

HALIFAX

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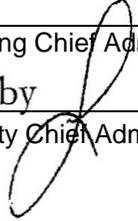
Item No. 14.1.3
Halifax Regional Council
January 26, 2016

TO: Mayor Savage and Members of Halifax Regional Council

Original Signed by 

SUBMITTED BY:

John Traves, Q.C. Acting Chief Administrative Officer

Original Signed by 

Mike Labrecque, Deputy Chief Administrative Officer

DATE: January 6, 2016

SUBJECT: Winter Service Standards for Streets and Sidewalks

ORIGIN

August 4, 2015 Regional Council motion requesting a staff report to consider the cost implications to revise the service standards with respect to: snow and ice for bus stops, sidewalks, intersections, the ramps at intersections, together with Priority 1 (P1) and Priority 2 (P2) streets to ensure public safety is met.

LEGISLATIVE AUTHORITY

The *Halifax Regional Municipality Charter* 2008, c. 39, s. 79 (1) (f) confers legislative authority to expend money required by the Municipality for snow and ice removal.

The *Halifax Regional Municipality Charter* 2008, c. 39, s. 320 (1), s. 320 (2) and s. 320 (3) confers legislative authority to make by-laws relating to snow and ice removal.

The *Halifax Regional Municipality Charter* 2008, c. 39, s. 322 (3) confers legislative authority to expend funds for the purpose of clearing snow and ice from the streets, sidewalks and public places in all, or part, of the Municipality.

The *Motor Vehicle Act* 1989 R.S.N.S. c.293, s.202 confers on the Local Traffic Authority the ability to declare an overnight parking ban during winter months.

RECOMMENDATION

It is recommended that Halifax Regional Council:

1. Direct staff to submit an end of season information report to Regional Council for June 2016 evaluating the service delivered in 2015/16 under the provisions of the Street Snow & Ice Control contracts awarded on August 4, 2015, and the impacts of operational changes implemented in 2015/16 following the November 24, 2015 Sidewalk Service Improvements report; and

RECOMMENDATION CONTINUED PAGE 2

2. Direct staff to expand the scope of the report requested by Regional Council for November 2016 to include recommended changes to the Street Snow & Ice Control contracts, in addition to the previously requested recommendations on the sidewalk program, commencing the 2017/18 winter season.

BACKGROUND

On August 4, 2015 staff presented to Regional Council a Strategic Recommendation report which acknowledged that enhancing service delivery, under the current standards, required a program which included:

- contingencies for extreme weather events and excessive snow accumulation on the ground
- strategic deployment of non-traditional snow resources, when required
- formalized priorities around snow removal in the Winter Operations Plan

The independent review of the Winter Operations program, by consultant Grant Thornton, made several recommendations. Regional Council adopted the following motions:

1. Endorse the following strategic directions to improve the delivery of the Winter Operations services as described in the discussion section of the July 22, 2015 staff report by:
 - a. Increasing 311 call centre capacity to respond to calls and e-mails during severe weather events;
 - b. Increasing capacity to monitor and measure performance and quality of contracted and in-house service delivery;
 - c. Take necessary actions to improve compliance with snow-related parking prohibitions;
 - d. Improve operational readiness by securing additional equipment capability and strengthening winter operations planning; and
 - e. Stabilizing winter operations expenditures.
2. Improve Sidewalk clearing by:
 - a. Working within existing approved contracts and resources, direct staff to return to Regional Council in November 2015 with options to improve sidewalk service outcomes, including service coordination, street intersections, and accessibility; and
 - b. Extending the remaining nine sidewalk service contract routes through the 2016/2017 winter season and direct staff to return to Regional Council in November 2016, with recommendations on the sidewalk program, commencing the 2017/2018 winter season.
3. That Council request a staff report to consider the cost implications to revise the service standards with respect to: snow and ice for bus stops, sidewalks, intersections, the ramps at intersections, together with Priority 1 (P1) and Priority 2 (P2) streets to ensure public safety is met.
4. Direct staff to explore increased coordination between 311 and Winter Works staff to ensure there is not extended periods of cumulative time that service standards are not met.
5. Request a staff report regarding the possibility of HRM assuming the ice and snow control service for the upcoming 2015-16 winter season for the community of Mineville and the few remaining subdivision streets in the Lawrencetown area that are not currently under HRM Performance based contracts.

In response, staff has previously submitted reports back to Regional Council:

- Per recommendation 2a on November 24, 2015 staff presented to Regional Council a report entitled “Winter Sidewalk Service Improvements for Winter 2015/16”. Regional Council approved the report recommendation to have staff increase focus on quality of service delivery and increase enforcement of parking restrictions; and,
- Per recommendation 5, on November 24, 2015 staff also presented to Regional Council a report entitled “Snow Clearing Outside of the Municipal Service Boundary” and staff have subsequently negotiated an amended winter service exchange agreement with NSTIR.

This report is in response to Recommendation 3 and, a further report will be presented in November 2016 to Regional Council per recommendation 2b.

DISCUSSION

Halifax’s winter service standards are equal to, or exceed, comparable Canadian cities as noted by Grant Thornton Productivity Improvement in their 2015 evaluation report of Halifax winter operation practices.

Table 1: Winter Operations Cross-Jurisdictional Survey

	Halifax	St. John’s	Moncton	Saint John	Boston
Streets Serviced	3,824 km	1,400 km	850 km	672 km	320 km (arterials)
Main thoroughfares and arterials	Bare pavement 12 hrs	Bare pavement 12 hrs	Two lanes 8 hrs	Two lanes 8 hrs Curb to curb 48 hrs	
Residential and Side Streets	Snow covered/passable 24 hrs	Bare pavement 24 hrs	Two lanes ¹	Centre lane 8-96 hrs Two lanes 48-72 hrs	
Sidewalks Serviced	1,009 km	134 km	430 km	240 km	0 km
Sidewalks	12-48 hrs	18-24 hrs	24-20 hrs ²	12-96 hrs	Residents responsible
In-house Staff	165	201	77	72	

¹ Moncton does not clear residential streets with traffic volumes less than 500 cars/day (unless grandfathered).

² To minimize costs and maintain service, many Moncton streets only have sidewalks on one side of the street plowed.

This staff report responds to Recommendation 3 from the August 4, 2015 Council to consider revisions to the winter street and sidewalk service standards with respect to: bus stops, sidewalks and ramps at intersections, intersections, and streets to ensure public safety is met.

Halifax's Winter Operations program uses a blended approach to service delivery – a combination of in-house personnel working with hourly-based contractors on retainer, and longer-term performance-based contractors. In-house and hourly based contractor resources are largely focused on the urban core. Performance based contracts are largely focused on the delivery of snow and ice management in suburban and rural areas.

Table 2: Current Approved Winter Services Budget

2015/16 Program components	Cost
Staff and materials	\$6,432,300
Performance based contracts – Streets*	\$14,321,600
Performance based contracts – Sidewalks*	\$4,399,900
Hourly Based Contracts	\$1,074,600
Infrastructure & Damage Repairs	\$477,500
Total Program Costs	\$26,705,900

Table 3: Service Cost per Kilometre

Program components	kilometres serviced	Cost/km
Sidewalks (In-house with Hourly Contracts)	132	\$13,548
Sidewalks Performance-Based Contracts	859	\$5,122
Streets (In-house with Hourly Contracts)	1,108	\$7,360
Streets Performance-Based Contracts	2,717	\$5,270

Pursuant to the August 4, 2015 Council meeting, four new Street Snow & Ice Control contracts were awarded to commence with the current winter season. These contracts contained clearer contract language to allow staff to better manage the contractor performance to deliver the outcomes expected by the community and Council within the existing winter service standards. Among these changes were clarity on the following:

- Priority 2 Street cut-throughs are required every 6 hours and a minimum of every 8 hours following during the extended periods of snow.
- Roadway travel lanes to be cleared to a minimum of 3.5 metres wide, or for narrower lanes, the full lane width.
- Snow removal (Hauling) is required when 10% of lane width is reduced, or when requested by HRM staff to address safe visibility (typically after 40 cm of sustained accumulation)
- Snow removal is defined for Elementary School Zones, Bus Stops, Accessible Parking Zones, Designated Crosswalks. Removal after each 20 cm of accumulation (piles at intersections and all snowbanks for 3 metres in each direction)
- All ice/snow pack to be removed once it reaches a depth of 5 cm on priority 1 streets, and 10 cm on Priority 2 streets.

In Spring 2017, 34 existing sidewalk snow clearing contracts and two area performance-based street snow clearing contracts will expire. The remaining four new Street Snow & Ice Control contracts expire in Spring 2019 with options to extend to Spring 2023. These four contracts also include provisions to renegotiate based on implementation of new service standards within the contract time period.

