Policy Review

Environment and Transportation Committee – January 21, 2005 – Service Level - Winter Sidewalk Maintenance

Environment and Transportation Committee – March 23, 2009 – Winter Maintenance Budget Monitoring

Environment and Transportation Committee – November 16, 2009 – Service Level – Winter Sidewalk Maintenance

Civic Works Committee – January 6, 2014 – Snow Packed Roads and Snow Dumping from Private Property

Civic Works Committee – October 7, 2014 – Provincial Minimum Maintenance Standards – 2013 Update

Civic Works Committee – February 3, 2015 - CWC Roadway Winter Maintenance Program

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**2015-19 STRATEGIC PLAN**

The following report supports the Strategic Plan through the strategic focus area of *Strengthening our Community* through the *Healthy, Safe and Accessible City* as the Winter Maintenance Strategy is a one component of making pedestrian and cycling routes safer year round for school aged children.

**BACKGROUND**

The purpose of this report is to provide Council with an overview of the winter maintenance program as it relates to sidewalks, as well as to provide options to enhance snow clearing activities beyond what is prescribed in the Provincial Minimum Maintenance Standards for Municipal Highways (MMS), Regulation 239/02.

The request came from added communication to the March 3, 2015 CWC meeting. In particular, the areas for potential improvement focused on the following areas:

1. Prioritization of sidewalks by pedestrian usage rather than vehicle usage
2. Priority clearance of sidewalks close to elementary and secondary schools to encourage walking to school
3. Clearing of snow in areas with a higher proportion of seniors or mobility-impaired residents
4. Clearing the paths in parks where those paths are the preferred pedestrian routes
5. Clearing of snow in parking bays

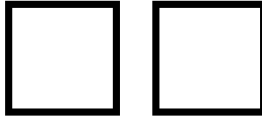
In addition, Civic Administration was requested to review and report back on the following:

*“how current snow removal practices at London Transit Commission (LTC) transit stops can be improved to ensure that snow removed from the transit stops is not placed on adjacent private property and that alternatives to use of excessive amounts of road salt on sidewalks and transit stops, be explored.”*

**DISCUSSION**

The City of London maintains roadways in accordance with the Provincial Minimum Maintenance Standards for Municipal Highways (MMS), Regulation 239/02. This Provincial regulation under the Municipal Act specifies minimum maintenance standards for roads, bridges, luminaries, road shoulders and signs, including the maintenance related to snow removal. Sidewalk quality standards are a separate standard which is approved by Council.

The City has a 24/7 response team equipped with; 68 pieces of road plowing equipment, 25 road salt/sanders and 41 sidewalk plows. The response team maintains the City’s 3,555 kms of roadway; 1,475 kms of sidewalk; 720 cul-de-sacs; and 2,100 bus stops.



## Winter Sidewalk Quality Standard

The City's existing level of service is defined in our winter sidewalk quality standard, a prefaced version of which is as follows:

*'The sidewalk surface shall be maintained in a **SNOW PACKED** condition and the maximum allowable accumulation of fresh snow is 8 cm. Continuous sanding shall not be completed except under conditions of freezing rain or generally slippery conditions. Sidewalks adjacent to major roads and bus routes are ploughed first and then followed by local streets. Ploughing shall be completed 24 hours after the snow fall **ends**.'*



**Difficult to locate the sidewalk under storm conditions**

A complete copy of the standard is in Appendix A.

The level of service will not produce bare sidewalks as the City uses mechanical equipment and citizens are encouraged to shovel their sidewalks to a bare condition in front of their residences.

To facilitate the removal of snow from sidewalks, and to prevent damage to private property, residents are required not to place cars, fences, posts, hedges, shrubs, in-ground lawn sprinklers, driveway curbs or other obstructions on the road allowance. The City will not be responsible for damage to items placed on City property by property owners.

