

# HALIFAX

P.O. Box 1749  
Halifax, Nova Scotia  
B3J 3A5 Canada

**Item No. 14.1.8**  
**Halifax Regional Council**  
**November 24, 2015**

**TO:** Mayor Savage and Members of Halifax Regional Council

Original signed by 

**SUBMITTED BY:**

\_\_\_\_\_  
Richard Butts, Chief Administrative Officer

Original Signed by 

\_\_\_\_\_  
Mike Labrecque, Deputy Chief Administrative Officer

**DATE:** November 3, 2015

**SUBJECT:** Snow Clearing Service Outside of the Municipal Service Boundary

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## ORIGIN

March 10, 2015 – **MOVED** by Councillor Whitman, seconded by Councillor Hendsbee that Halifax Regional Council request a staff report to analyze the agreement with the Province of Nova Scotia Transportation and Infrastructure Renewal regarding snow clearing service outside of the municipal service boundary with options to consider equality of snow clearing service for all residents of HRM.<sup>1</sup>

August 4, 2015 – **MOVED** by Councillor Mosher, seconded by Councillor Whitman, that Council 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.<sup>2</sup>

The executed maintenance agreements with the Nova Scotia Department of Transportation and Infrastructure Renewal (Agreement HRM-01).

## 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. 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.

**RECOMMENDATION ON PAGE 2**

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<sup>1</sup> See Item 12.1 at <http://www.halifax.ca/council/agendasc/documents/c150310.pdf>

<sup>2</sup> See Item 14.2 at <http://www.halifax.ca/council/agendasc/documents/c150804.pdf>

## **RECOMMENDATION**

It is recommended that Halifax Regional Council not expand the snow clearing service to roadways outside the Urban Core Services Boundary.

## **BACKGROUND**

### **Urban Core Service Boundary**

In 1995, as part of the Provincial-Municipal Service Exchange, Nova Scotia Transportation and Public Works announced that they would no longer own or maintain local roads in rural municipalities. In 1996, Halifax negotiated a Service Exchange Agreement with the Province governing local road maintenance (Agreement HRM-01).<sup>3</sup> Under the terms of HRM-01, the Province retained responsibility for, local roads outside of the urban core boundary.

Ongoing development that takes place outside of the urban core service boundary is not subject to the original service exchange. All new roads, approved by the municipality after June of 1996, are owned by the municipality.<sup>4</sup> Currently there are 78 roads which are owned by the municipality but are located outside of the current urban core service boundary. These roads are distributed throughout Districts 1, 2, 11 and 13 (see Attachment 1). Unless otherwise agreed to (by way of separate agreement), these new areas of development are also maintained by the municipality.

### **Winter Maintenance Service Exchange Agreements**

Snow removal was excluded from the scope of HRM-01. Since 2005, Halifax and the Province have used annual winter maintenance service exchange agreements to improve operational efficiency and reduce costs for both parties. It is cheaper, and more efficient for the Province to maintain certain roads within the urban service boundary. Likewise, it is cheaper, and more efficient, for Halifax to maintain certain roads outside of the urban service boundary.

Pursuant to the winter maintenance service exchange agreements, the total kilometers maintained by the Province matches the total kilometers maintained by the municipality.<sup>5</sup> To accomplish this matching, the Province maintains some roads located inside the urban core service delivery boundary – Dartmouth Crossing, Westphal, Bedford and Beechville (see Attachment 3 and Attachment 4).

Under the winter service exchange agreement, winter maintenance includes plowing snow and applying salt and/or sand. Winter road maintenance services may be delivered directly (by the Province or by the municipality), or be delivered indirectly (by agents of the Province or agents of the municipality). Levels of service are the same as those that apply to similarly classed roads maintained by the party delivering the service.<sup>6</sup> The service exchange agreement provides for mutual assumption of liability and indemnification (with respect to damages arising out of the delivery of winter maintenance services under the agreement).

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<sup>3</sup> Agreement HRM-01 was signed, effective June 1996.

<sup>4</sup> Agreement HRM-01 was executed in June of 1996. The execution date is used as the cut-off date to determine provincial/municipal ownership and maintenance responsibility for roads.

<sup>5</sup> Slight differences in total road inventory serviced by the two parties do occur; however, an effort is made to match the overall length of road serviced as closely as possible.

<sup>6</sup> The Province's level of service applies where the Province (or its agents) delivers the service. The municipality's level of service applies where the municipality (or its agents) delivers the service.

## **DISCUSSION**

No changes to the snow clearing service for roadways outside of the Municipal Service Boundary are possible for winter 2015/16, due to the required negotiations with the Province and resultant amendments to agreements and service provider contracts.

### **OPTIONS FOR EQUIVALENCY OF SNOW CLEARING SERVICE FOR ALL OF HRM**

Three options for achieving equality of snow clearing service for residents residing outside of the municipal service boundary in 2016/17 or future years are outlined below.

- Option 1 – Update the winter works service exchange agreement;
- Option 2 – Expand or eliminate the urban core service boundary; and
- Option 3 – Approach the Province regarding adopting Halifax Level of Service (LOS) standards.

These options differ in terms of scope, duration, ease of implementation and cost of implementation.

#### **Option 1 – Update the winter works service exchange agreement**

The municipality could negotiate a winter service exchange agreement that includes more streets for HRM than are currently included.

Under the existing winter maintenance service exchange agreement, the total kilometers of roads maintained by the Province (approximately) matches the total kilometers of roads maintained by the municipality. The municipality could, however, assume maintenance responsibility for a disproportionate share of roads. This approach would be limited in scope (i.e. specified roads) and would be limited in duration (i.e. for the term of the renewed/renegotiated winter service exchange agreement).

