

BMA

Management Consulting Inc.

High Level Core
Service Review

Engineering
& Public Works



City of Stratford

Table of Contents

Executive Summary	
SWOT Analysis	
Review Process	1
Department Staffing and Service Delivery	2
Waste Management	4
Waste Management Budget	6
Benchmarking—Waste Management	7
Garbage Collection and Disposal	7
Recommendations—Waste Management	9
Recycling	10
Winter Maintenance	11
Legislative/Regulatory Requirements and Guidelines	14
Winter Maintenance Budget	15
Winter Upcoming Capital Requirements and Reserves	15
Benchmarking—Winter Maintenance	16
Factors that May Impact Cost of Service	19
Recommendations—Winter Maintenance	24
Roads, Sidewalks, Miscellaneous Public Works Activities	25
Roads Budgeting and Capital	26
Benchmarking	28
Recommendations—Roads, Sidewalks	30
Water and Sewer Operations and Legislation	31
Water Budget and Service Delivery	33
Sewer Budget	34
Benchmarking—Water and Sewer	35
Comparison of Water and Sewer Rates—2008	40
Recommendations—Water and Sanitary Sewer Operations	41
Storm Water Management	42
Storm Budget and Funding	43
Benchmarking—Storm	46
Recommendations—Storm Water Management	47
Fleet Management	48
Recommendations—Fleet Management	49

Executive Summary

Engineering and Public Works provide a wide range of services to the community. There are four basic realms of service.

1. Firstly there are activities based on providing safety related activities such as winter control, traffic signage, water and sewer operations, storm and sanitary sewer cleaning.
2. Secondly there are activities based on maintaining the value of the municipal assets such as pothole patching and drainage.
3. Thirdly there are activities related to replacing or building assets such as pouring sidewalks and laying new asphalt.
4. Lastly there are activities related to the quality of life for the community at large. These include such things as street sweeping, sidewalk snow removal, litter pick up, boulevard maintenance and assistance with community events.

To meet this diverse span of operations, Public Works agencies have begun to reconsider what they do and why and whether there are other options available beyond simply adding more resources. The question becomes not whether activities can be outsourced but whether there is a way to identify the activities that combined with the economic factors, make a good business case for the decision. The City currently provides services through a combination of in-house and external services.

It is important to point out that comparing the performance of one Public Works agency against another is not easy and must always be accompanied by qualifying statements. There are many variables that affect the cost and accomplishments for service delivery so a difference in cost is not always directly attributable to a difference in efficiency or decision making. The cost of providing services in one City may be greatly different in another and be affected by a host of variables such as climate, variable weather, topography, traffic volumes, age of infrastructure, collective agreement wording, accounting methods, overhead calculations, permitted land uses under the official plan, etc.

Having said this however, understanding where the City is providing services at costs that appear higher than others provides an opportunity to review and revisit the current manner in which services are provided and the underlying service levels. A low cost, for example, is not necessarily good as this could mean that assets are not being maintained at appropriate levels.

Waste management programs and services appear to be working effectively from a cost and service delivery perspective. Waste management is a full user pay system and is considered a best practice. The service contracts appear to be delivering services at a competitive price and the City has been successful in encouraging recycling, with the highest diversion rate in comparison to peer municipalities. Opportunities exist with respect to the landfill site operations and enhanced revenue should be pursued with respect to non-residential dumping.

Winter maintenance standards are defined and are higher than a number of other municipalities, which, in part is impacting the high cost of service in the City of Stratford. While there is a mix of contract and in-house services used and new technologies are being employed, there is a need to further evaluate winter maintenance operations in order to better understand what the main cost drivers are and identify opportunities to create efficiencies in the operations.

Roads maintenance costs are higher on a per kilometre basis which should be investigated as this is a measure of efficiency. However, there are a number of factors that impact roads operations. Further, over the past several years, the City has undertaken a number of major water and sewer operations which directly impacts the roads operations.

Water treatment and distribution is provided by internal staff as is the maintenance of the sanitary sewer mains. The sewage treatment operations are outsourced through a contract with OCWA and no issues were identified in the current provision of service. The City's water and sewer rates are competitive, however, there will be upcoming challenges with respect to lifecycle maintenance of these capital intensive assets, particularly given that there are limited capital reserves to support the water operations which will require capital to be funded from debt. It is recommended that a full financing plan be developed for the water and sewer operations to ensure that the impact on rates is smoothed and that the City is able to effectively meet capital needs. Given the relatively high number of watermain breaks in comparison to the City's peer group, rehabilitation of old infrastructure on a timely basis is needed.

The City has been investigating the option of moving the storm water management program to a utility model. While relatively new to Ontario municipalities, this is considered an appropriate approach to funding these services and has been effectively implemented in some jurisdictions. There may be a need to further investigate alternate forms of cost recovery that will meet all the City's objectives in terms of fairness and equity, revenue stability, administrative ease and transparency, with an ultimate goal of establishing a sustainable funding source.

There may be opportunities to reconsider options with respect to a central fleet management system.

SWOT Analysis**Key Strengths**

- For the most part, there is a good balance of contracted and in-house services
- Lifecycle costing established for the replacement of vehicles and equipment in a timely basis
- Favourable contracts for garbage collection, disposal and recycling result in low cost of service
- User pay waste management system is considered a best practice
- Rationalized service standards and policies in waste management help to keep the cost of service low
- Clearly defined service standards for roads and winter maintenance that have been reviewed by Council and continue to be revisited during budget deliberations to identify opportunities to reduce the overall cost of operations
- Presence of winter stabilization reserve will provide some flexibility to address changing winter conditions
- Lower than average cost of water and sewer operations
- Favourable contract, from a cost perspective in the management of the Sewage Treatment facility
- Availability of some water stabilization reserves which will be available to offset potential losses in 2008 due to wet summer season
- Competitive water and sewer costs
- Planned and proactive sewer and storm cleaning system

Key Weaknesses

- Higher than average cost of service in winter maintenance which cannot be fully attributed to higher service levels
- Negative balance in the storm water management reserve
- Limited capital reserves for water operations
- Higher than average number of watermain breaks per 100km may indicate insufficient funding of the capital program

Key Opportunities

- Centralized fleet management operation
- Continued use of new technologies in winter maintenance to create efficiencies
- Re-rationalize the provision of winter and road maintenance service with the County
- Increase non-resident user fee at the landfill site to offset operating costs and reduce usage of the City owned facility by non-residents
- Undertake a full review of winter operations to focus on routes, technologies, service deployment, service standards, etc.
- Consider options to support winter maintenance service levels that are less costly (volunteers for sidewalk clearing in front of residential homes for seniors)
- Development of full lifecycle funding model for all Public Works assets
- Improved equity and transparency of costs by moving to a storm water utility management model. This also provides improved opportunity to establish a self funding capital program based on lifecycle costing

Key Threats/Challenges

- Maintaining training standards for water operations to comply with legislation/regulations
- Higher costs in winter maintenance will continue to pose financial challenges on the City
- Union restrictions on deploying staff in the most efficient and effective manner (e.g. winter maintenance) and outsourcing some services (e.g. landfill site operations)
- Level of funding required to fully support roads resurfacing and rehabilitations
- Inequitable allocation of costs to support County road operations

Review Process

Discussions were held with the Director of Engineering and Public Works and the Manager of Public Works to undertake a high level review. In order to do so, discussions were held with a focus on the following areas:

- Policies and practices
- Service levels and service standards
- Compliance with legislation/regulations
- Staffing needs, roles and responsibilities
- Contracted versus in-house services
- Current organizational structure
- Major priorities and challenges
- Opportunities for efficiencies
- Current and Capital Budgets

The review of the Engineering and Public Works Department focused on answering the following questions:

- What are the current programs and services?
- Does the program/service support the municipality's priorities?
- Are the objectives currently being met?
- What are the future challenges?
- What are the annual resources/costs?
- How is performance currently measured/tracked?
- Are the service levels and standards defined? What are they?
- How is technology used to meet the demand for services?

Department Staffing and Service Delivery

The Engineering and Public Works Department is responsible for the following areas:

- Review and make comments on engineering aspects of Zoning Amendments, Official Plan Amendments, Committee of Adjustment Applications, Site Plan Agreements and Plans of Subdivision.
- Design and supervise the construction of all hard services (roads, sidewalks, storm sewers, sanitary sewers and watermains) within the Public road allowances and Public walkways.
 - provide routine maintenance including winter maintenance on roads and sidewalks.
- Water Division is responsible for the production, treatment, and distribution of potable water for the City. This includes;
 - resource management,
 - well and treatment system design and maintenance,
 - reservoir and tower maintenance, and
 - water quality testing for operational, microbiological, and chemical parameters.
 - Maintain & operate water distribution system
- The City has a contract with the Ontario Clean Water Agency (OCWA) to operate the Water Pollution Control Plant for the sanitary sewer system.
- Operate the Stratford Landfill Site on Romeo Street and supervise the contractors for Refuse Collection, Recycling Collection, and Yard Waste Collection.
- Provide Bylaw enforcement of the Weed Act, Core Area Sidewalk Snow Clearing, and Sewer Use Bylaw.
- Review, approve, and supervise the construction of roads and services in new subdivisions.
- Approve the location and supervise all Utility companies construction on road allowances.
- Manufacture and replace traffic signs and posts, painting lane lines, crosswalks, stop bars and parking stalls. Maintain traffic signals.
- Provide maintenance and repair services for Public Works, Parks, Recreation, Cemetery and Building vehicles.
- Supervise the contract with the Stratford Humane Society for Animal Control in the City.

The Department is set up in 4 key divisions:

1. Public Works—this section includes waste reduction, landfill operations, roads, winter maintenance, sidewalks, fleet operations, wastewater collection, traffic. In total, this section includes 37 full time staff and some seasonal staff as required
2. Water Treatment and Distribution—this includes the provision of water treatment and the maintenance of the watermains. This is currently provided by 12 full time employees
3. Design and Construction—this includes 9 full-time positions including a deputy director, engineering design and CAD technicians, construction inspectors, a technical service coordinator and a surveyor.
4. Development Engineering—this section includes 4 full-time positions

In addition, the Director is supported by an executive secretary, a clerk secretary and a maintenance management clerk.