For each of the street and sidewalk infrastructure components identified in Council's motion, this report provides:

- Size or Quantity of the component and the Current Service Standard
- Current Service Delivery
- Feedback Received from 2014/15 Season
- Options for changes to Service Standards
- Staff Recommendation

The cost implications of the various options included in this report are indicative of the anticipated order of magnitude. If Regional Council provides staff direction on any changes to the winter service standards for streets and sidewalks, staff will need to use a procurement process to more accurately obtain cost estimates. Staff would report back to Regional Council with the refined costs and implications to incorporate service changes in the 2017/18 Operating Budget. Any changes would be included in the revised tender documents, be negotiated with the remaining contractors and be applied to the in-house service delivery.

A. Challenges

According to Environment Canada data, over the past decade Halifax has experienced on average 53 storm events each winter season. Snowfalls of less than 10 cm account for about 90% of these events. In a typical winter, only 1 or 2 events exceed 20 cm of snow. The maximum snow on ground has averaged 35 cm. In contrast, last winter saw 21% of the snowfalls exceed 20 cm and the maximum accumulation was 93 cm.

Extreme and Multiple Events

Winter service standards should be easily-understood by all so that community expectations can be aligned with the service delivered. The challenge is that the complexity of various weather patterns doesn't readily fit into simple categories. The existing standards state that:

In snowfalls greater than 30 centimetres, or in blizzard conditions, more time may be needed to complete clearing. The same exception may apply when there are rapidly changing weather conditions, like sudden freezes after rain, wet snow packed to ice and freezing rain. Crews will continue working until all streets and sidewalks are clear and safe from snow and ice. In the case of multiple snowfalls, where there is not enough time to clear the streets and roads, Winter Operations will return to the highest priorities and start over.

In addition, various areas of Halifax may experience different weather conditions within the same event. During most storm events, the existing service standards are met. The most significant challenge to service delivery is the ability to recover completely from an event before a subsequent event begins.

Coordination of Clearing Activities/Contractors/Private Property

Currently, the structure of street and sidewalk contracts can mean that two different sidewalk contractors are servicing one intersection, as well as another contractor or in-house crew clearing the street. This results in inefficient and inconsistent clearing of the interface points. Ideally sidewalk ramps at intersections and crosswalks should be cleared after the street has been plowed – to prevent windrows from filling in the pedestrian crossing points.

Similarly, there are challenges with snow clearing from private parking lots and commercial driveways that is performed by independent contractors leaving windrows blocking the sidewalks after they have been cleared or at times, preventing sidewalk plows from operating. Staff will look for opportunities in the current review of By-law S-300 to better support enforcement of illegal dumping of snow and ice on

Halifax's sidewalks and streets.

With the expiry in Spring 2017 of the sidewalk clearing contracts and two area street clearing contracts, there be the opportunity to make a single contractor responsible for clearing snow from all elements within a given geographic area.

Attention to Pedestrian Accessibility

Regional Council has identified concerns with sidewalk clearing and accessibility. Staff believe the adjustments to the current service delivery plan and the collaboration with members of the accessibility community will result in improved service delivery this year.

In the summer of 2015, municipal staff toured the downtown with members of the accessibility community. It was a great opportunity for them to experience firsthand some of the challenges that people with mobility issues face on a daily basis, especially during the winter months.

Feedback from that tour was shared with municipal winter operations staff and HRM's sidewalk contractors. The Municipality is also committed to working with the accessibility community to develop guidelines for future seasons that all staff can use. Those guidelines would clearly identify what the expectation is for clearing sidewalks, including items such as width, surface conditions and pedestrian ramps, as well as accessibility at bus stops and pedestrian crossing signals. Staff has included, where possible, these recommendations for the 2015/16 season.

B. Bus Stops:

Infrastructure Type	Quantity	Current Service Standard*
Bus Stops	2,369	48 hours*

*details attached as Appendix B

Current Service delivery

Halifax Transit routes service 2,369 bus stops that require snow clearing. In 2013/14 the service delivery standard specified bus stop clearing completion time was changed from 72 hours to 48 hours. Bus stop clearing is performed by a combination of in-house crews, hourly contract crews and performance based crews

Bus stops are cleared starting with the highest volume stops, within 48 hours of the end of snowfall. Bus stops are initially opened up as much as possible during adjacent sidewalk and street clearing; however, most aren't fully cleared until all the streets are complete, as the snow needs to be removed with larger equipment and trucks. Much of this work is done after hours, when lighter traffic conditions enable the work to be carried out more safely and with less disruption to transit operations and traffic flow.

Feedback Received from 2014/15 Season

- Bus stops not cleared – snow banks block pedestrian access to buses
- Passengers could not access shelters
- Passengers could not exit through rear doors

Options for changes to Bus Stops:

1.	Retain current standards (Recommended Option)	No financial impact to current streets and sidewalk contracts Add language to improve focus on delivery to current service standards when contracts are retendered after April 2017
2.	Increase standard from 48 hrs to 24 hrs	Since the existing cost to clear bus stops is not separated out from the applicable street or sidewalk contracts, it is difficult to determine the cost implications. However, additional resources would be required to clear and haul away snow within the same window as streets and sidewalks are being cleared. In addition, the operations would need to be permitted during peak periods

Staff recommends Option 1 retaining current standards and improving quality of service delivery to meet the standards

C. Sidewalks:

Infrastructure Type	Quantity	Current Service Standard
Priority 1 Sidewalks main roads	424 km	12 hours
Priority 2 Sidewalks school /bus routes	299 km	18 hours
Priority 3 Sidewalks residential/rural streets (Includes trails and walkways)	268 km	36 hours
Total Sidewalks	991 km	

Current Service Delivery

Halifax’s service delivery standards for sidewalks are on par with, or exceed, most major cities in Canada. Unlike many other jurisdictions, Halifax clears all sidewalks, and targets bare pavement (as opposed to safe and passable snow-covered). Completion times in other jurisdictions range everywhere from 4 hours to 7 days, with the majority of cities having completion times of 12+ hours. In most cases, completion times vary depending on the type of sidewalk infrastructure (arterial/business district/transit route/residential etc.).

As currently structured, some neighbourhoods are serviced by multiple sidewalk contractors. The Peninsula and Herring Cove are, for example, covered by two separate sets of contracts, employing multiple contractors. This overlap creates inefficiencies that could be corrected by contract area reconfiguration. By enlarging service areas, route servicing can be better coordinated to achieve route optimization.

For sidewalks to be cleared under the same service standard timeline as the adjacent street would present difficulties as the sidewalk equipment cannot travel as fast as the street equipment. Thus to match the service standards would require double if not triple the equipment resources.

Feedback Received from 2014/15 Season

- Sidewalks not cleared to service standards (packed snow and ice)
- Ramps at intersections not cleared or blocked by windrows on street
- Windrows from private property snow clearing block sidewalks
- Parked vehicles overhang or block sidewalks
- Damage to adjacent private property by sidewalk clearing equipment

Options for change to Sidewalks:

1.	<p>Retain current standards (Recommended Option)</p>	<p>No financial impact to current sidewalk contracts</p> <p>Enlarge service areas, eliminate overlaps and have a single service provider within an area.</p> <p>Add language to improve focus on delivery to current service standards when contracts are retendered after April 2017. Changes to contract language, to improve service delivery, will be implemented into the streets/sidewalk tenders. Sidewalk contractors, like their street contractor counterparts, will be required to clearly demonstrate their operational capacity (during the bid process). Furthermore, to ensure alignment with streets, the duration of the winter season will be extended from 22 to 28 weeks. Specific requirements, that better align the resources, operational strategies and communications requirements of contractors to those of the municipality, will be included in the new sidewalk contracts.</p>
2.	<p>When current contracts are retendered in April 2017,</p> <p>Increase standards from 18 hrs to 12 hrs for Priority 2 sidewalks; and,</p> <p>Increase standard from 36 hrs to 24 hrs for Priority 3 sidewalks.</p>	<p>Approximate 66% increase of performance-based contracts for sidewalks (additional \$2.9 Million annually)</p> <p>Affects 567 of 869 km (66%) of sidewalks cleared by performance-based contractors. In-house resources are only allocated to Priority 1 sidewalks.</p> <p>Result 73% of sidewalks would have a 12 hrs target 27% of sidewalks would have an 24 hrs</p>