#### **Option 2 – Expand or eliminate the urban core service boundary**

The municipality could apply to the Province to either expand or eliminate the current urban core service delivery boundary pursuant to HRM-01 and take on all maintenance obligations (including snow removal) on the expanded inventory of streets.

If the service boundary were to be expanded (or eliminated), the municipality would be responsible for maintaining such roads on a year-rounds basis, including:

- surface maintenance (grading, shoulder maintenance, dust control, sweeping, patching);
- roadside maintenance (brush cutting, mowing, seeding, weed control);
- drainage maintenance (ditching, storm sewer/catch basin maintenance and culvert maintenance); and
- traffic control (sign installation and maintenance, jersey barrier maintenance, traffic line painting, guard rail/guide post maintenance)

Taking on responsibility for these additional roads could have legal liability and significant cost implications. Depending on the extent of the urban core service boundary change, provincial-municipal negotiations may be required regarding disposal/disposition of provincial equipment and facilities.

#### **Option 3 – Approach the Province to adopt municipal LOS standards**

The municipality could approach the Province to have it adopt the municipality's LOS for winter road maintenance (within Halifax municipality).

The Province's Level of Service standards, for winter road maintenance, differ from those of the municipality (see Attachment 5). The Province's LOS standards diverge from the municipality with respect to:

- road classifications;
- completion time frames (after snowfall);
- end state for road surface (post winter operations);
- initial response to snow and ice events;
- frequency of clearing and snow accumulation limits; and
- anti-icing and de-icing specifications (application timing and application rates).

If Council were to adopt this go-forward option, staff recommends that negotiation be delayed pending Council direction on municipal winter service standards in January of 2016.

### **Contractual Constraints – Service Delivery Contracts**

Both the municipality and the Province use contractors to provide snow and ice management in areas outside of the current service exchange boundary. These contractual relationships complicate any change to winter-works-related service exchanges. Both the Province and the municipality are contractually bound by the terms and conditions of service delivery contracts. Any change to respective provincial-municipal winter works service delivery responsibilities would have to take into account contract language and contractual obligations.

In the case of Halifax, a total of 63 provincially owned roads (located outside of the urban core service boundary, but within the municipality) are serviced by contractor crews under performance based contracts with the municipality.<sup>7</sup> These performance based contracts include language consistent with the municipality's current level of service targets for ice and snow management. The contracts expire in April 2019.

HRM can add additional streets to the inventory of HRM's existing performance-based contractors (for an additional cost) pursuant to the terms of those tender contracts. Alternatively, HRM could tender snow removal for additional streets depending on the amount of new streets or service areas to be maintained.

The Province has recently tendered for winter maintenance service delivery for the next three years (see Tender No. 60148886 / Project No. SUB2015-WINTER-01). The Province's tender incorporates level of service expectations for winter snow and ice control as described in Attachment 5.

## **FINANCIAL IMPLICATIONS**

### **Winter Road Maintenance Cost Calculations**

Any costs associated with an expansion of snow clearing service to roadways outside the Municipal Service Boundary in future years would require sourcing additional revenues or reducing other service delivery expenses within the overall fiscal strategy.

Winter road maintenance cost calculations (see Table A) are based on per lane kilometer<sup>8</sup> servicing costs. These projected costs reflect negotiated rates of contractor compensation under existing performance based contracts recently awarded to Ocean Contractors Limited and Dexter Construction Company Limited. Servicing costs (per lane kilometer) differ for Mineville, Lawrencetown, Upper Tantallon, Lewis Lake and Hubley (see Attachments 6-10 for road inventories).

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<sup>7</sup> Only two provincially owned roads covered under the winter service exchange agreement are serviced by in-house crews (i.e. Graham's Grove and Woodland Avenue).

<sup>8</sup> A lane kilometer is defined as a minimum 3.5m wide lane(where possible) measured through its length including all adjacent turning lanes, bike lanes, bus lay-bys and merge lanes.

**Table A: Performance Based Contracts and Neighbouring Communities**

Community	Closest Communities Serviced under PBC*	Current PBC Contractor	Rate of Compensation (per lane kilometre)
Mineville and Lawrencetown	Waverley/Cole Harbour/ Eastern Passage	Ocean Contractors Limited	\$5,092
Upper Tantallon	Hammonds Plains/ Bedford	Dexter Construction Company Limited	\$5,104
Lewis Lake and Hubley	Herring Cove/Timberlea Bayers Lake	Dexter Construction Company Limited	\$6,797

\*PBC means pre-existing performance based contract with Halifax municipality.

Winter road servicing costs have been calculated for five communities located at the edge of the current urban core service boundary. Costs to provide winter road maintenance to these communities are based on the per lane kilometer costs from Table A

**TABLE B: WINTER ROAD MAINTENANCE COST CALCULATION**

Community Serviced	Municipally Owned Roads (Lane KMs)	Provincially Owned Roads (Lane KMs)	Total All Roads (Lane KMs)	Servicing Cost (per Lane KM)	Total Cost
Mineville	4.564	13.02	17.584	\$5,092	\$89,538
Lawrencetown	0.000	25.324	25.324	\$5,092	\$128,950
Upper Tantallon	2.156	12.354	14.510	\$5,104	\$74,059
Lewis Lake	12.094	10.736	22.830	\$6,797	\$155,176
Hubley	.862	14.264	15.126	\$6,797	\$102,811
<b>Annual Total for All Communities</b>					<b>\$550,534</b>

\* Winter maintenance cost calculations are restricted to snow and ice management expenses. This calculation does not include any allowance for associated road maintenance costs (surface maintenance, drainage maintenance, roadside maintenance or traffic control).

### Province of Nova Scotia Winter Road Maintenance Cost Calculations

The Province's Department of Transportation and Infrastructure Renewal (TIR) provides winter road maintenance throughout Nova Scotia (see Attachment 5). TIR's cost calculation is provided as an approximation of servicing cost for winter maintenance of all roads outside of the current urban core service boundary. Provincial costs (largely<sup>9</sup>) reflect direct delivery costs, rather than performance based contract costs.