Waste Management

The program includes:

- Curbside recycling
- Solid Waste Collection
- Landfill Operation
- Compost Site Operation
- Large Article Pickup
- Green Waste Collection

Funding for this budget is entirely through Waste rates (no tax levy implications).

The 2008 rates are as follows:

- Bag Tag \$2.00
- Bag or Can at Landfill Site \$2.00
- Minimum scale rate \$9.00
- Tip Fee – regular \$64.50/tonne
- Tip Fee – large hauler \$60.50/tonne
- Scale down – car \$9.00
- Scale down – truck \$13.50
- Scale down – trailer \$13.50
- Recycle Box \$5.00
- White Goods – freon removal \$35.00
- Televisions & computer monitors \$1.80

The current fee for curbside garbage collection is \$2.00 for a plastic bag and rigid container, depending on the size, they may require additional tags. For example, a rigid container 129 to 240 Litres requires two bag tags.

The majority of waste management services are contracted

Waste Management

The following table summarizes how waste management services are provided in the City of Stratford.

Program/Service	Comment	Internal	Contract
Waste disposal general		100%	
Recycling pickup	joint contract for disposal, collection & recycling		100%
Waste collection curbside	joint contract for disposal, collection & recycling		100%
Waste collection general	Staff do collection at parks and public locations	100%	
Landfill Sites		100%	
Hazardous Waste Collection		20%	80%
Compost program (collection)		50%	
Compost program (processing)			100%
Leaf disposal program		100%	
Litter pick up		100%	
Leaf pick up			100%

As shown above, the City contracts curbside garbage collection, recycling, most of the hazardous waste collection, leaf pick up and compost processing.

General waste disposal is provided through internal services. The City's landfill site is operated by City staff. Waste staff is based at the landfill and 2 primary staff is assigned to work there, while the waste reduction coordinator (1 staff) works from 82 Erie St.

Some of the benefits identified in contracting garbage collection, disposal and recycling services include:

- Reduced absenteeism and WSIB claims
- Reduced cost of operations
- Efficiencies through consolidated contract
- Ability for management to focus on skilled work processes

Waste Management Budget

	% of Total 2008 Budget	2007 Budget	FINAL 2008 Budget	2009 Budget	2010 Budget	2007-2008 Budget Change	2008-2009 Budget Change
EXPENDITURES							
SALARIES, WAGES & BENEFITS	20%	\$ 513,704	\$ 537,700	\$ 562,400	\$ 570,400	5%	5%
CONTRIBUTIONS TO RESERVES	14%	\$ 238,796	\$ 374,600	\$ 343,100	\$ 321,600	57%	-8%
SERVICES - OTHER (CONTRACT)	48%	\$ 1,177,200	\$ 1,275,500	\$ 1,281,300	\$ 1,293,800	8%	0%
MATERIALS AND MISCELLANEOUS EXPENSE	3%	\$ 92,000	\$ 91,800	\$ 91,800	\$ 91,800	0%	0%
CITY OWNED RENTAL EXPENSE	14%	\$ 379,500	\$ 380,500	\$ 381,500	\$ 382,500	0%	0%
TOTAL EXPENDITURES	100%	\$ 2,401,200	\$ 2,660,100	\$ 2,660,100	\$ 2,660,100	11%	0%
REVENUES							
BAG TAG REVENUE	25%	\$ (580,000)	\$ (660,000)	\$ (660,000)	\$ (660,000)	14%	0%
TIPPING FEE REVENUE	58%	\$ (1,380,000)	\$ (1,555,000)	\$ (1,555,000)	\$ (1,555,000)	13%	0%
CITY OWN RENTAL REVENUE	10%	\$ (270,000)	\$ (270,000)	\$ (270,000)	\$ (270,000)	0%	0%
RECOVERABLES WASTE DIVERSION AND DISPOSAL	6%	\$ (171,100)	\$ (171,100)	\$ (171,100)	\$ (171,100)	0%	0%
WASTE DIVERSION SALES	0%	\$ (100)	\$ (4,000)	\$ (4,000)	\$ (4,000)		0%
TOTAL REVENUES	100%	\$ (2,401,200)	\$ (2,660,100)	\$(2,660,100)	\$(2,660,100)	11%	0%
NET EXPENDITURES		\$ -	\$ -	\$ -	\$ -		

The City of Stratford is one of the few Ontario municipalities that has moved to a full user pay system for garbage collection and is considered a best practice. This program encourages recycling, which, as will be reflected in the benchmarking section of the report, has been successful.

Operational cost increases in 2008 were primarily due to additional earth moving related to cell closure final cover placement and additional costs associated with higher recycling tonnages translating to more waste being diverted from landfill. This is reflected in the transfers to reserves.

Benchmarking—Waste Management

While the waste management programs are based on 100% user fee cost recovery, it is still important to understand the cost of operations to ensure that the community is receiving an efficient and effective service.

There are a number of factors that impact the cost of these services including:

- Service levels—frequency of pickups
- Policies on bag limits
- Land area and density
- Distance to a disposal site
- Precipitation which impacts the weight of disposal
- The nature and extent of the municipality's recycling program
- Landfill hours of operation
- Material included in recycling

Garbage Collection and Disposal

Garbage collection costs have been compared on a per capita and per tonne basis. As will be shown on the next page of the report, the waste collection cost per capita in the City of Stratford is the lowest in survey. This is due, in part, to a higher level of waste that is being diverted in the City of Stratford. Using the MPMP measure of operating costs per tonne, the City is also below the average which indicates a favourable garbage collection contract.

For the most part, garbage collection services are provided through contracted services across the survey of municipalities. The only other municipalities included in the survey that are operating as a full user pay system are Tillsonburg and Belleville.

The MPMP cost of disposal per tonne in Stratford is amongst the lowest in the survey. Costs vary significantly in this area based on the type of landfill operations being used across the survey.

Stratford's garbage collection costs are low on a per capita and a per tonne basis reflecting a favourable contract and higher diversion rates

Municipality	Waste Collection Gross Cost per Capita	MPMP Collection Costs per Tonne	MPMP Disposal Cost/Tonne	Service Provision	Service Levels	Bag Limit	Fee For All Bags	Fee When Bag Limit Exceeded
Aurora (York)	\$ 20	\$ 73	\$ 82	Contract	Bi-weekly garbage, weekly green and blue	3		3
Belleville	\$ 21	\$ 130	\$ 119	Contract	Weekly	6	\$ 2.00	full user pay \$2.00 for every bag \$2.50 for every extra bag
Brockville	\$ 14	\$ 82	\$ 117	Contract	Weekly	1		
Chatham-Kent	\$ 18	\$ 38	\$ 63	Contract	Weekly	4		4
Cobourg (Northumberland)	N/A	\$ 97	\$ 100	Contract	Weekly	3	\$ 2.75	full user pay \$2.75 for every bag
Cornwall	\$ 23	N/A	N/A	Contract	Weekly garbage and Bi-weekly Blue			
East Gwillimbury (York)	\$ 24	\$ 83	\$ 82	Contract	Bi-weekly garbage, weekly green and blue	2		2
Georgina (York)	\$ 18	\$ 53	\$ 82	Contract	Bi-weekly garbage, weekly green and blue	1		1 and can purchase additional tags
Leamington	\$ 21	\$ 59	\$ 62	In House	Weekly	4		
Orangeville	\$ 24	N/A	N/A	Contract	Weekly			
St. Thomas	\$ 13	\$ 36	\$ 47	Contract	Weekly	2		tag over 2 bags
Tillsonburg (Oxford)	N/A	\$ 141	\$ 16	Mix	Weekly		\$ 1.25	full user pay \$1.25 for every bag
Average	\$ 20	\$ 79	\$ 77					
Median	\$ 21	\$ 78	\$ 82					
Stratford	\$ 8	\$ 71	\$ 43	Contract	Weekly	N/A	\$ 2.00	full user pay \$2.00 for every bag

(Source: 2006 FIR)

Lower than average collection costs per capita and per tonne as well as lower disposal costs

The City's transfer station is well located and offers well sized transfer solutions. A variety of solid waste services can be accessed there. There appears to be a high level of acceptance and participation by the community in the landfill site services, to the extent that this service is receiving almost the same amount of residential garbage as curbside collection. This places financial challenges on the cost of the landfill site, to a greater extent, than a number of other municipalities surveyed.

There is a high level of waste that is brought directly to the transfer station by residents rather than curbside collection

The City's landfill operates Monday-Friday 8:00—5:00 pm and Saturdays 8:00 am—1:00pm. The landfill site is operated by in-house staff that is paid through overtime rates every Saturday which contributes to the cost of operations. It is estimated that the overtime cost for this practice is \$80,000. Opportunities exist to change this practice and reduce the overall cost of operations.

The curbside fee and the fee to dispose at the landfill site are the same. This fee practice, along with bi-weekly rather than weekly curbside collection, may contribute to the high percentage of garbage that is disposed of directly by residents in the landfill site rather than at the curbside and this directly impacts on the cost of operation. Further, the amount of garbage brought directly to the landfill site may also be increased as a result of lower fees in the City, compared with neighbouring municipalities.

The City has a Tipping Fee reserve which is available for capital expenditures related to the landfill site. The balance is currently estimated to be \$236,000.

Recommendations—Waste Management

That the City consider charging a higher tipping fee at the landfill site for non-residents and businesses not located in Stratford.

That the City consider changing the hours of operations to reduce overtime costs.

