



Comprehensive Fire Services Review

Final Report

March 3, 2014





IBI Group
5th Floor—230 Richmond Street West
Toronto ON M5V 1V6 Canada
tel 416 596 1930
fax 416 596 0644

March 3, 2014

Mr. Tim P. Beadman
Chief of Emergency Services
Emergency Services Department
City of Greater Sudbury
239 Montee Principale, Unit 2
Azilda, ON P0M 1B0

Dear Mr. Beadman:

COMPREHENSIVE FIRE SERVICES REVIEW

We are pleased to submit our Final Report on the above study.

The study objective is to review the operations of the Greater Sudbury Fire Services division relative to the fire services needs of the City, and to recommend options and solutions for improving operational effectiveness and cost efficiency.

The study was a collaborative undertaking involving City resources - principally resources internal to the Fire Services Division - and those of IBI Group.

This report contains the findings and recommendations arising from the investigation. While the report is based in part on work performed by the City and in part on the results of IBI Group's own research, the findings and recommendations represent the opinions of IBI Group in its role as consultant.

Thank you for giving us the opportunity to work on this most interesting assignment.

Sincerely,

IBI GROUP

A handwritten signature in black ink, appearing to read 'Lee S. Sims', written in a cursive style.

Lee S. Sims
Director

A handwritten signature in black ink, appearing to read 'Marvin Rubinstein', written in a cursive style.

Marvin Rubinstein
Associate

Enc.

Table of Contents

Preamble	iii
Executive Summary	iv
1. Introduction	1
2. Context	3
3. Fire Services System Overview	6
3.1 Organizational Structure	6
3.2 Operating Model	7
3.3 Core Services	10
3.4 Operating Costs	11
3.5 Facility Capital.....	12
3.6 Fleet and Equipment Capital	12
4. Peer Comparison	14
5. Municipal Fire Risk Profile	18
5.1 Population	18
5.2 Economic Activity.....	19
5.3 Building Stock	19
5.4 Property Dollar Loss due to Fire	20
6. Fire & Rescue Incidents	21
6.1 Incident Trends	21
6.2 Incident Profiles	21
6.3 Fire Incident Location Mapping.....	22
6.4 2012 Incident Volumes by Fire Station	23
7. Fire Service Response Times	24
7.1 Response Time Summary	24
7.2 Incident Response Time Mapping	26
7.3 Station Coverage	27
8. Fire Station Locations	28
8.1 Principle Considerations	28
8.2 City Core Scenarios (District 1)	29
8.2.1 Relocate New Sudbury & Minnow Lake Stations.....	30
8.2.2 Merge New Sudbury & Minnow Lake Stations	32
8.2.3 Close Copper Cliff Station.....	33
8.3 Valley East / Capreol Scenarios (District 4).....	34
8.3.1 Close Hanmer Station.....	34
8.3.2 Close Val Caron Station.....	35
8.4 Outlying Rural Area Scenarios (Districts 2, 3 & 5).....	36
8.4.1 Merge Lively and Waters Stations	37
8.4.2 Merge Beaver Lake and Whitefish Stations	38
8.4.3 Close Vermillion Station	39
8.4.4 Close Falconbridge or Skead Stations.....	39
8.4.5 Merge Wahnapiatae and Red Deer Lake Stations.....	41
8.5 Preferred Station Arrangement.....	43
9. Firefighter Suppression Resources & Apparatus	47
9.1 Firefighter Suppression Resources	47
9.2 Barriers to Operationally Effective Fire Suppression Services.....	48

Table of Contents (cont'd)

9.3	Impediments Posed by CAD.....	51
9.4	Main Station Workload.....	52
9.5	False Alarms	52
9.6	Apparatus.....	52
9.7	Specialty Services.....	56
10.	24-Hour Shift Rotation.....	58
11.	Fire Prevention & Public Education.....	60
12.	Firefighter Training.....	65
13.	Volunteer Firefighter Operations	68
13.1	Role of the Volunteer Firefighter.....	68
13.2	Volunteer Recruitment & Retention	69
13.3	Volunteer Training.....	71
13.4	Volunteer Emergency Response Operations	72
13.5	Volunteer / Career Organizational Culture	74
14.	Fire Capital Management	75
15.	Fire Revenue & Cost Containment.....	77

Appendices

- A. Fire Station Inventory

Preamble

This report, entitled *Comprehensive Fire Services Review*, has been prepared for the Emergency Services department of the City of Greater Sudbury (the Client). In connection with the issuance of this report, we believe it is worthwhile to provide insight, in addition to that contained in the report, concerning IBI Group's involvement in this project.

IBI Group was engaged as an external professional consulting resource. Our participation in this consulting engagement is the direct result of a competitive tendering that required us to formally respond to a Request for Proposals (RFP) issued by the City.

The study was carried out under the leadership of a Steering Committee consisting of the Chief of Emergency Services (serving as Chair), Fire Chief, City's Chief Administrative Officer, Chief Financial Officer / Treasurer and City's Director of Human Resources. A Deputy Fire Chief served as Project Manager, reporting on this study to both the Fire Chief and Chief of Emergency Services.

The City's RFP defined the project scope and approach. In keeping with the RFP, the work program was organized into multiple tasks. City resources (principally resources internal to the Fire Services Division) assumed lead responsibility for a number of key tasks while IBI Group took responsibility for others. IBI Group agreed to this arrangement since this would instill in Fire personnel a greater understanding for the design and delivery of the services.

IBI Group provided project management support services, including advice, guidance, input and feedback on work performed by City resources. The work benefited from our knowledge of industry standards and best practices, and previous experience working on similar consulting engagements.

To a degree the work on this study was influenced by a parallel City initiative in which Fire and EMS are being transformed into an integrated emergency services delivery model that is intended to capitalize on goals in common to both Fire and EMS, and to a sharing of resources.

In respect of their assigned tasks, City resources contributed an assortment of data and assessments-in-progress that are still ongoing. Where it was apparent that City resources required assistance, IBI Group voluntarily assumed some of the work without obligation.

IBI Group was responsible for consolidating the work conducted respectively by City and IBI Group resources into a study report (i.e., this report). While the report is based in part on work performed by City resources and in part on the results of IBI Group's own research, the findings and recommendations represent the opinions of IBI Group in its role as consultant.

Our opinions are based on the information with which we were provided / available to us at the time of writing. It is our understanding that City resources are carrying on with their assessments-in-progress and that from this additional work, they may generate new information and as a result, findings and recommendations that may vary from those contained in this report.

IBI Group acknowledges the Steering Committee for its guidance and direction, and expresses appreciation to City resources for their contributions to the study.

Respectfully,
IBI Group Team

- Marvin Rubinstein, Lead Consultant
- Wayne Gould

Executive Summary

This report, entitled *Comprehensive Fire Services Review*, has been prepared for the Emergency Services department of the City of Greater Sudbury (the Client).

The review was a collaborative initiative involving City resources (principally resources internal to the Fire Services Division) working with IBI Group. The review was conducted under the leadership of a Steering Committee consisting of the Chief of Emergency Services (serving as Chair), Fire Chief, City's Chief Administrative Officer, Chief Financial Officer / Treasurer and City's Director of Human Resources.

IBI Group was responsible for consolidating the work conducted respectively by City and IBI Group resources into a study report (i.e., this report). While the report is based in part on work performed by City resources and in part on the results of IBI Group's own research, the findings and recommendations represent the opinions of IBI Group in its role as consultant.

IBI Group's recommendations (summarized below) are based on the information with which we were provided / available to us at the time of writing. It is our understanding that City resources are carrying on with their assessments-in-progress and that from this additional work, they may generate new information and as a result, findings and recommendations that may vary from those contained in this report.

Study Objectives and Scope

The principal study objectives were to review the operations of the Greater Sudbury Fire Services division (GSFS) relative to the fire services needs of the City, with specific focus on fire station locations, resourcing, placement of apparatus and costs; and to recommend options and solutions for improving the operational effectiveness and cost efficiency of fire services delivery.