The roads maintained by the Province include a mix of paved and unpaved/gravel surfaces. Average winter maintenance costs, in 2014/2015, were \$3,088/lane kilometer for Halifax East and \$4,822/lane kilometer for Halifax Suburban. The provincial performance based contracts (see provincial contract

<sup>9</sup> The majority of winter road maintenance in Halifax municipality undertaken by the Province is delivered directly by employees of the Province. Although the Province has historically used performance based contracting, the bulk of all service has been delivered by provincial employees.

tender discussion above) may impact the Province's per lane kilometer servicing costs in 2015/2016. TIR's cost calculation is inclusive of staff training costs, sick time and miscellaneous costs. The TIR cost calculation includes winter maintenance costs associated with maintaining 100-Series highways throughout the municipality. The TIR calculation, however, excludes costs associated with servicing the roads covered under the current provincial-municipal winter service exchange agreement.

### **COMMUNITY ENGAGEMENT**

No community engagement has taken place.

### **ENVIRONMENTAL IMPLICATIONS**

Differing provincial and municipal policies and procedures relating to the storage and application of de-icing and anti-icing materials may have environmental implications.

### **ALTERNATIVES**

Regional Council could direct staff to negotiate service changes for 2016/17 or beyond, with the Province, on one of the three options:

- Option 1 – Update the winter works service exchange agreement;
- Option 2 – Expand or eliminate the urban core service boundary; and
- Option 3 – Approach the Province regarding adopting Halifax Level of Service (LOS) standards.

### **ATTACHMENTS**

<b>Attachment 1</b>	Inventory of Municipally Owned Roads Outside of the Urban Core Boundary
<b>Attachment 2</b>	Winter Service Exchange Agreement (2014/2015)
<b>Attachment 3</b>	Inventory of Municipally Owned Roads Serviced by the Province under Winter Exchange Agreement
<b>Attachment 4</b>	Inventory of Provincially Owned Roads Serviced by the Municipality under Winter Exchange Agreement
<b>Attachment 5</b>	Comparative Levels of Winter Road Maintenance (Province and Municipality)
<b>Attachment 6</b>	Hubleby Area Road Inventory
<b>Attachment 7</b>	Lawrencetown Area Road Inventory
<b>Attachment 8</b>	Lewis Lake Area Road Inventory
<b>Attachment 9</b>	Mineville Area Road Inventory
<b>Attachment 10</b>	Upper Tantallon Area Road Inventory

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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.

Report Prepared by: Scott Sheffield – Community Developer, 902.490.3941  
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Report Approved by: Bruce Zvaniga – P.Eng., Director of Transportation and Public Works, 902.490.4855

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ATTACHMENT 1

**TABLE C: INVENTORY OF MUNICIPAL OWNED ROADS OUTSIDE OF THE URBAN CORE BOUNDARY**

Road Name	Community Name	Municipal District	Lane Kilometres
Abilene Avenue			2.52
Alps Road	Porters Lake	2	1.78
Ashberry Court	Upper Tantallon	13	0.94
Bali Terrace	Porters Lake	2	0.46
Beartooth Way	Lewis Lake	13	0.52
Beth Court	Mineville	2	0.24
Birch Bear Run	Lewis Lake	13	4.38
Black Bear Circle	Lewis Lake	13	1.98
Calderwood Drive	Wellington	1	2.54
Candlewood Drive	Porters Lake	2	1.66
Cathy Road	Brookside	11	0.54
Cindy Drive	Grand Lake	1	0.74
Clivedon Court	Fall River	1	1.98
Coulter Crescent	Oakfield	1	1.80
Coyote Ridge	Grand Lake	1	0.60
Curto Court	Portuguese Cove	11	0.40
Dakota Dr.	Wellington	1	1.92
David Allen Drive	East Lawrencetown	2	0.56
Deermist Drive	Porters Lake	2	1.18
Delray Court	Fall River	1	0.40
Earl Court	Porters Lake	2	0.38
Emerald Drive	Three Fathom Harbour	2	0.76
Emily Court	Mineville	2	0.60
Evergreen Crescent	West Porters Lake	2	0.08
Faune Lane	Hubley	13	0.42
Fiddle Parkway	Hatchet Lake	11	1.10
Fiddlehead Way	Porters Lake	2	0.34
Fox Hollow Drive	Upper Tantallon	13	0.60
Fox Point Court	Upper Tantallon	13	0.58
Gammon Lake Drive	Lawrencetown	2	3.58
Granite Cove Road	Hubley	13	2.94
Hollandbrook Run	Hubley	13	0.52
Irisweg Drive	Brookside	11	4.12
Island Lake Close	Hubley	13	0.86
Inspiration Drive	Porters Lake	2	0.42
Jericho Road	Hubley	13	0.80
Joan Elizabeth Way	Porters Lake	2	0.48
Keigan Drive	Enfield	1	1.08
Kestrel Court	Halibut Bay	11	0.42
Kittiwake	Halibut Bay	11	0.56
Les Collins Avenue	West Chezzetcook	2	4.80
Lillian Drive	Lawrencetown	2	0.72
Macfarlane Street	Lake Echo	2	0.36

