



City of Stratford

Winter Control Cost Review



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File: W.O. 7782/Stratford Winter Control Review

1. BACKGROUND

The City of Stratford recently received the results of a Core Services Review prepared by BMA consulting. This high level financial review provided an analysis and comparison of the unit cost for services which the City of Stratford delivers to the public. One area of review was the City's Winter Control Operations. BMA's review indicated that the City's cost per lanekilometre for these services was somewhat higher than the group of peer municipalities selected for comparison.

The BMA review recommended that additional analysis be considered to determine what cost drivers are influencing the higher than average unit cost for Winter Control Operations. The initial explanation suggested that the City provides a higher than average level of service in its core area and central business district where the City provides an extensive snow removal operation service.

The City has requested McCormick Rankin Corporation (MRC) to carry out a more detailed review of the City's Winter Control costs and to prepare a report on our finding.

2. BENCHMARKING CAUTION

We would like to offer a caution about our experience with benchmarking. Although benchmarking is a valuable tool to establish performance measures and cost comparators however caution should be taken when dealing with maintenance activities that are largely reactive. For the most part public works activities like mowing sweeping, catch basin cleaning, and concrete repairs are planned scheduled and carried with some degree of certainty and control both in terms of annual performance and peer comparison. Activities like litter pick up, pothole repair, and ditching are much less predictable and crews react to the need as required. This makes comparison of reactive activities more difficult since managers really do not know what needs to be done till it happens. The most reactive activities are those driven by weather. As much as managers plan and budget for things that happen in winter or things that happen during floods there is little they can do until it happens and then they have to keep going till it stops. Year to year internal cost comparisons of reactive activities therefore become less valuable as performance indicators. Year to year peer comparisons of these activities are even more questionable and since no two municipalities share exactly the same climate, topography, geography, road networks, road design, collective agreement, service levels and public expectation.

3. MUNICIPAL PERFORMANCE MEASUREMENT PROGRAM CAUTION

The other caution we would like to offer is the Municipal Performance Measurement Program (MPMP) publishes questionable data from the reporting municipalities. Although there is a specific set of instructions that accompany the submission requirements for data input into the MPMP we know that not all municipalities follow it to the letter and the Ministry responsible does not verify the accuracy or consistency of the data. Closer examination will reveal that municipalities report things differently from year to year and others exclude major cost

components all together. Additionally not all municipalities have budget control systems that permit them to capture the detailed information and there are also variations in the way municipalities account for overhead, supervisory costs, vehicle and equipment cost and material costs based on what department owns the purchased inventory and stockpiles. So even if the data was consistently reported the MPMP data has an element of variation despite best intentions.

3.1 Compensation for Reporting Errors

Despite all the variation possible two significant errors commonly occur in the MPMP reporting that affect winter control benchmarking. One is whether off road activities such as sidewalk maintenance, off road parking lot maintenance or bus stop maintenance costs are being included in the reported cost for roadways. And the second is whether or not the cost of the equipment used on roadway maintenance is being accurately reported or even reported at all.

3.1.1 Off Road Costs

With respect to the first error we cannot determine from the Financial Information Reports (FIR) whether or not municipalities have included their off road cost accidentally in the FIR's. We do know that the City of Stratford has examined its 2006 FIR in more detail and have discovered they reported the cost associated with winter maintenance of parking lots and sidewalks. For accuracy we have removed \$125,393 in sidewalk clearing costs from the data Stratford submitted in its FIR. While similar errors may have occurred among some of the peer municipalities in this review we have no means of identifying any errors and therefore we cannot make any adjustments to their reported costs. We have however adjusted the data for Stratford.

3.1.2 Missing Equipment Costs

The second source of error is easier to detect by reviewing the data submitted in the FIR. On "Schedule 40" the page is divided into two basic halves each with columns. The left half collects the direct costs like salaries, wages and materials then presents the costs in a subtotal column. The right half collects indirect cost attributed to the activities such as long term debt, program support and unfunded liabilities and then presents these costs, as well as the direct costs, into a totals column.

The page design does not specifically assign a column for equipment cost. So unless the reporting agents are well versed in the submission requirements equipment costs often go unreported. Equipment costs for winter control work is usually about 33% of the total expenditures in the activity and it is not being reported by many municipalities.

The column assigned to report equipment cost is on the right hand side of the page entitled "Inter-Functional Adjustments" and in many of the 2006 FIR Schedule 40 pages, submitted by the municipalities in the BMA Peer Group, this column was either left blank or contains only small values that could not relate to true equipment costs. Copies of Schedule 40 with and

without reported equipment costs are attached as “Appendix 1A and 1B” Those municipalities in the BMA Peer Group with missing equipment costs are:

- Cobourg
- St Thomas
- Woodstock
- Brockville
- Georgina

3.2 Correction Table

The following table shows the corrections applied to the MPMP data reported in the 2006 FIR. Stratford was adjusted for the misreported costs associated with parking lots and sidewalks. The municipalities shown in italics were adjusted to compensate for non-reporting of equipment costs. The adjustment to the equipment costs were calculated using the average costs reported by the municipalities in our study who had reported their equipment costs. The adjustment factor was calculated to be 31.5%. These adjusted costs will be used in the balance of this report.

Municipality	Adjusted WC Costs	Adjusted Per person Costs	MPMP Reported Per Person Costs	Adjusted Cost Per La.Km	MPMP Reported Costs Per La.Km
<i>Cobourg</i>	\$ 261,563	\$14	\$11	\$ 849	\$646
Tillsonburg	\$ 164,629	\$11	\$11	\$ 755	\$755
<i>St Thomas</i>	\$ 433,282	\$12	\$9	\$ 1,022	\$777
Grimsby	\$ 245,295	\$10	\$10	\$ 779	\$779
<i>Woodstock</i>	\$ 408,982	\$12	\$9	\$ 2,119	\$1,608
<i>Brockville</i>	\$ 662,093	\$31	\$23	\$ 2,854	\$1,556
<i>Georgina</i>	\$1,226,635	\$29	\$22	\$ 2,065	\$1,556
Stratford	\$ 634,834	\$21	\$25	\$ 1,763	\$2,106

This correction is significant in that Stratford’s service delivery cost is no longer the highest in the BMA Peer Group comparison table and is near the middle of the range.

4. APPROACH

The four key tasks performed in this study were:

1. Staff interviews and review of City operations
2. Peer Group Survey
3. Unit Cost Comparators
4. Data Analysis

5. COST DRIVERS

The range of cost drivers affecting any the winter control costs of any municipality were mentioned in the BMA report and through our discussions with staff and a tour of the City we have identified what we feel are the three most significant cost drivers influencing the City's winter Control operating costs. The three cost drivers are:

- Weather
- Snow Removal
- Adjacent Land Use

5.1 Weather

Stratford gets a lot of snow. The publish data from Environment Canada known as the "30 Year Normals" indicates that Stratford's experiences an average of 245 cm of snow per year. To put that into perspective we compared City's annual snow fall to those in the BMA Peer Group which were selected for their similarity of population size.

Municipality	30 Year Normal Snowfall (cm) ¹	Comment
Coburg	106	
Tillsonburg	128	
St Thomas	120	
Grimsby	118	No data available. Vineland Station data used
Woodstock	117	
Brockville	199	
Georgina	152	No data available. Alliston data used
Stratford	245	

5.2 Snow Removal

During the course of the winter the City forces remove the snow plow windrows from the City's central business district. Staff does this for reasons of public safety and in a City such as Stratford it is for good business to encourage public access to the Central Business District. Especially since much of the local economy is driven by out of town visitors. The urban core of the city is maintained to a very welcoming standard to encourage year round tourism. Windrows (or snow banks) cause visibility problems for pedestrian and motorists in the dense commercial areas. Once the snow is pushed to the side of the road there is almost no place in the Core Area to store the snow and it must be loaded out. The absence of local on street storage is a huge cost driver. Loading snow is an expensive operation and is a service that cannot likely be reduced without hardship to the community in terms of increased liability risk or loss of business from loss of parking. For reasons of logistics and convenience much of the snow removal is done after business hours which can also trigger overtime for the staff doing the work.

We do not have comparable data on the extent of snow removal from the other communities in the BMA Peer Group. Stratford's core urban design is also a factor. In Stratford's central business district there are wide road surfaces, small boulevards and acutely angled intersections that offer no spare space in the road allowance for snow

¹ Environment Canada: Canadian Climate Normals 1971-2001

storage. Snow that is in the way has to be loaded out. Despite the physical constraints the bottom line reason is that Stratford does more snow removal simply because it snows more than anywhere else.

5.3 Adjacent Land Use

As public works agencies have tried to classify their road system into categories they have almost universally adopted a system that used just two factors to rate the importance of each of their roads to the community's transportation network. By using speed and volume road authorities across the country have classified their roads into a system of six classes from a high of Class 1 to a low of Class 6. We can use these classes to develop priorities in levels of service etc and ostensibly prepare benchmarking comparison to other municipalities with similar roads each classed by speed and volume. That system works well provided each municipality has reasonably similar intensity of land use.

In Stratford's case it is somewhat unique. While the City has a blend of class 3, 4 and 5 roads like the Peer Cities, Stratford has no rural agriculture land use abutting those classes of roads but it does have approximately 13 kilometres of road considered rural. Where municipalities like Grimsby, Tillsonburg and Georgina have low speed and volume residential road like Stratford they also have large inventories of those classes of road with only farm land or open space abutting them. The difference in cost to maintain a lower class residential road and the same class rural road is significantly different. Plowing in a residential area is done at very low travel speed and it takes more staff and equipment time to complete each kilometre of road. In residential areas the operators have to contend with parked cars, driveways, stop controlled intersections, intersection sweeps, kids, dogs, garbage cans and the odd game of road hockey. The same operations on a rural road can be done at least double the travel speed since few of those residential challenges exist in rural farm areas (notwithstanding the mailboxes). The cost per kilometre of a lower class residential use road is significantly higher than a lower class rural use road.