Mechanical clearing of sidewalks is at a disadvantage because of two factors. First, the equipment can seldom 'get ahead of pedestrian traffic' that compacts the snow, and second the plow is set in a float position to ride on the sidewalk. This float position enables the plow to safely ride over expansion joints, minor vertical inconsistencies or elevation changes and distortions on the sidewalk. These factors form the basis for London's 'snow packed' level-of-service standard. Once a path is cleared, subsequent trips by the sidewalk plow are made easier.

## Best Practices Review

In reviewing the potential enhancements to the winter sidewalk quality standards, a best practices review of other municipalities was completed (Table 1). The service delivery models for winter sidewalk snow clearing vary across municipalities and include the following:

- Clearing only City owned sidewalks along municipality owned property and reverse frontage lots;
- Clearing all sidewalks within the municipality;
- Establishing priority city sidewalk routing based upon major arterials, collectors, bus routes, hospital, schools, tourism areas, BIA's, large employment centres and senior centres.

Sidewalk ploughing typically is triggered for most municipalities that provide sidewalk snow clearing at the 5cm threshold, with target pavement conditions varying from bare pavement to the more typical snow packed condition. Completion time for the sidewalk snow clearing program for most municipalities is 24 hours from the end of the event, to 72 hours after commencement of the sidewalk ploughing operations (Toronto), to five

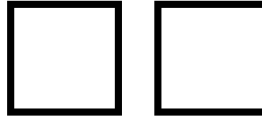


working days from commencement of the residential sidewalk ploughing operations (Winnipeg).

In most cases those municipalities that do service their entire sidewalk network do so only after the adjacent street or all of the roads within the City or Town have been ploughed.

**Table 1 – Summary of Sidewalk Clearing Practices**

Municipality	Features	Service Level	Completion Time	Comments
London ~ \$1350 / lane km	City plows all sidewalks on Arterial, Collectors and residential roads.	Snow packed condition.  Plowing starts at 8.0 cm trigger	24 hours from the end of the event	Downtown merchants are required to clean the sidewalks in front of their business.
Burlington ~ \$895 / lane km	City plows all sidewalks on Arterial, Collectors and residential roads.  Only after the adjacent road has been plowed	Snow packed condition.  Plowing starts at 5.0 cm trigger.	After the event: 5.0-12.5 cm -24 hours.  12.5 – 30cm varies Arterials -18 hours Collectors – 36 hours  Residential -72 hours 30cm+ - asap	Sidewalks on Arterial, Collector and roads with Schools are plowed first.  Residential sidewalks start only after Arterials and Collectors sidewalks are completed.
St. Catharines ~ \$1800 / lane km	City owned property only.  Property owners are responsible for all sidewalks adjacent to their property.	Bare Pavement – can only be obtained with material application.  After any accumulation.	Within 24 hours of snow falling.	
Brantford	City owned property only.  Property owners are responsible for all sidewalks adjacent to their property.	Kept clear of snow and ice.	Within 24 hours of snow falling.	Downtown crosswalks are cleared immediate after a plowing operation.
Oakville ~ \$1420 / lane km	Town plows all sidewalks on Arterial, Collectors and residential roads,  Sidewalk clearing starts only after all roads have been plowed	5.0 cm threshold and only after all roads have been cleared.  BIA- Bare pavement only with material application and where warranted  Residential – snow packed		Residential sidewalks start only after Arterials and Collectors sidewalks are completed.