**TABLE C: INVENTORY OF MUNICIPAL OWNED ROADS OUTSIDE OF THE URBAN CORE BOUNDARY**

Road Name	Community Name	Municipal District	Lane Kilometres
Melanson Lane	Brookside	11	0.44
Moraine Drive	Enfield	1	1.48
Morgan Drive	Lawrencetown	2	1.20
Mornington Court	Fall River	1	0.42
Nevan Road	Porters Lake	2	0.58
Norwood Court	Porters Lake	2	0.92
Notting Hill Road	Mineville	2	1.32
Oakwood Drive	Williamswood	11	0.60
O'Connell Drive	Porters Lake	2	1.32
Old Fairbanks Road	Porters Lake	2	0.40
Olivia Lane	Prospect	11	0.26
Omega Court	Hubley	13	0.24
Otter Lake Drive	Otter Lake	12	5.56
Park Court	Hatchet Lake	11	0.62
Portovista Drive	Portuguese Cove	11	1.60
Preakness Crescent	Fall River	1	3.14
Ridgewood Drive	Head of St Margaret's Bay	13	0.52
Rockcliffe Drive	Enfield	1	2.20
Russell Drive	Lawrencetown	2	0.28
Sarah Ingraham Drive	Williamswood	11	2.00
Sawgrass Drive	Oakfield	1	2.72
Scholars Road	Upper Tantallon	13	0.48
Sedona Court	Oakfield	1	0.38
Shady Vista Drive	Hatchet Lake	11	0.42
Shoreline Drive	Mineville	2	1.06
Starflower Way	Brookside	11	5.00
Steepleview Lane	Porters lake	2	4.86
Stoney Creek Drive	Mineville	2	1.18
Swan Crescent	Whites Lake	11	0.78
Thicket Drive	Brookside	11	2.80
Wayne Court	Lawrencetown	2	0.46
Westridge Road	Hatchet Lake	11	2.20
Withrow Court	Hubley	13	0.76
Yeaholm Way	Brookside	11	0.60
<b>Total Lane Kilometres</b>			<b>102.60</b>

\* Indicates a road located inside the urban core service delivery boundary

Attachment 2 Winter Service Exchange Agreement (2014/2015)

THIS AGREEMENT made  
BETWEEN:

November 19, 2014

HER MAJESTY THE QUEEN in Right of the Province of Nova Scotia,  
represented by the District Director – Central of Department of  
Transportation & Infrastructure Renewal, (hereinafter referred to  
as the "Department")

-and-

THE HALIFAX REGIONAL MUNICIPALITY, represented by the  
Director, Transportation and Public Works, (hereinafter referred to  
as the "Municipality")

WHEREAS the Department and the Municipality own streets, road and highways (hereinafter called "streets") within the Halifax Regional Municipality and provide snow removal services to them;

AND WHEREAS because of the location of certain streets owned by either the Municipality or the Department, snow removal services to these streets can be improved and snow removal costs can be reduced if snow removal services are provided by the Department to the streets owned by the Municipality, and by the Municipality to the streets owned by the Department.

NOW, THEREFORE, THIS AGREEMENT WITNESSES that in consideration of the covenants and agreements contained herein, the Department and the Municipality agree as follows:

1. The Department will, either directly or through its agents, at its own expense, provide winter maintenance including plowing snow, applying salt and/or sand to the roads listed in Schedule "A", which is attached to and forms part of this agreement. This winter maintenance will be provided in the same manner and with the same frequency as the Department removes snow and applies salt and/or sand to the streets in the vicinity of the streets identified in Schedule "A".
2. The Municipality will, either directly or through its agents, at its own expense, provide winter maintenance including plowing snow, applying salt and/or sand to the roads listed in Schedule "B", which is attached to and forms part of this agreement. This winter maintenance will be provided in the same manner and with the same frequency as the Municipality or its agents removes snow and applies salt and/or sand to the streets in the vicinity of the streets identified in Schedule "B".
3. The Department and the Municipality agree to assume liability for and indemnify and save harmless the other party from and against any and all claims by a third party for damages arising out of the provision of winter maintenance services referred to herein.
4. The Department and Municipality agree to assume liability for any damages done to roadways and signs during the provision of winter maintenance. Each party further agrees to repair any damages by May 1<sup>st</sup>, 2015.
5. The Department and the Municipality agree that all equipment or vehicles provided pursuant to this agreement has a minimum insurance coverage for personal liability and property damage of \$2 million per occurrence.
6. Equipment must be compliant with manufacturer's specification for axle loading.

7. The Department and Municipality will only maintain roads that are 'listed'. Certification of ownership will be required prior to commencement of winter maintenance.
8. The Department and the Municipality agree that all persons involved in winter maintenance activities pursuant to this agreement shall have Workers' Compensation coverage.
9. This agreement may be terminated by either party upon giving two weeks notice in writing to the other party,
10. This agreement is in effect for the duration of 2014/2015 snow and ice season and until November 1, 2015.

IN WITNESS WHEREOF the parties hereto have executed this agreement the day and year first above written.