While we do not have any comparative data support this claim directly in terms of dollars per kilometre we do have comparative population density data which will give some indication of how much more residential land use is made of the entire Stratford land mass. Stratford's population density is 28 percent larger than the next most densely populated town in the Peer Group and 995 percent more dense than the least dense Peer City.

Municipality	Population Density (people/square km)²
Cobourg	814
Tillsonburg	629
St Thomas	837
Grimsby	347
Woodstock	810
Brockville	1059
Georgina	136
Stratford	1354

² BMA Municipal Study

6. WEATHER ADJUSTED COSTS

One of the challenges of benchmarking winter control cost is that what ever you do you are always comparing apples to oranges. Several years ago the Public Works community and the academic community undertook to develop a tool, referred to as a “Weather Severity Index”, which would permit costing data from winter control operation from different climate zones to be adjusted and re-calculated be closer to apples to apples comparison. Two initiatives were under taken. One was through a University in the United States and another through the Transportation Association of Canada. (TAC) It turned that nothing very useful came of either project in least in terms of being able to use the resulting formulas to predict future costs based on anticipated weather severity.

So having just said that no weather severity index is very good we have dared to apply a weather severity index the MRC consulting team has developed to help us deal with benchmarking challenges such as this. We have taken the costing data from the BMA Peer Group and adjusted the costs using the MRC ‘Wizdex’ winter severity index.

6.1 Wizdex Winter Severity Index

The index we have developed is a simplified calculation of a much more complex problem. The Wizdex was developed by MRC using Environment Canada 30 Year Climate Normals as it basis.

We took the 30 year Normals data and looked at what recorded indicators are likely to have a cost impact on winter control operations. By using these four indicators we can make a statistical adjustment to the Peer Group data and re-compare the relative performance of the group based on weather. The four indicators we use and the rationale for use is a follows:

- Total Annual Snowfall (cm)
- Days with Minimum Temperatures less than or equal to 0C (# of days)
- Days with Snowfall greater than or equal to 5 cm (# of days)
- Days with a Snow Depth greater than or equal to 5 cm (# of days)

The rationale for selecting these indicators is as follows:

- The amount of snow received has almost a direct relationship to the cost of winter. We say almost since we know from experience that the initial cost to handle a 30 centimetre snow fall is the same as 15 cm. Each snowfall requires almost the same level of effort so it is incomplete on it own. Additionally the total annual snowfall is also an indication of the length of a municipalities’ winter season.
- The number of days where the minimum temperatures is below freezing is an indication of the length of the winter season and the number of days where winter maintenance is likely to be required.
- The number of storm events an area receives with snowfall greater than 5 cm is directly related to the number of responses required and directly affect cost.

- Days with measurable snow depth is an indication of the number of days where drifting conditions are likely to occur or daytime thawing has to be addressed during the evening freeze up.

We carried out a simple ratio comparison of the data available from the Peer City's Environment Canada 30 year Normals data to the City of Stratford's similar data. For comparison reasons we assigned Stratford's ranking factor a baseline of value of 1.

Any ranking factor with a number less than 1 means the parameter is less severe than Stratford's and should have a positive affect on the cost of providing winter control services. A ranking factor greater than 1 means the parameter is more severe than Stratford's and would have a negative affect on the cost of providing winter control services. We prepared a ranking of each factor then averaged the four indicators to produce the Wizdex.

The table showing the math involved with the development of the Wizdex is attached a Appendix 1. The following are summary tables from the table in Appendix one:

6.1.1 Adjustment Factors

City	Wizdex Adjustment Factor
Brockville	0.83
Cobourg	0.58
Georgina	0.92
Grimsby	0.51
St Thomas	0.51
Stratford	1.00
Tillsonburg	0.60
Woodstock	0.59

6.2 Weather Adjusted Data

We applied the Wizdex to the corrected MPMP data contained in the BMA report. The weather correction changes the relative cost per person significantly. The rankings for cost also change. Stratford's cost were 5th lowest before the weather correction was applied and 3rd lowest after.

City	Adjusted MPMP \$/Person	Adjusted MPMP Rank	Wizdex Adjusted \$/person	Wizdex Adjusted Rank
Cobourg	\$14	4	\$24	4t
Tillsonburg	\$11	2	\$18	1
St Thomas	\$12	3t	\$24	4t
Grimsby	\$10	1	\$20	2t
Woodstock	\$12	3t	\$20	2t
Brockville	\$31	7	\$37	6
Georgina	\$29	6	\$32	5
Stratford	\$21	5	\$21	3

Conclusion: Weather is a large factor contributing to the costs of winter operations. Stratford's costs are much lower than the group average of \$24.50 and Stratford's costs per person is near the bottom of the range.

6.2.1 2006 Cost per Lanekilometre Data

The Wizdex adjusted data for lanekilometre costs alters the range of cost proportional to the weather in each Municipality. The Wizdex adjusted average for the group is \$2,163 per lanekilometre.

City	Adjusted MPMP \$/Ln.Km	Adjusted Rank	Wizdex Adjusted \$/Ln.Km	Wizdex Adjusted Rank
Cobourg	\$849	3	\$1,464	2
Tillsonburg	\$755	1	\$1,269	1
St Thomas	\$1,022	4	\$2,004	5
Grimsby	\$779	2	\$1,535	3
Woodstock	\$2,119	7	\$3,592	8
Brockville	\$2,854	8	\$3,425	7
Georgina	\$2,065	6	\$2,251	6
Stratford	\$1,763	5	\$1,763	4

Conclusion: Stratford's winter costs are below the average of the BMA Peer Group and its ranking improves from 5th lowest to 4th lowest in the group once the lane kilometre data is adjusted for weather.

7. MRC PEER SURVEY

The BMA study selected peer cities for comparison based on population. For most municipal activities that is an appropriate criterion in making a selection for peer to peer comparison. Where population based criteria would not be less accurate would be for those activities that are reactive. Services that are driven by unplanned events usually have other drivers that impact their costs. Winter control operations are a good example on an activity that is almost entirely driven by weather. Police, Fire and Ambulance services are similar in that their costs are driven by factors other than population such as older demographic mix, urban density and age of the housing stock.

The BMA consulting group is well aware of this but the high level scope of their project did not permit them to explore what was driving Stratford's winter control lane kilometre cost to be higher than the peer comparators which were selected by population.

Beyond applying the Wizdex to the BMA Peer Group data the approach we have taken to provide a more detailed analysis of Stratford's winter Control costs is to identify and survey a "Weather Peer" Group who share a somewhat similar climate as Stratford. In that group we have also included three municipalities from the BMA peer group. Additional data from these three municipalities, as compared to Stratford, may offer some insight into why their cost are lower if we find that weather is not the most significant cost driver. Staff recognizes that despite the difference in climate there may be operational or policy based differences that could be making an impact as well.

The MRC Peer study Group includes:

<i>Cobourg</i>	London
<i>Georgina</i>	Stratford
<i>Grimsby</i>	St Mary's
Guelph	Waterloo
Kitchener	

The municipalities shown in italics were part of the BMA peer group and the group shown in normal type face were selected as "Weather Peers". The municipalities shown in **Bold** have had their MPMP data adjusted to include the costs associated with equipment costs. The reported costs have been increase 31.5 percent which reflects the average for the group who had reported equipment costs in their FIR.

The survey was design to capture not only cost and statistical data but information on how the peer cities organise the service delivery. Survey collected data on the following areas:

1. Inventories and Community Data
2. Resource Inventories
3. Operating Policies and Guidelines
4. Work Organization
5. Materials
6. Financial Data
7. Communication Plans

The survey was design using an Adobe Acrobat program that permitted the respondents to complete the survey electronically, on-line and send it directly back to the MRC head office. We received response from all municipalities except Kitchener. The Kitchener data we have was collected from the 2006 MPMP provincial files. "Appendix 2" catalogues the raw data polled form the MRC Peer Group.

7.1 Weather

7.1.1 Snow Fall

Even with the MRC peer group selected to have a similar climate to that of Stratford the Environment Canada 30 Year Normals indicates that Stratford still is the snowiest City in the area. We do not have any weather data for St Mary's since the next closest weather reporting station is in Stratford.

Municipality	30 Year Normal Snowfall (cm)³	Comment
<i>Cobourg</i>	106	
Guelph	161	
<i>Georgina</i>	152	No data available. Alliston data used
<i>Grimsby</i>	118	No data available. Vineland Station data used
Kitchener	160	
London	202	
Waterloo	160	
St Mary's	na	No data Available.
Stratford	245	

Conclusions: It snows more in Stratford than anywhere else even those cities in the MRC peer group that were selected based on known winter severity. We have confirmed that the amount of snow received in a City is a large cost factor contributing to the cost of winter operations.

7.1.2 Storm Events

As part of the documentation process most municipalities record the number of times they respond to winter weather conditions. The criteria varies however most municipalities record a storm event as any time the road patrollers respond to hazardous conditions or callout the trucks to respond to weather. The Municipalities in the entire peer group average 28 storm events. Setting aside the St Mary's high response, from what we suspect are from frequent drifting conditions, and Kitchener's data error the weather peer group averages 34 storm events.

Municipality	MPMP⁴ Storm Events	Overall Rank	Weather Peers
<i>Cobourg</i>	18	2	
<i>Georgina</i>	37	6	
<i>Grimsby</i>	28	4	
Guelph	20	3	2
Kitchener	1 ⁵	1	1
London	36	5	3
Waterloo	41	7	5
St Mary's	73 ⁶	8	6
Stratford	39	4	4

Conclusions: Setting aside the high response rate for St Mary's, which is attributable to the large number of drifting events and the lack of data from Kitchener, Stratford experiences slightly more storm responses than the average of its winter peers.