Mississauga	<p>Priority sidewalks routes are established on Major Arterials, Collectors, bus routes and streets that access hospitals/schools or nursing homes</p> <p>Homeowners are required to clear non-priority sidewalks</p>	8.0 cm – Bare Pavement	<p>After snow has ended.</p> <p>15.0cm less-24 hours</p> <p>15-30 cm – 36 hours</p> <p>30cm+ - 36 hours</p>	<p>City clears approximately 55% of their inventory.</p> <p>Sidewalks are set by Priority</p>
<p>Ottawa</p> <p>~ \$4,150 / lane km</p>	<p>Downtown BIA, Special Tourism areas, large employment centres</p> <p>Downtown /Urban residential/Villages</p> <p>Along Rural roads, suburban collectors and residential.</p>	<p>2.5 cm and Bare Pavement</p> <p>5.0 cm -Bare pavement on Arterial roads. Snow packed on all others</p> <p>5.0 cm – snow packed</p>	<p>4 hours from the end of the event</p> <p>12 hours from the end of the event</p>	
Winnipeg	<p>Arterial &amp; Collector</p> <p>Downtown Square</p> <p>Residential</p> <p>Senior Centres</p>	<p>5.0 cm – snow packed</p> <p>5.0 cm -bare pavement</p> <p>8.0 cm – snow packed</p> <p>5.0 cm – snow packed</p>	<p>36 hours from the end of the event</p> <p>5 working days from commencement of residential sidewalk plowing operations</p> <p>36 hours from the end of the event</p>	Senior Centres are provided access to the most logical Arterial or Collector sidewalk system.
<p>Toronto</p> <p>~ \$2,200 / lane km</p>	<p>City provides mechanical plowing on many areas</p> <p>No service in Downtown Toronto</p>	<p>8.0 cm in Nov/Dec and March after snow has stopped.</p> <p>5.0cm in Jan/Feb after snow has stopped</p>	72 hours after commencement of operations	The City offers a program to seniors and disabled living in Downtown Toronto to have their sidewalks cleared.

**Salt Management**

The City developed a Salt Management Plan in compliance with Environment Canada’s “Code of Practice for the Environmental Management of Road Salts” in 2003. The plan identifies goals to better handle, store and spread road salt within the City. Salt use is kept to a minimum and spread only on main roads, primarily at the beginning of snowfalls, to establish a melting point and help keep streets clear. The use of salt is balanced between the need to keep roads and sidewalks safe at a reasonable cost and environmental stewardship.



The sand mixture used on local streets is 90 percent sand and 10 percent salt. Sand is used on snow packed local streets, curves and hills. Sidewalks receive spot sanding during icy and slippery conditions, but the entire sidewalk is not typically sanded.

The City uses modern technology in the application of material and utilizes alternative de-icing and anti-icing technologies in order to be proactive in winter control measures. In order to help make informed decisions regarding plowing and sanding/salting, staff is aided by the use of Road Weather Information System units at key locations in the City. These units are local automated weather reporting stations that also use sensors embedded in the roadway to provide continuous information on pavement temperatures.

**Sidewalk Winter Maintenance Enhancements**

The desired sidewalk enhancements present a number of operational and logistical challenges. Each potential operational improvement needs to be assessed from an operational feasibility, risk management, environmental impact and financial implication perspective and balanced with public expectations around winter mobility which are increasing with regards to timeliness of service delivery.

There is no single set standard for sidewalks as climate and winter event occurrences vary across municipalities. The number of winter snow events over the last 4 years is identified on Table 2.

**Table 2 – Summary of Winter Snow Events**

Year	>0cm	>=2cm	>=5cm	>=8cm
2011	74	39	14	8
2012	56	22	8	2
2013	93	41	12	7
2014	75	31	13	7

Consideration of various service level increases was reviewed within the context of the issued identified and are outlined in Table 3.

**Table 3 – Winter Maintenance Enhancement Options for Sidewalks**

Option	Description	Cost
A	<p><b>Status Quo</b></p> <p>Existing sidewalk practice (8 cm) with existing resources allow plowing to proceed uninterrupted with spot sanding or salting occurring after roads are completed.</p>	\$0
B	<p><b>Service Enhancement - 5 cm Response</b></p> <p>Increasing the level of service by deploying sidewalk plows at 5 cm accumulation. Would require a response for 6 additional winter events on average per year.</p>	\$300,000