Original Signed

WITNESS

HER MAJESTY THE QUEEN in Right of the  
Province of Nova Scotia

Original Signed

DISTRICT DIRECTOR CENTRAL

Original Signed

WITNESS

HAIFAX REGIONAL MUNICIPALITY

Original Signed

DIRECTOR TRANSPORTATION & PUBLIC WORKS

ATTACHMENT 3

**TABLE D: INVENTORY OF MUNICIPALLY OWNED ROADS SERVICED  
BY THE PROVINCE UNDER WINTER EXCHANGE AGREEMENT**

Road Name	Community Name	Municipal District	Lane Kilometres
Abilene Avenue			2.52
Bali Terrace	Porters Lake	2	0.46
Bear Tooth Way	Lewis Lake	13	0.52
Beth Court	Mineville	2	0.24
Birch Bear Run	Lewis Lake	13	4.38
Black Bear Circle	Lewis Lake	13	1.98
Calderwood Drive	Wellington	1	1.52
Candlewood Drive	Porters Lake	2	1.66
Cathy Road	Brookside	11	0.44
Cindy Drive	Grand Lake	1	0.74
Commodore Drive*			0.84
Coulter Crescent	Oakfield	1	1.80
Coyote Ridge	Grand Lake	1	0.60
Crane Hill Road*			1.40
Curto Court	Portuguese Cove	11	0.40
Dakota Drive	Wellington	1	1.92
David Allen Drive	East Lawrencetown	2	0.60
Deermist Drive	Porters Lake	2	1.18
Delray Court	Fall River	1	0.40
Emerald Drive	Three Fathom Harbour	2	0.60
Emily Court	Mineville	2	0.60
Faune Lane	Hubley	13	0.42
Fiddle Parkway	Hatchet Lake	11	1.10
Fiddlehead Way	Porters Lake	2	0.34
Granite Cove Road	Hubley	13	2.94
Grassy Lake Drive*			0.88
Hollandbrook Run	Hubley	13	0.48
Inspiration Drive	Porters Lake	2	0.42
Irisweg Road	Brookside	11	4.12
Island Lake Close	Hubley	13	0.86
Jericho Road	Hubley	13	0.80
Joan Elizabeth Way	Porters Lake	2	0.46
Keigan Drive	Enfield	1	1.08
Kestrel Court	Halibut Bay	11	0.42
Kittiwake Ridge	Halibut Bay	11	0.50
Larry Uteck Boulevard*			0.40

**TABLE D: INVENTORY OF MUNICIPALLY OWNED ROADS SERVICED BY THE PROVINCE UNDER WINTER EXCHANGE AGREEMENT**

Road Name	Community Name	Municipal District	Lane Kilometres
Les Collins Drive	West Chezzetcook	2	4.80
MacDonald Point Road	Seabright	13	0.14
MacFarlane Street	Lake Echo	2	0.30
Melanson Lane	Brookside	11	0.44
Moraine Drive	Enfield	1	1.48
Mornington Court	Fall River	1	0.42
Nevan Road	Porters Lake	2	0.58
Norwood Court	Porters Lake	2	0.92
Notting Hill Road	Mineville	2	1.32
Oakwood Drive	Williamswood	11	0.60
O'Connell Drive	Porters Lake	2	1.26
Old Fairbanks Road	Porters Lake	2	0.40
Olivia Lane	Prospect	11	0.26
Omega Court	Hubley	13	0.24
Park Court	Hatchet Lake	11	0.62
Portovista Drive	Portuguese Cove	11	1.60
Preakness Crescent	Fall River	1	3.14
Ridgewood Drive	Head of St Margaret's Bay	13	0.52
Rockcliffe Drive	Enfield	1	2.20
Sarah Ingram Drive	Williamswood	11	2.00
Sawgrass Drive	Oakfield	1	2.70
Sedona Court	Oakfield	1	0.38
Shoreline Drive	Mineville	2	0.86
Starflower Way	Brookside	11	5.00
Steepleview Lane	Porters Lake	2	4.86
Stoney Creek Drive	Mineville	2	1.14
Swan Crescent	Whites Lake	11	0.68
Thicket Drive	Brookside	11	2.80
Trunk 7 (portion)*			3.10
Westridge Road	Hatchet Lake	11	2.08
Withrow Court	Hubley	13	0.76
Wright Avenue*			6.64
Yeaholm Way			0.46
<b>Total Roads Serviced by Province</b>			<b>94.72</b>

\* Indicates a road located inside the urban core service delivery boundary

ATTACHMENT4

**TABLE E: INVENTORY OF PROVINCIAL OWNED ROADS SERVICED BY THE MUNICIPALITY UNDER WINTER EXCHANGE AGREEMENT**

Road Name	Community Name	Municipal District	Lane Kilometres
Ashford Close	Beechville	5	1.48
Atlantic View Drive	Chezzetcook	3	1.10
Beaver Bank Road	Burnside	5	18.00
Bellefontaine Court	Chezzetcook	3	0.42
Birch Road	Burnside	5	0.60
Cambridge Drive	Chezzetcook	3	0.66
Carmans Drive	Chezzetcook	3	0.72
Cathy Court	Chezzetcook	3	0.36
Chandler Road	Beechville	5	0.40
Chesapeake Road	Burnside	5	1.00
Colony Way	Chezzetcook	3	1.04
Craig Allen Court	Chezzetcook	3	0.26
David Drive	Chezzetcook	3	1.50
Davis Drive	Burnside	5	1.60
Delaney Drive	Burnside	5	1.00
Doherty Drive	Chezzetcook	3	3.38
Earl's Road	Burnside	5	0.40
Eider Drive	Beechville	5	2.02
Ensley Road	Beechville	5	0.30
Fox Hollow Drive	Beechville	5	1.32
Fox Ridge	Beechville	5	0.54
George Cyril Drive	Chezzetcook	3	0.74
Gilby Crescent	Burnside	5	1.40
Glenn Drive	Chezzetcook	3	0.52
Grahams Grove	Burnside	1	1.16
Hebb Drive	Chezzetcook	3	1.08
Hubley Mill Lake Road	Beechville	5	2.60
Jan Marie Drive	Chezzetcook	3	0.72
Joel Crescent	Chezzetcook	3	0.70
Keltic Drive	Chezzetcook	3	2.76
Kensington Court	Chezzetcook	3	0.62
Kerry Drive	Chezzetcook	3	0.96
Killarney Crescent	Chezzetcook	3	1.10
Lakeridge Drive	Burnside	5	2.42
Lester	Chezzetcook	3	0.62
Lillian Drive	Chezzetcook	3	1.08
Lisa Ann Drive	Chezzetcook	3	3.14