Recycling

The City has a higher diversion rate due to a strong recycling program

The cost per tonne of recycling is lower in Stratford compared to all other municipalities surveyed

Municipality	MPMP % of Residential Recycling Diverted	MPMP Recycling Cost/Tonne	FIR Net Recycling Cost/Capita
Belleville	38%	\$ 140	\$ 14
Brockville	43%	\$ 111	\$ 16
Chatham-Kent	29%	\$ 130	\$ 15
Cornwall	20%	N/A	\$ 8
East Gwillumbury	36%	\$ 98	\$ 16
Georgina	39%	\$ 115	\$ 15
Orangeville	39%	N/A	\$ 18
St. Thomas	42%	\$ 170	\$ 22
Average	36%	\$ 127	\$ 16
Median	39%	\$ 123	\$ 16
Stratford	44%	\$ 96	\$ 18

As shown above, the City has an above average percentage of waste that is diverted to recycling. The cost per tonne in the City is the lowest in the survey which suggests a favourable contract for this service. The cost per capita is higher than average which is expected given that the percentage of tonnes diverted is higher.

The City is following a number of best practices with respect to garbage collection. From 1996 to 2007, the total diversion from residential waste stream went from 33% to 44%.

The City received the Recycling Council of Ontario's Waste Minimization Award and the Canadian Association of Municipal Administrators Environmental Award for an outstanding contribution to the local Environment.

A combination of in-house and contracted services are used for winter maintenance operations

Winter Maintenance

The winter maintenance budget includes the following key activities:

- Snow Plowing
- Sanding and Salting
- Snow Removal
- Winter Sidewalks
- Other Miscellaneous Winter Maintenance

The following table summarizes how services are currently provided to support winter maintenance.

Program/Service	Internal	Contract
Sidewalk snow plowing	100%	
Sidewalk salt/sanding	100%	
Street snowplowing	70%	30%
Street snow removal	90%	10%
Street salt/sanding	100%	
Parking Lots Snow Removal	20%	80%

As shown above, the majority of the City’s services are provided through internal services. All sidewalk snow plowing, sanding and salting is provided by staff, as well as street sanding and salting and the majority of street snowplowing and street snow removal. As will be discussed later in the report, given the higher than average cost of service in the City of Stratford, service delivery may need to be rationalized.

A combination of in-house and contracted services are used for winter maintenance operations

The number of contract standby plows has been reduced from 9 to 7 as of the winter of 2007/08. These contract machines are paid a daily standby rate of \$60 per day from December 1 to March 31 annually.

Historically the City has used a dedicated plow followed by a sander for winter control on the roads. Two combination trucks will be deployed for the first time this winter season which should create efficiencies.

The City fleet will not be reduced in size but will be able to operate more efficiently and effectively. One combination unit will do two jobs; plowing and sanding. Based on feedback from staff, it is expected that plowing costs will remain the same but sanding costs will be reduced.

The fleet currently includes:

- 9 Contract Plows
- 5 City Plows
- 2 Tandem City Sanders
- 1 Single Axle Sander

As of 2008/09, the fleet will include:

- 7 Contract Plows
- 6 City Plows (2 with sanders)
- 1 Tandem Sander
- 1 Single Axle Sander

Currently, there are 6 pieces of equipment that are used for winter maintenance activities by staff and 6 sidewalk plows that are responsible for all sidewalk plowing. In addition to internal staff, the City has 5 contractors that are paid on a standby pay basis.

The City of Stratford, consistent with the practice in other municipalities has set specific service standards and service levels for winter maintenance activities. Service standards formally and specifically define the expectations, or outcomes, of the operations undertaken to restore acceptable conditions on the related assets.

Based on feedback from staff, the City is typically meeting or exceeding minimum service standards which may be a factor in higher than average costs in the City compared with other municipalities surveyed

In this case, those services that relate to winter causes and the assets would be the municipal roads, sidewalks, transit access points, and parking lots. Service standards are important in that they provide residents a clear understanding of what can be expected from winter maintenance activities.

Policies and service levels have a direct impact on the cost of service provided for winter maintenance activities as municipalities may have differences in the level of service provided.

Based on feedback received from staff, the City typically meets or exceeds the standard responses. Class 2 to 5 roads are typically plowed prior to the accumulations listed in the service standards. For example, the City will plow Class 3 roads prior to 8 cm of accumulation. All roads are typically sanded using 3 machines in less than an 8 hour window.

Council has directed that 0.6 meters of snow must be removed from all City core boulevards at all times through the winter which is a service enhancement in comparison to a number of other municipalities. Blowing snow involves a blower unit, plow and 4 trucks. This operation is quite expensive at an estimated cost of \$540 per hour which may be a cost driver impacting the City of Stratford's comparative costs. The City has increased the amount of snow blown into trucks, partially due to road design, with curb face sidewalk and narrow boulevard that requires removal and based on complaints with respect to concerns related to blowing snow onto frontages.

The sidewalk snow plowing level of service increased by adding a plow route in 2002 which was approved by Council. Weekend sidewalk plowing of main sidewalk was also directed at this time. The level of service is currently to plow all sidewalks until cleared. Overtime, including weekends, is used regularly to accomplish this level of service.

Winter maintenance has been impacted by changes in the Employment Standards Act

The City undertook a Salt Management Plan

Legislative/Regulatory Requirements and Guidelines

Road Authorities have to operate in compliance with the Minimum Maintenance Standards for Municipal Highways (MMSMH) if they wish to limit their liability and exposure to claims for negligence. The MMSMH were originally developed to help municipalities deal with the increasing costs of negligence liability insurance as a result of increases in claim settlements. The MMSMH was approved in 2002 through *O. Reg. 239/02*.

As stated in the previous section. Stratford's road service standards as currently articulated, generally met or exceeded the limits set out in the regulations.

Most Public Works agencies have had to deal with the constraints imposed through the changes to the hours of work legislation in the Employment Standards Act. With the change in legislation, a worker is only allowed to work a maximum consecutive 15 hours per shift with a maximum of 13 hours behind the wheel. The Public Works Division has been able to accommodate this through the use of a combination of in-house and contracted services.

The City completed a Salt Management Plan in response to Environment Canada's "Code of Practice for the Environmental Management of Road Salts". The salt management plan initiative is designed to reduce the amount of winter road salt entering the aquatic environment by improving the accuracy of application, improving material handling and storage methods, by providing staff training in salt science and introducing improved anti-icing/de-icing methods.

The City's salt management plan outlines the minimum maintenance standard for winter control. The Minimum Maintenance Standard (MMS) was never formally adopted by Council however it has been reviewed by Council and is advertised at this level. These standards have been in place since the winter of 2002/03.

Winter Maintenance Budget

The following provides a summary of the budget to support winter maintenance operations.

EXPENDITURES	% of 2008 Budget	2007 Budget	2008 Budget	2009 Budget	2010 Budget	2011 Budget	% Change 2007-2008	% Change 2008-2009	% Change 2009-2010
SALARIES, WAGES AND BENEFITS	31%	\$ 295,681	\$ 328,855	\$ 338,698	\$ 348,765	\$ 359,188	11%	3%	3%
MATERIALS	16%	\$ 174,400	\$ 175,400	\$ 176,400	\$ 177,300	\$ 178,300	1%	1%	1%
SERVICES - OTHER (INCLUDES CONTRACT	22%	\$ 230,000	\$ 236,500	\$ 237,500	\$ 238,500	\$ 239,500	3%	0%	0%
VEHICLE EXPENSES	34%	\$ 359,100	\$ 360,800	\$ 363,400	\$ 366,000	\$ 368,600	0%	1%	1%
CONTRIBUTION FROM RESERVE FUNDS	-2%	\$ (25,000)	\$ (25,000)	\$ (25,500)	\$ (25,500)	\$ (25,500)	0%	2%	0%
TOTAL	100%	\$ 1,034,181	\$ 1,076,555	\$ 1,090,498	\$ 1,105,065	\$ 1,120,088	4%	1%	1%

As shown above, the major cost drivers are related to salaries and vehicle expenses. In 2008, the budgeted expenditures increased approximately 4%.

Winter Upcoming Capital Requirements and Reserves

The City has a lifecycle plan for the replacement of its vehicles and equipment to support winter operations and is working toward moving to combination units which are more efficient as plowing and salting can be done simultaneously.

The City has a number of reserves to support winter maintenance operations including:

- Salt and Sand Storage Building \$21,000
- Winter Expenditure Surplus \$55,200
- Winter Sand Removal \$9,000

As well, winter maintenance vehicle replacement is supported by the Public Works Equipment Depreciation Reserve.

It is appropriate, as has been established in the City of Stratford to set aside surplus funds in a winter maintenance reserve as the costs can vary significantly from year to year based on weather conditions. The Winter Expenditure Surplus Reserve is equivalent to approximately 5% of the total budget.

The City has established 3 reserves to support winter maintenance operations

**Many factors
impact the
comparability of
winter maintenance
costs**

Benchmarking—Winter Maintenance

There are a number of factors that impact the cost of winter maintenance services including, but not limited to, the following:

- Number of winter storm events
- Severity of winter storms—amount of snowfall and length of storm
- Temperatures
- Road types—Extent of road network located in urban centres, urban/rural mix, arterial and non-arterial roads
- Traffic volumes
- Land area, density
- Public expectations
- Policies for snow removal—roads and sidewalks
- Service and maintenance standards
- How services are provided—mix of contract and internal
- Amount of snowfall removed from streets
- Age and type of equipment
- Service standards
- Number and extent of areas prone to drifting
- Cost of standby services
- Competitive market conditions

As such, the ability to provide meaningful comparisons is dependent on the above noted factors. The Province established a winter control efficiency measure that calculates the operating costs for winter control maintenance of roadways on a per lane kilometre basis. This is part of the Municipal Performance Measurement Program (MPMP) and has been included in the analysis.

Higher than average costs for winter maintenance

A cost per capita for all winter maintenance activities was undertaken to identify the relative burden on residents in Stratford in comparison to other municipalities. This was done using the 2006 Financial Information Return, 2006 Statistics Canada figures (most current for households). While this does not provide any indication of the efficiency or effectiveness of the operations, it does provide an indication of the burden to the taxpayer.