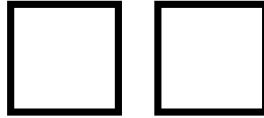


<p>C</p>	<p><b>Service Enhancement – Prioritize School Zone Areas – 8 cm Response</b></p> <p>Increasing the level of service by modifying sidewalk beats to add sidewalk within 200 m of school to Priority 1 (8 cm response).</p> <p>Enhanced snow clearing in school zones exists where the school is on a major road. Schools that are situated on local streets are cleared and part of the local sidewalk clearing protocol. The same scenario exists with senior and health care area.</p> <p>Routes would be linked back to Priority 1 routes since it would be impractical to jump over to these areas and then back over to the remaining areas without creating a lot of non-essential travel time.</p>	<p>\$500,000</p>
<p>D</p>	<p><b>Service Enhancement – Continuous Salting of full sidewalk network</b></p> <p>This option would involve the use of salt on all sidewalks while initial plowing is ongoing. Would require multiple plowing passes to reduce the depth of snow pack.</p> <p>This option would be contrary to the Salt Management Plan and have a significant impact on abutting sod, vegetation and environmental receivers. Additional costs would be incurred for replacement of sod and vegetation.</p>	<p>\$2,200,000 plus damage costs</p>
<p>E</p>	<p><b>Shovel By-law - Implement a by-law that would require property owners to scrape the sidewalks bare.</b></p> <p>This option would require an increase in by-law enforcement service and reduce contracted services. The City would be required to do extensive lengths of sidewalk where they are the abutting land owner.</p> <p>Equipment used to clear LTC bus stops would no longer be available and the City would discontinue this service and there would be higher LTC costs.</p> <p>Higher inspection, manual labor clearing and enforcement costs would create a cost neutral scenario at best.</p>	<p>\$0</p>

**Winter Maintenance of Parks Pathways and the Thames Valley Parkway**

At present there are over 160 kms of recreational trails in our city parks system, 41 kms of which are located along the Thames Valley Parkway. Our current winter maintenance of these pathways has been confined to just three primary areas in the City. They include:

- Springbank and Greenway Parks and the connections between
- The Forks of the Thames loop of the Thames Valley Parkway (TVP)
- The White Oaks Park School park campus



Springbank and Greenway have historically been maintained as recreational trails and much appreciated by Londoners as a city wide destination for walking and running in a natural setting. The “Forks” loop was added in 2008 for similar reason to add to the opportunities for a larger population in the downtown and take advantage of investments including lighting of these urban portions of the TVP.

White Oaks Park winter maintenance was added in recent years in response to the unique nature of the community design to provide non street connections to schools, shopping, community centres, and indoor pool from residences.

All pathways including the TVP are considered recreational trails and as such are not required to be serviced at the same standard as municipal sidewalks with respect to surface condition and timing.

All winter service to park pathways is considered gratuitous or not required. Park pathways and roadways along the TVP are initially plowed and maintained in a snow packed condition and over time in some areas a bare pavement is achieved. Depending on the event it may take several days to get park pathways plowed, sanded and salted. Due to their recreational nature, a timed response has not been standardized to allow other priority work in parks and recreation to be completed first.

The TVP is completed within existing resources by parks and recreation staff in parks operations. White Oaks Park pathways are treated as Class 3 sidewalks and become an extension of the road system through the parks and school campus concept and are completed on the same timing as the neighbourhood sidewalk system. This work is done by contracted sidewalk plows supplemented by city parks staff for drifting.

**Why don't we currently plow all the parks pathways?**

In most cases, pedestrians can utilize the sidewalk system within the road allowance to connect to all points of interest in any neighbourhood. These routes are well lighted in the road system and already receive a level of sidewalk winter service. The convenience factor of winter service of park pathways has historically been out-weighted by the potential cost.

In addition, unlike sidewalks, which are for the most part in standard locations, park pathways in typical neighbourhood parks that may connect street to street or to schools or combination of both meander through large open environments. These pathways areas at night are in low or no light, and can be subject to drifting making monitoring and maintenance difficult to satisfy the Class 3 sidewalk standard which would likely be applied to these walk ways as is the case at White Oaks Park.