³ Environment Canada: Canadian Climate Normals 1971-2001

⁴ MPMP reported data in 2006 FIR

⁵ Data reporting error

⁶ Frequent drifting conditions

7.2 Snow Removal

Similar to Stratford all responding municipalities carry out snow removal operations in the core business areas. In terms of length of curblines cleared Stratford has the second largest inventory serviced in the group. Cobourg has the largest but has less than half the number of storm events that Stratford records. Two of 3 municipalities in the original peer group provide almost no snow removal service. Georgina responds to complaints and Grimsby averages less than one cycle per year.

Except for St Mary's the MRC peer group does not do much snow removal. London focuses on bus stops reporting few incidents where snow is removed. Waterloo does 10% the amount of Stratford and Guelph does 20% of what Stratford does. It is important to point out that most of the snow removal in Stratford is done by a night shift on regular time.

Municipality	Snow Removal in CBD ⁷	Curblines Cleared (km)	Response Trigger or Criteria	Comment
<i>Cobourg</i>	Y	158	visual	Nights only
<i>Georgina</i>	Y	na	1.5m	By complaint Nights only
<i>Grimsby</i>	Y		visual	1 to 3 times in last 5 years
Guelph	Y	30	0.30	Nights only-3shifts for 1 cycle
Kitchener				
London	Y	Not many	visual	Mostly Bus Stops Nights only
Waterloo	Y	14.5		Off Peak Hours
St Mary's	Y	73.3	0.6m	Nights only
Stratford	Y	150	0.6m	Nights only

Conclusions: Based on the number of storm event and the curblines data Stratford does more snow removal than any other municipality in our survey.

7.3 Adjacent land Use

We had suggested earlier that population density was an indicator of how intensely used the lands were adjacent to the road allowance and how that land use had an influence on the costs of winter control services. In our survey we polled the municipalities to determine how much of their road inventory they would consider rural. We have table that information against data on population density and municipality size. Two of the 3 original municipalities report that approximately 40 percent of their inventory is rural. Cobourg reports half of the rural inventory as Stratford but has slightly more than half of Stratford's population density. Of the MRC peer group only Guelph reports fewer rural roads but again with much less density.

⁷ Central Business District

Municipality	Population density People/sq km	Area (Sq km)	Percent rural road Inventory (km)
<i>Cobourg</i>	784	23.6	5
<i>Georgina</i>	136	200	40
<i>Grimsby</i>	347	68	39
Guelph	874	135	2
Kitchener			
London	846	423	na
Waterloo	1888	64	11
St Mary's		na	0
Stratford	1354	26.7	10

Conclusions: This data didn't support or refute our assumption that rural roads are less costly to maintain in winter than urban roads. The municipalities in the MRC peer group that experiences more severe winter weather all report a relatively low level of rural road (as a percentage of inventory). When compared to the BMA peer group 2 of the 3 have considerable more rural road but experience considerably less winter weather. Although we suspect it to be true we can't draw any supportable connection between population density and amount of rural road inventory and how it impact winter control operating costs.

7.4 MRC Peer Group Cost Comparators

7.4.1 Wizdex Adjustment Factors

We have calculated the Wizdex adjustment Factor for the MRC peer group in a similar fashion as we did for the BMA peer group.

City	Wizdex Adjustment Factor
<i>Cobourg</i>	0.58
<i>Georgina</i>	0.92
<i>Grimsby</i>	0.51
Guelph	0.70
Kitchener	0.72
London	0.79
St Mary's	1.00
Stratford	1.00
Waterloo	0.72

7.4.2 2006 MPMP per Person Data

In the previous sections we discussed our attempts to determine if the amount of rural road inventory can impact the cost of winter control operations by connecting that data to population density. That work is not to be confused with this section where we have compared the cost per person and adjusted them for winter severity. We have used cost per person because it is one of the performance measure required to be calculated in the MPMP reporting. While it is easy to calculate and is an understandable performance measure it has to be read with one major caution. When comparing per person cost it is important to bear in mind that population density does have a significant impact on this

data. A city with many high rise type dwellings will report lower per person cost than a community where the majority of the population live in single story dwellings.

Municipality	Adjusted MPMP \$/Person	MPMP Rank	Wizdex Adjusted \$/person	Wizdex Adjusted Rank	Weather Peers Rank
<i>Cobourg</i>	\$14	2	\$25	3t	
<i>Georgina</i>	\$29	2	\$31	2	
Grimsby	\$12	1	\$24	2	
Guelph	\$19	5	\$28	3	3
Kitchener	\$18	4	\$25	3t	2
London	\$40	8	\$50	6	5
St Mary's	\$37	7	\$37	3	4
Stratford	\$21	6	\$21	1t	1t
Waterloo	\$15	3	\$21	1t	1t

Conclusions: The application of the weather adjustment tightens the range of cost considerably and the costs for Stratford which looked high before the adjustment are the lowest of both groups and well below the average of \$29.00 However since this statistic is influenced by population density we would give less value to this performance measure than we would the following.

7.4.3 2006 MPMP Lane Kilometre Data

Road authorities almost universally use the cost/lanekilometre as the performance measure which has more relevance to the true measure of an operations performance. A lane is a lane and is the same everywhere.

Municipality	Adjusted MPMP \$/Ln.Km	Rank	Wizdex Adjusted \$/Ln.Km	Adjusted Rank	Weather Peers Rank
<i>Cobourg</i>	849	2	1464	1	
<i>Georgina</i>	2065	5	2245	6	
<i>Grimsby</i>	779	1	1527	2	
Guelph	2133	7	3048	7	4
Kitchener	1413	3	1963	4	2
London	4062	9	5142	9	6
St Mary's	2216	6	2216	5	3
Stratford	1763	4	1763	3	1
Waterloo	2261	8	3141	8	5

Conclusions: Similar to the previous table the weather adjusted range of costs is reduced as well. Stratford's costs are at the low end of the range and much below the average of \$2501 of entire peer group.

7.5 Other Comparators

Although we designed the MRC Peer survey primarily to test whether or not our preliminary assumptions on the cost drivers were correct we also polled the municipalities for other data as well. The two additional areas we were interested in were the ratio of truck per lane kilometre and the ratio of operators per lane kilometre.

7.5.1 Lane Kilometres per Truck Ratio

This is a common performance measure and is an indication of the level of service. Some municipalities use this ratio to establish a level of service target which they use to support fleet purchases.

A municipality that has too few trucks will have a much lower level of service and will fall behind in the work if vehicle break downs occur. One with too many trucks will likely experience above average costs.

Without any other comparator for level of service we will use the data to determine if Stratford's vehicle inventory is comparable to those of its peers and whether Stratford is providing similar levels of service.

The Average ratio of lane kilometre per truck is 53.5. Stratford's ratio of 58.2 is only slightly above the average.

City	Lane Kilometres per Truck
<i>Cobourg</i>	43.3
<i>Georgina</i>	60
<i>Grimsbay</i>	52
Guelph	67.2
Kitchener	na
London	41
St Mary's	na
Stratford	58.2 Average ⁸
Waterloo	52.8

Conclusion: It would appear the Stratford is providing a similar level of service in its winter control plowing operations. This is an effective measure to use when planning to add resources to accommodate growth. The City could establish a Lane Kilometre per truck ratio as a gauge to support additional fleet purchases as the road inventory grows.

7.5.2 Lane kilometres per Operator Ratio

The number of lanekilometres per operator is an interesting performance measure. It provides a level of service indicator when compared to a municipalities peer group and at the extreme ends can indicate a workforce over or under loaded with work. A workforce with too much work would then generate more overtime and those costs would be reflected in the cost of the operations.

For example in a perfect world there would be enough trained and available staff to run the trucks continuously on regular time. A less than perfect world there would have enough operators to run the trucks continuously with the staff earning some overtime. In a world needing work there would be enough staff to run the truck continuously by earning loads of overtime but not violating any of the hours of work legislation. In a world off the rails the trucks would be off the road for periods of time because of staff shortage and the only way to provide continuous operation would be to violate the hours of work legislation.

⁸ 74.8 city /41.5 Contract

Providing the data we collected is fairly represented and includes only trained and available operators we would suggest that those municipalities reporting low ratios reporting are living in a more perfect world than those with high ratios. They would likely be experiencing less overtime costs and be less likely to have to park a truck due to lack of operators.

The concern was raised in the BMA report that there was too much money being spent on overtime. If that was true and our assumption is true then the ratio of lane kilometre per operator would be high.

The average for the winter peer group is about 35 lane kilometres per operator.

City	Lane Kilometres per Operator
<i>Cobourg</i>	20
<i>Georgina</i>	52
<i>Grimby</i>	26
Guelph	35.8
Kitchener	na
London	56
St Mary's	na
Stratford	26.7
Waterloo	21.4

Conclusions: The average for this group is 33.9 lane Kilometres per operator. Stratford's ratio of lane kilometres per operator is just below average. The fact that Stratford's ratio is below average does not support the notion that too much money is being spent on overtime.

8. SUMMARY OF FINDINGS

1. Stratford receives more snow than any of the municipalities in peer groups selected for comparison.
2. The amount of snow received in Stratford is the largest cost factor contributing to the winter control costs.
3. Stratford has a high number of reported storm events but is in a similar range as its weather peers.
4. The survey analysis does not support rationale that adjacent land use affects the cost of the service delivery.
5. Stratford provides a higher level of service for snow removal than any other municipality in our survey.
6. The survey data from the three municipalities, once adjusted for reporting errors, polled in both the BMA and the MRC peer groups did not offer any other reason other than amount of snow and snow removal policy to explain their lower unit costs.
7. The number of trucks available for winter control operations is similar to the data reported from its peers so we would not consider the overall level of service being currently provided to be either high or low.