Municipality	2006 Population	Net Expenditures	Winter Control Net Expenditures per Capita	MPMP \$ per lane kilometre maintained in winter	Sidewalk Clearing
Cobourg	18,210	\$ 198,907	\$ 11	\$ 646	No
Tillsonburg	14,822	\$ 164,629	\$ 11	\$ 755	Yes
St. Thomas	36,110	\$ 329,492	\$ 9	\$ 777	Yes
Grimsby	23,937	\$ 245,295	\$ 10	\$ 779	Yes
Woodstock	35,480	\$ 311,013	\$ 9	\$ 1,608	No
Brockville	21,957	\$ 503,493	\$ 23	\$ 1,556	Yes
Georgina	42,346	\$ 930,581	\$ 22	\$ 1,566	Yes
Average	27,552	\$ 383,344	\$ 14	\$ 1,098	
Median	23,937	\$ 311,013	\$ 11	\$ 779	
Stratford	30,461	\$ 759,534	\$ 25	\$ 2,106	Yes

Source: 2006 FIR

As shown above, from both a cost per capita and a cost per lane kilometer basis, the City of Stratford is the highest in the survey. In fact, on a per capita and per lane km basis, the City's costs are approximately double that of other municipalities surveyed. As discussed earlier in this section of the report, there are a number of possible reasons for this, including higher service standards, the current use of equipment and service delivery practices. This should be explored further to better understand the driving factors impacting Stratford's higher than average costs.

While costs have been consistently higher in the City of Stratford, the costs vary from year to year

A comparison of the costs over time in the City of Stratford was undertaken to determine the trend in this area.

The following table provides a comparison of the net expenditures per capita over time as well as the MPMPs. Differences from year to year may reflect changes in weather conditions and work practices.

Stratford	Winter Control Net Expenditures Per Capita	MPMP \$ per lane kilometre maintained in winter
2004	\$ 41	\$ 2,688
2005	\$ 34	\$ 2,966
2006	\$ 25	\$ 2,106
2007	\$ 40	\$ 3,318

The following table provides the cost comparison of the MPMP for winter maintenance on a per lane kilometre basis.

Costs per lane kilometre provides a reasonably good indication of the efficiency of the operations

Municipality	2004	2005	2006
Cobourg	\$ 1,144	\$ 1,075	\$ 646
Tillsonburg	\$ 1,549	N/A	\$ 755
St. Thomas	\$ 1,584	\$ 1,934	\$ 777
Grimsby	\$ 2,802	\$ 1,595	\$ 779
Woodstock	\$ 1,495	N/A	\$ 1,608
Brockville	\$ 3,016	\$ 2,773	\$ 1,556
Georgina	\$ 1,470	\$ 1,742	\$ 1,566
Average	\$ 1,866	\$ 1,824	\$ 1,098
Stratford	\$ 2,688	\$ 2,966	\$ 2,106

As shown above, while the cost of service has varied over the years, the costs are higher than those experienced in other comparable municipalities when a comparison of the MPMP \$ per lane kilometre is considered (which excludes sidewalk clearing).

Efficiencies are being implemented which should help to reduce the cost of operations in the City

The following summarizes some of the key efficiencies that are currently being implemented or were recently implemented by the City which should result in reductions in the future cost of operations:

- Historically the City had used separate loaders and sanders and is moving toward **combination units** which will create efficiencies in the operations.
- The elimination of **wing persons**—consistent with the practice in other municipalities, this will ensure that there are sufficient resources to meet the service standards and reduce the operating costs. With the new combination units, operating cost savings should be experienced.
- The City adopted a Salt Management Plan which will assist in the **reduction in salt use** through earlier planned response times and calibrations of spread rates that are geared to storm conditions.
- Reduction in the number of contracted services, with no addition of internal services.

Factors that May Impact Cost of Service

Included in the cost per capita basis is the cost of sidewalk clearing which is not provided by all municipal comparators. However, sidewalk clearing costs are not included in the MPMP cost per lane km and, therefore, should not be a factor in this comparative analysis.

Currently, the cost of winter maintenance for all sidewalk services in the City of Stratford is estimated to be approximately \$170,000 a year. As presented to Council, there are options to reduce the cost to taxpayers by modifying the level of service provided. This is, however, a policy decision and the negative consequences may outweigh the savings that would be achieved.

Of the municipalities surveyed, the following municipalities provide full snow clearing service of all sidewalks, consistent with Stratford:

- Brockville
- Georgina
- Grimsby
- St. Thomas

A number of other municipalities also provide sidewalk clearing

Options are available to reduce the cost of winter sidewalk services while still ensuring that those most in need of the service continue to have their needs met

As such, this is likely not the key driving factor in the higher than average cost of service in the City of Stratford, but will impact the cost comparisons for the cost per capita in those areas that do not provide this service (e.g. Cobourg and Woodstock). Further, it can be argued that this is not a core service and so there is an opportunity for cost reductions in this area, but it would come at a cost of reduced levels of service.

A number of other municipalities have elected to provide snow removal, sand/salt for only those sidewalks that abut publicly owned property. In these circumstances, property owners are typically required to remove the snow within 24 hours. This will impact the overall cost of operations. Various enforcement strategies are then needed to monitor that the snow has been cleared within the requisite amount of time. Some municipalities include a fine that will be imposed for properties that have not been cleared within the required time frame.

For the most part, municipalities that do not clear snow in front of residential properties provide a program available to seniors and disabled persons that ensure that their sidewalks are cleared. There are various methods used in developing a program for sidewalk and windrow clearing currently employed in Ontario municipalities including, but not limited to, the following:

1. **City Operated and Funded Program**—City to provide the service to those in need—identified through an application process.
2. **City Subsidy/Grant Program**—Seniors and those with physical challenges may apply for a financial grant of up to \$100 from the City to offset the cost of snow removal.
3. **Volunteer Matching Program**—City administers a program with youths providing the service, free of cost.

Another factor that will impact the cost of service is related to service standards in the removal of snow banks. While a detailed analysis was beyond the scope of this engagement, the service standards in the City of Stratford are high and this will increase the cost of service.

There is a need for further investigation to ensure that the City is providing services in the most efficient and effective manner

Other factors that should be considered to determine the driving factors impacting the cost of service include:

- Shift scheduling
- Use of wingmen
- Routing
- Overall service standards
- Equipment usage
- Ancillary services

Beyond offering an alternative that may be more cost effective, many municipalities elect to contract out services in winter maintenance to improve the timeliness of service delivery during peak periods (some contracting is a practice in the City). For example, cul-de-sacs, sidewalk, parking lots and bus shelters tend to be the services that are most frequently contracted out to ensure that these areas can be cleared on a timely basis with dedicated resources and clearly defined service standards. By contracting out these services, municipalities surveyed identified that this permitted municipal staff to focus on the main arteries. While the City contracts out some winter maintenance service, given the high cost of overall service, it may be appropriate to re-rationalize the allocation of in-house versus contracted services.

The most common approach to winter service delivery used by Ontario municipalities is through the use of two or three shifts. A number of municipalities have moved to a full or partial two shift approach to providing winter maintenance. This generally has the impact of reducing the overtime costs, as staff is providing service through a regular afternoon/evening shift.

Based on feedback from staff, the majority of staff work the regular day shift during winter months except as follows:

- 1 truck driver is paid a shift premium from 3:00 to 11:00 pm Monday through Friday
- 2 night operators stay on year round 11 pm to 7 am
- 2 operators are paid standby pay for the weekends and any call outs are overtime

Decisions on how best to deploy winter control manpower (seasonal shift structures) are a critical driver of direct-delivery service costs and quality

While a detailed analysis was not conducted on the allocation of overtime costs in the Department, it is assumed that the majority of overtime costs are, in fact, related to winter maintenance activities. In 2007, the overtime costs for the Department were \$237,500, which is significant in relation to the total budget.

While it would be extremely difficult to completely eliminate overtime costs, there may be opportunities to reduce costs through modifying the current work practices. Benefits that have been experienced by other municipalities of employing a shift practice include:

- Reduced overtime and expenses
- Unit cost reduction through overtime cost avoidance
- Better able to meet Employment Standards Act
- Flexibility for employees re winter working hours
- Avoids staff burnout from excessive hours of work
- Improved response time to evening winter events
- Avoids call-out “lag time”
- 24 hour, 7 day per week response capability

As stated by the Ontario Centre for Municipal Best Practices, decisions on how best to deploy winter control manpower (seasonal shift structures) are a critical driver of direct-delivery service costs and quality. The blend of winter control straight time versus overtime service hours varies greatly across the municipal sector. Local winter event conditions play a role in determining the optimal shift structure. The best practice is not a one-size-fits-all shift structure, but rather a process of experimenting with and learning from various options in order to find one that is best suited to local conditions at the time.

There is recognition that the ability to perform certain services across all four seasons requires the management of the Division to constantly balance the service needs of the community against the available manpower. So we appreciate the complexity of the task and recognize that you do not make changes in one area without giving full consideration to what impact that may have on the Division’s ability to provide services in other areas or at other times.

Further analysis of winter maintenance operations is recommended as there may be opportunities to maintain the same level of service and reduce the overall operating costs

An approach that is considered a best practice is to identify a base number of staff needed to provide year round service and then to determine the most efficient and effective method of meeting the peak demands, whether this is through in-house services or external contractors. Typically, the peak periods are in the winter.

There may also be opportunities to work in a more coordinated fashion with the County to improve the efficiency and effectiveness of the services delivered.

It is recommended that the City further investigate the relatively high ongoing cost of winter maintenance service and rationalize the service levels to ensure that the City is providing an efficient, effective service.

Individually, the factors noted above may not necessarily lead one to conclude that further detailed review would be advisable and there might be some inclination to try to explain these one by one. However, the sum total of the various observations and analysis leads us to conclude that there is merit in undertaking a more detailed analysis of winter maintenance activities. The review, in addition to undertaking a more detailed financial and operational analysis should focus on structure, people, processes, routes and alternative service delivery options, user fees and strategies to reduce the cost of service. In the context of such a review, insights as to operating anomalies and policies should serve to explain some of the high level findings.