The project scope of work as defined by the City's RFP is presented below:

- To investigate the City's Fire Service needs (risks) and trends, including needs specific to essential services e.g., hospital, long term care facilities, Sudbury airport, etc.
- To assess the operational performance of the City's Fire Services, including number and geographic location of stations, and utilization of resources.
- To investigate the costs to operate the City's Fire Services and how the cost compares to fire services costs in other municipalities of similar size.
- To investigate options for containment of the City's Fire Services costs (capital and operating), including the use of User Fees.
- To investigate options for improving the operational effectiveness of the City's Fire Services, including options for rationalizing (consolidating) infrastructure (stations), resources (manpower, fleet and equipment) and operating protocols.
- To investigate whether Fire Area Rating is impacting service delivery, and provide any recommendations for improvement.
- To review the volunteer operations with respect to the examination of alternative volunteer deployment models, alternative volunteer in-the-field oversight models, as well as alternative approaches to volunteer retention and recruitment used by other municipalities.

- In tandem with the Fire Rationalization review, a Fire Capital Replacement program should be developed for replacement of Fire vehicle, apparatus, and systems. A similar initiative for capital improvements/replacement of Emergency Services facilities should be included.

Fire dispatch, which was recently addressed in a separate report commissioned by the City, is excluded from the scope of this review.

Context

The City of Greater Sudbury was formed on January 1, 2001 with an amalgamation of the following former municipalities and neighbouring unorganized townships: City of Sudbury, City of Valley East, and the communities of Capreol, Nickel Centre, Onaping Falls, Rayside-Balfour and Walden.

GSFS evolved concurrently from an amalgamation of the former municipal fire departments. GSFS is a composite fire service consisting of some 470 personnel who, operating out of 24 fire stations, provide various levels of fire suppression, emergency rescue and medical assist response to about 4,000 calls annually.

The former City of Sudbury is served by career (full-time) firefighters. The former Valley East is served by a composite force of career and volunteer firefighters. The rest of Greater Sudbury is served by volunteer firefighters. Fire dispatch is provided by the Greater Sudbury Police Service Communications Division.

The City's Establishing and Regulating Fire By-law (By-law #2012-146) sets out the levels of service approved by City Council. The approved services include: fire prevention and inspection; public safety education; and various levels of fire suppression, emergency rescue and medical assist response.

Firefighters

Inside the City core, GSFS employs about 1 career firefighter per 1,000 population. In the suburban and rural communities outside of the City core GSFS employs about 5 volunteer firefighters per 1,000 population. These ratios are consistent to those of other Ontario-based career, volunteer and composite services. From this one may conclude that for the greater City's population, the number of firefighters currently employed by GSFS is reasonable.

Geographic Coverage

Among peer fire services, the minimum number of firefighters per station is 21 and the average is 27. At GSFS the figure is considerably lower, averaging 19 firefighters per station. These statistics, suggest that GSFS may be operating with more stations than required.

This is affirmed by the following statistics (and extensive discussion in Section 8 of the report) that demonstrate an extensive overlap in geographic coverage: About 95% of all fire incidents (SIR 1-3) occur within 5 kilometres of a fire station. Ninety-eight percent (98%) are within 7.5 kilometres and 99% are within a 10 kilometre radius.

Fire Services Planning Principles

From a Fire services planning perspective, no discussions are as contentious as those which endeavour to define an optimum number of Fire stations and their placement within a municipality. The study participants clearly recognize the sensitivities associated with any recommendations to close, merge or relocate an existing Fire station, or to alter existing Fire suppression services.

Sensitivities notwithstanding, this review includes an assessment of alternative fire station location arrangements and suggestions pertaining to the use of resources and apparatus that is based predominately on the following principles:

- Services should align to Fire risks and service needs.
- One City / decisions should respond to the needs of the entire municipality, allocating available resources based on priorities.
- Decisions should give consideration to both current settlements and anticipated future growth.
- Public safety, financial sustainability and value for money should be fundamental to any decision.
- Fire prevention and public education should be promoted aggressively as the principal lines of fire defense, particularly in areas distant from a station or fire suppression services.
- Operating model for Fire suppression should give consideration to response time / coverage capabilities and the capabilities of firefighter staffing.
- Fire suppression operations should make best use (and utilization) of resources (both career and volunteer).
- Fire suppression operations should not be impeded by artificial barriers and restrictions.
- Operating model should take advantage of automatic aid agreements where reasonable.

Preferred Fire Station Arrangement

The preferred station arrangement arising from this assessment is shown in Exhibit 8.8. The preferred arrangement includes a total of 18 fire stations (down from the existing 24 stations). The proposed station location changes are summarized below:

- New Sudbury station is relocated to the west near Lasalle and Notre Dame
- Lively station is closed and Lively firefighters are merged with Waters station
- Wahnapiatae station is closed and Wahnapiatae firefighters are merged with Red Deer station
- Copper Cliff, Falconbridge, Hanmer and Vermillion stations are closed.

In IBI Group's opinion, the preferred station arrangement will continue to provide Greater Sudbury residents and businesses with reasonable levels of coverage. Coverage projections are: 92% of calls within 5 kms of a fire station (compares to the current 95%), 98% within 7.5 kms and 99% within 10 kms. The projected values at 7.5 kms and 10 kms do not vary from current percentages.

Assuming that most of the displaced volunteer firefighters will continue to serve from neighbouring fire stations, it is estimated that under the preferred station arrangement, GSFS will operate with an average of about 25 firefighters per station. This figure is up from the present 19 firefighters per station, and it is consistent with peer fire services, where as discussed previously, the number averages about 27 firefighters per station.

Operating Costs

For 2013, the cost to operate GSFS is projected to be \$22.3 million. Career firefighter wages and benefits account for 61% of the total expenditure. Payments to volunteer firefighters account for about 5%. Other operating cost components include vehicle and equipment maintenance, fuel, supplies, firefighter training, and the cost of fire prevention and public education programs.

The 2013 cost of \$22.3 million translates to about \$139 per resident, which not only compares well to the cost of fire departments in other Ontario municipalities but also is 5% lower than the median value among 21 peers that we surveyed.

The cost to operate GSFS is increasing at a rate of about 3.4% per annum. Career firefighter wages and benefits account for almost 85% of the annual increase. Should past trends continue, then the annual cost to operate GSFS may increase to \$30 million by 2021 (+35%) and to over \$40 million

by 2031 (+90%). In comparison, the City's population is expected to increase at a much slower pace of +3% by 2021 and +6% by 2031.

The preferred station arrangement arising from this assessment does not recommend a reduction in the number of firefighters. Therefore, a significant change in current or projected future operating costs is not anticipated.

Facilities Capital

The capital implication of relocating the New Sudbury station is estimated to be about \$2 million. The cost of land acquisition would be an additional cost. A capital investment may also be required to renovate and/or expand the Red Deer station to accommodate the Wahnapiatae volunteer firefighters.

IBI Group anticipates that there will be a capital savings of several hundred thousand dollars in facility improvements arising from the closure of the six stations, and that the facility costs identified above could be offset by selling off these facilities and properties.

We acknowledge the absence of specificity in the anticipated facility costs and savings; however, we anticipate that these items will be the subject of greater scrutiny when City staff commence deliberations in respect of the preferred 18 station arrangement.

Fleet & Equipment Capital

GSFS operates with a fleet of about 100 vehicles and several thousand pieces of equipment. Despite GSFS' best efforts, the service operates with some vehicles and equipment that exceed (no longer comply) to industry standards for fleet and equipment useful life.

The life cycle replacement cost of the present fleet and equipment inventory has been estimated by applying generally accepted industry standards for the useful life of fire fleet and equipment. In 2012 the GSFS capital requirement for fleet and equipment replacement amounted to \$4.52 million; however, the service's capital spending envelope was only \$1.02 million. The projected capital replacement requirement for 2013 is \$4.16 million; however, the operating budget for 2013 includes only \$1.21 million for capital spending. These and other annual capital shortfalls are being carried into future years.

We anticipate that if current trends prevail, then the unfunded capital requirement will increase to over \$5 million by 2017, to \$10 million by 2022 and to \$15+ million by 2027.

Under the proposed rationalization to 18 stations (from the current 24 stations) it is anticipated that a minimum of 12 fire vehicles will either be surplus or be relocated deferring other purchases. This will include: a 75' aerial, 1 telesquirt, 5 pumpers, 3 tankers, a bush truck and a van. There also will be a reduction in equipment inventory. In total, IBI Group estimates a potential cost savings in future apparatus replacement (fleet and equipment) of about \$4.5 million (based on replacement costs at current dollars), which is equivalent to a 15% reduction in the existing apparatus inventory.

