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Value-for-Money Audit of the  
Operations of the  
Greater Sudbury Fire Services  
For the Period  
January 1, 2013 to April 30, 2017

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May 15, 2017  
FINAL REPORT

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## **SUMMARY**

### **Audit Objectives**

To assess the extent of regard for value-for-money within the operations of the Greater Sudbury Fire Services.

### **Background**

The relevant legislation for the operation of a fire department in Ontario is contained in the Fire Protection and Prevention Act, 1997 (FPPA) which is administered by the Ministry of Community Safety and Correctional Services (MCSCS). Section 2 of the FPPA states that, "every municipality shall, establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention; and provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances." Section 5 of the FPPA "allows the council of every municipality to enact a by-law to establish, maintain and operate a fire department to provide fire suppression services and other fire protection services within the municipality."

The Occupational Health and Safety Act, R.S.O. 1990 (OHSA) requires every employer to, "take every precaution reasonable in the circumstances for the protection of a worker". The OHSA provides for the appointment of committees, and identifies the "Ontario Fire Services Section 21 Advisory Committee" as the advisory committee to the Minister of Labour with the role and responsibility to issue guidance notes to address firefighters-specific safety issues within Ontario.

The National Fire Protection Association of the United States issues authoritative codes and standards that are commonly referenced within the industry when setting performance targets and monitoring the actual response levels of fire services. These codes and standards are widely accepted within the fire services industry in Canada as well as internationally.

According to the City's By-Law 2014-84 which establishes and regulates the GSFS the mandate of the Greater Sudbury Fire Services is to provide fire protection services, public fire and life safety education, and fire prevention initiatives to protect the lives and property of the citizens, businesses and visitors to the City of Greater Sudbury.

In February 2016, Audit Committee requested that the Auditor General's Office advance the value-for-money audit of Fire Services. On March 22, 2016, Council approved our Updated Audit Work Plan for 2016 to 2018 which includes this audit.

### **Audit Scope**

The operations of the GSFS from January 1, 2013 to April 30, 2017.

### **Report Highlights**

This audit identified opportunities to improve value for money within the operations of the GSFA and recommends the following:

- Establishing reasonable and attainable service level targets for responding to fire calls, formalizing them within the Establishing and Regulating Fire Services By-law, communicating them to the public and reporting annually to Council on them;

- Preparing a business case for specialized training and equipment to bolster the GSFS' technical rescue capability as well as HAZMAT response capability;
- Establishing minimum participation rates of 65% for volunteers for training to improve their effectiveness;
- Developing revised fire call response protocols and providing improved communications tools to facilitate improvements to call response rates for volunteer staff;
- Establishing minimum call response rates of 50% for volunteers to improve their reliability and effectiveness;
- Continuing to pilot the 24-7 shift and, in conjunction with staff from Human Resources and Organizational Development, assessing its costs and benefits relative to other shifts;
- Coordinating with facilities and finance staff to develop a program for essential station maintenance;
- Preparing a business case for a fire station location study to effectively plan for the replacement of stations that are approaching the end of their useful service lives;
- Preparing a business case for the replacement of front-line equipment that has reached or is about to reach the end of its useful service life where budgets are insufficient to maintain existing service levels;
- Preparing a business case for an additional Fire Prevention Officer and Public Safety Officer to ensure compliance with the FPPA;
- Preparing a business case for additional training staff to ensure all firefighters are trained and able to participate in a meaningful way that best serves the needs and circumstances of the community; and
- Revising the timing of the annual recruitment of career firefighters to Q1 to ensure new recruits are available to work when the peak vacation period begins in Q3.

### **Audit Standards**

We conducted our review in accordance with Generally Accepted Government Auditing Standards (GAGAS). Those standards require that we adequately plan for the audit; properly supervise audit staff; obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions; and prepare audit documentation related to the planning, conducting, and reporting for each audit. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit.

Under section 223.19(1) of the Municipal Act, 2001, the Auditor General is responsible for assisting the Council in holding itself and its administrators accountable for the quality of stewardship over public funds and for achievement of value for money in municipal operations.

Obtaining value for money requires the achievement of three interrelated values: economy, efficiency, and effectiveness. Economy is about getting the right inputs at the best cost. Efficiency is about getting the most output for our inputs. Effectiveness is about getting the outputs or outcomes that are desired.