Potential savings in this area could be significant based on the benchmarking analysis undertaken. For example, a move toward the survey average on a cost per capita or per lane kilometre would see the cost of service in Stratford reduced by \$350,000-\$400,000. While it is not anticipated that the City could necessarily achieve this level of savings due to the number of factors impacting the cost of service, there is certainly merit in exploring this area further.

Recommendations—Winter Maintenance

That the City explore winter control maintenance operations to better understand the driving factors impacting Stratford's higher than average costs. Based on the findings, there may be a need to undertake a winter route rationalization study and/or change the current manner in which services are provided.

That the City apply a managed competition strategy to identify the most appropriate manner in which to deliver winter maintenance services.

That the City work with the County to determine if there are opportunities to create efficiencies in the delivery of services through improved coordination of services delivered.

Roads, Sidewalks, Miscellaneous Public Works Activities

This section includes a number of activities. The following table summarizes how roads and sidewalk related services are provided in the City of Stratford.

There is a good mix of internal and external resources to support these operations

Program/Service	Internal	Contract
Spring street sweeping	100%	
Traffic signals		100%
Street lights		100%
Traffic signs	100%	
Sidewalk repairs	20%	80%
Sidewalk cleaning	100%	
Gravel surface maintenance	100%	
Asphalt surface maintenance	100%	
Bridge maintenance	10%	90%
Curb and gutter maintenance	10%	90%
Culvert maintenance	50%	50%
Culvert construction	50%	50%
Ditch maintenance	100%	
Pavement markings	80%	20%
Pavement resurfacing prep	50%	50%
Pavement surface failure	50%	50%
Pavement curb and gutter repair	10%	90%
Pavement crackfilling		100%
Pavement skinpatch	90%	10%
Railway crossing signals		100%
Guardrails, barricades	10%	90%
Safety devices, x walks		100%
Roadside grass cutting		100%
Roads design	90%	10%
Roads contract supervision	90%	10%
Roads tender preparation	90%	10%

As shown above, there are a significant number of services that are provided through contracted services. For example, traffic signals, street lights, pavement crack filling, roadside grass cutting are services that are fully contracted out. Other functions such as sidewalk repairs, bridge maintenance, curb and gutter maintenance and repair are largely contracted services.

A number of programs are fully supported by internal staff including traffic signs, sidewalk cleaning, gravel and asphalt surface maintenance and ditch maintenance.

Others such as road design, contract supervision, pavement markings and tender preparation are largely provided through staff resources.

Roads Budgeting and Capital

	% OF TOTAL 2008 BUDGET	2007 Budget	2008 Budget	2009 Budget	2010 Budget	% Change 2007-2008	% Change 2008-2009
EXPENDITURES							
SALARIES, WAGES AND BENEFITS	52%	\$ 1,228,078	\$ 1,265,444	\$ 1,297,043	\$ 1,329,967	3.0%	2.5%
MATERIALS	13%	\$ 319,900	\$ 324,200	\$ 328,100	\$ 332,100	1.3%	1.2%
SERVICES - OTHER	14%	\$ 324,100	\$ 331,900	\$ 336,300	\$ 340,500	2.4%	1.3%
TRANSFER TO RESERVES	12%	\$ 280,000	\$ 280,000	\$ 280,000	\$ 280,000	0.0%	0.0%
CITY OWNED RENTAL EXPENSE	9%	\$ 205,900	\$ 210,000	\$ 212,800	\$ 216,100	2.0%	1.3%
MISCELLANEOUS	1%	\$ 14,100	\$ 19,600	\$ 22,600	\$ 22,600	39.0%	15.3%
TOTAL EXPENDITURES							
	100%	\$ 2,372,078	\$ 2,431,144	\$ 2,476,843	\$ 2,521,267	2.5%	1.9%
REVENUES							
CONTRIBUTIONS FROM RESERVES	3%	\$ (25,000)	\$ (25,000)	\$ (25,000)	\$ (25,000)	0.0%	0.0%
CITY OWN RENTAL REVENUE	96%	\$ (749,500)	\$ (758,400)	\$ (766,900)	\$ (775,500)	1.2%	1.1%
RECOVERABLES	1%	\$ (9,000)	\$ (9,000)	\$ (9,000)	\$ (9,000)	0.0%	0.0%
TOTAL REVENUES							
	100%	\$ (783,500)	\$ (792,400)	\$ (800,900)	\$ (809,500)	1.1%	1.1%
NET EXPENDITURES							
		\$ 1,588,578	\$ 1,638,744	\$ 1,675,943	\$ 1,711,767	3.2%	2.3%

The above noted budget includes the administrative area responsible for Roads as well as the direct operating costs. As shown above, the budgeted increase in 2008 was 3.2%. The tax supported budget includes \$1.7 million in capital programs to support roads reconstruction.

***Current roads
repairs and
reconstruction is
under-funded***

In addition to funding local roads, as stated in the Shared Service Review which was undertaken by the City in 2008, the City of Stratford is the only municipal example that was identified where a separated City is required to directly contribute to the County road system.

The City has an annual program to address road resurfacing and reconstruction and rebuild requirements. Over the past three years, road improvements as a percentage of the total lane length ranged from 4.3%-6.4% on an annual basis. While every effort is made to proactively manage road maintenance, due to budgetary restraints, feedback from staff indicated that the current roads repairs and reconstruction program is under-funded.

The benchmark for roads to be resurfaced is every 8-12 years which would indicate that, on average, approximately 10% of the roads should be resurfaced annually (assuming an even distribution of age of the existing roads).

The majority of the pavement and road work is generally considered a candidate for alternate service delivery, however, some are preferred over other activities. This is the practice in the City of Stratford, where much of the work is contracted.

There are many factors that impact roads

Benchmarking

A number of factors influence the amount of the funds allocated to road resurfacing including but not limited to the following:

- Overall age and condition of the roads and age of the infrastructure
- Weather conditions—Climate, including frequency and severity of freezes and thaws, rainfall events
- Road service standards which may be set above the minimum regulated standards
- Mix of roads (classifications) - Urban and rural mix
- How services are provided and cost per lane km (contract versus in-house)
- Municipal pavement standards
- Volume and type of traffic using the road
- Where roads resurfacing is included (capital or operating)
- Financial reporting practices, including whether a municipality keeps separate accounts for paved and unpaved roads
- Whether indirect costs are included as part of roadways, e.g. supervision, technical support, building/stock maintenance, training, utilities, etc.
- Size of municipality
- Number of lane kilometres
- Accuracy of estimate of number of lane kilometres
- Width of lanes affects surface area maintained
- Proportion of heavy trucks in the traffic stream
- Housing density, development patterns, urban form
- Age of equipment
- Presence of proactive maintenance programs

Municipality	2006 Population	Total Paved Lane km	Total Unpaved Lane km	Net Expenditures Roadways	Net Expenditures Roadways per Capita	% of Lane Kilometres tested were rated as good to very good	MPMP Operating Costs for Paved Roads per Lane km
Georgina	42,346	594		3,988,794	\$ 94	60%	\$ 406
Tillsonburg	14,822	216		1,388,852	\$ 94	68%	\$ 794
Woodstock	35,480	481	12	\$ 3,051,597	\$ 86	66%	\$ 2,354
Brockville	21,957	323		307,413	\$ 14	68%	\$ 2,455
Grimsby	23,937	315		\$ 1,591,814	\$ 67	44%	\$ 4,503
St. Thomas	36,110	424		\$ 1,924,670	\$ 53	72%	\$ 4,617
Cobourg	18,210	308		\$ 3,781,833	\$ 208	86%	\$ 4,677
Average		380		\$ 2,290,710	\$ 88	66%	\$ 2,829
Median		323		\$ 1,924,670	\$ 86	68%	\$ 2,455
Stratford	30,461	374		\$ 2,945,215	\$ 97	69%	\$ 5,777

As illustrated above, the cost of operations on a per capita and per lane km basis are higher than the survey average. This does not imply that the City is less efficient or effective but provides an indication of the cost of service.

A comparison of the costs over time in the City of Stratford was undertaken to determine the trend in this area. The following table provides a comparison of the net expenditures per capita over time as well as the MPMPs.

Stratford	Net Expenditures Roadways per Capita	MPMP Operating Costs for Paved Roads per Lane km
2004	\$ 143	\$ 1,302
2005	\$ 107	\$ 4,839
2006	\$ 97	\$ 5,777
2007	\$ 114	\$ 5,280

Costs in the City are higher than other municipalities surveyed which may mean a higher level of investment is being made into the existing road infrastructure

The following table provides the cost comparison of the MPMP for road maintenance on a per lane kilometre basis.

Municipality	2004	2005	2006
Brockville	\$ 2,777	\$ 2,897	\$ 2,455
Cobourg	\$ 4,750	\$ 4,385	\$ 4,677
Georgina	\$ 3,184	\$ 500	\$ 406
Grimsby	\$ 6,324	\$ 4,298	\$ 4,503
St. Thomas	\$ 3,860	\$ 3,842	\$ 4,617
Tillsonburg			\$ 794
Woodstock	\$ 2,036		\$ 2,354
Average	\$ 3,822	\$ 3,184	\$ 2,829
Stratford	\$ 1,302	\$ 4,839	\$ 5,777

As shown above, while the cost of service has varied over the years, the costs are higher than experienced in other comparable municipalities when a comparison of the MPMP \$ per lane kilometre are considered.

Recommendations—Roads, Sidewalks

That further analysis be undertaken to confirm that the higher roads maintenance costs are, in fact, providing a higher level of service and are being provided in an efficient and effective manner.

Water and Sewer Operations and Legislation

The City of Stratford’s Water Division is responsible for the production, treatment, and distribution of potable water for the City. This includes;

- resource management,
- well and treatment system design and maintenance,
- reservoir and tower maintenance, and
- water quality testing for operational, microbiological, and chemical parameters.