To close the unfunded capital gap entirely will require an increase in capital spending. In this, our estimates are as follows:

- For the existing 24 stations, capital spending needs to be increased to \$2.2 million a year to eradicate the unfunded capital within 15 years.
- Under the preferred 18 station arrangement, this could be achieved within the same time frame by increasing capital spending to \$1.9 million a year. Further, by increasing capital spending to

\$2.0 million a year the unfunded capital could be eradicated within 10 years, and by increasing capital spending to \$2.3 million a year the unfunded capital could be eradicated within 5 years.

Section 9 of this report offers additional suggestions by which fleet and equipment capital may be better managed. They include replacing end-of-life custom pumpers with commercial units, unless the purchase request is accompanied by a business case that clearly demonstrates the need for a custom vehicle. For relatively low volume fire stations that are situated in non-hydrant areas, GSFS should consider replacing end-of-life pumpers and tankers with more economical combined pumper/tanker units; and in lieu of the existing 11 Bush Trucks, GSFS should give consideration to a fewer number that would be positioned strategically to respond without boundary constraints.

Barriers to Operationally Effective Fire Suppression Services

Best practices pertaining to Fire department operations repeatedly affirm the following as two key principles for effective fire suppression operations: (a) that Fire suppression operations should not be impeded by artificial barriers or restrictions, and (b) that the closest available and appropriate resource should be dispatched to the site of a fire / emergency incident.

Contrary to best practices, fire suppression operations in Greater Sudbury are adversely impeded by two artificial restrictions. One is the collective agreement governing career firefighting operations and the other is the area ratings system that aligns career and volunteer fire suppression services to specific geographic areas. In this regard, it is recommended that:

- The collective agreement should be reviewed and adjusted where possible to eliminate the perception of a restriction and to give greater consideration to the services being provided, and by extension to make more effective use of available career and volunteer firefighter resources in keeping with the principles set out above.
- Area rating boundaries should be adjusted to reflect the greater City's current growth and geographic development; giving particular consideration to areas where sending career firefighters outside of the core would potentially contribute to better services, and concurrently make more effective use of career resources.

One potential scenario is shown in Exhibit 9.2. In this scenario, the core area boundary would be adjusted slightly to align more closely with the service areas of the existing City core stations and the composite area boundary would be enlarged to include the suburban communities of Waters, Lively, Azilda, Garson and Coniston.

Enlarging the composite area boundary would, in our opinion, better reflect existing conditions within these suburban communities that have changed significantly since the 2001 amalgamation, including their respective populations, the relatively large number of incidents that they generate (relative to those of smaller outlying settlements), and their anticipated future residential growths.

Unlike the existing definition for the term composite, the enlarged composite area would not require that additional career firefighters be based at local stations (albeit Val Therese staffing with both volunteer and career firefighters would continue unimpeded). Rather, the term composite area would be redefined to mean a geographic area where volunteer firefighters will be supported actively by career firefighting resources that are stationed in the City core. Further details, including tax implications associated with the suggested boundary realignment, are provided in Section 9.2.

In concert with the above we also recommend that response standards and protocols to various incident types need to be standardized, and adjusted to reflect the principles for effective fire suppression operations set out above. Also, Computer Aided Dispatch (CAD) system recommends should be redesigned to reflect the changes to response standards and protocols, and as the recommends are revised, GSFS should take advantage of the CAD system's ancillary supports to

attain more effective fire suppression operations i.e., focused / single purpose paging, volunteers tracking software, etc.

24-Hour Shift Rotation

In 2012 the City of Greater Sudbury and the Sudbury Professional Firefighters Association (IAFF Local 527) entered into a Letter of Understanding, agreeing to trial a 24-hour work schedule for the Fire Suppression Division. The trial (or pilot) would last two years unless extended by mutual agreement.

For firefighters the 24-hour shift rotation trial has been a benefit resulting in more personal time at home with family and for activities other than firefighting; whereas, as discussed below, for the Fire Services Division, the 24-hour shift rotation trial has been a challenge creating a number of issues that in particular are adversely impacting the Fire Training Section i.e., increased difficulty to recruit Fire Trainers from Fire Suppression, increased challenge to track firefighter training activity, progress and proficiency, etc.

Peer Fire services also report that in their organizations there has been some disconnect between supervisors and firefighters due to less frequent interaction and some issues with respect to station chores.

In IBI Group's opinion, going forward GSFS may wish to give consideration to alternate shift schedules e.g., a 12-hour shift that may align Fire and EMS. This in particular, is something that merits consideration if, as is the case in GSFS, there is a desire to consolidate to an integrated Fire and EMS service.

Also, solutions are needed for keeping firefighters active and productive over a 24-hour shift. GSFS may wish to consider a 24-hour work schedule that assigns estimated times for different programs and routine activities, i.e.: in-service training, fire prevention inspection activities, public education, pre-incident planning, apparatus maintenance, fire station maintenance and break periods.

Fire Prevention and Public Education

Both a 2011 Strategic Review and a more recent review of Volunteer Firefighter Operations (discussed in Section 13 of this report) have recommended that there should be a greater role for suppression staff (career and volunteer) in inspection, prevention and education activities. Also, that internal processes and technological support requirements need to be addressed, with particular emphasis on the acquisition of an RMS system suitable to the needs of Fire Prevention.

Given the myriad of initiatives facing the FPPE Section, it is our opinion that greater emphasis should be placed on the role that suppression personnel play in alleviating some of the Section's workload in addition to promoting prevention and public fire safety education throughout the community. Having said this, one needs to be mindful of the ancillary requirements for training, resources and time.

It is recommended that the Chief Fire Prevention Officer should assess and report on the role of staff (career and volunteer) relevant to the department's FPPE requirements in terms of time allocation, program effectiveness, pre-incident planning and training.

Fire Training

The staffing needs of the Training Section need to be addressed as a priority initiative, to ensure the ongoing responsibilities of the Section and that firefighters (career and volunteer) are receiving the requisite orientation, training and skills enhancement support, to ensure a safe and successful Fire response to emergency incidents.

In conjunction with the above there needs to be a strategy for addressing the ancillary needs of any new Training Officer hires i.e., scheduling, workspace, resources, technology and vehicle needs.

The Training Section should consider implementing a documented quality management program by which to ensure that the training curriculum is appropriate to the needs of the service as defined by the Chief Training Officer in consultation with senior fire management, and to track firefighter training activity progress and proficiency.

Volunteer / Career Cultural Issues

During the course of the review we consulted with numerous volunteer firefighters, almost all of whom commented on tension and dissension that presently exists within the GSFS organization.

The discord, we are advised, stems from a number of perceived, and in some cases, real conflicts between career and volunteer firefighters, e.g.: The greater City not being served by one fire department, but rather by two departments of which, one is staffed with career firefighters and the other with volunteers. Career firefighters being given preference. Volunteer firefighters being treated as second class citizens / not receiving the respect that is due.

In our opinion, it does no good to debate the existence of such issues, what is important to note is that, to many volunteer fire fighters, these issues matter, as evidenced by the fact that the volunteers opted to organize in February of 2013. Moreover, these issues need to be addressed if the City is to continue to rely on a volunteer firefighter force for rural fire fighting services.

This point is all the more important in light of the current direction toward the integration of fire and emergency medical services.

Our research of other amalgamated fire departments shows that many have successfully addressed such issues by promoting a "One Fire Department" approach, joint career / volunteer activities, and pro-active recognition and reward of achievements.

We recommend that GSFS should develop a strategic statement supporting a "One Fire Department" approach, including mission, vision and values that extend to both volunteer and career firefighter resources. It is further recommended that in conjunction with the City's Human Resources Department, GSFS should explore alternate means by which this may be implemented.

1. Introduction

On February 28, 2012 City Council adopted a recommendation authorizing the Chief of Emergency Services, working with the support of a Steering Committee consisting of Departmental Senior Management and an external professional resource, to undertake a comprehensive review of the Greater Sudbury Fire Service (GSFS).

IBI Group was engaged as the external professional resource. Our involvement in this project is the direct result of a competitive tendering that required us to formally respond to a Request for Proposals (RFP) issued by the City.

This report contains the findings arising from the review.