In order to provide winter maintenance, the actions required include preseason path delineation, snow fencing and drift control where necessary, plowing, spot sanding and salting, monitoring and inspection, spring turf plow and salt damage repair and spring sweeping. All these factors add to the cost of this service not including the cost of administration and supervision for performance.

Providing service to recreational trails also introduces a level of risk which does not exist where service is not provided. Extending service to more park pathways introduces a greater potential for risk of slip and falls and the potential of claims associated with a failure to provide adequate service.





**What would expansion of service cost to a km of park pathway or the TVP?**

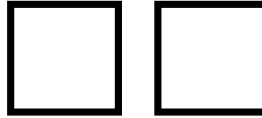
For the purpose of this report, the following calculation has been used in our initial estimates of cost:

- Cost per typical Class 3 sidewalk service per lane km of \$1350.00, as per the sidewalk costs
- **Plus 25% allowance** for preseason, post season and in season monitoring average cost of \$338.00 per km
- Total cost of \$1688 per km (excluding contingencies)

The methods and procedures for consistent clearing of these areas are very difficult to estimate costs and consider best practices. Costs may increase as the operational impacts are better understood and the intricacies of the unique topography throughout the trail system are learned. The following **Table 4** provides options for service level enhancement for pathways.

**Table 4 – Winter Maintenance Enhancement Options for Pathways**

Option	Description	Cost
F	<p align="center"><b>Service Enhancement – All Parks Pathways</b></p> <p align="center">Expand to Class 3 sidewalk service to all park pathways 115 km at \$1688 per km</p>	<p align="center">\$194,120</p>
G	<p align="center"><b>Service Enhancement – 50 % Parks Pathways</b></p> <p align="center">Expand to Class 2 or 3 sidewalk ONLY to service to parks where those paths are the preferred pedestrian routes 50% of park pathways 55 km at \$1688 per km</p>	<p align="center">\$92,840</p>
H	<p align="center"><b>Service Enhancement – Entire TVP</b></p> <p align="center">Expand Class 3 sidewalk service service to the balance of the TVP 30 km at \$1688 per km</p>	<p align="center">\$50,640</p>
I	<p align="center"><b>Service Enhancement – TVP from King Street to Richmond Street</b></p> <p align="center">Expand service on the TVP ONLY from King street to Richmond Street 6 km at \$1688 per km</p>	<p align="center">\$10,130</p>



**Clearing of Snow in Parking Bays**

The City has approximately 13.3 km of boulevard parking bays. The parking bays are defined with curb on both sides running parallel to the travelled portion of the road. These parking facilities exist in new subdivisions over the last 10 years and have been implemented through road reconstruction projects. They are currently not deemed part of the roadway; therefore, not required to be plowed under the current Provincial Minimum Maintenance Standard.



To include these areas in the winter operation program would require additional resources of \$45,000. This cost represents 1-2 additional road plows and then reconfigure the geographical plowing ‘beats’. Installation of permanent plow markers to identify the areas would be a one-time cost. As this option is related to growth in the roadway network, it could be considered for funding through the assessment growth allocation.

The existing design allows for ‘roll over’ style curb which will allow the plow blade run up on the sod. Care will be taken to prevent sod damage but it is likely to occur when the ground is unfrozen. The curb transition at the beginning and end of the parking area will also be difficult to clear.

**Winter Maintenance of LTC Bus Stops**

The winter maintenance of bus stops is the responsibility of the LTC, and they contract the City to maintain them. The cleaning of LTC bus stops is currently done after all roads and sidewalks are completed. The current standard to clear bus stops is 48 hours after the sidewalks have been cleared; therefore, up to 72 hours after the snowfall ends. The City uses contracted sidewalk plows to clear bus stops. The costs for this service over the last 4 years are identified on **Table 5**.