For further information regarding this report, please contact Ron Foster at extension 4402 or via email at [ron.foster@greatersudbury.ca](mailto:ron.foster@greatersudbury.ca)

## OBSERVATIONS AND ACTION PLANS

### 1. Fire Operations

The Fire Operations section within the GSFS provides both offensive and defensive fire response. Offensive fire response includes interior fire rescue and attack, while defensive fire response is exterior only with additional consideration for the protection of adjacent buildings and vegetation.

#### Call Volumes

Year	Total Incidents	Fire incidents	False Fire Alarms	Medical	Traffic	Other
2013	4,681	470	1,615	737	859	1,000
2014	4,251	473	1,111	667	855	1,145
2015	4,327	500	1,088	791	762	1,186
2016	4,469	501	1,238	729	715	1,286

This section delivers emergency services including fire suppression, technical rescue, hazardous material response and medical tiered response. While it has an approved staff complement of 95 career staff, 9 composite career staff, 4 platoon chiefs and 350 volunteer firefighters, the actual number of volunteers is closer to 260 at this time. The 2017 budget for this section is approximately \$17 million and accounts for roughly two-thirds of the total annual budget of \$25.3 million for the GSFS.

According to the BMA studies of Ontario municipalities, the net costs per capita excluding amortization for the GSFS are significantly lower than those within our municipal counterparts, primarily because of the GSFS' extensive use of volunteers. This does not necessarily mean that taxpayers are getting value-for-money. Additional analyses of the levels and costs of service as well as the expectations of taxpayers and their ability to pay is required for conclusions about the extent of regard for economy, efficiency and effectiveness.

#### Net Costs Per Capita of Fire Services

Year	Greater Sudbury	Average of Peers	Thunder Bay	Windsor	Guelph	Barrie	Kingston	Chatham Kent
2013	\$134	\$203	\$263	\$223	\$179	\$169	\$180	N/A
2014	\$136	\$204	\$301	\$217	\$205	\$178	\$186	\$136
2015	\$139	\$208	\$265	\$258	\$195	\$194	\$185	\$148

The municipal burden (average residential taxes and water/waste water costs as a percentage of household income) for the City and its peers is a proxy for the ability of taxpayers to pay for services. Our analysis at *Appendix 1* indicates that municipal tax rates for residential properties in the City are currently lower than those in our peers. Tax rates for Industrial taxpayers are already higher than those in our peers. Tax rates also vary by area rating, with areas outside of the City core being charged reduced rates for lower levels of services.

#### Municipal Burden

Year	Greater Sudbury	Average of Peers	Thunder Bay	Windsor	Guelph	Barrie	Kingston	Chatham Kent
2014	5.1%	5.2%	5.4%	5.3%	4.9%	4.9%	5.7%	N/A
2015	4.8%	5.2%	5.3%	5.4%	4.9%	4.9%	5.5%	5.1%
2016	4.8%	5.1%	5.0%	5.4%	4.8%	4.8%	5.3%	5.1%

## Observations

The GSFS presently operates with 95 career firefighters that are assigned to the Van Horne, Minnow Lake, Leon Avenue and Long Lake Stations. The Val Therese composite station has 9 career firefighters and 18 volunteers. Nineteen other stations operate across the City with 10 to 20 volunteers each.

The City's By-Law 2014-84 establishes and regulates the GSFS but does not set out service level standards to allow management, Council and the public to assess the performance of the City's firefighting services. Most fire services use the standards of the National Fire Protection Association to measure performance.

*Appendices 2 to 4* indicate that there are a number of significant risks that associated with the GSFS' firefighting service that need to be addressed. Most of these risks arise from the number and location of fire stations and number and mix of firefighters presently assigned to each station.

In 2016, the GSFS conducted a review of risks to people and property in response to IBI's comprehensive review of fire services that identified potential gaps in the existing response capacity of the GSFS outside of the City core. The potential gaps relate to the number and location of stations outside the City core and the level and type of staff in each station. Our review of service levels indicated that 45% of the responses to fire calls from the volunteer stations in 2016 took greater than 9 minutes while 24% of the responses took less than 6 minutes. This compares to 16% and 67% in the City core.