		Target
3.	<p>When current contracts are retendered in April 2017,</p> <p>Eliminate Priority 3 Residential/Rural Sidewalk Street clearing – sidewalks be cleared by the abutting property owner</p> <p>(continued)</p>	<p>Approximately a \$1.4 Million reduction in performance-based contracts (268km * \$5122/km) however additional education and enforcement costs to ensure compliance</p> <p>The Halifax Charter does not impose a statutory obligation to clear snow and ice from sidewalks or streets.</p> <p>Since 2006, Halifax has expanded the performance based residential sidewalk snow-clearing. Prior to this time, abutters were required to clear residential sidewalks under S-300 where the service was not provided.</p> <p>Several Canadian cities require that residents clear their own sidewalks. Many cities across Canada only mechanically clear a subset of sidewalks, typically those in high volume corridors or those that abut municipal property</p> <p>Eliminating residential sidewalk clearing service is inconsistent with Council's Healthy Communities Priority Outcomes direction</p> <p>Result 26% of sidewalks would be cleared by the abutter</p>

Staff recommends Option 1 retaining current standards and improving quality of service delivery to meet the standards

D. Crosswalks & Intersections:

Infrastructure Type	Quantity	Current Service Standard
RA-3 School 7 RA-4 marked	333	12 or 24 hours per street priority
RA-5 marked and overhead lights	196	12 or 24 hours per street priority
Traffic Signals	267	12 or 24 hours per street priority
Others	1,612	12 or 24 hours per street priority
Total Crosswalks	2,408	

Current Service delivery

Crosswalks are cleared by a variety of resources. The four new performance based contracts awarded in August 2015 are responsible to clear crosswalks. All current existing sidewalk contracts and in-house resources are also responsible to clear crosswalks. Only the two streets contracts expiring after April 2017 do not contain language around crosswalks.

Feedback Received from 2014/15 Season

- Pedestrians could not access pedestrian crosswalk signal push-buttons
- Access ramps were not cleared

Options for change to Crosswalks & Intersections:

1.	Retain current standards (Recommended Option)	No financial impact to current streets and sidewalk contracts Add language to improve focus on delivery to current service standards when contracts are retendered after April 2017
2.	Increase standards from 24 hrs to 12 hrs in conjunction with changes to street clearing priorities	It is impractical to clear intersections

Staff recommends Option 1 retaining current standards and improving quality of service delivery to meet the standards

E. Streets:

Infrastructure Type	Quantity	Current Service Standard*
Priority 1 Streets	2,246 lane-km	12 hours
Priority 2 Streets	1,578 lane-km	24 hours
Total Streets	3,824 lane-km	

Current Service delivery

Streets are cleared by a combination of in-house crews supplemented, when required, by hourly contractors on retainer, and by larger area-wide performance based contractors. The downtown urban areas of Halifax and Dartmouth are serviced by in-house crews and the areas outside the downtown are serviced by performance based contractors.

Feedback Received from 2014/15 Season

- Snow banks and ice-pack reduced effective street width resulting in a loss of part or whole lane of traffic
- High snow banks and intersections affected visibility of turning traffic and pedestrians
- Residential streets had a prolonged ice pack cover and ice pot holes developed

Options for changes to Streets:

1.	Retain current standards with revised wording to provide clarity on priority 2 streets (Recommended Option)	<p>No financial impact to current streets and sidewalk contracts</p> <p>Refine the existing Winter Service Standards for priority 2 streets to identify targeting an initial cut-through to be completed within 6 hours following 10 cm of accumulation, and repeated every 8 hours or less during an extended period of snow</p> <p>Improved focus on delivery to current service standards to be included when contracts are retendered after 2016/17.</p>
2.	<p>When current contracts are retendered in April 2017,</p> <p>Increase standard to 12 hours for priority 2 streets</p>	<p>Approximately \$15 to \$20 Million increase in street clearing cost</p> <p>Currently Halifax has priority 1 and priority 2 streets in recognition of the higher service demand of the priority 1 streets. Council could choose to provide a higher service standard on both priorities in order to achieve a 12 hour clearing of the priority 2 streets.</p> <p>Today priority 2 streets are cleared by the same resources as priority 1 streets once they are complete. This would no longer be possible to achieve the performance timeframe.</p> <ul style="list-style-type: none"> • Include new standard in 2 Streets contracts which expire after 2016/2017 • 4 new performance based contracts would require renegotiation around the new standard <p>The area covered by in-house crews would be reduced (and performance-based contract areas expanded) to reflect the more intense use of in-house staff resources.</p> <p>41% of the streets would have their standard increased from 24 hrs to 12 hrs</p>

Staff recommends Option 1 revising wording to provide clarity on priority 2 streets and retaining current standards and improving quality of service delivery to meet the standards

F. Measuring Program Success

Staff does not have the technology or resources to comprehensively measure the direct percent of time that streets, sidewalks, bus stops and crosswalks are clear of ice and snow. As a result, staff currently uses three proxy measures as performance indicators. They include the call volume through the Corporate Call Centre (311), claims submitted through Legal and Risk Management, and motor vehicle collision statistics.

1. Snow and Ice Management Related Calls to the Corporate Call Centre (311)

311 Coded Category	Calls 2014/15
Transit Stops	238
Sidewalks	4,659
Streets	17,431
Damage	720
Total Calls	23,048

*Call volumes reflect calls handled. Offered call volumes exceed these figures.

2. Claims through Legal and Risk Management

Information from Risk Management	2014/15
Pedestrian – Slip & Fall	48 (+2 after April 1)
Vehicle Damage - Ice Ruts	56 (+4 after April 1)

3. Motor Vehicle Collision Statistics

Information from HRP & RCMP	November 1, 2014 to April 30, 15
Pedestrian/Vehicle	144
Vehicle/Vehicle	3894

G. Conclusions

In response to the feedback from the 2014/15 winter season, a number of service delivery improvements have been implemented for this winter. These include clearer, better defined contractual terms for the four newly awarded performance-based contractors, and greater attention to quality control and supervision by the HRM winter services management team. There is a need to evaluate the effectiveness of the changes that have already been implemented since August 2015 at the end of the current winter season.

In April 2017, all 34 of the sidewalk service contracts and two of the streets contracts expire and will need to be re-tendered. Therefore, there is the opportunity for Council to consider the options in this report and the 2015/16 end of season performance report, in conjunction with the 2017/18 Business Plan and Budget review schedule. Council can at that time give the business unit direction for changes to bring forward in the 2017/18 Budget.

The significant milestone dates and deliverables are as follows:

Timeframe	Action
June 2016	End of Season Report 2015/16 The purpose of this report is to give an overview of the season and an evaluation of the service delivered in 2015/16 under the provisions of the Street Snow & Ice Control contracts awarded on August 4, 2015, and the impacts of operational changes implemented in 2015/16 following the November 24, 2015 Sidewalk Service Improvements report
November 22, 2016	Report recommending Changes for the 2017/18 Winter Service Delivery In alignment with 2017/18 Business Plan and Budget schedule ,the purpose of this report would be to recommend changes and provide refined estimates for the sidewalk and the street snow & ice control contracts commencing the 2017/18 winter season based on Council direction from this January 26, 2016 report and any actions from the 2015/2016 end of season report.

FINANCIAL IMPLICATIONS

There are no financial implications of retaining the existing winter streets and sidewalks service standards as recommended. In the event that Council directs staff to implement a change, staff will report back to Regional Council with a refined cost estimate and operating budget implications for 2017/18.

COMMUNITY ENGAGEMENT

A special meeting of the Accessibility Advisory Committee was held September 10, 2015. The Municipality is also committed to working with the accessibility community to develop guidelines for future seasons that all staff can use.

ENVIRONMENTAL IMPLICATIONS

There are no environmental implications associated with this report.

ALTERNATIVES

Regional Council could direct staff to change the existing Winter Service Standards for Streets and Sidewalks per one or more of the options identified in this report, or in any other way. This would require staff to report back to Regional Council prior to the 2017/18 Budget process with a refined cost estimate and budget implications.

ATTACHMENTS

- Appendix A - Status Update of Actions from the August 4, 2015 Council Decision
- Appendix B - Current Service Standards
- Appendix C - Additional details from the street performance based tenders approved for 2015/16
- Appendix D - Map of Current Sidewalk Tenders
- Appendix E - List of Current Sidewalk & Streets Contracts

A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/cagenda.php> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 902.490.4210, or Fax 902.490.4208.

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APPENDIX A – Status Update of Actions from the August 4, 2015 Council Decision

The independent review of the Winter Operations program, by consultant Grant Thornton, made several recommendations. These recommendations were approved by Regional Council and the updates for each item are listed below.