8. Stratford's ratio of lane kilometres per operator is below average and does not support the notion that too much money is being spent on overtime.
9. Costs adjusted for weather factors indicate that Stratford's lane kilometre unit costs are at the low end of the MRC Survey Peers and the lowest of its Weather Peers
10. Costs adjusted for weather factors indicate that Stratford's per person unit costs are the lowest end of the MRC Survey Peers and the lowest of its Weather Peers.

9. BEST PRACTICE SUGGESTIONS

From interviews with staff and observations of the City's operations we have prepared a list of things the City can consider for future implementation that are generally accepted to be the current "Best Practice" in Winter Operations. Some Best practice items are currently in place.

Winter Control Best Practices currently in place are:

1. Use of Anti-icing Liquids
 - ON board pre-wetting
 - Direct Liquid Application for anti-icing
2. Reduced Salt Use
3. One Man plowing
4. Self Loading Operators
5. Combination Units replacing City owned Single Use Units

The Best Practice items listed below are areas we suggest may be beneficial to the City but need further study to determine their applied value:

9.1.1 Combination Units

The City is replacing its single purpose units with combination plow and spread units. These units offer increased efficiency since they can spread and plow simultaneously. We suggest that the replacement schedule be fast tracked as much as possible. We would offer one caution with respect to combination units. There will be times when the snow being plowed is very heavy and spreading material will not be possible since the truck will require the weight of the materials as ballast to provide traction to the drive wheels. This doesn't happen often but should be understood that every compromise has a potential downside.

9.1.2 Sand Salt Mix Ratios

All sand has some salt in it to keep the stockpile from freezing. The salt in the sand really doesn't do much at low concentrations to remove ice or to chemically form a brine layer to prevent the snow from adhering to the road. Currently Stratford is using an 8 percent salt ratio. It is considered best practice to use ratios of 3 percent or just slightly

more⁹. This requires very accurate mixing however to ensure even distribution of salt throughout the mix or frozen lumps can form.

9.1.3 Contractor Utilization

The practice of the call out process has been that City staff are initially called at the start and then supplemented with contractors and further staff as needed. While this may be a reasonable expectation from a unionized labour perspective it doesn't support the overall mandate of the City to provide efficient service delivery. We suggest that this issue be considered for review at the appropriate corporate level.

9.1.4 Shift Systems

Several staff commented on the need to review the winter shift system. Currently there is no weekend shift scheduled so most winter control activities carried out Friday through Sunday are booked as overtime. From our experience, and in light of the hours of work legislation, one of the most effective winter shift systems is the "days/evening" concept. This system has staff on shift days and evenings only and needs enough staff to operate 7 days a week. In a storm to provide 24 hour coverage the day shift stays 4 hours late to cover 12 hours and the evening shift reports 4 hours early and completes the 24 hour cycle. It ensures that no one violates the hours of work legislation and from a human resources perspective staff on nights are usually awake when the callout is made. Getting people out of bed to respond isn't the best approach. However successful this system has been elsewhere the only suggestion we make is that the City undertake to review their current system with a view of designing a winter shift system that is effective, compliant, potentially reduces overtime costs and is user friendly to staff and supervisors.

9.1.5 Communication Plan

It is just not our observation but Public Works agencies are not very good at telling people what they do or why they do it especially when it comes to winter control operations. We suggest the City design and introduce a communication plan to inform the City's residents of what they can expect during a winter storm. There is a need to communicate the priority route systems, why it exists, the approved levels of service and a reasonable expectation of what will happen during any given storm, who to call during an emergency, where seniors can go for help and other winter survival advice. We suggest a draft of any plan be reviewed by the management of the Police, Fire and Ambulance services so the plan takes their concerns into the mix. We have attached as "Appendix 3" a copy of a winter control flyer produced by the former City of Stoney Creek. It is somewhat dated but is an example of what others have done to help educate the public, improve communications and reduce the call to the dispatch centre during a storm.

9.1.6 Urban Design

The City should review its urban design standards with a view of making the street and boulevard design friendlier to snow removal and storage operations. Loading out and storing snow is expensive and creates environmental problems at the snow storage site(s). Where ever possible the best place to store snow is on the road allowance. Also

⁹ TAC Salt Management Synthesis of Best Practice

residential street design incorporating cul-de-sacs or hammer heads should be discouraged. It takes as long to plow one cul-de-sac as it does to plow 10 km of straight road. Town's such as Oakville actively discourage the construction of cul-de-sac for that reason and where cul-de-sacs exist they are constructed with a large diameter landscaped island that accommodates the radius of the snow plow and provides on street snow storage.

9.1.7 Budget Design

We suggest the City redesign the winter control budget to include more sub-accounts that capture the cost of specific activities like snow removal so the true cost of these services can be reported. Senior Staff and Council can then have the discussion on whether to maintain the services at their current level or adjust them to the suit the community needs or expectations. This would also capture the special service request that staff reported. These services, while outside the budgeted levels of service, have value to the community however their costs should be capture for monitoring and reporting purposes.

9.1.8 Target Ratios

Establishing a target ratio of Lane Kilometres per truck and using that ratio to purchase resources to accommodate growth is an idea the City may wish to consider. At that time the concept of raising or lowering the levels of service can be discussed.

9.1.9 Continued Use of Graders

The City is currently renting graders with operators to supplement its own winter control resources. While combo units are more efficient and offer greater versatility the prices the City is getting for the contracted graders is extremely favourable. Other municipalities are paying considerably more for the same types of equipment. We suggest that the City not change their contract requirements to combo only units unless the market conditions for the graders change. We would speculate that it is likely cheaper to keep the contract graders at this price and add spread only units to supplement the operations

9.1.10 Comment on Overtime

Much has been said about winter control generated overtime costs. May organization has implemented reduction policies and intricate shift systems but from our experience it is always going to be there. It can be managed but when a service is absolutely necessary there has to be some means of ensuring it gets done.

All Canadian Public works operations wrestle with this challenge: How do you efficiently and cost effectively balance running an operation that functions both a construction company and a fire department and at times simultaneously. During winter the main focus of the operation is to react quickly to maintain the roads and sidewalks for public safety. Timeliness is every thing and it is organized very similar to any fire department. During all other times, and during winter when it is not snowing, the same crews operate like a construction company doing repairs and maintenance on the City's assets.

If it were just a construction operation there would be only day shifts, every activity authorized by work order and overtime approved only for extreme conditions. If it were

just a fire company then there would be a shift system to provide continuous coverage all through the week and no overtime.

There is little difficulty meeting this challenge this during the summer but winter poses the problem. It would be possible to organize a winter shift system were little or no overtime was required. However it would require more trained people to staff the shifts than would normal be used during summer. More importantly two of the shifts operate outside of daylight hours. So it is difficult to find productive construction type work for the staff to do at night in the winter during the times it is not snowing. Even though Stratford gets more snow than most Cites the number of winter events generating response is approximately 40 per year.¹⁰ If each response takes 2 days to clean up there are approximately 80 days of full out winter work. If the winter season standby season runs from mid-November to mid-April there are about 150 winter days where a shift would be required of which only 80 of them have staff fully mobilised on winter activities. It would be difficult to find productive work for 2 shifts in during night time for the 70 days where not much winter was happening.

So the suggestion that the costs associated with overtime can be better controlled by shift design is does not take all the factors into consideration. It would reduce overtime cost but at what other expense. The work done by staff in winter during the times it is not snowing has value. A shift design that only focuses on overtime elimination discounts the value of the work the staff provide to improve the value of the City's assets and to provide continuous public safety in other areas like work on signage, protective barriers etc.

It is common in Ontario to find smaller public works winter shift systems that rely on overtime to provide the "fire department" type services during winter. The cost of the overtime is balanced against the value of the "construction type" work that would go undone if all their staff were on shift. Sometimes during severe winters the overtime cost would make it seems foolish to continue but on average, over several years, a system that relies on overtime for its existing trained staff seems to be the best way to address this challenge and is potentially the cheapest solution if you cost out the alternatives of hiring more staff to do the work going undone or to hire and train staff just for the winter shift.