Background

The review was a collaborative initiative involving City resources (principally resources internal to the Fire Services Division) working with IBI Group.

The review was conducted under the leadership of a Steering Committee consisting of the Chief of Emergency Services (serving as Chair), Fire Chief, City's Chief Administrative Officer, Chief Financial Officer / Treasurer and City's Director of Human Resources.

IBI Group was responsible for consolidating the work conducted respectively by City and IBI Group resources into a study report (i.e., this report). While the report is based in part on work performed by City resources and in part on the results of IBI Group's own research, the findings and recommendations represent the opinions of IBI Group in its role as consultant.

IBI Group's recommendations are based on the information with which we were provided / available to us at the time of writing. It is our understanding that City resources are carrying on with their assessments-in-progress and that from this additional work, they may generate new information and as a result, findings and recommendations that may vary from those contained in this report.

Study Objectives

The principal study objectives were to review the operations of the Greater Sudbury Fire Services division (GSFS) relative to the fire services needs of the City, with specific focus on fire station locations, resourcing, placement of apparatus and costs; and to recommend options and solutions for improving the operational effectiveness and cost efficiency of fire services delivery.

Scope of Work

The project scope of work as defined by the City's RFP is presented below:

- To investigate the City's Fire Service needs (risks) and trends, including needs specific to essential services e.g., hospital, long term care facilities, Sudbury airport, etc.
- To assess the operational performance of the City's Fire Services, including number and geographic location of stations, and utilization of resources.
- To investigate the costs to operate the City's Fire Services and how the cost compares to fire services costs in other municipalities of similar size.



- To investigate options for containment of the City's Fire Services costs (capital and operating), including the use of User Fees.
- To investigate options for improving the operational effectiveness of the City's Fire Services, including options for rationalizing (consolidating) infrastructure (stations), resources (manpower, fleet and equipment) and operating protocols.
- To investigate whether Fire Area Rating is impacting service delivery, and provide any recommendations for improvement.
- To review the volunteer operations with respect to the examination of alternative volunteer deployment models, alternative volunteer in-the-field oversight models, as well as alternative approaches to volunteer retention and recruitment used by other municipalities.
- In tandem with the Fire Rationalization review, a Fire Capital Replacement program should be developed for replacement of Fire vehicle, apparatus, and systems. A similar initiative for capital improvements/replacement of Emergency Services facilities should be included.

Fire dispatch, which was recently addressed in a separate report commissioned by the City, is excluded from the scope of this review.

2. Context

Municipal Amalgamation, 2001

The City of Greater Sudbury was formed on January 1, 2001 with an amalgamation of the following former municipalities and neighbouring unorganized townships: City of Sudbury, City of Valley East, and the communities of Capreol, Nickel Centre, Onaping Falls, Rayside-Balfour and Walden.

GSFS evolved concurrently from an amalgamation of the former municipal fire departments. GSFS is a composite fire service consisting of some 470 personnel who, operating out of 24 fire stations, provide various levels of fire suppression, emergency rescue and medical assist response to about 4,000 calls annually.

The former City of Sudbury is served by career (full-time) firefighters. The former Valley East is served by a composite force of career and volunteer firefighters. The rest of Greater Sudbury is served by volunteer firefighters. Fire dispatch is provided by the Greater Sudbury Police Service Communications Division.

Encompassing more than 3,600 sq. kilometres of land and water resources, Greater Sudbury is the largest municipality in Ontario based on total area.

Greater Sudbury is recognized for its diversity of urban, rural and natural landscapes, and for its valuable resource base that includes minerals, forestry and agriculture. The City contains one of the largest mining industrial complexes in the world, as well as a growing mining supply services sector. While this sector remains the foundation of the local economy, the City also is a major centre in Northeastern Ontario for finance, business, health care, education, government and tourism.

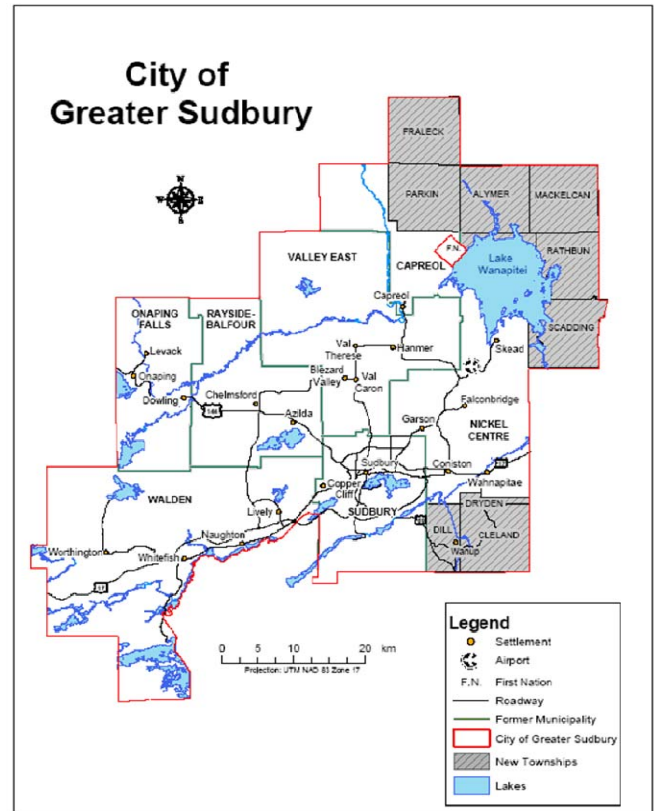
The total population of Greater Sudbury is about 160,000 residents and the number employed is about 83,000. The largest proportion of population and employment is concentrated in the former City of Sudbury.

Master Fire Plan, 2003/04

Shortly after the municipal amalgamation, City Council authorized Emergency Services staff to proceed with the preparation of a Master Fire Plan, which based on an analysis of needs and risk, would provide direction and vision to the City's Fire Services for the period 2004 to 2010.

Work on the Plan commenced in March 2003. During the process a number of issues requiring immediate attention were identified and presented individually to City Council for approval and action. These included approval of: a new organizational structure, additional staffing for the Fire Prevention and Training Divisions, a Computer Aided Dispatch (CAD) system, a Records Management System, and an increase in firefighter staffing for Valley East.

Exhibit 2.1
City of Greater Sudbury



A final Master Fire Plan report was presented to City Council in September 2004. The Plan concluded that while the Greater City's Fire Services had improved over that which existed immediately following municipal amalgamation various aspects of the operation required additional service enhancements. This included Fire Prevention and Public Education, training, communications, and fire suppression and rescue.

The Master Fire Plan report included a phased plan for the implementation of recommended service enhancements over the life of the Plan (10 years). With City Council's approval-in-principle the Master Fire Plan has provided direction and vision to the City's Fire Services for the past decade.

Strategic Review, 2011/12

At the direction of City Council, an organizational transformation of Fire and Emergency Services commenced in June 2011 with an administrative merging of Fire, EMS and Emergency Management into a single Emergency Services department.

Shortly thereafter, the Chief of Emergency Services initiated a high level strategic review of the Department's needs and capabilities, taking into consideration industry-wide Best Practices pertaining to Fire, EMS and emergency management services delivery.

The findings of the review, including 38 recommendations having potential to improve the delivery of the City's emergency services or to make service delivery more cost-effective, were presented to City Council in February 2012. The recommendations, which were consolidated into a "Going Forward Work Plan", cover a wide range of undertakings specific to Fire, EMS and to a bringing together of the two services into a fully integrated emergency services delivery model.

One recommendation in particular, was that the City of Greater Sudbury should undertake a comprehensive review of the City's Fire Services. This recommendation, which was endorsed by the City's Community Services Committee and approved by City Council, serves as a basis for the work documented in this report.

Integration of Fire and EMS

As noted above, the Strategic Review included recommendations for bringing together the two services (Fire and EMS) into a fully integrated emergency services delivery model. In this, a principal objective, endorsed by City Council, is to achieve service excellence by capitalizing on goals in common to both Fire and EMS, and to a sharing of resources. The proposed model will also serve as the means by which to cost-effectively develop and expand services over time to meet the City's evolving needs.

This initiative by Greater Sudbury is consistent with approaches taken by other North American communities as a way to improve efficiency and cost-effectiveness of their services.