1. Endorse the following strategic directions to improve the delivery of the Winter Operations services as described in the discussion section of the report by:

Report Recommendation	Actions implemented to date
Increasing 311 call centre capacity to respond to calls and e-mails during severe weather events;	<ul style="list-style-type: none"> • Citizen Contact Centres have designated a 311 agent to reply to correspondence and be the designated centralized dispatcher, in an effort to increase service levels and reduce costs of 311 winter season overtime • Collaborated with Corporate Communications on communications regarding “when to call” 311
Increasing capacity to monitor and measure performance and quality of contracted and in-house service delivery;	<ul style="list-style-type: none"> • Increased the capacity to monitor service delivery by assigning addition supervisors • Increased the frequency of inspections • Installed AVL technology on in-house equipment
Take necessary actions to improve compliance with snow-related parking prohibitions;	<ul style="list-style-type: none"> • Increased the number of dedicated parking enforcement staff • Secured additional access to tow trucks • Emphasized the importance of resident compliance with parking prohibitions through Corporate Communications
Improve operational readiness by securing additional equipment capability and strengthening winter operations planning; and	<ul style="list-style-type: none"> • Secured additional equipment including graders and loaders (69 pieces of hourly equipment to supplement current streets & sidewalks contracts) • Increased meteorological forecasting • Updated Winter Control Plan
Stabilizing winter operations expenditures.	<ul style="list-style-type: none"> • Implemented 4 new Performance Based contracts which provide increased response to meet out service targets • Reduced use of hourly based contracts • Expanded the geographic scope of performance based contractors • Consolidated in-house resources into a smaller geographic area • Enhanced definition of response to levels of service and trigger points to deploy additional resources <ul style="list-style-type: none"> ○ Increased Project Management of tendered services (Superintendents, Quality Assurance, 24/7 access, etc) ○ Increased number of trucks, operators and other equipment (graders, loaders, backhoes, loader mounted blowers) ○ Contractors added two new salt domes in proposed service area. This reduced the use of municipal salt & sand by contractors. ○ Increased capacity of contractors to use brine ○ Increased contracted service from 22 to 28 weeks ○ Included spring sweeping and grading of municipally owned and serviced roads

2. Improve Sidewalk clearing by:

Report Recommendation	Actions implemented to date
<p>Working within existing approved contracts and resources, direct staff to return to Regional Council in December 2015 with options to improve sidewalk service outcomes, including service coordination, street intersections, and accessibility; and</p>	<p>Regional Council recommended staff continue with the initiated service improvements as detailed in the November 24, 2015 report including:</p> <p>Increased focus on quality of service delivery</p> <ul style="list-style-type: none"> • Improved understanding of accessibility needs and attention to detail by our sidewalk contractors and in-house staff • Consolidated in-house resources (labour and equipment) within the urban core and expanded the performance-based contracts • Conducted pre-season meetings with contractors to review service level and performance expectations • Contractors purchased additional equipment and attachments (narrower equipment, additional blowers, harder cutting edges etc.) • Updated GIS maps which identified the location of bus stops, accessible bus stops, and problem area “hot” catchbasins. <p>Remove barriers to service delivery</p> <ul style="list-style-type: none"> • Increased efforts around communication and enforcement by ticketing and towing vehicles that interfere with snow clearing operations.
<p>Extending the remaining nine sidewalk service contract routes through the 16/17 winter season and direct staff to return to Regional Council in the November 2016, with recommendations on the sidewalk program, commencing the 17/18 winter season.</p>	<p>Contracts were extended to the end of the 2016/2017 season.</p> <p>Staff will return in November 2016 with recommendations on the sidewalk program for 2017/18.</p>

3. Request a staff report to consider the cost implications to revise the service standards with respect to: snow and ice for bus stops, sidewalks, intersections, the ramps at intersections, together with Priority 1 (P1) and Priority 2 (P2) streets to ensure public safety is met. – **COMPLETE with the presentation of this report to Regional Council January 26, 2016**

4. Direct staff to explore increased coordination between 311 and Winter Works staff to ensure there are no extended periods of cumulative time that service standards are not met. - **ONGOING**

Actions implemented to date:

- Citizen Contact Centres have designated a 311 agent to reply to correspondence and be the designated centralized dispatcher, in an effort to increase service levels and reduce costs of 311 winter season overtime

- If multiple events occur before the service standard has been achieved, they shall be considered one continuous event. This would provide a cut-through is to allow traffic access for residents on P2 streets.
5. Request a staff report regarding the possibility of HRM assuming the ice and snow control service for the upcoming 2015-16 winter season for the community of Mineville and the few remaining subdivision streets in the Lawrencetown area that are not currently under HRM Performance based contracts. – **COMPLETE. Presented to Regional Council November 24th, 2015**
 6. Regional Council request staff prepare an information report in regards to the status, waiting list, and possible funding requirements of the 2015/16 Snow Removal Program for Seniors and Persons with Disabilities – **Presentation to Regional Council January 26th, 2016**
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Appendix B- Current Service Standards

- Regional Council approved service standards for snow removal after the end of a snowfall, which crews make every effort to achieve:
 - **ROADS:** 12 hours for main roads & bus routes, 24 hours for all other streets.
 - **SIDEWALKS:** 12 hours on main routes, 18 hours for school & bus routes, 36 hours for residential & rural streets.
- Streets and sidewalks are prioritized based on a number of criteria, including how often they're used by commuters, access to important infrastructure like hospitals and schools, and whether they're on major bus and transportation routes.
- In snowfalls greater than 30 centimetres, or in blizzard conditions, more time may be needed to complete clearing. Crews will continue working until all streets and sidewalks are clear and safe from snow and ice.
- During significant snow events, "cut-throughs" (one-lane plowing) may commence on residential streets to allow single-lane access prior to full street-width clearing.
- In the case of multiple snowfalls, where there has been insufficient time to complete all sidewalks, operations will return to the highest priorities and start over.
- Plowing, from either street or sidewalk operations, will result in snow at the end of residents' driveways. It is the responsibility of the property owner to remove this snow.

Service Standards for Sidewalks

Priority 1 sidewalks include those along main arterials and within the downtown core. Our goal is to clear these sidewalks within 12 hours of the end of a snowfall.

Priority 2 sidewalks include those along transit routes. Our goal is to clear these sidewalks within 18 hours of the end of a snowfall.

Priority 3 sidewalks include those along residential streets and also municipal walkways. Our goal is to clear these sidewalks and walkways within 36 hours of the end of a snowfall.

TABLE 2: SERVICE STANDARDS FOR SIDEWALKS

Sidewalk/ Shelter Type	Priority	Materials Used	Initial Response	Clearing Frequency	Completion Time (after snowfall ends)
Main Arterials/ Urban Core	Priority 1	Salt or salt/ sand mixture	After 5 cm of snow		12 hours
School Drop Off Zones and Transit Routes	Priority 2	Salt or salt/ sand mixture	After 10 cm of snow		18 hours
Residential Streets/ Walkways	Priority 3	Salt or salt/ sand mixture	After priority 1 and 2 sidewalks are cleared		36 hours

Note: In the case of multiple snowfalls, where there is not enough time to clear all sidewalks, intersections and bus stops, Winter Operations staff will return to the highest priorities and start over.

Service Standards for Streets

Priority 1 streets include main arterials, emergency routes to hospitals and fire equipment, major bus routes and snow routes in extremely hilly areas. Our goal is to have a plow or salt truck pass through these areas every three hours, and have them clear of snow and ice within 12 hours of the end of a snowfall.

Priority 2 streets and roads include residential and rural routes with medium to low volume traffic, gravel roads and private lanes that the municipality is responsible for. Our goal is to start cut-throughs at intersections to allow access onto these streets after 10 centimetres of snow has fallen, and have them in a snow-covered and passable state within 24 hours of the end of a snowfall.

Cut-throughs are where a single lane is plowed in the middle of the street to allow access until crews are able to return to complete full street-width clearing. This often happens during significant snow events. In the case of multiple snowfalls, where there has been insufficient time to complete all sidewalks, operations will return to the highest priorities and start over.

Important Notes on Service Standards

In snowfalls greater than 30 cm, or in blizzard conditions, service levels may not be achieved. HRM's crews will continue working until all streets and sidewalks are clear and safe from snow & ice.

During significant snow events "cut throughs" (one lane plowing) may commence on residential streets to allow single lane access prior to full street width clearing

While the objective is to maintain sidewalks to a bare condition, many factors are key to achieving success. Wet snow packed to ice, freezing rain and sudden freezes after rain can produce a heavy ice build-up on sidewalks. Sand will be applied to provide a degree of traction.

In the case of multiple snowfalls, where there has been insufficient time to complete all sidewalks, operations will return to the highest priorities and start over.

Plowing, from either street or sidewalk operations, will result in snow at the end of resident's driveways. HRM will NOT be responsible for removing this snow.