McCormick Rankin Corporation

¹⁰ 2006 MPMP data

APPENDIX 1A

FIR2006: London C

Asmt Code: 3936

MAH Code: 59101

Schedule 40
REVENUE FUND EXPENDITURES
for the year ended December 31, 2006

		Salaries, Wages and Employee Benefits	Long Term Debt Charges (Interest)	Materials	Contracted Services	Rents and Financial Expenses	External Transfers	Subtotal	Long Term Debt Charges (Principal)	Transfers to Own Funds	Inter-Functional Adjustments	Allocation of Program Support *	Amounts for Undeclared Liabilities	TOTAL Expenditures	TOTAL Expenditures LESS Undeclared Liabilities	
		1	2	3	4	5	6	7	8	9	12	13	14	11	15	
		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
General government																
0240	Governance	1,559,810	0	575,984	32,060	0		2,167,854		550,000				2,602,854	2,717,854	
0250	Corporate Management	9,743,094	196,145	5,161,346	6,796,816	4,831,961	807,404	27,636,768	708,201	20,855,744	-37,900		673,720	48,036,533	48,162,813	
0260	Program Support	21,389,214		117,508	2,963,096	1,131,723		25,611,543		2,128,968	-285,295		-25,326,258	1,450,832	3,576,000	
0299	Subtotal	32,702,218	196,145	5,854,838	9,791,676	6,063,684	807,404	55,418,245	708,201	23,531,712	-323,195		-25,326,258	2,800,453	54,008,715	
Protection services																
0410	Fire	37,461,199	74,586	2,163,067	64,822	0		39,763,774	259,332	6,463,698			1,709,937	2,531,759	50,728,500	
0420	Police	65,419,148	117,772	5,279,506	470,343	140,332		71,428,901	707,732	2,886,797			4,426,589	4,079,991	83,528,010	
0430	Conservation authority	0		0	0	0	1,955,791	1,955,791		4,671			0	1,960,462		
0440	Protective inspection and control	4,583,425		2,137,821	178,159	6,342		6,907,547		983,688			783,937	307,603	8,692,776	
0450	Emergency measures	154,231	7,178	5,684	10,532			177,623		16,399			4,230	10,351	342,252	
0460	Provincial Offences Act (POA)	1,157,468	123,482	565,343	562,171	238,945	286,580	2,953,969	316,529	54,806	310,785		321,638	77,660	4,036,407	
0498	Other Erosion Control	0		0	0	0		0					0	0		
0499	Subtotal	108,775,471	322,896	10,171,821	1,286,127	387,819	2,242,371	123,165,605	1,301,882	10,530,890	310,785		7,231,002	7,007,384	142,580,374	
Transportation services																
0610	Roadways	12,606,815	2,476,897	5,785,194	1,587,233	445,889		22,913,838	6,312,074	18,496,020			940,224	739,388	48,403,544	
0620	Winter control	3,743,450		2,789,573	59,131	2,054,732		8,646,886		1,882,147			72,415	211,133	10,612,581	
0630	Transit	29,263,489	626,233	13,236,594	2,347,990	0	1,000,000	46,474,300	1,693,305	3,330,821			24,073	1,145,474	51,522,505	
0640	Parking	841,067		127,011	816,703	3,724		1,788,525		451,399			54,395	54,710	2,294,319	
0650	Street lighting	145,221	22,752	5,340,661	0			5,508,634	66,833	111,990			52,931	13,332	5,753,690	
0660	Air transportation	0		0	0			0		9,085			0	9,085		
0698	Other Other Transportation	0		0	0			0					49	49		
0699	Subtotal	46,599,862	3,127,882	27,279,033	4,821,057	2,504,355	1,000,000	85,332,189	6,072,212	24,283,432	0		1,144,067	2,164,037	118,895,957	
Environmental services																
0810	Sanitary sewer system	11,294,137	1,355,433	10,145,886	512,490	632,462	296,135	24,408,543	2,758,658	9,210,025			829,826	567,999	37,872,051	
0820	Storm sewer system	1,990,405	1,203,822	1,082,474	84,407	110,105	213,865	4,694,878	1,751,043	8,353,235			451,284	196,364	15,440,440	
0830	Waterworks system	8,820,782	1,389,347	9,092,676	3,269,551	439,966		22,992,332	5,907,257	15,725,759	12,400		740,219	45,680,274	45,378,087	
0840	Waste collection	4,141,458		2,500,753	110,758	1,375		6,754,944		35,483			487,911	304,409	7,582,147	
0850	Waste disposal	1,358,567		765,893	104,854	1,200,339		3,429,653		1,670,385			417,278	5,835,490	11,552,608	
0860	Recycling	1,003,838		152,475	4,043,685	124		5,200,222		9,743			113,548	7,794	5,331,307	
0898	Other Public Utilities Commission	376,437		518,528	111,251			1,009,216					1,012,436	25,465	2,047,117	
0899	Subtotal	28,958,734	3,928,402	24,258,685	8,236,798	2,584,371	510,000	68,476,988	10,417,158	35,204,830	12,400		4,151,402	7,238,728	118,282,576	
Health services																
1010	Public health services	15,687,406		3,327,302	1,144,014	1,004,207	389,627	21,552,556		24,100			214,179	110,720	21,901,555	
1020	Hospitals			0	0			0		2,013,114			4,655	2,017,769		
1030	Ambulance services			8,038,389				8,038,389					9,815	8,048,204		
1035	Ambulance dispatch			0				0					0	0		
1040	Cemeteries			0				0					0	0		
1098	Other Medical capital grants			0				0					0	0		
1099	Subtotal	15,687,406	0	3,327,302	8,182,403	1,004,207	389,627	29,590,945	0	2,037,214	0		228,649	110,720	31,867,528	
Social and family services																
1210	General assistance	14,021,309		3,698,637	6,915,322	1,164,095	88,168,434	123,887,797		3,001,157			3,011,403	940,997	130,901,354	
1220	Assistance to aged persons	14,286,659	1,643,268	2,008,451	348,402	7,997	207,331	18,500,108	944,656	523,441			1,219,372	958,805	22,146,382	
1230	Child care	1,146,577		25,436	15,190,339	72,400	13,017,025	29,451,777		50,000			636,599	76,949	30,218,325	
1298	Other Other Social Services	213,683		152,717	4,081			370,481		18,264			14,341	403,066		
1299	Subtotal	29,668,228	1,643,268	5,885,241	22,458,144	1,284,492	111,392,790	172,310,163	944,656	3,574,598	0		4,885,638	1,991,092	181,715,055	
1499	Social housing	4,098,486		4,081,161	7,481,384	387,650	17,765,823	33,814,804		7,337,406			264,011	65,401	41,481,422	
Recreation and cultural services																
1610	Parks	4,243,965	275,470	2,041,280	336,718	235,768		7,133,201	770,620	1,712,830			543,394	284,501	10,444,548	
1620	Recreation programs	5,383,229		1,067,401	307,109	397,742	239,264	7,794,745		87,969			2,344,648	361,279	10,188,841	
1631	Rec. Fac. - Golf Crs, Marina, Ski Hill	1,380,555		1,026,891	218,829			2,626,375		390,945			92,468	3,555,829		
1634	Rec. Fac. - Other	4,912,440	1,893,587	1,824,302	2,195,239	52,841		10,878,409	4,286,460	4,941,752			2,139,143	327,840	22,573,604	
1640	Libraries	11,274,541		1,480,942	5,010,891	0	52,573	18,385,201	1,378,716	705,098			124,661	11,576	20,005,254	
1650	Cultural services	1,338,172	58,602	1,643,279	872,293	73,657	413,180	4,399,183	152,000	2,591,283			832,892	-16,923	7,958,435	
1698	Other Other Recreation and cultural s	0		0	0			0					0	0		
1699	Subtotal	28,532,802	3,508,001	12,614,044	4,496,542	760,008	705,017	50,817,114	6,587,798	10,429,877	0		6,430,779	1,068,741	75,128,309	
Planning and development																
1810	Planning and zoning	3,514,670		260,689	897,968	261,495	-215,991	4,719,039		302,322			652,060	213,630	5,887,051	
1820	Commercial and industrial	2,399,453	385,742	2,469,873	1,073,827	122,162	2,426,502	8,674,559	1,140,322	13,442,122			269,664	-65,048	23,881,821	
1830	Residential development	866,291		34				866,325		508,773			58,835	58,138	1,434,933	
1840	Agriculture and reforestation							0		209,693			10,008	219,791		
1850	Tile drainage/shoreline assistance		4,822					4,822						4,822		
1898	Other Urban Renewal							0		44,500			33	44,533		
1899	Subtotal	6,780,614	390,364	2,727,606	1,971,793	383,657	2,210,511	14,484,545	1,140,322	14,508,410	0		990,690	208,722	31,310,690	
5099	Non-Functionalized Amounts													0	0	
9910	TOTAL	301,803,821	13,117,858	98,198,911	69,724,222	15,340,043	137,023,643	633,208,396	29,172,330	131,438,269	0	0	22,055,278	615,874,284	793,919,006	

* Column 13, designated for Allocation of Program Support (Line 0260), may also include amounts allocated for Corporate Management (Line 0250)