The City recognises that the transformation must be a coming together (i.e., a partnering) of the affected organizations - not a takeover of one service by another; also that the resulting model must satisfy the City's unique geographic makeup and service requirements.

In keeping with Council's direction, there are plans to introduce the following Departmental structure changes in December 2013, upon the retirement of the current Fire Chief. The Chief of Emergency Services will assume an integrated role of "Chief of Fire and Paramedic Services". There also will be a new position of "Executive Deputy Chief of Fire and Paramedic Services". The incumbent for this position was recently recruited.

We are advised that no other significant Departmental structure changes are anticipated in the short term. The four existing Deputies (2 in Fire and 2 in EMS) will maintain their existing / modified portfolios and they will be actively involved in the ongoing planning / transformation process.

The merging, or coming together, of Fire and EMS will likely take several years to complete. Departmental Executives anticipate full implementation in 5 to 7 years.

Plans for 2014 include planning for a consolidation of Fire and EMS operations support functions, and development of Pilot Projects by which to trial one or more specific initiatives for integrating Fire and EMS field operations. This could potentially include assignment of Firefighters and Paramedics to the same squad, same emergency response vehicle, etc. We are advised that the design of the Pilot Projects will be undertaken in consultation with Corporate Human Resources and key stakeholders.

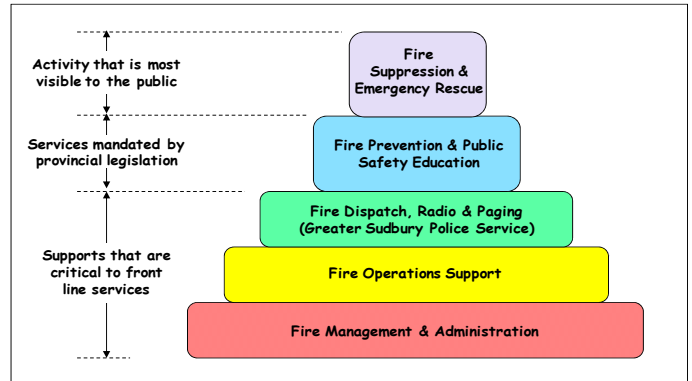
This ongoing transformation of Fire and EMS into an integrated emergency services delivery model is the backdrop in which the Comprehensive Fire Services Review was carried out.

3. Fire Services System Overview

In tandem with the ongoing transformation of Fire and EMS into an integrated emergency services delivery model, which is being dealt with by others, our focus is on the Greater Sudbury Fire Service (GSFS).

GSFS is made up of the basic components shown in Exhibit 3.1. Fire Prevention and Public Education are the basic (minimum) services mandated by provincial legislation under the *Ontario Fire Protection and Prevention Act*. Fire Prevention services include inspection, regulatory investigation / enforcement, permitting and public education. Fire dispatch is provided by the Greater Sudbury Police Services. The Greater Sudbury corporate administration provides Fire with a range of administrative supports including legal, HR, IT, finance, and health and safety.

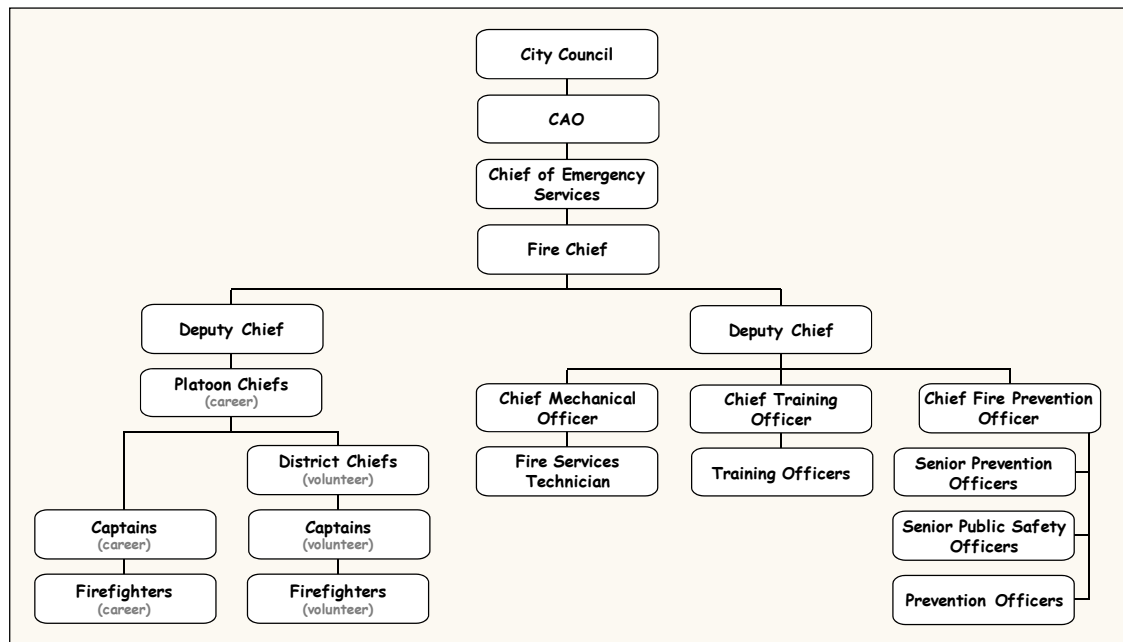
Exhibit 3.1
GSFS Schematic



3.1 Organizational Structure

GSFS consists of some 470 personnel, including a full-time Fire Chief, 2 full-time Deputy Chiefs, 112 career and 340 volunteer firefighters at various ranks, and 17 personnel in fire prevention, public education, training, mechanical and various administrative support positions. The number of volunteer firefighters fluctuates depending on recruitment and retention.

Exhibit 3.2
Current Organizational Structure of GSFS



Note: The graphic does not show clerical positions – but they are included in the personnel count.