**Table 5 - LTC Bus Stop Clearing Costs**

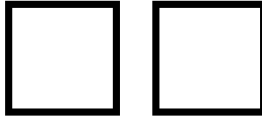
Year	Jan-April	Oct-Dec	Total
2012	\$37,200	\$21,500	\$58,700
2013	\$48,100	\$60,300	\$108,400
2014	\$115,300	\$46,400	\$161,700
2015	\$169,200	TBD	TBD

Options for consideration include the following:

- LTC directly retaining a contractor as a stand-alone service to clean bus stops utilizing a higher service standard (within 24 hours of snowfall)
- City retaining additional contractors to clean bus stops utilizing a higher service standard (within 24 hours of snowfall).

The costs for the LTC to retain a separate contractor would most likely be higher than incorporating additional contractors within the City’s overall service delivery.

To plow the bus stops as soon as the road plows are finished on the main roadways



and bus routes, the City would require twice as many bobcats on standby. Currently the City's unit's clear bus stops once the sidewalks are plowed and or sanded. The City would have to hire additional units that are separate from the existing contract. One disadvantage is the bobcats would clear the snow put at the stop by the road plow. The sidewalk plow would likely come by afterwards, dumping the snow from the sidewalk on the now cleared bus stop.

The cost to start clearing LTC bus stops at the same time as the sidewalks (8 cm standard) is related to the additional standby costs, approximately \$170,000. If bus stops are cleared concurrently with sidewalk plowing and road plowing then a second or third clearing may be required to remove the snow plowed onto the bus stops by those operations; thus, doubling or tripling the cost. The total cost for this option would be estimated at \$340,000.

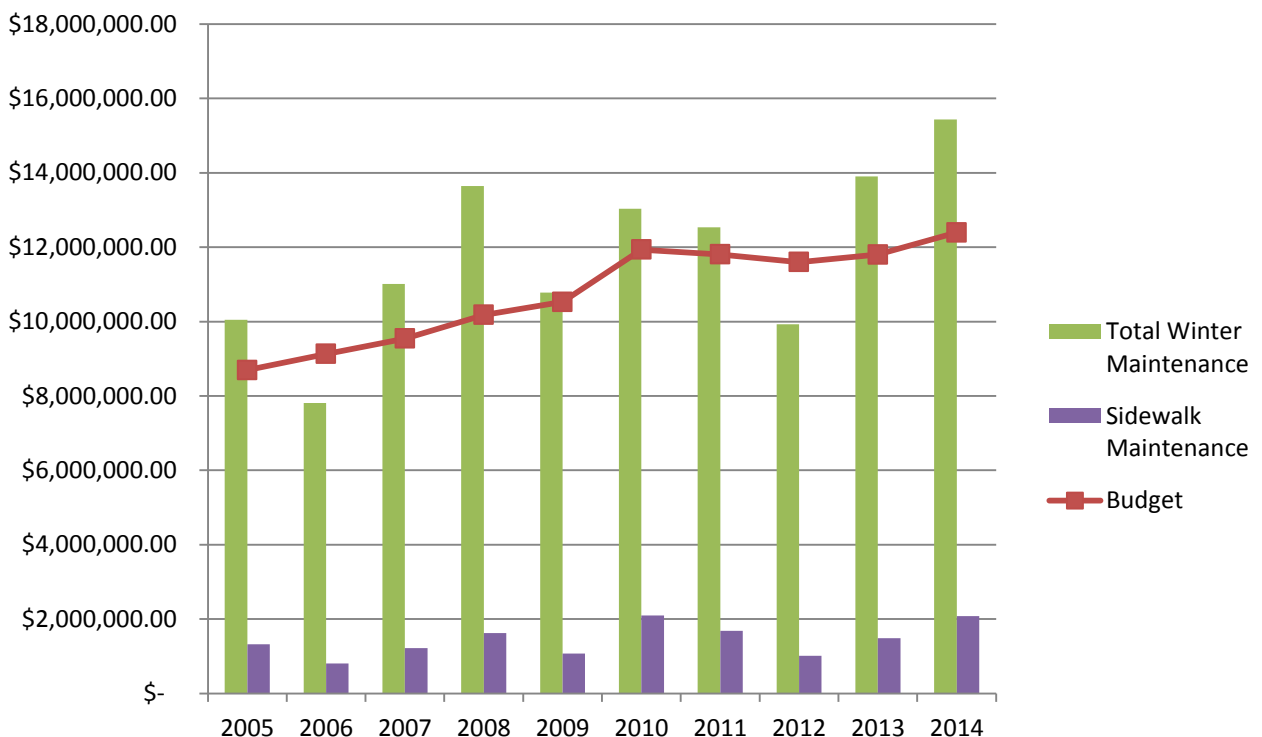
Under the current standard, salt/sand mixture shall be applied in isolated sections only, generally at intersections, school crossings and PXO's. Salt is used at bus stops to provide greater accessibility for transit users.