Our review of the skillsets of staff identified gaps in the GSFS' capabilities for technical rescue such as auto extrication, ice and water rescue, confined space, trench and hazardous material (HAZMAT). The depth of expertise in technical rescue currently varies from one community to the next and is not commensurate with the community risk profiles. Staff currently only has an awareness level for HAZMAT response which is insufficient for communities with a large industrial economy and major networks of railways and roads.

Our assessment of the participation rates of volunteer staff in training programs and response rates to fire calls identified significant concerns. *Appendix 5* shows the response rates per volunteer. Our review of participation rates of the volunteers in training indicated that the average rate of participation was only 37 percent.

In 2013, the City agreed to pilot the 24-7 hour shift for its career firefighters. We noted that the City has not yet evaluated the effectiveness or efficiency of this shift. Our audit identified risks to both staff and the public from the adoption of this shift as well as concerns about its efficiency between 2300 hours and 0700 hours when the volume of fire calls is significantly lower.

## Impacts

The extent to which firefighting services are meeting the expectations of residents, taxpayers and Council could not be assessed objectively in the absence of service level targets.

Current service levels outside of the City core are inconsistent and may not meet expectations.

The current capability of the GSFS for technical rescue and Hazmat response is not uniform across the City and may not meet expectations.

The current rates of participation of some volunteers in training programs and rates of response to fire calls indicate that there is significant room for improvement.

The 24-7 shift may present risks and costs to the City without commensurate benefits.

## Recommendations

- Establish reasonable and attainable service level targets for responding to fire calls, formalize them within the Establishing and Regulating Fire Services By-law, communicate them to the public and report annually to Council on them;
- Prepare a business case for specialized training and equipment to bolster the GSFS' technical rescue capability as well as HAZMAT response capability;
- Establish minimum participation rates of 65% for volunteers for training to improve their effectiveness;
- Develop revised fire call response protocols and provide improved communications tools to facilitate improvements to call response rates for volunteer staff;
- Establish minimum call response rates of 50% for volunteers to improve their reliability and effectiveness; and
- Continue to pilot the 24-7 shift and, in conjunction with staff from Human Resources and Organizational Development, assess its costs and benefits relative to other shifts.

## Management's Comment & Action Plan

*We concur with the Auditor General's (AG's) findings. It should be noted regarding the 24 hour shift recommendation that the fulltime fire firefighters association and fire administration are subject to interest arbitration as per the provisions of the Fire Protection and Prevention Act and as such it would not be prudent to comment on this recommendation.*

## 2. Fire Stations and Equipment

### Observations

The GSFS has operated 24 stations across the City with few changes for the last 16 years since amalgamation. Condition assessments prepared by CCI in 2013 and 2014 indicate that maintenance programs and budgets have not kept up with the pace of deterioration in the City's stations which on average are over 40 years old. Our analysis indicated that essential station maintenance has been deferred over the last several years due to budget constraints as well as recommendations to rationalize the number of stations from IBI's comprehensive fire services review. Our analysis indicates that budgets for fleet have also not kept pace with the annual cost increases for front-line vehicles which include pumpers, aerials, bush trucks and other rescue equipment.

Our research on fire master plans and fire location studies indicated that residents and property owners would very likely benefit from a modest relocations of the stations when they reach the end of their useful lives. Our research also indicated that the most effective locations for replacement stations can be determined by modeling techniques which examine actual fire call volumes. They also show the potential benefits to response times that can be achieved by placing stations in alternative locations.

### Impacts

Deferring maintenance reduces the useful lives of the fire stations and may create health and safety risks. The cost for a fire station relocation study would be \$25K to \$50K and would provide value for money as it would very likely improve first response times to fire calls with the existing levels of staff.

Budgets are not always sufficient to replace front-line equipment at the end of its useful life. Pumpers that exceed 20 years of age are not recognized by the Fire Underwriters Survey as a result of their lack of reliability. Fire stations with obsolete equipment could be downgraded to unprotected or partially protected, causing insurance rates in those communities to increase.

### **Recommendations**

- Coordinate with facilities and finance staff to develop a program for essential station maintenance;
- Prepare a business case for a fire station location study to effectively plan for the replacement of stations that are approaching the end of their useful service lives; and
- Where budgets are insufficient to maintain existing service levels, prepare a business case for the replacement of front-line equipment that has reached or is about to reach the end of its useful service life.