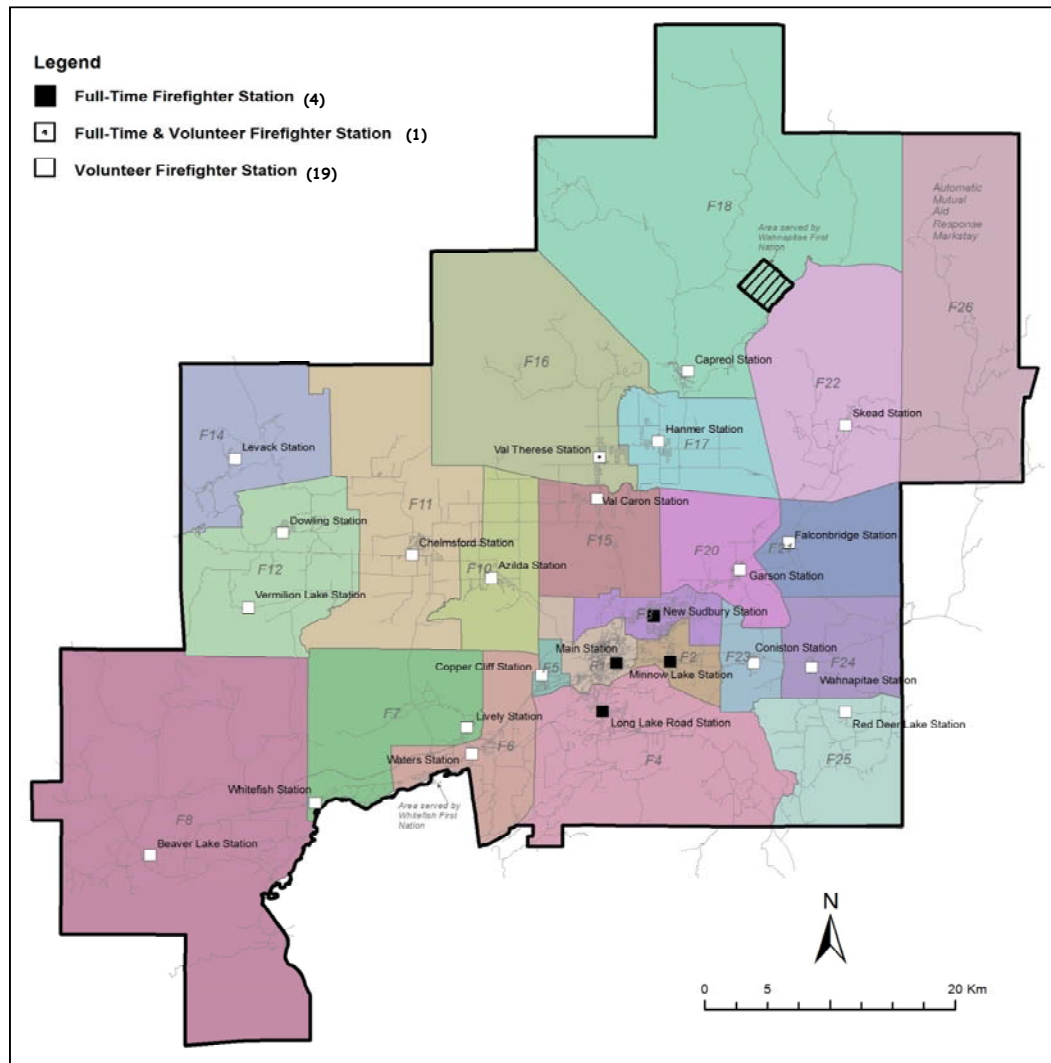
3.2 Operating Model

Fire Stations / Service Areas

There are a total of 24 fire stations. Four stations, in the former City of Sudbury, are staffed by career (full-time) firefighters. One station, in the former Valley East, is staffed by a composite force of career and volunteer firefighters. The other 19 stations are staffed by volunteer firefighters. The station locations, service type (career, composite or volunteer) and service areas (commonly referred to as fire beats) are shown in Exhibit 3.3. An inventory of the existing stations and assigned firefighiting resources is included in Appendix A.

The mapped service areas are the basis by which the emergency communications centre dispatches fire department resources. The dispatch function is facilitated by a computer aided dispatch (CAD) system in which the service areas are encoded. For each incident that arises, the CAD will cross-reference the street address of the incident to the service area to identify the closest fire station having the requisite apparatus.

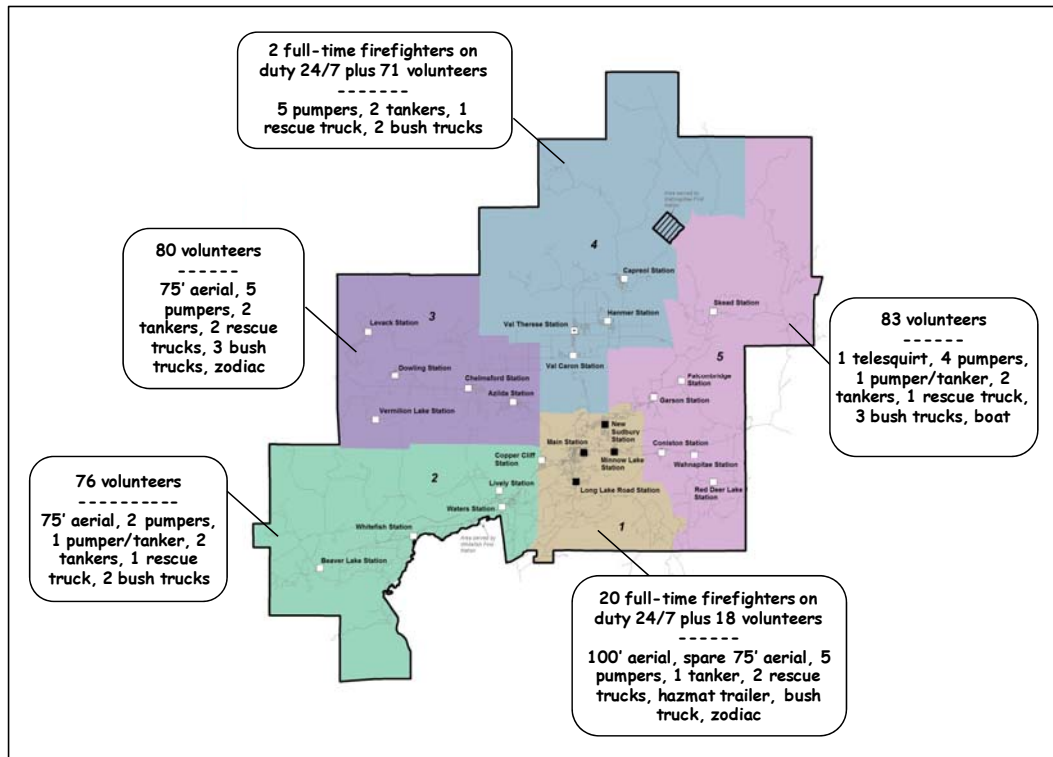
Exhibit 3.3
Fire Station Locations & Service Areas



Fire Districts

Organizally, the fire stations are grouped into five districts that generally align to the former municipal boundaries. The districts and assigned firefighting resources are shown in Exhibit 3.4.

Exhibit 3.4
Firefighting Resources by District



Note: The number of volunteer firefighters fluctuates depending on recruitment and retention

District 1 includes the former City of Sudbury and the community of Copper Cliff. The district is served by 4 stations that are staffed-at-base with full-time fire fighters (Main, Minnow Lake, New Sudbury and Long Lake), and 1 station which is staffed by volunteers (Copper Cliff). The aggregate firefighter complement is 20 full-time firefighters on duty 24/7 plus 18 volunteers.

District 2 includes the former municipality of Walden and the communities of Lively, Naughton and Whitefish. The district is served by 4 stations and an aggregate complement of 76 volunteers (Waters, Lively, Whitefish and Beaver Lake).

District 3 includes the former municipalities of Rayside Balfour and Onaping Falls. The district is served by an aggregate complement of 80 volunteers operating out of 5 stations located in the communities of Azilda, Chelmsford, Dowling, Vermillion and Levack.

District 4 includes the former municipalities of Valley East and Capreol. The district is served by the Val Therese composite station, which is staffed with 2 full-time firefighters on duty 24/7 and 14 volunteers; and the Val Caron, Hanmer and Capreol stations that are staffed with an aggregate complement of 57 volunteers.

District 5 includes the former municipality of Nickel Centre and adjacent townships. The district is served by 6 stations and an aggregate complement of 83 volunteers (Garson, Falconbridge, Skead, Coniston, Wahnapiatae and Red Deer).

Fire Turnout

Fire turnout usually involves the deployment of multiple station resources so as to attain a sufficient number of firefighters on scene. For example, it is standard operating procedure to deploy a minimum of two stations to a structure fire. In the case of an institution (hospital, university, college, etc), the standard operating procedure is to deploy three stations.

Exhibit 3.5 identifies the stations that generally operate in tandem. Since the Copper Cliff volunteer station is backed up by the Main and Long Lake career stations, for structure fires the turnout may include as many as 12 career firefighters. Since Val Caron and Hanmer volunteer stations are backed up by the Val Therese composite station, for structure fires the turnout may include two career fire fighters.

Similarly, since the Coniston volunteer station is regularly backed up by Minnow Lake career station, for structure fires the turnout may include four career fire fighters.

Fire Agreements

In addition to fire stations operating in tandem, GSFS maintains fire support / automatic aid agreements with adjacent fire services, 1st Nations and local industries whereby, when required, the parties may call on one-another for assistance.

For example, parties whom GSFS may call upon for assistance include: Ministry of Natural Resources (MNR) for fire support to wildland fires; Nairn-Hynman Fire Department for fire support in the west; Markstay-Warren Fire Department for fire support in the east; and Estaire-Wanup Fire Brigade for fire support in the southeast.

Parties who may call upon GSFS for assistance include: Whitefish 1st Nations Reserve, Wahnapiatae 1st Nations Reserve, Vale and Xstrata mining companies, CN/CP and Sudbury Airport.

Co-Location of Fire & EMS

Greater Sudbury EMS operates from five reporting stations that are co-located with fire at the following locations: Waters, Chelmsford, Levack, Val Therese and Capreol. Various other fire stations also serve as positioning stations for EMS crews. They include: Main, Minnow Lake, New Sudbury, Long Lake and Garson stations.

Fire Apparatus

Apparatus available to GSFS consists of about 100 vehicles including 3 operating aerials (at Main, Waters and Chelmsford), 1 spare aerial (at Minnow Lake), 1 telesquirt (at Falconbridge), 21 pumpers, 2 pumper/tankers, 9 tankers, 7 rescue trucks, 11 bush trucks and 3 boats. There also are several thousand pieces of equipment including various lengths of hoses, SCBA equipment, mobile radios and pagers, portable generators, extrication tools, bunker gear and water rescue gear.