Snow is generally plowed onto abutting boulevard areas and placement of snow onto private property is highly discouraged, although in certain instances, under heavy snowfall conditions, this may occur.

**FINANCIAL**

The cost to maintain the City's roadways during the winter depends on the frequency and severity of weather event. The type and duration of winter storms impacts operation/maintenance costs and the winter response is directly linked to the service standards. Growth in the roadway network, increased traffic and operational costs has led to increased winter maintenance costs over the course of the last ten years. The City budgets for winter maintenance based on a three year average.

**Winter Maintenance Costs (2005 to 2014)**

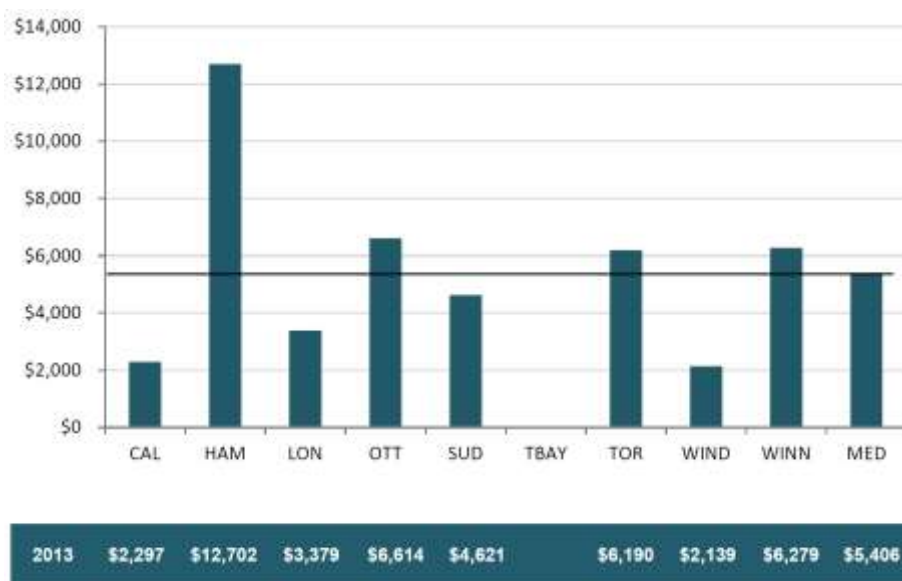


In relation to other municipalities that participate within the Ontario Municipal



Benchmarking Initiative (OMBI) 2013 survey, London’s total costs of \$3,379 per lane km was well below the average for winter maintenance of roadways per lane kilometer maintained. The average cost for sidewalk winter maintenance is \$1,500,000 (\$1,350 per lane km) or about \$4 per capita.

**OMBI Winter Maintenance Costs**



**Slip and Fall Claims**

The City relies primarily on the operational adherence to the Winter Sidewalk Quality Standard as a defense against slip and fall claims. The following chart represents the claims experience for falls on City sidewalks due to icy/snowy conditions for the years 2010-2015:

Year	# Claims	Current Expense
2010	23	\$99,556.25
2011	23	\$93,627.39
2012	8	\$2,125.00
2013	24	\$75,065.00
2014	22	\$22,688.03
2015	12	\$0.00

Potential changes to the winter maintenance sidewalk standard may impact the number of claims and liabilities. The Accessibility for Ontarians with Disabilities Act, (AODA) has not developed guidelines for this service. Sidewalk plowing will likely bridge two standard Development Committees – the *Built Environment* and *Transportation*. It may be premature to make a substantive service level change until such time as the requirements are known

**SUMMARY**

The top priority of the Winter Maintenance Program is to meet the Provincial Minimum Maintenance Standards for Municipal Highways (MMS), Regulation 239/02. The sidewalk standard is defined by Council. The program strives to balance the needs of the community with environmental stewardship through the use of salt in our operations.