### **Management Comment & Action Plan**

*We concur with the Auditor General's observations.*

## **3. Prevention, Training and Support**

This section provides prevention, training, mechanical, business improvement, and administrative services and had a \$4.5 million budget for 2017. It includes the Chief Mechanical Officer, Chief Prevention Officer, Chief Training Officer, two Training Officers as well as 8 technical and 4 administrative staff.

### **Observations**

While fire prevention has a very significant role in community safety, and is a requirement of the Fire Protection and Prevention Act, 1997 (FPPA), our analysis indicates that this section is presently understaffed. The existing complement of Fire Prevention Officers is only able to respond to requests and complaints and to inspect the properties with the highest risks. An additional Fire Prevention Officer is required to allow the GSFS to inspect and to assess compliance with the Fire Code of buildings that present moderate public risks.

Section 2 of the FPPA states that, "every municipality shall, establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention. Our analysis also indicates that the number Public Safety Fire Educators is insufficient for a municipality of our size. One additional Fire Education Officer is required to provide sufficient coverage across the broader City.

Our audit analysis also indicated that the current complement of training staff is insufficient to develop and deliver an adequate firefighter training program that responds adequately to significant risks that stem from the City's unique geography and industrial properties. An additional trainer is required to provide technical rescue and Hazmat response training. Another trainer is required to help develop and deliver a more robust training program to the volunteers.

Administrative staff monitor overtime for the GSFS which has averaged \$640K over the last 4 years and is comparable with most of our peer municipalities. Our analysis indicates that overtime costs for career firefighters account for approximately 76% percent of the total overtime for the GSFS. The amount of overtime incurred annually for career firefighters is directly impacted by the timing of retirements and vacation of existing

staff, timing of new staff hires and the size of each platoon of firefighters which is currently specified within the collective bargaining agreement. We also noted that overtime costs were 1.5 times higher than average in 2015 as a result of the hiring freeze during the P6M project. Over the last 4 years, monthly overtime costs averaged \$30K for the first half of the year and \$50K for the second half.

### **Impacts**

The annual cost of another Fire Prevention Officer would be approximately \$115K per annum would offset the risk of litigation from the City's failure to fully comply with the requirements of the FPPA.

The annual cost for another Public Safety Fire Educator would be also be approximately \$115K per annum and would offset the risks of not complying with FPPA requirements.

Hiring two additional training officers to improve the quality of training for both career and volunteer firefighters would cost approximately \$250K per annum.

Hiring career firefighters in early March each year should reduce overtime costs.

### **Recommendations**

Prepare a business case for an additional Fire Prevention Officer and Public Safety Officer to ensure compliance with the FPPA;

Prepare a business case for two additional training officers to ensure all firefighters are trained and able to participate in a meaningful way that best serves the needs and circumstances of the community;

Revise the timing of the annual recruitment of career firefighters to Q1 to ensure that new recruits are available to work when the peak vacation period begins in Q3.

### **Management's Comments & Action Plan**

*We concur with the AG's findings and, if warranted, will provide business cases for Council's consideration for the 2018 budget.*



## Appendix 1 – Municipal Tax Rates

### Residential Municipal Rates – Upper & Lower Tier

Year	Greater Sudbury	Average of Peers	Thunder Bay	Windsor	Guelph	Barrie	Kingston	Chatham Kent
2014	1.2675%	1.3282%	1.6216%	1.6434%	1.0434%	1.1093%	1.2233%	N/A
2015	1.2047%	1.3846%	1.5895%	1.6348%	1.0505%	1.1291%	1.2081%	1.6958%
2016	1.2008%	1.3804%	1.5318%	1.6484%	1.0531%	1.1500%	1.1960%	1.7028%

### Multi-Residential Municipal Rates – Upper & Lower Tier

Year	Greater Sudbury	Average of Peers	Thunder Bay	Windsor	Guelph	Barrie	Kingston	Chatham Kent
2014	2.8258	2.9163	4.3550	4.1748	2.1723	1.1093	2.7699	N/A
2015	2.6317	2.990	4.2113	4.1528	2.1429	1.1291	2.6599	3.6439
2016	2.5906	2.9481	4.0302	4.1876	2.1039	1.1500	2.5580	3.6589