Exhibit 3.5
Primary and Secondary Responders


	Service Area / Primary Responder	Backup Support
District 1	Main (career) Minnow Lake (career) New Sudbury (career) Long Lake (career) Copper Cliff	Minnow Lake / New Sudbury Main / New Sudbury Main / Minnow Lake Main Main / Long Lake
District 2	Waters Lively Whitefish Beaver Lake	Lively Waters Waters / Beaver Lake Waters / Whitefish
District 3	Azilda Chelmsford Dowling Vermillion Levack	Chelmsford Azilda Chelmsford / Vermillion Chelmsford / Dowling Dowling
District 4	Val Caron Val Therese (composite) Hanmer Capreol	Val Therese Hanmer / Val Caron Val Therese / Capreol Hanmer
District 5	Garson Falconbridge Skead Coniston Wahnapiatae Red Deer	Falconbridge Garson Garson / Falconbridge Minnow Lake / Garson Coniston / Red Deer Coniston / Wahnapiatae

3.3 Core Services

The Ontario Fire Protection and Prevention Act (FPPA) requires every municipality in Ontario to establish a fire prevention and inspection program and to provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances.

The City's Establishing and Regulating Fire By-law (By-law #2012-146) sets out the levels of service approved by City Council. As shown by Exhibit 3.6, which is extracted from the City's Fire By-Law, the approved services include: fire prevention and inspection; public safety education; and various levels of fire suppression, emergency rescue and medical assist response.

Exhibit 3.6
Schedule D1 to CGS Fire By-Law 2012-146

 Emergency Services Fire Services Division Station Location and Services Available (as of March 2012)		Fire Services — Services at a glance																				
		Intervention										Prevention										
No.	Location	Suppression – Structure & Vehicle	Suppression – Wild lands	Suppression -- Tanker Shuttle	Rescue – Low Angle **	Rescue – Aerial Ladder	Rescue – Vehicle Extrication **	Rescue – Water (Shore Based) **	Rescue – Water (Marine Unit) **	Rescue – Ice & Cold Water **	Rescue – Swift Water **	Medical – First Responder	HAZMAT – Awareness Level **	Inspection	Fire Regulation Enforcement	Investigation – Regulatory Compliance	Investigation – Origin & Cause	Permitting – Fire Regulation Only	Public Fire Extinguisher Training	Youth Arson Prevention	Public Awareness & Education	
1	Van Horne	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2	Minnow Lake	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
3	Leon (New Sudbury)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
4	Long Lake	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
5	Copper Cliff	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
6	Waters	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
7	Lively	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
8	Whitefish	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
9	Beaver Lake	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
10	Azilda	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
11	Chelmsford	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
12	Dowling	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
13	Vermillion	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
14	Levack	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
15	Val Caron	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
16	Val Therese	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
17	Hanmer	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
18	Capreol	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
20	Garson	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
21	Falconbridge	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
22	Skead	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
23	Coniston	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
24	Wahnapiatae	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
25	Red Deer	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□

Legend	■	Station staffed by full-time Firefighters.
	■	Station staffed by full-time Firefighters & Volunteer Firefighters. Response time is subject to crew availability. Typical additional travel time is 10 minutes minimum.
	□	Station staffed by Volunteer Firefighters. Response time is subject to crew availability. Typical additional travel time is 10 minutes minimum.
	**	Denotes "Specialty Rescue Service"

3.4 Operating Costs

Current Trends

Using budget and year end expenditures provided by the Client, it is estimated that the cost to operate GSFS is increasing at a rate of about 3.4% per annum. In 2012 the operating cost was \$21.6 million and for 2013 it is projected to be \$22.3 million.

Should past trends continue, and there is no evidence to the contrary, then the annual cost to operate GSFS may increase to \$30 million by 2021 (+35%), and to over \$40 million by 2031 (+90%).

Major Cost Components

Career firefighter wages and benefits are the most significant cost components. In 2012 they accounted for \$13.1 million or 61% of the total expenditure.

In 2005 the total operating cost was \$17.1 million. By 2012 it had increased by \$4.5 million to an annual \$21.6 million. Over the same period, career wages and benefits had increased by \$3.8 million (from \$9.3 million in 2005), thereby accounting for almost 85% of the total increase.

Payments to volunteer firefighters accounted for \$1.2 million in 2012. Fire prevention and education accounted for \$1.3 million and training for \$0.5 million. Collectively, these components accounted for 13% of the total 2012 expenditure.

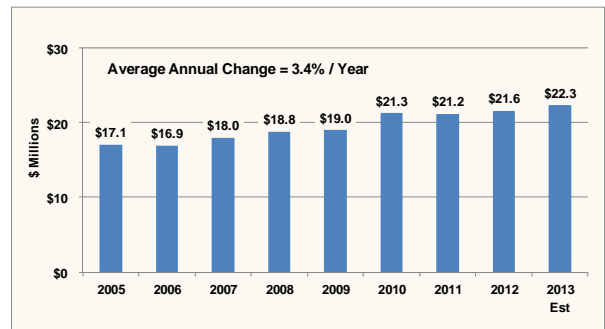
Cost by Individual Station

Fire station costs vary from one station to another, depending on the firefighters and apparatus assigned to the station, volume of calls, condition of the facility, etc. Using the year end expenditures for 2012, IBI Group developed a breakdown of the service's cost by district and station. We estimate that in 2012, it cost about \$6.5 million to operate the Main station (career) and an average of about \$2.3 million to operate each of the other career stations (Minnow Lake, New Sudbury and Long Lake).

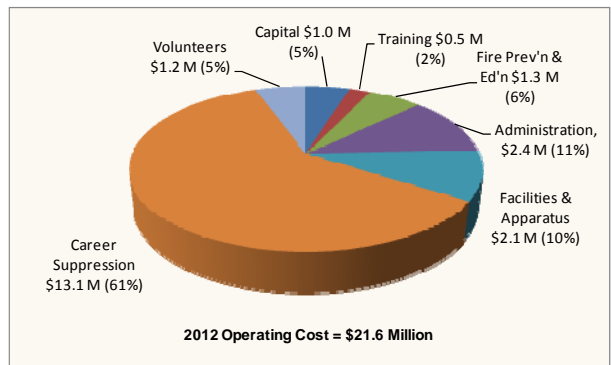
In comparison, we estimate the annual cost to operate the composite Val Therese station to be about \$1.5 million and the cost to operate a volunteer station to range from under \$30,000 a year (e.g., Vermillion & Red Deer) to \$130,000 or more (e.g., Azilda, Chelmsford, Garson & Lively).

Exhibit 3.7: GSFS Operating Costs

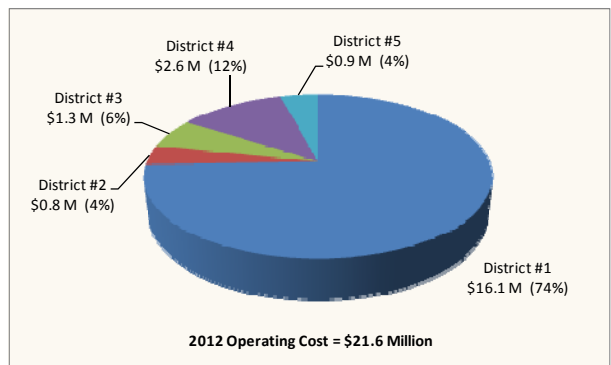
Cost Trend



Breakdown by Major Cost Component



Breakdown by Fire District



3.5 Facility Capital

The following information is extracted from an inventory of existing fire stations conducted by GSFS personnel. Their findings are summarized in a discussion paper entitled "Fire Station Overview", February 28, 2013 (as amended March 1, 2013).¹

The 24 fire stations range in age from about 25 years to 60 years. Sixteen stations (two-thirds of the total) are over 35 years old. Seven (7) are between 45 and 60 years of age.

Despite their age about 40% of the stations are in relatively good condition and they continue to be suitable for ongoing fire services operations. These include the stations based at: Azilda, Capreol, Chelmsford, Garson, Lively, Val Caron, Val Therese, Waters and Whitefish.