APPENDIX 1B

FIR2006: Guelph C
 Asmt Code: 2308
 MAH Code: 75101

Schedule 40
REVENUE FUND EXPENDITURES
 for the year ended December 31, 2006

		Salaries, Wages and Employee Benefits	Long Term Debt Charges (Interest)	Materials	Contracted Services	Rents and Financial Expenses	External Transfers	Subtotal	Long Term Debt Charges (Principal)	Transfers to Own Funds	Inter-Functional Adjustments	Allocation of Program Support *	Amounts for Undeclared Liabilities	TOTAL Expenditures	TOTAL Expenditures LESS Undeclared Liabilities	
		1	2	3	4	5	6	7	8	9	12	13	14	11	15	
		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
General government																
0240	Governance	476,496		171,015	106,268	0		753,780			32,710	46,990	12,174	845,614	833,440	
0250	Corporate Management	3,353,995		247,499	1,396,557	9,884	1,229	5,009,944	13,146,968		110,402	448,832	56,269	18,550,609	18,494,340	
0260	Program Support	4,261,083	0	1,833,312	3,547,480	1,684,805		11,326,680			-2,167,419	-9,159,261	138,286	138,286	0	
0299	Subtotal	8,091,574	0	2,251,826	5,050,305	1,694,689	1,229	17,080,404	0	13,146,968	-2,245,111	-8,663,479	206,729	18,534,508	19,327,780	
Protection services																
0410	Fire	13,642,063	18,156	1,015,430	212,216	0		14,886,565	0	182,995	143,058	627,762	347,757	16,188,137	15,840,380	
0420	Police	22,629,855	1,825	1,303,373	1,031,005	28,433	0	24,994,291	0	970,176	220,890	1,314,270	578,163	28,077,790	27,489,627	
0430	Conservation authority			0	0		1,058,358	1,058,358			0	0	0	1,058,358	1,058,358	
0440	Protective inspection and control	1,883,226		123,210	54,874	518	292,775	2,354,403		0	787,529	93,455	48,114	3,283,501	3,235,387	
0450	Emergency measures	0		0	0	0	0	0		0	0	0	0	0	0	
0460	Provincial Offences Act (POA)	629,813		577,233	148,767	17,257	918,329	2,287,199		254,500	140,000	188,651	16,086	2,886,436	2,870,350	
0498	Other	0	0	0	0	0	0	0		0	0	0	0	0	0	
0499	Subtotal	38,784,757	17,781	3,019,246	1,445,382	46,200	2,267,462	45,580,816	0	1,407,871	1,291,477	2,224,138	990,120	51,484,222	50,504,102	
Transportation services																
0610	Roadways	7,525,733	219,060	2,571,781	1,846,532	100	0	11,983,188	713,865	9,671,154	-4,689,762	729,224	192,273	18,579,040	18,387,667	
0620	Winter control	594,229		1,248,140	1,815	0	0	1,844,184			338,134	95,865	15,182	2,283,494	2,278,512	
0630	Transit	9,314,507	78,783	3,580,820	800,241	38,737	0	13,811,168	435,935	1,184,981	322,754	932,574	237,974	16,925,383	16,687,409	
0640	Parking	1,480,621	0	1,036,031	338,163	2,907	98,546	2,956,668	0	1,519,484	95,353	182,805	37,317	4,781,307	4,743,600	
0650	Street lighting	577		738,045	213,826	0	0	952,448		0	0	79,299	15	1,031,762	1,031,747	
0660	Air transportation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0698	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0699	Subtotal	18,895,667	297,823	9,174,906	3,000,577	39,744	98,546	31,507,263	1,149,800	12,375,589	-3,833,521	2,029,984	482,761	43,611,888	43,128,125	
Environmental services																
0810	Sanitary sewer system	2,865,190	258,518	3,972,335	1,656,447	0	0	8,752,490	1,258,587	6,236,695	733,041	635,003	78,213	17,694,029	17,815,816	
0820	Storm sewer system	123,495	0	89,842	14,850	0	0	208,187	0	0	47,070	11,395	3,115	269,767	266,652	
0830	Waterworks system	2,820,786	0	2,213,540	1,620,853	0	0	6,755,179	0	5,579,050	707,819	519,871	72,117	13,633,838	13,561,719	
0840	Waste collection	1,313,143		92,837	130,946	0	0	1,536,926		0	2,603,715	79,578	33,549	4,253,568	4,220,019	
0850	Waste disposal	263,834	332,578	105,945	3,603,382	0	0	4,305,639	2,030,437	0	242,156	846,824	6,743	7,231,699	7,225,258	
0860	Recycling	3,824,795		2,668,778	1,822,706	618	0	8,016,897	0	-540,350	587,495	95,213	8,139,255	8,044,942		
0898	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0899	Subtotal	11,311,343	591,096	9,123,077	6,549,184	618	0	28,575,318	3,289,024	11,815,745	3,783,451	2,459,968	288,950	51,222,454	50,933,504	
Health services																
1010	Public health services	0	0	0	5,048,209	0	2,098,389	7,146,598		17,954	0	0	0	7,164,552	7,146,552	
1020	Hospitals		18,437	0	0	0	0	18,437	149,211	0	0	0	0	167,648	167,648	
1030	Ambulance services	7,878		250,215	8,410,428	0	0	8,688,521		0	0	0	201	8,688,722	8,688,521	
1035	Ambulance dispatch							0						0	0	
1040	Cemeteries							0						0	0	
1098	Other							0						0	0	
1099	Subtotal	7,878	18,437	250,215	13,458,637	0	2,098,389	15,833,556	149,211	17,954	0	0	201	16,000,822	16,000,721	
Social and family services																
1210	General assistance				0	0	36,281,504	36,281,504		0				36,281,504	36,281,504	
1220	Assistance to aged persons			0	634,000	0	0	634,000						634,000	634,000	
1230	Child care						8,851,508	8,851,508						8,851,508	8,851,508	
1298	Other						0	0						0	0	
1299	Subtotal	0	0	0	0	0	43,767,012	43,767,012	0	0	0	0	0	43,767,012	43,767,012	
1499	Social housing	80,655	2,566,224	2,931,822		1,308,294	9,948,771	16,833,766		290,376				17,124,142	17,124,142	
Recreation and cultural services																
1610	Parks	2,082,966	0	425,840	101,233	0	12,000	2,622,139	0	0	725,347	122,820	52,692	3,532,798	3,480,108	
1620	Recreation programs	2,342,208	0	131,530	229,801	0	95,354	2,798,693		0	27,069	113,141	47,424	2,986,547	2,939,123	
1631	Rec. Fac. - Golf Crs, Marina, Ski Hill							0			0	0	0	0	0	
1634	Rec. Fac. - Other	3,433,196	1,256,714	1,977,709	736,923	99,126	219	7,503,887	1,303,884	906	143,689	1,011,806	102,470	10,068,644	9,984,174	
1640	Libraries	3,639,994		1,315,002	407,421	2,820	0	5,365,237	0	513,705	37,300	305,640	92,997	6,314,879	6,221,882	
1650	Cultural services	1,571,196	46,778	474,140	-54,242	23,087	283,998	2,344,957	483,500	46,696	22,687	218,970	39,362	3,156,172	3,116,810	
1698	Other (Farmers Market)	33,867		33,028	25,880	0	0	92,588			3,231	7,695	865	104,379	103,514	
1699	Subtotal	13,113,427	1,303,492	4,357,349	1,448,829	125,033	391,571	20,737,701	1,787,384	581,309	959,343	1,779,872	338,610	26,161,419	25,825,609	
Planning and development																
1810	Planning and zoning	1,372,251	0	41,538	102,957	0	0	1,516,746		0	130,898	74,096	35,059	1,758,789	1,721,740	
1820	Commercial and Industrial	701,771	0	1,276	347,703	1,150	418,457	1,470,360	0	0	3,463	95,423	17,929	1,587,175	1,569,246	
1830	Residential development			0	0	0	0	0			0	0	0	0	0	
1840	Agriculture and reforestation			0	0	0	0	0			0	0	0	0	0	
1850	Tile drainage/shoreline assistance			0	0	0	0	0			0	0	0	0	0	
1898	Other			0	0	0	0	0			0	0	0	0	0	
1899	Subtotal	2,074,022	0	42,817	450,660	1,150	418,457	2,987,108	0	0	134,361	169,519	52,988	3,343,974	3,290,986	
5099	Non-Functionalized Amounts													0	0	
8910	TOTAL	92,359,323	4,794,863	31,151,258	33,401,555	3,215,516	58,989,437	223,911,942	6,375,419	39,615,620	0	0	2,857,559	272,260,540	269,902,981	

* Column 13, designated for Allocation of Program Support (Line 0260), may also include amounts allocated for Corporate Management (Line 0250)

APPENDIX 2

**Appendix 2
Summary of Survey Responses**

	From	Received Date	Municipality	Contact	Address	Phone	e-mail	Lane Kilometres (2006)	Sidewalk Kilometres	Snow Removal (Curblin Kilometres)	No. Patrol YDS	Population	Area km2	% rural	% urban
COBOURG	nstewart@cobourg.ca	01/06/2010 9:09	Town of Cobourg	Neil Stewart	290 King Street West, Cobourg, ON, K9A 2N7	905-372-9971	nstewart@cobourg.ca	260	102 (sand only)	158	1	18,500	23.6	5	95
GEORGINA	Bob Fortier	01/06/2010 9:09	Town of Georgina	Bob Fortier	26557 Civic Centre Road	905-476-4301 x 230	rfortier@georgina.ca	778	done by Leisure Services	?	2	47,000	200 s km	? - 40	? - 60
GRIMSBY	R LeRoux	01/06/2010 9:09	Town of Grimsby	R. LeRoux	PO Box 159 , 160 Livingston Ave., Grimsby ON , L3M 4G3	905 309 2008	bleroux@town.grimsby.on.ca	2006 data 310 lane km	77 km	na - cul de sacs only if required	1	24,200	68.12 km2	39%	61%
LONDON	anonymous user	01/06/2010 9:09	City of London	John Parsons	663 Bathurst Street	519-661-2500 ext 8491	jparsons@london.ca	3500	1600	we don't track that	5	358000	42,300 hectares	don't have that info	don't have that info
ST. MARYS	Sofia Polania	01/06/2010 9:09	Town of St. Marys	Sofia Polania	P.O. BOX 998, 408 James St. S.	(519) 284-2340 Ext. 208	spolania@town.stmarys.on.ca	106.4	40.5	73.3	1	6293		0	100
WATERLOO	Brad Witzel	01/06/2010 9:09	City of Waterloo	Brad Witzel	100 Regina St. S, Waterloo ON, N2J 4A8	519-886-2310 x264	brad.witzel@waterloo.ca	792 km	124 km	14.5 km	1	120,800	64 Square Kilometres	11%	89%
GUELPH	2010.pdf	Sam Mattina	01/06/2010 9:01	City of Guelph	Sam Mattina	1 Carden St.	sam.mattina@guelph.ca	1,075	624	30	1	118,000	135 square kilometres	2%	98%
STRATFORD	Lyndon Kowch	14/06/2010 15:59	City of Stratford	LyndonKowch			lkowch@city.stratford.on.ca	374	160	up to 150 km (aprox)	1	32000	26.7 km	10	90%