**TABLE E: INVENTORY OF PROVINCIAL OWNED ROADS SERVICED BY THE MUNICIPALITY UNDER WINTER EXCHANGE AGREEMENT**

<b>Road Name</b>	<b>Community Name</b>	<b>Municipal District</b>	<b>Lane Kilometres</b>
Lyla Drive	Chezzetcook	3	0.52
Magnolia Court	Beechville	5	0.14
Mark Crescent	Chezzetcook	3	0.96
Meadowbrook Drive	Burnside	5	2.64
Megan Drive	Chezzetcook	3	0.98
Michelle Drive	Chezzetcook	3	2.66
Officer Crescent	Burnside	5	0.80
Osprey Way	Chezzetcook	3	2.92
Owen Drive	Burnside	5	0.20
Parkcrest Drive	Chezzetcook	3	1.46
Pinebrook Drive	Burnside	5	0.88
Queens Road	Chezzetcook	3	0.36
Renee Drive	Chezzetcook	3	0.42
Robinson Road	Chezzetcook	3	0.96
Roywell Drive	Chezzetcook	3	0.14
Russel Drive	Chezzetcook	3	1.22
Saluki Drive	Burnside	5	0.40
Sandy Lake Road	Burnside	5	1.60
Schooner Drive	Chezzetcook	3	1.42
Setter Lane	Burnside	5	0.20
Shepherds Lane	Chezzetcook	3	2.36
Sonia Drive	Chezzetcook	3	0.86
Trevor Drive	Chezzetcook	3	0.42
West Avenue	Burnside	5	1.00
Woodland Avenue	Burnside	1	4.64
<b>Total Roads Serviced by Municipality</b>			<b>89.88</b>

**ATTACHMENT 5**

**COMPARATIVE LEVELS OF WINTER ROAD MAINTENANCE  
(PROVINCE AND MUNICIPALITY)**

The Province's Level of Service (LOS) standards, for winter road maintenance, differ substantively from those of the municipality (see below). The Province's LOS standards diverge from the municipality with respect to:

- road classifications;
- completion time frames (after snowfall);
- end state for road surface (post winter operations);
- initial response to snow and ice events;
- frequency of clearing and snow accumulation limits; and
- anti-icing and de-icing specifications (application timing and application rates).

**Level of Service Standards**

The Province, like the municipality has developed Level of Service (LOS) road maintenance standards that govern how the Department of Transportation and Infrastructure Renewal (TIR) delivers winter road maintenance in the province.<sup>10</sup> These LOS standards fulfill multiple functions – they provide road maintenance staff with performance targets, help clarify expectations for clients and employees, drive service improvement, and contribute to results-based management.

The Province's LOS document establishes operational performance targets that take into account the risks associated with process delays and uncertainties arising from factors such as workload fluctuations, staff movements, and seasonal variations. The Province's LOS standards for winter road maintenance differ, to some extent, from the municipal LOS road maintenance standards (as outlined below). Unlike the municipality, the Province does not have LOS standards for the maintenance of sidewalks. Rural and suburban areas maintained by the Province (almost without exception) do not have sidewalks.

**Definition of Snow and Ice Control**

The Province defines snow and ice control as including plowing, anti-icing (direct liquid application (DLA)), salting, pre-wet salting, sanding, and ice blading of roads before, during and after winter weather events.<sup>11</sup> This operational definition is functionally equivalent to how the municipality defines winter road maintenance.<sup>12</sup>

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<sup>10</sup> See <https://novascotia.ca/tran/publications/Highway%20Maintenance%20Standards%20Manual.pdf>

<sup>11</sup> See <https://novascotia.ca/tran/publications/Highway%20Maintenance%20Standards%20Manual.pdf> at pg.99.

<sup>12</sup> See <http://www.halifax.ca/snow/>

**Road Classifications**

The Province’s winter maintenance standards establish levels of service on provincial roads and highways. The winter maintenance levels of service for snow and ice control are based on road classifications linked to annual average daily traffic (AADT)<sup>13</sup> volumes (see Table F).

**TABLE F: PROVINCIAL ROAD CLASSIFICATIONS**

<b>Level of Service</b>	<b>Level 1A</b>	<b>Level 1B</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>
Road Type	All 100-Series highways and select high volume highways	Trunks and select highways as per AADT limits	Routes and select highways as per AADT limits	Local roads	All gravel, double chip seal and sand seal roads
AADT Limits	Greater than 7,500	Between 7,500 – 4,000	Between 4,000 – 1,500	Less than 1,500	N/A

**Completion Time Frames (After Snowfall)**

The Province’s level of service targets for completion of winter operations currently match or exceed the municipal level of service targets (see Table G). Provincially maintained gravel roads, residential roads and local paved roads are cleared by the Province within 24 hours of the end of a snow event. This 24 hour completion time frame matches the municipal completion time frame for gravel roads, residential roads and private lanes. Provincially maintained secondary routes and high traffic roads are cleared by the Province within 12 hours of the end of a snow event. This 12 hour completion time frame matches the municipal completion time frame for arterials, collectors, transit routes and residential roads with steep grades. Provincially maintained 100-series highways and high traffic roads are cleared by the Province within 8 hours of the end of a snow event. This 8 hour completion time frame improves on the municipal completion time frame for the municipality’s highest priority roads.

**TABLE G: COMPARATIVE COMPLETION TIMES (AFTER SNOW EVENT ENDS)**

<b>Time to Completion</b>	<b>Provincial LOS</b>	<b>Municipal LOS</b>
24 hours	Local paved roads, most subdivision roads, residential roads, gravel roads (Class 3 and Class 4)	Gravel roads, private lanes, residential roads (P2)
12 hours	Secondary routes, trunk highways, medium traffic roads (Class 2)	Arterials, collectors, transit routes, select residential roads with steep grades (P1)
8 hours	100-Series highways, high traffic highways (Class 1A and Class 1B)	N/A

<sup>13</sup> Annual average daily traffic, abbreviated AADT, is a measure used primarily in transportation planning and transportation engineering. Traditionally, it is the total volume of vehicle traffic of a highway or road for a year divided by 365 days. AADT is a useful and simple measurement of how busy the road is. Newer advances from traffic data providers are now providing AADT by side of the road, by day of week and by time of day

**End State for Road Surface (Post Winter Operations)**

The Province's end state for road surfaces range from bare pavement to snow packed. The Province's bare pavement end state for 100-series/trunk highways and high traffic roads parallels the end state for municipal arterials. The Province's bare centerline end state for secondary roads parallels the end state for municipal transit routes, municipal collector roads and municipal residential roads with steep grades. The Province's bare center line level of service for local paved roads, subdivisions and residential roads exceeds the municipality's snow covered and passable level of service that applies to municipal residential roads. Both the Province and the municipality take a common approach to gravel roads – a snow covered passable/snow packed end state.