The City’s water system is considered a medium sized system by the Province. The following table summarizes how services are currently provided for water and sewer operations:

Program/Service	Internal	Contract
Water treatment plant operations	100%	
Water treatment plant capital	100%	
Water laterals and services	100%	
Wastewater plant operations		100%
Wastewater plant capital		
Pumping stations	100%	

The Ontario Safe Drinking Water Act has increased the training requirements of staff

The City has a contract with the Ontario Clean Water Agency (OCWA) to operate the Water Pollution Control Plant for the sanitary sewer system. The City is responsible for the maintenance of the sewer mains and for all capital costs associated with the treatment plant. The Water and Wastewater services in the City are provided through two different divisions within the Engineering and Public Works Department.

The Ontario Ministry of the Environment (MOE) has legislated under the *Ontario Safe Drinking Water Act, 2002* that all operators of water systems and under the *Ontario Water Resources Act* that all operators of wastewater systems be licensed through rigorous formalized and recognized training.

No issues were identified with respect to the current provision of services in the water and wastewater area

One cannot underestimate the personal commitment that certification requires, the learning skills required and the efforts required to obtain and subsequently maintain certification, let alone dual certification. These are not just operators, as in the past, or employees comparable to field workers in other Departments/ Divisions; these are highly-skilled and trained individuals who have legal ongoing training requirements; they also have personal liabilities in terms of the water and wastewater systems, i.e. they can be charged as individuals when things go wrong.

There are essentially two ways to look at the organizational structure for the water and wastewater utilities, with other options as a mix between these two extremes. One, which is the model that is generally used by large municipalities, is to split along the lines of water and wastewater with little, if any, cross-training with each other; this can be cost-effective for larger municipalities since considerably more resources are required to operate larger and more complex systems and therefore, more depth is available. This is the approach in the City of Stratford.

The other model, usually adopted by smaller municipalities, is to fully cross-train operators so that staffing levels are kept to a minimum since it is simply not feasible for them to have two sets of independently trained operators with no cross-training. This model, however, requires an organization that is not only very committed to operator training but also recognizes the value of these certified operators and rewards them appropriately if they are to retain them.

Another option for smaller systems to deal with these certification requirements is to have a third-party operate facilities for them, so that they are not saddled with the liability of having to maintain the right number of certified operators 24/7, on an operational or on-call basis as is the case in the City of Stratford with respect to the Sewage Treatment Plant. It is quite feasible for a City the size of Stratford to operate under separate water and wastewater sections as is currently the practice, particularly given that the City contracts the operations of the sewage treatment plant.

Water Budget and Service Delivery

	% OF TOTAL 2008 BUDGET	2007 Budget	2008 Budget	2009 Budget	2010 Budget	2011 Budget	% Change 2007-2008	% Change 2008-2009	% Change 2009-2010
EXPENDITURES									
WATER ADMINISTRATION	53%	\$ 1,759,235	\$ 2,083,278	\$ 2,074,080	\$ 2,093,157	\$ 2,142,613	18%	0%	1%
WATER SUPPLY	25%	\$ 924,078	\$ 980,280	\$ 1,008,975	\$ 1,028,423	\$ 1,051,204	6%	3%	2%
WATER DISTRIBUTION	23%	\$ 874,755	\$ 900,910	\$ 917,413	\$ 934,824	\$ 954,723	3%	2%	2%
TOTAL EXPENDITURES	100%	\$ 3,558,068	\$ 3,964,468	\$ 4,000,468	\$ 4,056,404	\$ 4,148,540	11%	1%	1%
REVENUES									
USER FEES	95%	\$ (3,326,133)	\$ (3,768,468)	\$ (3,804,468)	\$ (3,860,404)	\$ (3,952,540)	13%	1%	1%
CONTRIBUTIONS FROM RESERVES		\$ (50,735)	\$ -	\$ -	\$ -	\$ -			
RECOVERABLES	1%	\$ (31,200)	\$ (46,000)	\$ (46,000)	\$ (46,000)	\$ (46,000)	47%	0%	0%
CITY OWNED RENTAL REVENUE	4%	\$ (150,000)	\$ (150,000)	\$ (150,000)	\$ (150,000)	\$ (150,000)	0%	0%	0%
TOTAL REVENUES	100%	\$ (3,558,068)	\$ (3,964,468)	\$ (4,000,468)	\$ (4,056,404)	\$ (4,148,540)	11%	1%	1%
TOTAL NET EXPENDITURES		\$ -							

As shown above, the water budget is based on a full cost recovery from user fees which is consistent with the practices of other municipalities and is a best practice.

This includes the cost of the treatment and distribution system which is staffed by a Manager, Supervisor, 7 licensed operators, a maintenance electrician, a supervisor of water compliance and a water resource technician.

The City's budget in 2008 increased by 11%, largely attributed to increases in reserve contributions which was required to begin to set aside sufficient funds for future capital requirements. Currently, there is no capital reserve for water. The City has a Water Department Surplus Reserve (\$288,000) which would be used to fund shortfalls in any given year. This is approximately equivalent to 8% of the operating budget.

As a general rule, many municipalities establish target balances for stabilization reserve funds in the range of 5%-10% of the operating costs. The extent to which stabilization reserves are needed is dependent to some extent on the rate structure. For example, the City of Stratford's rate structure does not include a fixed monthly meter charge for residential customers but it does include a minimum charge for the first 3 m³ which provides some degree of revenue stability.

It is an appropriate strategy to establish a stabilization reserve for water and sewer operations as consumption fluctuates from year to year

Sewer Budget

	2008 BUDGET	Budget	Budget	Budget	Budget	Budget	2007-2008	2008-2009	2009-2010
EXPENDITURES									
SANITARY ADMINISTRATION	69%	\$ 3,034,364	\$ 3,325,171	\$ 3,366,007	\$ 3,408,288	\$ 3,364,131	9.6%	1.2%	1.3%
SANITARY TREATMENT	22%	\$ 1,043,633	\$ 1,077,849	\$ 1,116,484	\$ 1,156,594	\$ 1,191,291	3.3%	3.6%	3.6%
SANITARY COLLECT	9%	\$ 416,000	\$ 426,720	\$ 437,350	\$ 448,000	\$ 458,880	2.6%	2.5%	2.4%
TOTAL EXPENDITURES	100%	\$ 4,493,997	\$ 4,829,740	\$ 4,919,841	\$ 5,012,882	\$ 5,014,302	7.5%	1.9%	1.9%
REVENUES									
USER FEES	98%	\$ (4,389,697)	\$ (4,723,840)	\$ (4,812,441)	\$ (4,904,082)	\$ (4,904,082)	7.6%	1.9%	1.9%
RECOVERABLES	0%	\$ (13,800)	\$ (14,000)	\$ (14,000)	\$ (14,000)	\$ (14,000)	1.4%	0.0%	0.0%
CITY OWNED RENTAL REVENUE	2%	\$ (90,500)	\$ (91,900)	\$ (93,400)	\$ (94,800)	\$ (96,220)	1.5%	1.6%	1.5%
TOTAL REVENUES	100%	\$ (4,493,997)	\$ (4,829,740)	\$ (4,919,841)	\$ (5,012,882)	\$ (5,014,302)	7.5%	1.9%	1.9%
TOTAL NET EXPENDITURES		\$ -							

Sanitary Sewer Operations has faced backlogs in work required related to inflow and infiltration

The Sanitary budget covers staffing and materials required for functions relating to the collection and treatment of wastewater. This includes sanitary sewer and pumping station operations as well as the operation of the Wastewater Pollution Control Plant, which is contracted out to OCWA (Ontario Clean Water Agency).

Staff working in this area are based at the works yard and 5 staff are primarily assigned for the required work.

It should also be noted that funding for the Sanitary Trunk Sewer Upgrade program is housed within this budget and that this budget is covered entirely (no tax levy impact) by the revenue provided through the Sewer Surcharge fee, which is 140.4 % (same as 2007) of the water rate.

As shown above, the sanitary sewer budget increased 7.5% in 2008, largely driven by increases in the contributions to reserves. Staff indicated that the City has a backlog of work related to inflow and infiltration which, once complete, will reduce the overall cost of the operations and increase the revenue recovery of the system which reduces the overall rates.

Due to surplus treatment capacity available at the Water Pollution Control Plant, staff are attempting to promote delivery and treatment of private wastewater which will generate revenue to offset operating costs. This has been utilized successfully in the past and provides future opportunities to reduce City costs.

Lower water reserves but healthy sanitary sewer reserves

Public Works maintains and repairs the City sanitary sewer mains. Ongoing programs include inspection and flushing of sanitary sewers, upgrading of sanitary manholes and repairing or replacing sanitary sewers identified for need. Sanitary systems are cleaned rotationally throughout the City with two in house flushing trucks. A four to five year rotation of all sanitary sewers is conducted during the warmer months. Larger diameter sewers are cleaned with contract forces.

Benchmarking—Water and Sewer

The City has a Sanitary Sewer Capital Reserve of \$5.2 million. From a benchmarking perspective, the following table reflects the total reserve balances for the water and sewer operations as a percentage of total expenditures.

Municipality	2006 Water Reserves as a % of Total Water Expenditures	2006 Sanitary Sewer Reserves as a % of Sanitary Sewer Total Expenditures
Belleville	5.5%	183.2%
Brockville	0.0%	0.0%
Cobourg	0.0%	-7.8%
Cornwall	3.0%	20.1%
East Gwillimbury	41.9%	109.6%
Georgina	32.2%	94.6%
Leamington	88.4%	35.8%
Orangeville	4.1%	4.2%
St. Thomas	25.1%	43.5%
Average	22.2%	53.7%
Median	5.5%	35.8%
Stratford	13.7%	116.4%

As shown above, the City's water reserve balances are below the survey average but the sanitary sewer reserves are relatively healthy.

Operating costs for the treatment and distribution of water is lower than the survey average

There are two types of MPMP performance measures: efficiency measures; and effectiveness measures. Operations and maintenance costs are the numerator of all efficiency measures while the denominator depends on what is being benchmarked (e.g. in wastewater the denominator is km of collection system).