**Appendix 2
Summary of Survey Responses**

	NO of Combo Units	No. of Plow only Units	No. Spread Only Units	No. of Sidewalk Units	Staff Available (all types)	km/sidewalk unit	No. Lane Kilometres/ Truck	No of lane kilometres/operator	Salt App Rate Tonnes/Lnkm	Prioritized Response (Yes Box)	Prioritized Response (No Box)	Describe	Criteria	24/7 Service (Yes Box)	
COBOURG	6	2	N/A	2	13		43.3	20	To MTO Specs	Yes	Off	http://cobourg.ca/index.php?option=com_content&view=article&id=74&Itemid=445	http://cobourg.ca/index.php?option=com_content&view=article&id=74&Itemid=445	Yes	
GEORGINA	13		1	Leisure Services	WC - what does this mean?	Leisure services	60	52	?	Yes	Off	Not sure what this question means. Each route has priority streets that are plowed and sanded first.	Collector roads, main roads out of a subdivision, curves, hills, drifting etc.	Yes	
GRIMSBY	6	5 (2x 2tonnes+ 2x backhoes + 1 Frit End Lder)	0	2	13 incl. Foreman + 5 from other Depts as required)	?	all routes vary in length and lengths are na	?	? straight salt or salt in mix	Yes	Off	One priority route and all others treated the same	Priority Route represents our most important Collector roads Established by general knowledge of municipality	Off	
LONDON	8	62	16	33	120	48	41	56 for plows	28	Yes	Off	We have 62 plow beats, 24 sander/salter beats.	We prioritize based on the class system outline in reg 239/02	Yes	
ST. MARYS	2	1	1	2	13	40.5 Km/unit				Yes	Off	Arterial and collector roads are done first followed by the core area and school routes.	Traffic flow and safety.	Yes	
WATERLOO	15	1	0	7	FT:30, PT:7	17.7	792/15 = 52.8	792/37 = 21.4	Dry Rate: L 60kg, M 118kg, H 141kg, Pre Wet: L 50kg, M 95kg, H 113kg	Yes	Off	- Attachment #1: 2009/2010 Plow Routes	Roads Network is prioritized by: - Regional Roads - Bus Routes - Schools - Secondary Roads or Subdivisions	Yes	
GUELPH	16	30	13	60	48	67.2	35.8	4.77te/ln/km		yes	off	www.guelph.ca	Minimum Maintenance Standards, transit bus routes, school zones	Yes	
STRATFORD		2	10	2	6	12 operators 6 truck/lab	5 beats/160km = 32 km	city=74.8km city & contract=41.5km per plow/truck	as above in 8.	2200 tonnes/374=5.88kg	yes	off	primary mains	Minimun Maintenance Standard	Yes

**Appendix 2
Summary of Survey Responses**

	24/7 Service (No Box)	Any Restrictions?	Level of Service Docs (Yes Box)	Level of Service Docs (No Box)	Copy or Link	Sidewalk Clearing (Yes Box)	Sidewalk Clearing (No Box)	All or part of inventory	Snow Removal in Core Area (Yes Box)	Snow Removal in Core Area (No Box)	Snow Removal Criteria	Restrictions of Hoursof Operation	% contracted out
COBOURG	Off	http://cobourg.ca/index.php?option=com_content&view=article&id=74&Itemid=445	Yes	Off	http://cobourg.ca/index.php?option=com_content&view=article&id=74&Itemid=445	Yes	Off	Town only clears sidewalks adjacent to town owned property.	Yes	Off	Restrictions on Hours of Operations	2:00 a.m. to 7:00 a.m.	5
GEORGINA	Off		Off	Yes		Yes	Off	We plow all sidewalks. This function falls under our Leisure Services department and I am not sure' of details for this work.	Yes	Off	based on complaint by local businesses. When banks get to be about 1 and half metres, they are usually cleared.	No. It is usually done at night with cooperation with the upper tier (Region of York) who operate a large snowblower. We use grader to pull snow onto road where blower loads it into trucks.	15%
GRIMSBY	Yes	Only as set by MMSMH	Off	Yes		Yes	Off	100% of public sidewalks located on municipal ROW's and includes sidewalks on Town , Regional and Provincial ROW's	Yes	Off	only on rare occasions after extremely heavy snow build up. Done 1 -3 times over a 5 yr. period	No	
LONDON	Off	We have a sander/salter shift that is 24/7 from November to April. We use 8 city staff per shift and 16 contracted units as required. If designated plows are required then they are called in	Off	Yes		Yes	Off	London maintains all sidewalk within the ROW with the exception of the downtown area where we assist but rely on the business owners to ensure the sidewalk remain clear. See attached standard	Yes	Off	This service is provided based on visual observation and not a set height. It is rare that we are required to remove all the windrows in the core area. Typically we focus on bus stop areas.	We typically remove snow during the evening or between 5am and 7am. We have a downtown shift that starts a 5am and they remove snow with a bobcat and service truck as required during those hours.	
ST. MARYS	Off		Off	Yes		Yes	Off	Entire network including walking trails/paths.	Yes	Off	Windrow height of 18". Clean up is dependant on weather events at the discretion of Public Works Supervisor.	Generally, core ara snow removal begins at 2:00 A.M. and it is completed by 6:00 P.M. per event.	
WATERLOO	Off		Off	Yes	MMSMH: Minimum Maintenance Standards for Municipal Highways The City of Waterloo complies with MMSMH Regulations	Yes	Off	Sidewalk snow clearing is for part of the network - 124km maintained - 124/492 = 25% Criteria: - Back Lotted Sidewalks - In front of City Facilities - In front of Park Property	Yes	Off	#NAME?	#NAME?	5%
GUELPH	Off		Yes	Off	www.guelph.ca	Yes	Off	Entire network	Yes	off	Windrow height is trigger criteria. Removal is scheduled when height reaches 0.3 metres.	No restrictions in place, but in order to cause minimal disruption to downtown activities, removal is normally performed at night. it takes on average 3 night shifts (of 8 hours) to complete the removal task.	19%
STRATFORD	Off		Off	Yes	need to ask about response times.	Yes	Off	entire network, with priority sidewalk cleared first in 5 beats	Yes	Off	At an average height .6 meters we remove all core snow banks adjacent to parking stalls and store frontages	For safety and ease of operation (efficiency) this is conducted from 11 pm to 6 am. Conducted by regular shifted operators and contract equipment.	30%-40% of plowing

**Appendix 2
Summary of Survey Responses**

	WC work Done In-House? (Yes Box)	WC work Done In-House? (No Box)	Sidewalk Work In-House (Yes Box)	Sidewalk Work In-House (No Box)	Winter Control Shifts (Yes Box)	Winter Control Shifts (No Box)	Do You Use Wingmen	Overall Contracted out	Describe Shift System	Patrol System (Yes Box)	Patrol System (No Box)	Describe Patrol System	OT all Activities (Yes Box)	OT all Activities (No Box)
COBOURG	Off	Yes	Yes	Off	Off	Yes	no			Yes	Off	Dispatched after regular hours by local police service.	Yes	Off
GEORGINA	Off	Yes	Yes	Off	Off	Off	no			Yes	Off	Monday to Friday - one staff in each yard do what we call night shift. They come in at 3:30 am and work to Noon. They are responsible for patrolling at this time. The Foreman in each yard are responsible to patrol in evenings and weekends.	Off	Yes
GRIMSBY	Yes	Off	Yes	Off	Off	Yes	no			Yes	Off	Not 24/7 and only to the extent that a Foreman or supervisor may be available.	Yes	Off
LONDON	Off	Yes	Off	Yes	Yes	Off	wingmen	50	The sander salter work a 8 hour shifts 24/7 from November to April. 8 city staff per shift and 16 contacted as required are our first response to any storm. The dedicated road plow and sidewalk operators work 7am-3pm Monday to Friday and are call in if required outside of their normal work day.	Yes	Off	The Supervisors or city staff that work on the 24/7 shift will patrol representative roads and fill out forms describing the locations that they check.	Yes	Off
ST. MARYS	Yes	Off	Yes	Off	Yes	Off	Wingmen		Two employees work from 3:30 A.M to 12 P.M. Weather depending the call in should require staff to manage any event. All operators are on a rotating 6 week shift. The remaining staff works from 7:30 A.M. to 4:00 P.M.	Yes	Off	Our early shift patrols a predefined route each morning and then cover a specific area of Town rotating the areas each day.	Yes	Off
WATERLOO	Off	Yes	Yes	Off	Yes	Off	Wingmen	N/A - #4 Not Contracted	Week Day Shift Schedule - Full day shift / 7am to 3pm / 15 employees - Afternoon shift / 3pm to 11pm / 7 employees - Night shift / 11pm to 7am / 7 employees Weekends Shift Schedule - 2 employees per shift - * Additional Employees as required*	Yes	Off	Trucks with Computer enabled GPS systems. GPS system tracks areas that have been completed/remain outstanding. Also records the amount of materials used.	Yes	Off
GUELPH	off	yes	Yes	Yes	Off	Yes	Off	one man plows	3 shifts per day- 7am-3pm, 3pm-11pm, 11pm-7am Monday- 7 staff per shift Tuesday- 10 staff per shift Wednesday- 10 staff per shift Thursday- 10 staff per shift Friday- 7 staff per shift Saturday- 3 staff and 4 temp staff per shift Sunday- 3 staff and 4 temp staff per shift	Yes	Off	Leadhand per shift performs winter road patrol.	Yes	Off
STRATFORD	Off	Yes	Yes	Off	Yes	Off	no	see2	7:30 to 3:30 regular day shift 3:00 pm to 11:00 pm afternoon shift - 1 sander operator shifted 11:00 pm to 7:00 am night shift - 2 operators typically in combo trucks	Yes	Supervisors patrol 24/7 daily or as needed All patrol on off hours done by supervisors on overtime. Staff on duty could be considered for this task?	Off	Yes	Off