**TABLE H: COMPARATIVE ROAD END STATES**

<b>End State of Road</b>	<b>Provincial LOS</b>	<b>Municipal LOS</b>
Snow packed or snow covered passable	Gravel roads (Class 4)	Gravel roads, private lanes, residential roads (P2)
Bare centre line	Local paved roads, subdivisions, residential roads (Class 2 and Class 3)	Collectors, transit routes, residential roads with steep grades (P1)
Bare pavement	100-series highways, high traffic highways (Class 1A and Class 1B)	Arterials (P1)

**Initial Response to Snow and Ice Events (Roads)**

The Province's winter operations level of service does specify initial snow-accumulation-based dispatch triggers. Provincial trigger points are, however, different from the municipality's trigger points. The municipality specifies a snow accumulation threshold ranging from 2 cm of snow to 10 cm of snow. The Province specifies a snow accumulation threshold ranging from 2.5 cm of snow to 5.0 cm of snow (see Table I).

**TABLE I: INITIAL RESPONSE TIME**

<b>Initial Response</b>	<b>Provincial LOS</b>	<b>Municipal LOS</b>
10.0 cm of snow	N/A	Gravel roads, residential roads (P2)
5.0 cm of snow	Secondary routes, trunk highways, medium traffic roads (Class 2)	N/A
4.0 cm of snow	N/A	Residential roads with steep grades (P1)
2.5 cm of snow	100-series highways, high traffic highways (Class 1A and 1B)	N/A
2.0 cm of snow	N/A	Arterials, collectors, transit routes (P1)

\*Note that the Province does not specify snow accumulation response triggers for Class 3 and Class 4 roads (i.e. local paved roads, subdivisions, residential roads or gravel roads). Those roads are plowed during a winter storm as required.

**Frequency of Clearing and Snow Accumulation (Roads)**

The Province’s level of service does not stipulate the frequency with which Provincial equipment services a road during the course of a winter weather event. In the case of the municipality, servicing frequencies apply only to P1 roads (i.e. arterials, collectors, transit routes, residential roads with steep grades). All P1 roads are serviced a minimum of once every three hours during the duration of a winter weather event.

While the Province does not dictate frequency of clearing, it does set out maximum snow accumulation limits. These limits on accumulation ensure that provincial plows are out on a continuous basis when winter conditions are severe and snow accumulation is rapid and/or ongoing for extended periods.

**TABLE J: MAXIMUM SNOW ACCUMULATION**

<b>Level of Service</b>	<b>Level 1A</b>	<b>Level 1B</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>
Road Type	All 100-Series highways and select high volume highways	Trunks and select highways as per AADT limits	Routes and select highways as per AADT limits	Local roads	All gravel, double chip seal and sand seal roads
Maximum Allowable Accumulation	7.5 cm	10 cm	15 cm	20 cm	20 cm

**Anti-Icing and De-Icing – Timing and Application Rates (Roads)**

The Province sets out level of service standards relating to anti-icing and de-icing (direct liquid application (DLA), pre-wetting, salting and sanding). These anti-icing and de-icing standards relate to timing of application and the rate of application. In the case of sand, there are suggested rates of application. In the case of DLA and salt/brine there are maximum allowable rates of application. These application limits/recommendations are specified for each provincial road class (Class 1A through to Class 4). Reduced application rates may be considered based on road temperature, trends, type of weather event, and time of year. The municipality has no equivalent level of service standards relating to timing or rate of application of de-icing and anti-icing materials.

**ATTACHMENT 6**

**Hubley Urban Density Area Road Inventory**

Of the thirteen roads within the Hubley urban density area (see Table K), one road is currently owned by the municipality (Island lake Close).

**TABLE K: HUBLEY AREA ROAD INVENTORY**

<b>Road Name</b>	<b>Community Name</b>	<b>Municipal District</b>	<b>Lane Kilometres</b>
Brant Street	Hubley	13	0.564
Doyle Park Road	Hubley	13	0.384
Five Island Road	Hubley	13	1.612
Five Island Road	Hubley	13	0.680
<b>Island lake Close*</b>	Hubley	13	0.862
Juniper Way	Hubley	13	2.506
Lake Place	Hubley	13	0.364
Mallard Drive	Hubley	13	1.712
Noble Court	Hubley	13	0.296
Sheldrake Crescent	Hubley	13	1.378
Silver Birch Drive	Hubley	13	3.236
Teal Court	Hubley	13	0.310
Woodland Crescent	Hubley	13	1.220
<b>Total Length (In Lane Kilometres)</b>			<b>15.126</b>

\*Indicates road currently owned by the municipality (per Agreement HRM-01)

ATTACHMENT 7

Lawrencetown Urban Density Area Road Inventory

All fifteen roads within the Lawrencetown urban density area (see Table L) are currently owned by the Province.