The effectiveness measures relate to level of service provided in the utility. For example, an effectiveness measure for water treatment is the number of watermain breaks/100 km of pipe per annum. This measure relates to the reliability of the system.

Water

Municipality	MPMP Operating Costs for Treatment of Drinking Water per megalitre	MPMP Operating Costs for Distribution per km of Water Distribution Pipe	Total km of Water Distribution Pipe	MPMP Water Main Breaks /100km	MPMP Operating Costs Integrated System
Cornwall	\$ 100	\$ 2,015	367	9.5	\$ 156
Leamington	\$ 148	\$ 4,394	330	2.7	\$ 289
Port Colborne	N/A	\$ 4,549	180	6.1	N/A
Orangeville	\$ 438	\$ 5,555	112	2.7	\$ 635
Niagara-on-the-Lake	N/A	\$ 5,734	N/A	6.6	N/A
Fort Erie	N/A	\$ 6,835	N/A	11.2	N/A
Brockville	\$ 266	\$ 8,638	N/A	10.4	\$ 469
Belleville	\$ 361	\$ 9,305	N/A	8.0	\$ 624
Georgina	N/A	\$ 9,491	N/A	4.0	N/A
St. Thomas	N/A	\$ 17,834	209	11.5	N/A
Grimsby	N/A	\$ 19,030	127	11.0	N/A
Cobourg	\$ 488	N/A	N/A	N/A	N/A
Timmins	N/A	N/A	4	4.4	N/A
Average	\$ 300	\$ 8,489	190	7.3	\$ 435
Median	\$ 314	\$ 6,835	180	7.3	\$ 469
Stratford	\$ 212	\$ 6,148	173	13.3	\$ 427

The City of Stratford has lower costs using all efficiency measures but has experienced a greater number of watermain breaks..this may indicate inadequate spending

The operating costs for the distribution of drinking water can be influenced by:

- Provincial water quality regulations
- Ages of pipes
- Pipe material
- Soil conditions in which pipes lay
- Topography
- Depth of frost penetration
- Severity of winter weather
- The distance between consumption points and the treatment plants

The operating costs for the treatment of drinking water can be influenced by:

- Provincial water quality regulations
- The source of raw water
- The quality of raw water
- The distance between the sources of raw water and the purification plants
- The number, age, type and capacity of water purification plants

The efficiency measures related to water treatment and distribution are operations costs for the treatment of drinking water per megalitre treated, operating costs for the distribution of drinking quality water per kilometer of water distribution pipe and the operating costs for drinking water treatment and distribution per megalitre. Using all efficiency measures, the City of Stratford's costs are below the survey average.

However, from an effectiveness perspective which is measured by the number of breaks per 100/km, the City is the highest in the survey. This may indicate inadequate spending in the watermain program. This situation should be analyzed further to ensure that adequate funds are available for the timely replacement/ refurbishment of these assets.

All efficiency measures reflect lower average costs in Stratford compared with the survey average

The City also experienced lower backups than the majority of the municipalities surveyed

Sanitary Sewer

The efficiency measures are related to the wastewater treatment and collection operating costs for the collection of wastewater/km of wastewater main and the operating costs/ml of wastewater treatment and disposal. A third measure, which gauges the performance of the overall wastewater utility, is the integrated operations and maintenance costs/ ml collected and treated.

Municipality	MPMP Operating Costs for Collection per km of WW Main	MPMP Operating Costs for Treatment and Disposal of Wastewater per Megalitre	MPMP Operating Costs Integrated System per Megalitre	Wastewater Main Backups per 100/km
Cornwall	\$ 1,974	\$ 83	\$ 203	2.3
Leamington	\$ 1,896	\$ 352	\$ 375	-
Port Colborne	\$ 3,254	N/A	N/A	-
Orangeville	\$ 1,829	\$ 427	\$ 497	-
Niagara-on-the-Lake	\$ 4,357	N/A	N/A	-
Fort Erie	\$ 4,552	N/A	N/A	2.1
Brockville	\$ 3,105	\$ 266	\$ 313	2.7
Belleville	\$ 7,397	\$ 201	\$ 304	17.8
Georgina	\$ 6,065	N/A	N/A	0.6
St. Thomas	\$ 1,692	\$ 137	\$ 177	2.7
Grimsby	N/A	N/A	N/A	36.9
Cobourg	\$ 3,045	\$ 346	\$ 415	7.9
Timmins	\$ 3,087	\$ 204	\$ 305	6.3
Average	\$ 3,521	\$ 252	\$ 324	6.1
Median	\$ 3,096	\$ 235	\$ 309	2.3
Stratford	\$ 2,513	\$ 144	\$ 190	0.6

As shown above, all efficiency measures reflect lower than average costs in the City of Stratford. Further, the effectiveness measure also reflects a better than average outcome in 2006 for wastewater main backups.

The operating costs for the collection of wastewater can be influenced by:

- The extent of water infiltration into the sewers
- The distance between collection points and the treatment plant
- The frost penetration and heaving with respect to underground conduits and surface inspection chambers
- The topography of the municipality and number of lift stations
- Age of the infrastructure

The operating costs for the treatment and disposal of wastewater can be influenced by:

- Whether plants receive both sewage and stormwater
- The number, size and scale of a municipality's plants
- The extent of water infiltration into the sewers
- The amount and nature of industrial sewage treated
- The method of sludge disposal
- The type of treatment process utilized
- The age of the infrastructure

Comparison of Water and Sewer Rates—2008

As shown in the following table, the cost of Water and Sewer in Stratford is below average. This comparison reflects a Residential property that consumes 250 m³ per year. The cost for water and sewer operations is \$599, compared to a survey average of \$664.

Costs in the City of Stratford are lower than the survey average

Municipality - Water & Sewer Costs Volume Meter Size	Residential 250 m3 5/8"
Ajax	\$ 580
Amherstburg	\$ 838
Aurora	\$ 463
Barrie	\$ 499
Belleville	\$ 796
Bracebridge	\$ 947
Bradford West Gwillimbury	\$ 749
Brampton	\$ 291
Brantford	\$ 612
Brockville	\$ 522
Burlington	\$ 638
Caledon	\$ 291
Cambridge	\$ 637
Central Elgin	\$ 1,143
Chatham-Kent	\$ 640
Clarington	\$ 580
Cobourg	\$ 537
Collingwood	\$ 986
Cornwall	\$ 542
East Gwillimbury	\$ 598
Fort Erie	\$ 1,084
Georgina	\$ 520
Gravenhurst	\$ 947
Grimsby **	\$ 407
Guelph	\$ 562
Halton Hills	\$ 638
Hamilton	\$ 549
Huntsville	\$ 947
Innisfil	\$ 796
Kawartha Lakes	\$ 1,016
King	\$ 748
Kingston	\$ 774
Kitchener	\$ 667
Leamington	\$ 637
Lincoln	\$ 873
London	\$ 655
Markham	\$ 442
Middlesex Centre	\$ 921
Milton	\$ 638
Mississauga	\$ 291
Newmarket	\$ 626
Niagara Falls	\$ 884
Niagara-on-the-Lake	\$ 792
Norfolk	\$ 1,036

Municipality - Water & Sewer Costs Volume Meter Size	Residential 250 m3 5/8"
North Bay	\$ 670
North Dumfries	\$ 620
Oakville	\$ 638
Orangeville	\$ 685
Oshawa	\$ 580
Ottawa	\$ 540
Pelham	\$ 664
Peterborough	\$ 463
Pickering	\$ 580
Port Colborne	\$ 955
Prince Edward County	\$ 989
Quinte West	\$ 485
Richmond Hill	\$ 463
Sarnia	\$ 685
Sault Ste. Marie	\$ 383
St. Catharines	\$ 731
St. Thomas	\$ 758
Stratford	\$ 599
Sudbury	\$ 847
Tecumseh	\$ 649
Thorold	\$ 689
Thunder Bay	\$ 578
Tillsonburg	\$ 689
Timmins	\$ 474
Toronto	\$ 434
Uxbridge	\$ 580
Vaughan	\$ 459
Wasaga Beach	\$ 402
Waterloo	\$ 608
Welland	\$ 860
Wellesley	\$ 620
West Lincoln	\$ 499
Whitby	\$ 580
Whitchurch-Stouffville	\$ 452
Wilmot	\$ 682
Windsor	\$ 974
Woolwich	\$ 887
Average	\$ 664
Median	\$ 638
Min	\$ 291
Max	\$ 1,143

Recommendations– Water and Sanitary Sewer Operations

That full lifecycle costing and analysis be undertaken for the water and wastewater system to ensure that adequate funds are available for the replacement/refurbishment of the assets on a timely basis.

That the City establish a long range capital financing plan, taking into consideration capital needs, rates, reserves and debt.

Storm Water Management

This program includes the following:

- Maintenance and repair of City storm sewers that collect rain run off from streets
- Upgrading of storm sewer manholes, catch basins and storm sewer are carried out based on identified need
- Sand collected in catch basins is vacuumed out
- Storm water leaders to buildings are the responsibility of the building owner

The operating costs for storm water management can be influenced by:

- Heavy rainfall or snowfall
- Heavy spring runoff
- Age of pipes
- Pipe materials
- Soil conditions
- Topography
- Depth of frost penetration
- Number, size and scale of a municipality's plants
- The destination of the plant's effluent
- The type of treatment process

At one time, it was common to combine storm water and sanitary sewer systems. Now all new sewer construction consists of separate storm and sanitary sewers. The storm sewers collect run-off water on roadways and direct it to natural drainage systems such as rivers.

Storm Budget and Funding

The operating budget for storm water management in 2008 was \$261,000. To assist in managing the storm water program, an additional 2% was added onto the tax rates to secure additional dedicated funding to address the existing deficiencies. Further, the City is in the process of preparing a Storm Sewer Master Plan which will identify the capital needs over the next 10-15 years.