The enhancements that are identified for consideration strive to improve mobility for all users of sidewalks and pathways within the City. This report is for information purposes in support of the proposed Winter Maintenance Strategy identified in the Strategic Plan and for funding consideration as part of the multi-year budget process.

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**Acknowledgements**

This report was prepared with input from John Parsons, Division Manager, Transportation and Roadside Operations and Don Purchase, Manager of Operations - Roadside Ops.

<b>PREPARED BY:</b>	<b>RECOMMENDED BY:</b>
<b>EDWARD SOLDO, P.ENG. DIRECTOR – ROADS AND TRANSPORTATION</b>	<b>WILLIAM C. COXHEAD MANAGING DIRECTOR PARKS AND RECREATION</b>
<b>RECOMMENDED BY:</b>	
<b>JOHN BRAAM, P.ENG. MANAGING DIRECTOR OF ENVIRONMENTAL &amp; ENGINEERING SERVICES AND CITY ENGINEER</b>	



Appendix "A"

**QUALITY STANDARD  
FOR  
WINTER OPERATIONS – SIDEWALKS**

**OBJECTIVE**

The major objective for Winter Operations – sidewalks are:

- to reduce the hazards of snow and ice to pedestrians
- to reduce economic losses to the community and industry caused by workers not being able to get to their jobs.

**SUMMARY**

In order to assign specific levels of service for Winter Operations – sidewalks, all sidewalks in the City of London have been classified according to the following:

**Streets By-law**

**Class 1**

- Located within designated area as defined in By-law S-2879-193 where primary responsibility for winter operations.

**1<sup>st</sup> Priority**

**Class 2**

- Arterial and expressway streets.
- Primary collector streets.
- Secondary collector and local streets where London Transit Bus Routes are designated.
- Serve as access routes to hospitals and fire equipment.
- Includes pedestrian walkways where walkway abuts a Class 1 or Class 2 sidewalk.

**2<sup>nd</sup> Priority**

**Class 3**

- Primarily secondary collectors, collectors where there is no London Transit route designated and local streets.
- Provides access to abutting property owners.
- Includes pedestrian walkways.

**Closed**

**Class 4**

- Pedestrian walkways closed for winter.

The level of service to be provided for Winter Operations – Sidewalks shall be in accordance with the following:

**Class 1 Sidewalks**

- Surface shall be maintained **as bare as possible** through enforcement of the provisions of the Streets By-law pertaining to the designated area where the primary responsibility for winter operations rests with the abutting property owner.
- When non-compliance with provisions of the Streets By-law are noted, works shall be completed by assignment of manpower, equipment and materials as required.

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**Class 2 and 3 Sidewalks**

- Surfaces shall be maintained in a **snow packed** condition by assignment of manpower, equipment and materials as necessary.
- The maximum allowable accumulation of **fresh** snow shall be 8 cm.
- Ploughing shall be completed within 24 hours after an accumulation of 8 cm.
- During periods of excessive or continual snowfalls Class 2 sidewalks shall be given **first priority** treatment and Class 3 sidewalks shall be given **second priority** treatment.
- Salt/sand mixture shall be applied in isolated sections only, general at intersections, school crossings and PXO's.
- Class 2 sidewalks shall be given **first priority** treatment for sanding/salting.
- Continuous sanding and/or salting and sanding shall not be completed except under conditions of freezing rain or generally slippery conditions.

**Class 4 Sidewalks**

- Class 4 sidewalks shall be closed from December 1 to March 30 and no winter operations shall be completed.