TABLE 1: SERVICE STANDARDS FOR STREETS

Road Type	Priority	Service Level (post operations)	Initial Response	Clearing Frequency	Completion Time (after snowfall ends)
Main Arterials ¹	Priority 1	Bare pavement driving lanes	After 2 cm of snow	3 hour turnaround	12 hours to full driving lanes
Transit Routes/ Collector Roads ²	Priority 1	3m centreline bare	After 2 cm of snow	3 hour turnaround	12 hours
Residential Street with greater than 10% slope that serve as snow	Priority 1	Centreline bare	After 4 cm of snow	3 hour turnaround	12 hours to 2 lane width

¹ Examples of main arterials include Robie Street, Sackville Street and Portland Street.

² Examples of transit routes/collector roads include Parkland, Caledonia Road and Metropolitan Avenue

routes³

Residential Streets ⁴	Priority 2	Snow covered, passable	After 10 cm of snow	N/A	24 hours to 2 lane widths
Gravel Roads ⁵	Priority 2	Snow covered, passable	After 10 cm of snow	N/A	24 hours
Private Lanes	Priority 2	Snow covered, passable	N/A	N/A	24 hours

Note: In the case of multiple snowfalls, where there is not enough time to clear all streets and roads, Winter Operations staff will return to the highest priorities and start over.

³ Examples of snow routes include Vestry Street, Joffre Street and Lindsay Hill.

⁴ Examples of residential streets include Cork Street, Anderson Street and Chandler Drive.

⁵ Examples of gravel roads include Confederation Drive and Raines Mill Road.

3. **Supervision and Contact Numbers**

1. The Contractor shall have a supervisor available 24 hours a day to effectively plan, organize, direct and supervise winter maintenance activities to ensure conformity with the requirements of the Contract.
2. The Contractor shall also provide an authorized representative that can be contacted at any time of day or night (24/7) to deal with matters relating to the Contract for the duration of the Contract.
3. Prior to the commencement of each winter season, the Contractor shall notify HRM of the names, addresses, positions and telephone numbers of the Contractor's representatives. The Contractor shall immediately notify HRM of any changes to this information.
4. Failure to meet the requirements of this section will result in \$3,000.00 liquidated damage for each occurrence

4. **Description of Work**

The required work comprises the supply of all labour, traffic control materials, equipment, salt, sand, fuel, transportation, supplies, supervision, communication requirements, reporting requirements and customer service requirements necessary to perform winter streets and roads snow and ice control for designated streets and roads in HRM.

The winter maintenance operations involve snow and ice control activities consisting of the following:

1. Snow plowing, ice control and salt/sand spreading on all designated streets and roads. A lane KM is defined as a minimum 3.5m wide lane measured through its length and includes the full width and length of all bike lanes, turning lanes, merge lanes and bus lay-bys, in both directions. Some streets may be wider or narrower by design; the contractor is responsible for full width clearing of all roadway surfaces from curb to curb or shoulder to shoulder (1m past roadway edge), as per the attached levels of service performance matrix.
2. Clearing and removal (hauling) for the full width of all bus stops to allow for entry and exit from the front and rear doors of the bus) minimum width of 12 meters as per the attached levels of service. This includes the removal (hauling) of all snow stored at the bus stop by both street and sidewalk clearing operations. Full bus stop snow removal to take place after every 20cm of total accumulation or as deemed required by the HRM Contract Manager or designate.
3. Snow removal from Accessible Parking Zones within the contract area.
4. Snow removal from crosswalks within the contract area.
5. Snow removal (hauling) and ice control on all drainage structures (catch basins, swales, drainage ditches)
6. Snow removal (hauling) on designated streets and roads as per the attached levels of service.
7. Ice removal (full depth removal/chopping) on all ice flows and snow/ ice pack.

The Contractor shall have complete control of the work and shall effectively initiate, direct, supervise and perform the work in accordance with the requirements of the contract.

9. **Additional Work**

In addition to the total contract price, HRM may require additional unit prices (such as per kilometre or per hour) that shall apply to occasional requests for additional work. Unit prices shall be firm/fixed for the duration of the contract and Contractor agrees to perform additional work at such prices when requested by HRM.

HRM reserves the right to award additional occasional work to any contractor regardless of the area that is covered by their awarded contract.

10. **Contractor's Responsibilities**

The Contractor shall be responsible to carry out the following:

1. The Contractor is responsible to ensure that winter maintenance activities are performed in accordance with HRM's Levels of Service/Performance Matrix Standards as specified in this tender document (as per Performance Matrix Appendix "J") and per the Description of Works.
2. The Contractor is responsible to ensure that all staff engaged in winter maintenance activities are properly trained in snow and ice control operations and knowledgeable of the prescribed Performance Standards and Levels of Service;
3. The Contractor shall be liable for, prepared to and capable of carrying out all snow and ice control activities at any time (24 hours a day, 7 days a week) during the contract period from November 1st until May 15th of each year and option year of this contract.
4. The Contractor shall be fully responsible for supplying all the necessary equipment, labour, salt, sand, traffic control and materials required to undertake snow and ice control activities during the contract period from November 1st until May 15th of each year and optional year(s) of this contract.
5. It is the Contractor's full responsibility to determine the equipment, labour and material needs to meet the requirements of the contract including but not limited to the review of streets and roads to assess physical restrictions and other obstacles in the streets Right of Way. This does not supersede the requirements set out in Section 17 Equipment Requirements.
6. The Contractor is responsible to subscribe to the services of a professional weather forecaster in order to monitor weather conditions (24 hours a day) during the contract period. The forecast shall include detailed information pertaining to precipitation, wind speed and direction, surface and air temperature, dew point, and the probability of black ice. The forecast must be issued to the Contractor a minimum of 3 times daily.
7. The Contractor is responsible to patrol/monitor the streets 24 hours a day during the contract period and keep a daily log of inspections and work performed. This log should be available for inspection at any time.
8. The Contractor is responsible to ensure availability of an adequate supply of salt and sand to satisfy the requirements of the contract, including any necessary stockpile which would be required to offset any possible shortages due to transportation delays, salt mine/source shut downs, holidays, mine closures and the increased salt/sand usage rate

of multiple subsequent winter weather events. Note: Salt and sand cannot be purchased from HRM.

9. When conditions dictate the need for winter maintenance activities, the Contractor is responsible for initiating, organizing, directing and supervising the necessary resources to achieve the prescribed Performance Standards during the contract period;
10. The Contractor is responsible to comply with the Nova Scotia Temporary Work Place Traffic Control Manual, the HRM Traffic Control Manual Supplement and must provide traffic control and protection during snow removal operations involving streets intersections, drainage structures, and bus stops. <http://www.halifax.ca/procurement/documents/TrafficControlManualSupplement.pdf>
11. The Contractor is responsible to investigate and respond to complaints and inquiries from the HRM and the public concerning winter snow and ice control operations;
12. The Contractor is responsible to maintain 24 hour supervisory coverage within the contracted area. The Supervisor must be able to receive calls and respond to emails from the HRM Manager or his/her designate, the HRM Corporate Call Centre (#311) and/or other designated representatives from HRM. The Supervisor is to be actively on duty, patrolling and located within the contracted area at all times for the duration of this contract.
13. The Contractor is to provide one (1) email address and one (1) telephone number that can be used by HRM staff to contact the on-duty Supervisor at all times.
14. The Contractor must use liquid salt brine when conditions are favorable, in support of its own Salt Management Plan and the HRM Salt Management Plan. Innovations in Direct Liquid Application are encouraged but must first be approved by the HRM.
15. The Contractor is responsible to pre-salt or apply sufficient liquid salt brine to cover the entire road surface on all Priority 1 roads and intersections prior to any forecasted snow/weather event. Not all weather events are suitable for the use of direct liquid application (example: weather events starting as rain).
16. The Contractor is responsible to respond to, investigate and resolve any inquiries or complaints from a Property Owner regarding service issues or damage to private property as a result of snow and ice control activities.
17. The Contractor is responsible to repair all damage caused to HRM and private property as a result the Contractor's snow and ice control activities. Repairs are to be completed by June 1st of each year (failing which HRM may make such repairs at Contractor's expense and/or terminate the contract). Any urgent or safety related damage/repair requiring immediate attention will be completed with 24 hours.
18. The Contractor is responsible to report to HRM staff regarding the status and completion of damage repairs through twice weekly updates (Monday and Thursday) during the spring repair season (April/May).
19. The Contractor is responsible to coordinate directly with the sidewalk clearing Contractor at locations where street snow is deposited directly on the sidewalk (no median or boulevard). The level of coordination and communication is expected to provide a structured and cooperative approach to both street and sidewalk clearing that will benefit both roadway and sidewalk users. The Contractor is to arrange for hauling of snow from these locations as required and the HRM will be the sole judge of the level of coordination required and will provide any required contact information.