The following table summarizes how storm water management services are currently provided:

Program/Service	Internal	Contract
Storm sewer maintenance	80%	20%
Catch basin maintenance	70%	30%
Catch basin construction	80%	20%

Many municipalities, including the City of Stratford are facing increasing infrastructure backlogs, funding gaps, and increasing financial pressures in infrastructure management. These challenges have been driven by several trends over the last decade, including:

- ageing infrastructure facilities that create large needs for capital replacement, renewal, and rehabilitation;
- environmental and public health issues, which demand new investments for higher service levels;
- limited ability to raise funds from property taxes, due to resistance to increases in property taxes; and
- resulting competition for resources (tax revenues), from other municipal responsibilities.

Stormwater programs tend to be perceived differently from water distribution and wastewater treatment efforts. Turning on the tap and flushing the toilet are daily reminders of those more traditional services. Surface water management tends to be noticed only when problems such as flooding or acute pollution events occur. It is important, therefore, to remind customers continually of the necessity of these programs.

Capital pressures on the stormwater management program will continue to be a challenge for the City

The City continues to investigate the benefits of moving stormwater management into a utility

A storm water management program cannot be successful without a consistent, dedicated source of revenue on which it can rely.

Historically, in most Ontario municipalities storm water management has been financed with general revenue from property taxes, but these taxes, have proven to be undependable and inadequate as storm water programs must compete against other programs and services for funding. Recently, a number of municipalities, including Stratford have investigated the option of moving storm water management into a utility.

The declining infrastructure in many cities, highlighted by many national studies and reports, shows storm water service has been particularly hard hit. When funded through property taxes, most municipalities lack adequate funds for infrastructure improvements, repairs, maintenance and other storm water management programs. Another approach is to fund storm water management through a utility model, charging “service” or “user” charges to distribute the costs among owners of properties in proportion to some estimate of the amount of runoff from their properties, or their relative contribution to the cost of operations. This was the recommendation made to Council.

While it is beyond the scope of this engagement, there may be other options in terms of cost recovery that will meet the needs of the community that will balance equity and ease of administration in a utility model.

The following summarizes the practices in Ontario municipalities that have implemented a storm water management utility model.

The **Town of Aurora** has a flat rate structure for all properties, with a different rate for Residential and Non-Residential Units.

While still relatively new, municipalities are now considering the merits of moving stormwater into a utility model using a variety of cost allocation methodologies

The **City of London** has used a utility rate model for storm water management since 1996 to finance the 20-year needs for infrastructure improvements and upgrades to the storm sewer system. The surcharge is a fixed flat rate added to each monthly water bill for all residential customers and small ICI users and is based on a per hectare charge for larger ICI properties. The allocation of costs considers the underlying pipe costs of each class of user and the land area. The City recommended against the use of the most common types of allocation methodology (impervious area or intensity development) largely because it wanted to align all types of cost allocation in water, wastewater and storm water using the same methodology (pipe value).

The **City of St. Thomas** charges all residential properties the same per unit charge on a monthly basis added onto the water/sewer utility bill. Commercial/Institutional properties pay based on a per hectare rate and Industrial also pays based on a per hectare rate that is higher than the Commercial/Institutional rate. This was originally established based on estimates for impervious area.

The **City of Hamilton** recovers storm water program costs (fully recovered) from water/wastewater rates. This has been incorporated into the City's rate structure.

A number of other municipalities are in the process of considering this option including the **City of Guelph**, the **Town of Richmond Hill** and several other GTA municipalities. In addition, a storm water utility is practiced in Regina, Saskatchewan which implemented flat storm utility rates for various ranges of property size. Surrey, British Columbia has a drainage utility that charges a flat rate for most properties in the City. Calgary, Alberta used a partial user fee charged on a flat rate basis for all properties at the same rate for all customers for upgrading the storm drainage system. Winnipeg, Manitoba pays for most storm sewer costs through property taxes, however, if there is an existing storm sewer on a property that requires rehabilitation, it is charged directly to the benefiting property owner on a frontage levy.

Benchmarking—Storm

The average operating costs for the urban storm water management (collection, treatment, and disposal) / km of drainage system was \$2,175/km across the survey, compared with a cost of \$2,896 in the City of Stratford.

Municipality	Population	Debt Principal	Debt Interest	Transfer to Own Funds	Net Expenditures	Storm Sewer Net Expenditures per capita	Expenditures (Removing Debt and Transfers to Own)	Expenditures (Excluding Debt and Transfer to Own) Per Capita	MPMP Operating Costs Urban per km of drainage
Fort Erie	29,925			\$ 714,604	\$ 1,237,564	\$ 41	\$ 522,960	\$ 17	\$ 365
Cornwall	45,965	\$ -	\$ -	\$ -	\$ 242,941	\$ 5	\$ 242,941	\$ 5	\$ 551
Timmins	42,997				\$ 178,835	\$ 4	\$ 178,835	\$ 4	\$ 784
Georgina	42,346				\$ 210,495	\$ 5	\$ 210,495	\$ 5	\$ 860
Belleville	48,821		\$ 1,370	\$ 13,367	\$ 279,466	\$ 6	\$ 264,729	\$ 5	\$ 1,132
Tillsonburg	14,822	\$ 32,396	\$ 28,133	\$ -	\$ 221,589	\$ 15	\$ 161,060	\$ 11	\$ 1,789
Port Colborne	18,599	\$ 38,607	\$ 17,146	\$ 20,500	\$ 108,814	\$ 6	\$ 32,561	\$ 2	\$ 2,555
Brockville	21,957	\$ 147,671	\$ 40,175	\$ 2,210	\$ 696,951	\$ 32	\$ 506,895	\$ 23	\$ 3,755
St. Thomas	36,110	\$ 188,579	\$ 11,087	\$ 747,587	\$ 1,998,671	\$ 55	\$ 1,051,418	\$ 29	\$ 7,788
Average						\$ 19		\$ 11	\$ 2,175
Median						\$ 6		\$ 5	\$ 996
Stratford	30,461	\$ 2,426	\$ 535,272	\$ 444,661	\$ 1,495,736	\$ 49	\$ 513,377	\$ 17	\$ 2,896

The City has a systematic approach to cleaning the sanitary and storm sewers

As shown above, the cost is very capital intensive with the majority of the expenses in the City used to fund debt and transfers to reserves to begin to build a source of funds to support lifecycle costing as the City's Storm Water Management Reserve is in a negative position.

The flood in 2002 has underscored the importance of maintaining storm sewer systems. The City's storm systems are cleaned rotationally throughout the City with two in house flushing trucks. A four to five year rotation of all storm and sanitary sewers is expected and is conducted during the warmer months. Larger diameter sewers are cleaned with contract forces. Areas that are known to build up with debris are cleaned bi-annually in some sections and on a 4 to 8 week rotation on other sections. This cleaning is conducted year round. As such, the operating costs may be higher as a result of more aggressive preventative maintenance programs than that used in other municipalities.

The City is facing some resource challenges in that the rotation of four to five years may not be met with present resources. Further, there is no proactive Closed Caption T.V. program that would aid in trouble shooting problems within the storm and sanitary system. However, if the jetting crews cannot get through a section of pipe or if they encounter very large amounts of debris the City will camera the section.

The City also cleans approximately half of the catch basins (2,000 to 2,500) each year on a rotating basis and is contracted out for the majority of the work.

Recommendation—Storm Water Management

That the City continue to explore establishing a storm water management utility in an effort to move toward a dedicated source of user fee funding and to improve the equity in recovering costs.

The City is currently operating with a decentralized fleet

Fleet Management

The City does not have a centralized fleet operation. Public Works has three mechanics that are responsible for the maintenance of the Department's vehicles. The Parks and Recreation vehicles are maintained by the Transit operations. The Police and Fire Departments maintain their own fleet of vehicles through outsourced services.

Work is undertaken by the three mechanics and some work is contracted out. The Department is undertaking preventative maintenance on a scheduled basis, however, due to budget constraints, the replacement of all vehicles based on lifecycle costing is not always possible.

While a centralized fleet operation may offer some efficiencies, with the existing facilities and different unions, this would pose some challenges. However, there are operational efficiencies that could be achieved and should be further investigated.

Fleet chargeback systems are an internal mechanism to accurately recognize the costs of operating, maintaining and replacing vehicles and equipment. A properly designed charge-back system will not only reflect the fleet management operations costs of services (e.g. parts, labour, fuel, asset replacement, and overhead), but will also present the owner with the comprehensive cost of ownership and ensure that funds are available for replacement on a timely basis.

Arguably, the principal reason that organizations use chargeback systems is to finance the costs of their fleet operation; that is, to motivate fleet managers to provide, and fleet users to utilize, vehicles, equipment, and related services efficiently and effectively. A properly designed chargeback system does this by making both fleet users and fleet management personnel aware of the costs of such resources. More precisely, a good chargeback system illustrates the linkage between an organization's behavior and its costs.

The City is employing best practices with respect to establishing appropriate chargeback to maintain the fleet of vehicles and equipment

The City employs a chargeback system for vehicles and equipment to allocate costs to the various activities. The current system is designed to:

- Facilitate the distribution of direct and indirect costs associated with vehicles and equipment to each department and activity
- Promote the efficient management of resources by making users aware of the costs of fleet and equipment
- Ensure that the system is understandable, fair and equitable and does not result in a significant amount of additional work for administrative staff to manage

The City employs an equipment replacement reserve to control fluctuating replacement costs. By contributing an “average” amount to a reserve each year, the equipment can be replaced as required, on schedule without imposing large cost variations on the operating or capital budgets. An equipment replacement reserve exists specifically to replace equipment. The Public Works Equipment Depreciation Reserve has a balance of \$1.4 million, with an additional \$300,000 for Water Vehicles.

The Public Works reserve contributions are calculated on a straight line basis using the expected life, purchase price, salvage value and an inflation factor.

Recommendation—Fleet Management

That the City investigate the pros and cons associated with a centralized fleet operation to determine if efficiencies can be achieved.