### Commercial Residual Municipal Rates – Upper & Lower Tier

Year	Greater Sudbury	Average of Peers	Thunder Bay	Windsor	Guelph	Barrie	Kingston	Chatham Kent
2014	2.7356	2.4813	3.2108	3.2929	1.9199	1.5898	2.3932	N/A
2015	2.5777	2.6174	3.1977	3.2739	1.9329	1.6181	2.3641	3.3179
2016	2.5259	2.6091	3.1068	3.3003	1.9376	1.6481	2.3406	3.3211

### Commercial Shopping Municipal Rates – Upper & Lower Tier

Year	Greater Sudbury	Average of Peers	Thunder Bay	Windsor	Guelph	Barrie	Kingston	Chatham Kent
2014	2.7356	2.4869	3.2108	3.3208	1.9199	1.5898	2.3932	N/A
2015	2.5777	2.7184	3.1977	3.3697	1.9329	1.6181	2.3641	3.8280
2016	2.5259	2.7106	3.1068	3.3969	1.9376	1.6481	2.3406	3.8333

### Industrial Residual Municipal Rates– Upper & Lower Tier

Year	Greater Sudbury	Average of Peers	Thunder Bay	Windsor	Guelph	Barrie	Kingston	Chatham Kent
2014	3.9762	3.0905	4.0921	3.9771	2.5223	1.6821	3.1789	N/A
2015	3.7392	3.1291	3.9140	3.8227	2.4278	1.7120	3.1402	3.7577
2016	3.7021	3.0639	3.6742	3.8547	2.3218	1.7438	3.1090	3.6797

### Industrial Large Municipal Rates – Upper & Lower Tier

Year	Greater Sudbury	Average of Peers	Thunder Bay	Windsor	Guelph	Barrie	Kingston	Chatham Kent
2014	4.5068	3.1615	4.4473	3.9771	2.5223	1.6821	3.1789	N/A
2015	4.2382	3.4872	5.1992	4.6862	2.4278	1.7120	3.1402	3.7577
2016	4.1962	3.4421	5.0730	4.7254	2.3218	1.7438	3.1090	3.6797

## Appendix 2 – Summary of Significant Risks

Risk	Total No. of Risks	Risks Before Controls			Risks After Controls		
		High	Med	Low	High	Med	Low
Reputation	17	11	6	0	5	12	0
Operational	24	13	11	0	5	19	0
Financial	16	6	10	0	3	13	0
Legal	9	4	5	0	0	9	0
<b>TOTAL</b>	<b>66</b>	<b>34</b>	<b>32</b>	<b>0</b>	<b>13</b>	<b>53</b>	<b>0</b>

## Appendix 3 – Summary of High Risks after Controls

Risk	Risk Description	Before Controls	After Controls
		High	High
R2	Volunteer response is inconsistent and may compromise service	12.0	10.8
R4	Fire prevention and training services may be inadequate in some areas	10.5	10.5
R5	Fire response capability may be inadequate in some areas	11.3	10.2
R7	Technical rescue response capability may be inadequate	10.5	10.5
R8	Hazmat response capability may be inadequate	11.3	10.2
O1	Fire stations may be in wrong locations	15.0	13.5
O2	Fire stations may lack essential functionality	14.0	12.6
O3	Volunteer staff may be ineffective in terms of skills	10.5	9.5
O4	Volunteer staff response may be unreliable	12.0	10.8
O12	Serious staff and/or citizen injuries may occur while en route to scene	11.3	9.1
F1	Fire services may not sustainable/affordable	10.5	9.5
F11	The investment in fleet may be insufficient for effective fire services	14.0	11.3
F12	The investment in buildings may be insufficient for effective fire services	15.0	12.2

**Appendix 4 – Sample of Medium Risks after Controls**

Risk	Risk Description	Before Controls	After Controls
		High	Med
R1	Old trucks may result in breakdowns and incidents	10.5	8.5
O22	Fleet may fail and compromise service delivery	10.5	8.5
F3	Labour costs may not be sustainable/affordable	9.8	8.8
F13	Lack of effective asset management systems in the City may compromise budget decisions	10.5	8.5
F14	Lack of effective Long Term Financial Planning processes in the City may compromises capital budget decisions	10.5	8.5

**Appendix 5 – Call Response Rates Per Volunteer**