20. The Contractor is responsible to provide storage locations for any snow removed (hauled) from the contract area. The location of all storage locations must be disclosed to the Halifax Regional Municipality and must comply with any pertinent and related regulations (Federal, Provincial and Municipal). The Contractor is also responsible for any required clean-up of the snow storage location during the winter season and once all snow has melted. This includes but is not limited to the removal and off-site disposal of all refuse, garbage, contaminated material and any/all materials contained within the hauled snow.
21. The Contractor is responsible for the sweeping and removal of all salt, sand, gravel and debris from paved roads and bridges, boulevards, medians, traffic islands and jibs within the contracted area, including dust control (water). Sweeping and removal is to be completed by May 1st of each year for the duration of this contract.
22. The Contractor is responsible for the spring grading of all HRM owned and serviced gravel roads within the winter service area of this contract. If requested by HRM additional gravel may be required and will be supplied and delivered by the Contractor as per the line item pricing provided in this tender. Delivery, placement and all required grading, compaction and driveway tie-in is to be done at the Contractor's expense and is considered to be included in the pricing submitted under this tender.
23. HRM will be the sole judge of which locations require additional gravel. All grading activities including the placement of additional gravel is to be completed by June 1st of each contract year.
24. The Contractor is responsible to defer all media inquiries and requests related to this Contract or winter maintenance activities to the HRM Contract Manager and/or the Manager of HRM Public Affairs. The Contractor will not engage in any media inquiries related to the performance of winter operations without the prior written consent of the HRM Contract Manager. Failure to comply with this requirement and/or negative public comments made about HRM constitute default and may result in the immediate termination of the contract.
25. The Contractor is responsible to obtain all permits, if applicable, comply with all codes, regulations and bylaws and all standards pertaining to the work and job-site including the Nova Scotia Occupational Health and Safety Act and Regulations.
26. HRM is not liable for damages and will not respond to any claims for damages to private property as a result of a Contractor carrying out snow and ice activities. However, HRM will coordinate any investigations and responses to inquiries and complaints from the public regarding disputed snow and ice activity damages. When necessary, HRM will provide Contractor's contact information which may include Contractor's insurance information, to the Private Property Owner and advise them to pursue any claims for damages directly with the Contractor.

11. **Performance Standards**

1. The Contractor shall meet or exceed the performance standards set out in the contract (including but not limited to the Performance Standard Matrix Appendix "J").
2. At any time during the term of the contract, HRM may, at its sole discretion and upon one-hundred-eighty (180) calendar days' written notice to the Contractor, modify any of the performance standards set out in the contract, including but not limited to the performance standards contained in the Performance Standards Matrix – Appendix "J". If a modification to a performance standard materially affects the Contractor's operating

costs, the contract price shall be adjusted accordingly, based on a profit margin of 15% on the reasonably estimated additional or reduced operating costs. HRM and the Contractor shall conduct good faith negotiations to determine the appropriate increase or decrease to the contract price. For this purpose, the Contractor shall maintain and make available for review by HRM's external auditors full and complete records respecting its operating costs for the contract. If HRM and the Contractor are unable to agree upon an acceptable increase or decrease to the contract price within sixty (60) calendar days, either party shall be entitled to refer the matter to a single arbitrator pursuant to the *Commercial Arbitration Act* to determine an appropriate increase or decrease to the contract price. The arbitrator's decision shall be final and binding on HRM and the Contractor; however, if either party is unsatisfied with the arbitrator's decision it may elect to terminate the contract without cost or penalty by providing written notice to the other within thirty (30) calendar days of receipt of the arbitrator's decision.

3. All the Contractor's personnel engaged in winter snow and ice control activities shall be informed of their specific duties and shall be properly trained in snow and ice control and knowledgeable of the prescribed Performance Standards. All the Contractor's operators shall become familiar with the P1 & P2 routing as well as transit routes, bus stops, crosswalks, catch basins, ice flows and school locations.
4. The Contractor shall inspect equipment to ensure proper working order. Any breakdowns shall be repaired immediately and replaced with replacement equipment in order to continue to reach the required turnaround times and minimum performance standards.
5. The Contractor shall report all vehicle accidents or property damage to HRM.
6. The Contractor shall not engage in any confrontation with the general public. Refer such matters to HRM.
7. All vehicles are to be operated in a safe manner, respecting legal speed limits and to be respectful and aware at all times of pedestrian and vehicle traffic.
8. Plow curls at intersections, bus stops, traffic islands and from parked cars and other obstructions shall be checked and cleared during and after each storm.
9. Contractors shall monitor and respond for freeze/thaw hazards as conditions warrant.
10. Sanding Spreading Performance Matrix (Appendix "J").
11. Plowing Matrix (Appendix "J").
12. Snow Clearing and Removal of Ice Flows, Drainage Structures, Bus Stops and Ice pack (Appendix J).
13. Liquidated Damages (Appendix "F").

The Contractor and HRM shall complete a performance evaluation form (Appendix "K") at the end of each winter season

**Appendix “J”
 Performance Matrix**

General Notes

1. Performance standards must be met whether the weather event is forecasted or not.
2. Contractor must be cognizant that icing conditions may develop through a number of means due to frost depth, wet roads, falling temperatures, flash freezing, and blowing snow.
3. Contractors must submit a detailed Salt Management Plan (SMP), and Anti Icing strategy with their bid.
4. The Halifax Regional Municipality is the sole judge of whether or not the performance standard has been met.
5. The substitution of sand in salt sections must only be done when salting is no longer effective and with the approval of the HRM Contract Manager.

Salting

Street Type	Start Time	Turnaround	Finish Condition	Spread Rates	Comments
Priority 1	Pre-salt or Direct Liquid Application (brine) as per SMP or immediately if event is un-forecasted	3 hours	Bare pavement curb to curb within 3 hours See note 3	95kg to 125kg per lane km Full width. Sufficient brine to evenly cover the road surface (minimum 80 L per lane km).	
Priority 2	Within 6 hours after street has been cleared	N/A	2m c/l bare See note 3	95kg to 125kg per lane km Full width. Sufficient brine to evenly cover the road surface (minimum 80 L per lane km).	Hills and turns centerline bare for 4 meters
Intersections	Pre-salt or Direct Liquid Application as per SMP or immediately if event is un-forecasted	3 hours	Bare at stop bars for 7 meters See note 3	Full width coverage of entire intersection. Sufficient brine to evenly cover the road surface (minimum 80 L per lane km).	

1. Freezing rain conditions will require immediate and continuous response on all street classifications until conditions improve and bare pavement achieved.
2. In areas with no curbs, road shoulders will be cleared for 1m from edge of asphalt.
3. Spot salting is required for any icy conditions. Repeated applications as required until conditions are made safe.

4. Salt only is to be applied in salt areas. Any substitution with sand must be approved by the HRM.

Sanding Matrix

Street Type	Start Time	Turnaround	Finish condition	Lane width	Spread Rates	Comments
Priority 1	At snow start	3 hours	All snow and ice removed through plowing and sanding See note 3	curb to curb edge to edge full width	600-800kg per lane km	
Priority 2	End of snowfall	N/A	All snow and ice removed through plowing and sanding. See note 3	curb to curb edge to edge full width	600-800kg per lane km	
Gravel Roads	End of snowfall	N/A	All snow and ice removed through plowing and sanding	Full width including shoulder.	600- to 800kg per lane km	

1. Winter conditions may vary requiring additional sand on Priority 1 and 2 roads especially on hills, turns and intersections.
2. HRM will be the sole judge as to whether additional sanding is required.
3. Spot sanding is required for any icy conditions. Repeated applications as required until conditions are made safe.

Priority One Streets: Plowing

Street Type	Turnaround	Anti-icing	Start Time	Time to clear (from end of snow)	Lane width	Finish condition	Salt Spread Rate
Main Arterials	3 hours maximum	Yes Pre-salting or brine	Immediately as the snow starts	12 hours	curb to curb or shoulder to shoulder	bare pavement full width see note 5	-Minimum 95kg per lane km to 125kg per lane km -Sufficient brine to evenly cover the road surface.
Transit Routes	3 hours maximum	Yes Pre-salting or brine	Immediately as the snow starts	12 hours	curb to curb or shoulder to shoulder	bare pavement full width see note 5	-Minimum 95kg per lane km to 125kg per lane km -Sufficient brine to evenly cover the road surface.
Hills over 10%	3hours maximum	Yes Pre-salting or brine	Immediately as the snow starts	12 hours	curb to curb or shoulder to shoulder	bare pavement full width see note 5	-Minimum 95kg per lane km to 125kg per lane km -Sufficient brine to evenly cover the road surface.