**Appendix 2
Summary of Survey Responses**

	OT Restrictions	OT Reduction Policy (Yes Box)	OT Reduction Policy	Straight Salt (Yes Box)	Straight Salt (No Box)	Annual Tonnage Salt	Sand/Salt Mix Ratios	Annual Amount	Spread Sand/Salt Mixes (Yes Box)	Spread Sand/Salt Mixes (No Box)	Describe Liquids	Use Liquids (Yes Box)	Use Liquids	Copy of FIR
COBOURG		Off	Yes	Yes	Off	1400 to 1900			Off	Yes	Manufacture brine on site at Public Works Department.	Yes	Off	
GEORGINA	Foreman are considered management and follow management policy (straight time)	Off	Yes	Off	Yes		10%	13,000	Yes	Off		Off	Yes	http://www.town.georgina.on.ca/pr-performance-measures.aspx
GRIMSBY		Off	Yes	Yes	Off	Only on Priority roads - 366t in 05/06 season	5:1 , 17%	1,877t = 1.610t sand + 267t salt ; 05/06 season	Yes	Off		Off	Yes	attached
LONDON		Off	Yes	Yes	Off	40,000 tonnes and it is all prewetted with salt brine and 'beet juice'	10:01	20,000	Yes	Off	30% Desugared sugar beet molasses and 70% salt brine is used for prewetting and anti icing	Yes	Off	Operating costs for winter control maintenance of roadways per lane kilometre = \$2007.50/lane km 2006 was a mild winter and one of the few where we had a surplus. Budget \$9,130,940 Actual(net) \$7,808,714 net (Revenues of \$332,000 for bus stops clearing and subdivision plowing) Contractor cost (gross) \$2,054,732 (\$80,000 revenue for Bus stops clearing)
ST. MARYS		Yes	Off	Yes	Off	Annual tonnage of salt used is approximately 1000 tonnes.	Mix and spread ratios are determined by the truck operator and vary depending on conditions.	Average sand used is 1100 tonnes.	Yes	Off		Off	Yes	
WATERLOO	Overtime is authorized by the Managers or Lead Hands	Yes	Off	Yes	Off	2007: 12,358.25 MT, 2008: 12,376.64 MT, 2009: 7,820.21 MT	90% Sand / 10% Salt - Only applied on gravel roads	Not Available	Yes	Off	#NAME?	Yes	Off	Attachment #2 City of Waterloo 2006 FIR MPMP filing data 2) For 2006 year actuals, we are providing the Winter Control Cost (Org #17101) - Regional Cost Ignored: Reimbursed by Region - Ignored other Transportation Cost: Only provided Winter Cost - Below Calcs based on Org 17101 figures Attachment #3 & #4
GUELPH	We ask all operators to communicate fully and continuously with the Road Patroller/Lead hand during a snow/ice event in order to continually assess road conditions which aids in decision making on whether to call in additional staffing requirements, (on overtime) which ultimately reduced cost impacts.	Yes	Off		Yes	9,200 tonnes, average of last 3 years	5 % salt/sand mix	2,500 tonnes	Yes	Off	Anti icing- salt brine, all salt routes before the storm 100% Pre wetting with salt brine at 23% concentration Salt brine mixed with Fusion (beet juice) during cold snaps at a 70% salt brine, 30% Fusion ratio.	Yes	off	The link below goes to the FIR home page for all municipalities. Question 1 is on schedule 91 and Question 2 is on schedule 40. http://csconramp.mah.gov.on.ca/fir/Wel come.htm
STRATFORD		Yes	Off	Yes	Off		10 50/50 typical (1 to 1)	5200 tonnes (2200 salt and 3000 sand typical)	Yes	Off	salt brine	Yes	Off	

**Appendix 2
Summary of Survey Responses**

	2006 Actuals (Yes Box)	2006 Actuals (No Box)	\$/Ln/Km Roads	\$/Sidewalk Km	Cost of Salting/LaKm	Snow Removal Cost/LnKm	OT/LnKm	OT for Snow Removal	Communication Plan (Yes Box)	Communication Plan (No Box)	Details
COBOURG	Off	Yes							Off	Yes	
GEORGINA	Off	Yes	1566						Off	Yes	
GRIMSBY	Yes	Off	\$598 / lnkm	\$414 / km	? salt alone or sand salt costs - which we do not have	na	\$, \$37/lnkm , + \$31/lnkm standby/off hours cost - all included in item 1. above	\$21 total	Off	Yes	
LONDON	Yes	Off	\$2007.50 / lane km	\$578 / km typically \$900/km	\$2,807/km (labour, equip, mat)salt runs	snow loading approx. \$50,000	\$74	don't have detailed cost	Yes	Off	http://www.london.ca/d.aspx?s=/Snow_Removal/default.htm
ST. MARYS	Off	Yes							Yes	Off	Community Calendar and local paper ads.
WATERLOO	Yes	Off	\$1,185,978 / 792km = \$1,497.44	\$122,037 / 124km = \$984.16	\$283,111 / 792km = \$357.46	\$183,529 / 792km = \$231.72	Not Available	Not Available	Yes	Off	Yes we have a formal and informal communications process 1. We in conjunction with the City of Kitchener prepare flyers and have delivered to each house in K-W (however, did not do it this for 2009-2010 winter) 2. We also issue media releases throughout the winter (example Attachment #5); 3. The media release also appears on the City Website Home Page for a day or so while in effect 4. Each spring we prepare a report for Council on Operating Costs for the most recent winter. 5. We have information on our Website (copy below address into explorer for details) Links:
GUELPH	Yes	Off	\$1,467.59 for 2006	\$350.48 for 2006	\$474.29 for 2006	data not available	\$43.82 for 2006	data not available	Yes	Off	website-www.guelph.ca
STRATFORD	Yes	Off	293k/374km=\$783.km plow 257k/374km=\$687/km sanding total = \$1470/km	125k/160km = \$781/km	2200t@47.50=\$104k/374km = \$270/km (some to parking lots)		Incorporated in the above	to follow	Off	Yes	http://web-dev.stratford.internal/cityinternalwebsite/site_stepstocityhall/faqs_answer_type_result.asp?FAQType=Snow%20Removal

APPENDIX 3

PLOW OPERATOR'S SUGGESTIONS

- "Please give snow plows plenty of room. Snow plows make frequent stops and reversing is required at intersections. Do not pass to the right of any snow plow. If a snow plow is stopped, keep back 20 metres so the operator can see your vehicle."
- "Snow plows leave a pile of snow when they pass, these are called 'windrows'. To reduce the windrow in your driveway, clear your drive after the plow has passed (if possible) and be sure when shoveling snow that you pile it in the direction of traffic travel."
- "Keep children off of snow banks, they can slip off and into the path of vehicles and equipment. Do not let children tunnel into snow banks. The snow bank can collapse or be pushed back by secondary plowing."
- "Help others and help yourself!"
- Keep catchbasins clear, keep snow away from culverts and uncover fire hydrants near your home."
- "Do not throw your driveway and sidewalk snow onto the road. Not only is it a violation of City By-Laws but snow plows will push it back on the next pass."
- And Don't Forget...
 - Keep extra food at home.
 - Check heating fuel levels.
 - Clean Snow from furnace and water heater wall vents.
 - Remove snow and ice from gas meter.
 - Be sure that your car is ready for winter driving. Keep in your vehicle a small shovel, candle and/or flashlight, blanket and a bag of cat litter (for tire traction).
 - If your vehicle breaks down, use four-way flashers and stay in your vehicle until help arrives.

EMERGENCY INFORMATION

In the event of any emergency **CALL 911**. City plow crews will be contacted by the Fire Department if assistance is required.

Stay tuned to local radio stations for up to the minute road and weather conditions and facility closures.

The City of Stoney Creek's Sidewalk Snow Clearing By-law 580-78 requires all property owners to clear the sidewalk adjacent to their property within 24 hours after a storm.

If a Snow Emergency is declared, parking is prohibited on signed Snow Routes as shown on the inside of this flyer.

The Highway Traffic Act and the City Traffic By-law 2816-89 permit the Police to tow, at the owners expense, any vehicle parked on the roadway which is interfering with snow clearing operations.

The City Traffic and Parking By-Law 2816-89 prohibits vehicles from being parked longer than six (6) hours on any road.



City of Stoney Creek WINTER DRIVING INFORMATION



Police, Fire and Ambulance (ALL EMERGENCIES)	911	City of Stoney Creek, City Hall	843-1281
Stoney Creek Hydro	843-4224	City of Stoney Creek, 7:30 am - 4:00 pm	843-7070
Downed wires, street signs, etc. (After Hours)	821-1024	City Operations Centre (Plows, Salts, Snow, Damage, Traffic, Parks, Cemeteries, Facilities and Street Signs) (After Hours)	843-2710
Water and Sewer	843-4028 (After Hours) 843-2710	Seniors Outreach Centre 8:00 am - 12 Noon or leave message	844-3383
911 Telephone	(24 hour hours) 911	Stoney Creek Animal Shelter	843-8826
Union Gas	843-8444		
Traffic Signs	843-4378		



City of Stoney Creek

1999/2000 SNOW PLOWING & SALTING PRIORITIES

SNOW PLOWING AND SALTING PRIORITIES	
FIRST PRIORITY	
	Arterial & Escarpment Access Roads
	Signal Snow Routes
SECOND PRIORITY	
	Second Priority (Major Collector Roads)
QEW	
	Serviced by the M.T.O.

The City of Stoney Creek's Winter Control Operating Plan has prioritized all roads within the City according to their importance to the overall transportation network. The **First Priority** and **Second Priority** roads will receive a different level of service. **First Priority** roads will be maintained as close as possible to a bare pavement standard during a storm. **Second Priority** roads will be maintained to a center bare standard with the final plowing done at the same time as residential streets. Most businesses and residences in the City are within 500 metres of a priority road.

The Map indicates the roads which have been identified as either **First Priority** (Red and Red Dashed), **Second Priority** (Blue), or **QEW** (Green). Only Priority roads are shown. Local roads and sidewalks are not shown.

In a major winter storm City crews will reduce the standard on the priority roads to provide better access on residential streets.

For any emergency during a winter storm dial 911 and the Emergency Service Providers will coordinate the necessary response.