**TABLE L: LAWRENCETOWN AREA ROAD INVENTORY**

Road Name	Community Name	Municipal District	Lane Kilometres
Bastion Point Road	Lawrencetown	2	0.720
Conrad Road	Lawrencetown	2	4.088
Greendale Drive	Lawrencetown	2	0.318
Heronview Drive	Lawrencetown	2	0.718
Lahey Drive	Lawrencetown	2	0.636
Leeward Lane	Lawrencetown	2	0.308
Leslie Road	Lawrencetown	2	4.704
Maple Drive	Lawrencetown	2	0.690
Moore Drive	Lawrencetown	2	0.454
Murphy Road	Lawrencetown	2	0.218
Oceanic Drive	Lawrencetown	2	2.486
West Lawrencetown Road	Lawrencetown	2	8.640
Westview Drive	Lawrencetown	2	0.306
Windward Lane	Lawrencetown	2	0.392
Tanner Avenue	Lawrencetown	2	0.646
<b>Total Length (In Lane Kilometres)</b>			<b>25.324</b>

\*Indicates road that is currently owned by the municipality (per Agreement HRM-01)

**ATTACHMENT 8**

**Lewis Lake Urban Density Area Road Inventory**

Of the sixteen roads within the Lewis Lake urban density area (see Table M), nine roads are currently owned by the municipality (Beartooth Way, Birch Bear Run, Blackbear Circle, Faune Lane, Granite Cove Road, Hollandbrook Drive, Jericho Road<sup>14</sup>, Omega Court and Withrow Court).

**TABLE M: LEWIS LAKE AREA ROAD INVENTORY**

Road Name	Community Name	Municipal District	Lane Kilometres
Beartooth Way*	Lewis Lake	13	0.494
Big Hubley Lake Drive	Lewis Lake	13	4.168
Birch Bear Run*	Lewis Lake	13	4.356
Blackbear Circle*	Lewis Lake	13	1.984
Faune Lane*	Lewis Lake	13	0.276
Glory Avenue	Lewis Lake	13	0.434
Granite Cove Road*	Lewis Lake	13	2.946
Hollandbrook Drive*	Lewis Lake	13	0.478
Hope Avenue	Lewis Lake	13	0.296
Hubley's Road	Lewis Lake	13	2.274
Jericho Road	Lewis Lake	13	0.308
Jericho Road*	Lewis Lake	13	0.794
Joshua Slocum Avenue	Lewis Lake	13	1.280
Omega Court*	Lewis Lake	13	0.192
Three Brooks Drive	Lewis Lake	13	1.522
White Sands Court	Lewis Lake	13	0.454
Withrow Court*	Lewis Lake	13	0.574
<b>Total Length (In Lane Kilometres)</b>			<b>22.830</b>

\*Indicates road currently owned by the municipality (per Agreement HRM-01)

<sup>14</sup> Jericho Road is jointly owned by the Province and the municipality.

**ATTACHMENT 9**

**Mineville Urban Density Area Road Inventory**

Of the fifteen roads within the Mineville urban density area (see Table N), five roads are currently owned by the municipality (Beth Court, Emily Court, Notting Hill Road, Shoreline Drive and Stoney Creek Drive). For the purposes of this road inventory staff have excluded Mineville Road.<sup>15</sup>

**TABLE N: MINEVILLE AREA ROAD INVENTORY (LANE KILOMETRES)**

<b>Road Name</b>	<b>Community Name</b>	<b>Municipal District</b>	<b>Lane Kilometres</b>
Beth Court*	Mineville	2	0.254
Candy Mountain Road	Mineville	2	4.518
Deerwood Drive	Mineville	2	0.842
Dempster Crescent	Mineville	2	1.930
Emily Court*	Mineville	2	0.562
Foxwood Crescent	Mineville	2	1.252
Notting Hill Road*	Mineville	2	1.290
Partridge Nest Drive	Mineville	2	1.188
Peter Court	Mineville	2	0.250
Riverfront Court	Mineville	2	0.222
Shoreline Drive*	Mineville	2	1.054
Stillwater Court	Mineville	2	0.208
Stoney Creek Drive*	Mineville	2	1.404
Tall Trees Court	Mineville	2	0.480
Two Rivers Drive	Mineville	2	2.130
<b>Total Length (In lane kilometres)</b>			<b>17.584</b>

\*Indicates road that is currently owned by the municipality (per Agreement HRM-01)

<sup>15</sup> Mineville Road is a main provincial thoroughfare used by the Province for road maintenance purposes. As such, the Province is unlikely to surrender it to the municipality.

**ATTACHMENT 10**

**Upper Tantallon Urban Density Area Road Inventory**

Of the fourteen roads within the Upper Tantallon urban density area (see Table O), three roads are currently owned by the municipality (Ashberry Court, Fox Hollow Drive<sup>16</sup> and Fox Point Court).

**TABLE O: UPPER TANTALLON AREA ROAD INVENTORY (LANE KILOMETRES)**

<b>Road Name</b>	<b>Community Name</b>	<b>Municipal District</b>	<b>Lane Kilometres</b>
Ashberry Court*	Upper Tantallon	13	0.954
Ashford Close	Upper Tantallon	13	1.528
Chandler Road	Upper Tantallon	13	0.524
Elk Road	Upper Tantallon	13	1.308
Ensley Road	Upper Tantallon	13	0.302
Fox Hollow Drive	Upper Tantallon	13	1.530
Fox Hollow Drive*	Upper Tantallon	13	0.606
Fox Point Court*	Upper Tantallon	13	0.596
Fox Ridge	Upper Tantallon	13	0.566
Hubley Mill Lake Road	Upper Tantallon	13	2.434
Juniper Place	Upper Tantallon	13	0.460
Maple Place	Upper Tantallon	13	0.296
Paper Birch Place	Upper Tantallon	13	0.354
Tantallon Crescent	Upper Tantallon	13	1.570
White Birch Drive	Upper Tantallon	13	1.482
<b>Total Length (In Lane Kilometres)</b>			<b>14.510</b>

\*Indicates road currently owned by the municipality (per Agreement HRM-01)

<sup>16</sup> Fox Hollow Drive is jointly owned by the Province and the municipality.