***Streets may require repeat plowing/sanding/salting to achieve finished condition. It is the Contractor's responsibility to ensure ongoing and repeated application of salt and or sand in order to achieve the prescribed level of service and finish condition.**

1. Cut-through is defined as the clearing of the plow curl at the street intersection to allow traffic access and 6 meter wide plowed traveled way to allow access for residents.
2. Prior to rain events, with frost in the ground, gravel roads will be required to be ice-bladed to provide a degree of traction.
3. Special care must be taken when plowing gravel roads when ground conditions are soft. Grading the road to reclaim lost gravels will be the responsibility of the Contractor and is included in the pricing of this contract.
4. Some conditions (i.e. blowing/drifted snow) may require an additional cut-through to maintain access.
5. All ice/snow pack to be removed once it reaches a depth of 5 cm. Certain conditions may prevail which will require that ice/snow pack be bladed, shaved or scarified to ensure the road remains safely passable, including the elimination of ice potholes. This work is included in the contract pricing.

Priority 2 Streets Plowing:

Street Type	Start Time	Time for cut through completion	Time to clear (From end of snow)	Finish Condition	Salting	Sanding (as designated)	Comments
Local residential	No later than after 10cm accumulation	6 hours and a minimum of every 8 hours following during extended periods of snow.	24 hours	Snow covered with a minimum 2m centerline bare See note 5	Minimum 95kg per lane km to 125kg per lane kilometer	Minimum 800kg per lane kilometer	All snow must be removed by mechanical means before salting and or sanding
Cul-de-Sacs	No later than after 10cm accumulation. Backhoe(s) or similar type equipment will be required (for snow movement and placement) for all major events (15+cm) or multiple/subsequent average events (5-15cm).	6 hours and a minimum of every 8 hours following during extended periods of snow.	24 hours	Snow covered Passable See note 5	Minimum 95 kg/lane km to 125kg per lane kilometer	Minimum 800kg per lane kilometer	Use of a backhoe(s), a mini-loader(s) or a tractor(s) will be required for major events or multiple/back to back average events in order to move snow as required and to ensure ongoing access in and out for all homes within the cul-de-sac as per required cut-through times and completion.
Gravel Roads	No later than after 10cm accumulation	6 hours	24 hours	Snow covered passable See note 5	n/a	Minimum 800kg per lane kilometer	See notes 2 & 3 for Shoulder Season
Private Lanes	No later than after 10cm accumulation	6 hours	24 hours	Snow covered See note 5	n/a	Minimum 800kg per lane kilometer	

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1. Cut-through is defined as the clearing of the plow curl at the street intersection to allow traffic access and 6 meter wide plowed traveled way to allow access for residents.
2. Prior to rain events, with frost in the ground, gravel roads will be required to be ice-bladed to provide a degree of traction.
3. Special care must be taken when plowing gravel roads when ground conditions are soft. Grading the road to reclaim lost gravels will be the responsibility of the Contractor and is included in the pricing of this contract.
4. Some conditions (i.e. blowing/drifted snow) may require an additional cut-through to maintain access.
5. All ice/snow pack to be removed once it reaches a depth of 10cm. Certain conditions may prevail which will require that ice/snow pack be bladed, shaved or scarified to ensure the road remains safely passable, including the elimination of ice potholes. This work is included in the contract pricing.

Catch-basins/Drainage Structures/Ditches

Type	Time to Clear	If rain is forecasted
1 "Hot List"	48 hours from end of snowfall.	Immediately and continuously during rain event
2 "Regular"	7 days from end of snowfall.	To be monitored and kept clear during rain if street flooding occurs

1. The priority catch-basins are to be cleared within 48 hours of street plowing unless rain is forecasted in which case they are to be cleared immediately and continuously during the rain event. Priority catch basins are those identified as a potential flood risk or those identified by the HRM as an immediate priority,
2. Remaining catch-basins are to be cleared within 7 days of the last snowfall, unless rain is forecasted in which case they are to be cleared immediately and continuously during the rain event.
3. Separate and additional resources above and beyond regular plowing gear will be required for flood control during snow/rain events.

Snow Removal

Street type	Condition	Duration to complete
P1 streets	10% reduction in driving lane width	72 hours from end of snowfall
P2 streets	10% reduction in driving lane width	7 days from end of snowfall
P1 intersections	Visibility problems or as requested by HRM (typically after 40cm of sustained accumulation)	72 hours from end of snowfall
P2 intersections	Visibility problems or as requested by HRM (typically after 40cm of sustained accumulation)	5 days from end of snowfall
Cul-de- Sacs	Lack of snow storage causing width reduction as per P2 street or as requested by HRM Use of a backhoe or similar will be required for all plowing during major events (15+ cm)	5 days from end of snowfall
Elementary School Zones	Removal of street side snow banks along bus loading areas/passenger drop-off zones.	7 days from end of snowfall
Bus Stops	Removal after each 20cm of accumulation (all piles, snow banks and snow stored within the lay-by or adjacent right-of-way)	72 hours from end of snowfall
Accessible Parking Zones	Removal after each 20cm of accumulation (all piles, snow banks and all snow stored within the adjacent right-of-way)	72 hours from end of snowfall
Designated Crosswalks	Removal after each 20cm of accumulation (piles at intersections and all snowbanks for 3 meters in each direction)	72 hours from end of snowfall

Ice flows

Type	Description	Frequency
Damaging Infrastructure	Causing ice on driving lanes	Daily as required
Regular Removal	Build up along curb	After 20cm of build up

*Ice flows to be removed, salted, or sanded as per Appendix C

Bus Stops

Type	Description	Frequency	Duration to Completion
Remote Bus Stop	Plowing and ice control of remote bus stops	As per P1 street standard including turnaround times as indicated in appendix C plowing	Ongoing during an event and as per Priority 1 standard.
	Removal/Hauling of snow from the bus stop and surrounding storage area.	After 20cm of accumulation or as requested by HRM.	72 hours after the end of snowfall.
Standard Bus Stop	Plowing and ice control for standard bus stops	As per P1 street standard including turnaround times as indicated in appendix C plowing	Ongoing during an event and as per Priority 1 standard.
	Removal/Hauling of snow from the bus stop and surrounding storage area.	After 20cm of accumulation or as requested by HRM.	72 hours after the end of snowfall.

Definitions:

- Remote Bus Stop: adjacent to the roadway shoulder or within the HRM right-of-way but not along a sidewalk.
- Standard Bus Stop: located along a sidewalk route and may include a lay-by or merge lane.
- Concrete bus stop pads to be cleared full length (if present).
- Shoulders to be cleared full-width for a minimum of 20 meters including salting and sanding required.
- Bus stops are to be plowed during regular plowing activities as per P1 Street standard including turnaround times and no later than 12 hours after the end of all snowfall.
- Bus stops to be hauled (removed) after 20cm of accumulation within 72 hours after the end of snowfall.

Handling of Complaints:

Nature of Complaint	Time to acknowledge receipt of the complaint	Resolution time
Safety Complaint	1 hour	2 hours
Plow Damage or Other Damage	8 hours	24 hours
Non-emergency complaint	24 hours	72 hours

End of Appendix J- Performance Matrix

WINTER WORKS SIDEWALK CONTRACTS EAST REGION

FLOWED BY HRM

— YES

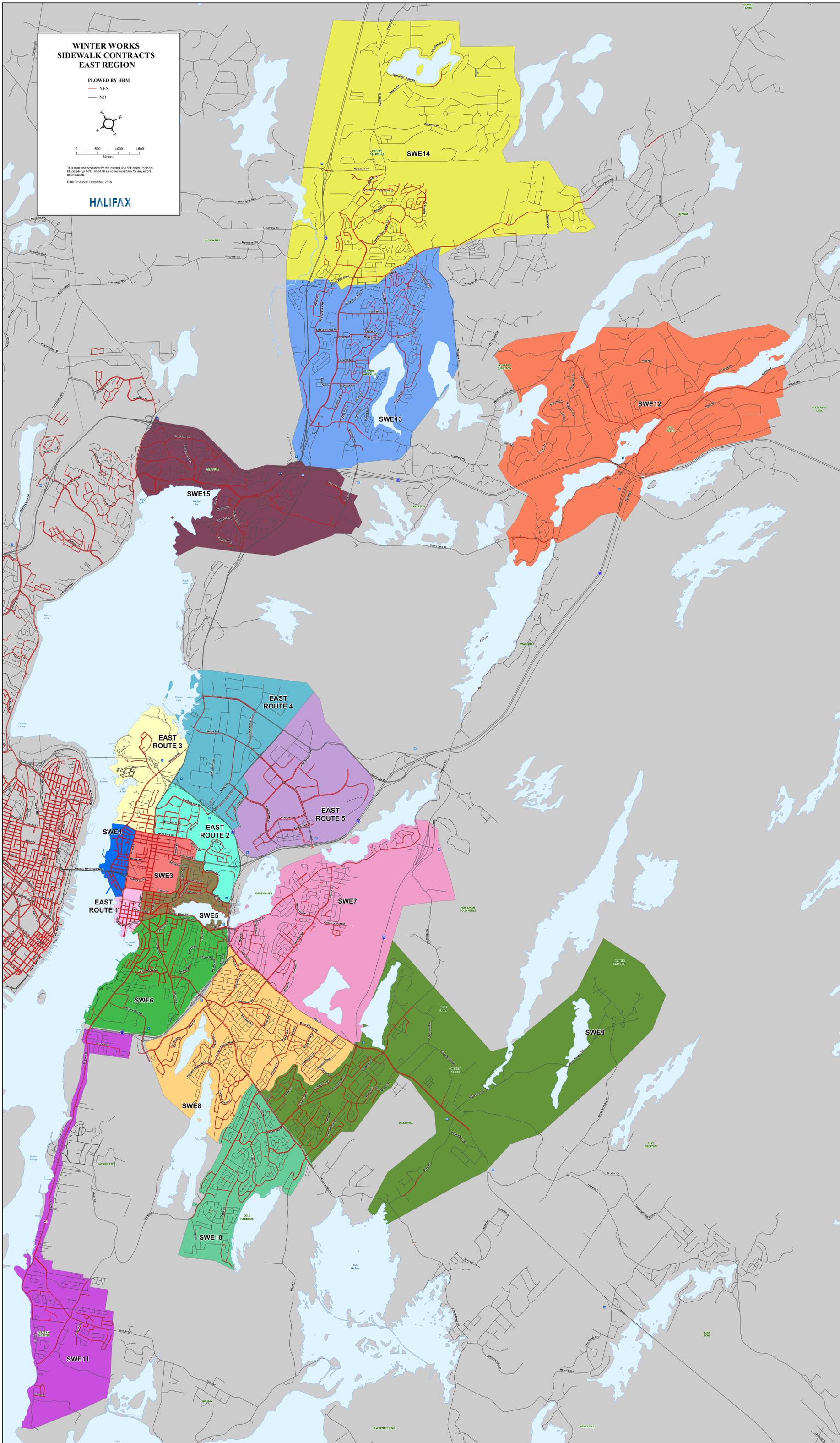
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Meters

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Date Produced: December, 2015

HALIFAX



WINTER WORKS SIDEWALK CONTRACTS WEST REGION

FLOWED BY HRM

— YES

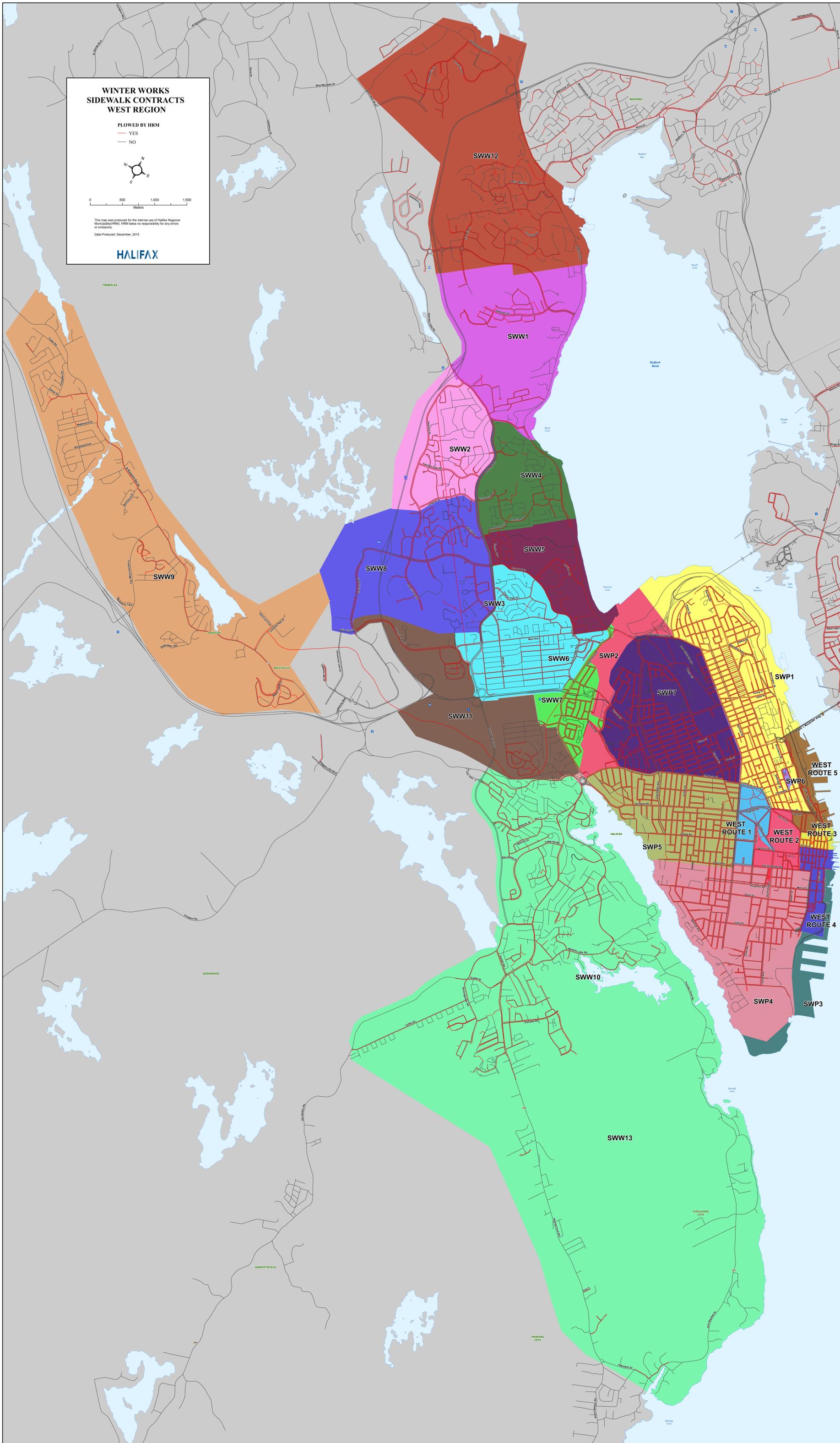
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Meters

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Date Produced: December, 2015

HALIFAX



Performance Based Sidewalk Contracts

Central Region - Tantallon		
Route #	Contractor	Tender #
SWC5	Leahey's Landscaping Contracting Ltd.	11-326

East Region		
Route #	Contractor	Tender #
SWE4	Excel Property Ltd.	13-048
SWE5	Cutting Edge Construction	11-065
SWE6	Cutting Edge Construction	11-065
SWE7	Provincial Pavement Markings	13-048
SWE8	Cutting Edge Construction	13-048
SWE9	Provincial Pavement Markings	13-048
SWE10	Green & White Construction	13-048
SWE11	Green & White Construction	13-048
SWE12	Excel Property Ltd.	13-048
SWE13	Provincial Pavement Markings	13-048
SWE14	Provincial Pavement Markings	13-048
SWE15	Excel Property Ltd.	13-048

West Region - Peninsula		
Route #	Contractor	Tender #
SWP1	Ocean	11-066
SWP2	Provincial Pavement Markings	11-066
SWP3	Provincial Pavement Markings	11-066
SWP4	Tracey's Landscape Ltd.	14-086
SWP5	Tracey's Landscape Ltd.	14-086
SWP6	Leahey's Landscaping Contracting Ltd.	14-086
SWP7	Tracey's Landscape Ltd.	13-056

West Region		
Route #	Contractor	Tender #
SWW1	T&T Excavating	13-049
SWW2	Provincial Pavement Markings	13-049
SWW3	Provincial Pavement Markings	13-049
SWW4	Provincial Pavement Markings	13-049
SWW5	Provincial Pavement Markings	13-049
SWW6	Provincial Pavement Markings	13-049
SWW7	Provincial Pavement Markings	13-049
SWW8	T&T Excavating	14-086
SWW9	Provincial Pavement Markings	11-066
SWW10	Cutting Edge Construction	11-066
SWW11	Provincial Pavement Markings	11-066
SWW12	T&T Excavating	13-049
SWW13	Excel Property Ltd.	14-086

Performance Based Street Contracts

Route #	Contractor	Tender #	Description
PB1	Ocean	15-071	Waverley/Cole Harbour/Eastern Passage
PB2	Dexter	13-051	Upper Sackville / Beaver Bank
PB3	Dexter	15-072	Hammonds Plains/Bedford
PB4	Dexter	15-073	Herring Cove/Bayers Lake/Timberlea
PB5	Dexter	15-080	Lakeview/Lower Sackville
PB6	Teak Tree	13-050	Windsor Junction / Fall River