The other 60% are in need of capital attention, requiring repairs such as roof replacement, window replacement, new insulation, repairs to plumbing, heating and ventilation, and expansion of internal space and renovation to address overcrowding. These include:

- In District 1, the four career fire stations, New Sudbury (aged 60 years); Main and Long Lake (aged 40 years); and Minnow Lake (aged 35 years); and also, the Copper Cliff volunteer station (aged 25+ years)
- In District 2, Beaver Lake (aged 40 years) where, in addition to age and the need for capital attention, call volumes are low and volunteer availability / turnout is a challenge
- In District 3, Vermillion (aged 30 years) and Levack (aged 40 years); in District 4, Hanmer Station (aged 50 years); and in District 5 Falconbridge (aged 50 years), Skead (aged 40 years) and Red Deer (aged 40 years). The service areas of these stations also incur relatively low call volumes, and they also are challenged by volunteer availability / turnout.

We understand that the City has retained an external professional resource to carry out a comprehensive condition assessment for a variety of City owned facilities, including a number of fire stations. It is anticipated that when the condition assessment is complete (potentially by the end of 2013), it will not only affirm these observations but also provide detailed projections of future capital requirements to remediate / sustain the facilities.

GSFS personnel anticipate that station repairs are likely to cost millions of dollars and that in some cases (e.g., New Sudbury station), it may be necessary to replace a structure rather than effect repairs.

3.6 Fleet and Equipment Capital

GSFS apparatus includes about 100 vehicles and several thousand pieces of equipment including various lengths of hoses, SCBA equipment, mobile radios and pagers, portable generators, extrication tools, bunker gear, water rescue gear, etc. Using information provided by the Client, we estimate that the inventory is valued at about \$31 million (in current dollars). This includes \$23.5 million in fleet and \$7.5 million in equipment.

By applying generally accepted industry standards for the useful life of fire fleet and equipment, IBI Group has estimated that over the period 2012 to 2030, the life cycle replacement cost of the present inventory will be about \$42 million (in current dollars), or over \$51 million in inflated dollars.

In 2012 the GSFS capital requirement for fleet and equipment replacement amounted to \$4.52 million; however, the service's capital spending envelope was only \$1.02 million. To help address

¹ For additional detail, please refer to the inventory of existing stations in Appendix A.

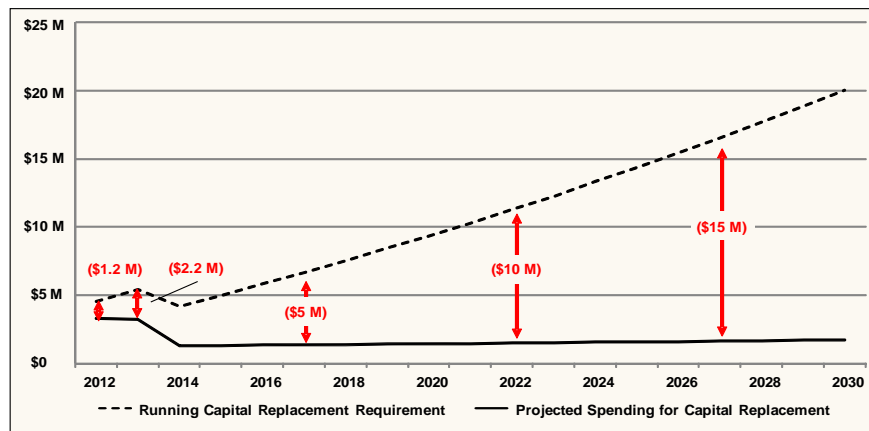
the situation City Council committed \$2.27 million from the City's capital reserves. This still left a capital shortfall of \$1.23 million that GSFS must carry into future years.

GSFS' capital replacement requirement for 2013 is projected to be \$4.16 million; however, the operating budget for 2013 includes only \$1.21 million for capital spending and GSFS has again requested assistance from the City's capital reserves. This notwithstanding, GSFS anticipates another capital shortfall for 2013, which also will have to be carried into future years.

Clearly, despite GSFS' efforts, the service presently operates with some vehicles and equipment that exceed (no longer comply) to industry standards for fleet and equipment useful life.

Using the above information, we have carried out a gap analysis of current and anticipated future annual capital requirements. The findings, shown in Exhibit 3.8, indicate that if current trends prevail, then the unfunded capital requirement will increase to over \$5 million by 2017, to \$10 million by 2022, and to \$15+ million by 2027.

Exhibit 3.8
Gap Analysis: Fleet & Equipment Capital replacement



Note: Capital spending for 2012 and 2013 includes a special allocation from the City's capital reserves to help offset the total cost requirement for capital replacement.

The reader is reminded that the above cost projections pertain only to fleet and equipment capital. They do not include future capital requirements to remediate / sustain fire service facilities, which are being investigated by an independent professional resource; also, that in the opinion of GSFS personnel (based on a station inventory that they conducted), additional millions of dollars will be required to effect the station renovations that they have identified.

4. Peer Comparison

So as to put GSFS into a broader context, we undertook a select survey of 21 peer fire services.

- 2 fire services are entirely volunteer operations,
- 9 are composite services that operate with career and volunteer firefighters as does GSFS,
- 10 are entirely career fire services.

The survey was conducted by e-mail and coordinated by the office of the GSFS Fire Chief. The peers were asked to provide the following information on their Fire department operations:

- No. of fire stations
- No. of volunteer firefighters – career and volunteer
- Is the Fire Chief a full-time position?
- No. of Deputy Chiefs. Are these full-time?
- No. of Platoon Chiefs (career)
- No. of District Chiefs (volunteer)
- No. of Fire Prevention and Public Safety (FPPS) Officers
- No. of Training Officers
- Do you self dispatch?
- Gross operating budget (2013)
- Estimated revenue from sources other than property taxes (2013)

The individual survey responses are shown in Exhibit 4.1 (next page). Key survey results are presented below.

Communities Surveyed

GSFS is responsible for about 160,000 residents and a geographic area of over 3,600 sq kms. The population served by peer fire services ranges from 43,000 to 883,000 residents, and the maximum geographic area is about 3,000 sq kms.

Firefighters

GSFS employs 112 career firefighters, almost all of whom work in the City core stations. Dividing this figure into the City core population yields a ratio of about 1 career firefighter per 1,000 population. GSFS also employs 340 volunteer firefighters, almost all of whom work in suburban and rural communities outside of the City core. Dividing this figure into the population residing outside of the City core yields a ratio of about 5 volunteer firefighters per 1,000 population. City-wide, the ratio of GSFS firefighters to residents averages out at about 3 firefighters per 1,000 population.

These ratios are consistent to those of the career, volunteer and composite services that we surveyed. From this we may conclude that for the greater City's population, the number of firefighters currently employed by GSFS is reasonable.

Fire Stations

GSFS operates with 24 fire stations. For peers, the number ranges from 4 to 45 fire stations. Among the peers, the minimum number of firefighters per station is 21 and the average is 27. At GSFS the figure is considerably lower, averaging 19 firefighters per station. These statistics, in combination with the above firefighter to resident ratios, suggest that GSFS may be operating with more stations than required. This finding is affirmed by the extensive overlap in geographic coverage, which is discussed at length in Section 8 of this report.

Exhibit 4.1
Peer Survey Results

Municipality	Pop'n	Sq. Kms	Pop'n Density	Fire St'ns	Residents per Station	Sq. Km per Station	Firefighters			FF per Stn	Fire Chief	Deputy Chief	Platoon Chief (career)	District Chief (vol)	FPPE Officers	Training Officers	Self Disp.	Res. per FPPE Officer
							Career	Vol	Total									
Timmins	43,165	2,979	14	6	7,194	497	28	140	168	28	FT	1	0	6	3	1	no	14,388
Haldimand County	44,876	1,252	36	12	3,740	104	0	276	276	23	FT	2	0	12	2	0	no	22,438
Caledon	59,460	688	86	9	6,607	76	20	240	260	29	FT	2	0	0	3	2	no	19,820
Norfolk County	63,175	1,608	39	11	5,743	146	0	242	242	22	FT	2	0	11	2	0	no	31,588
Sault Ste Marie	75,141	223	337	4	18,785	56	88	0	88	22	FT	3	4	0	4	0	yes	18,785
Milton	84,362	363	232	4	21,091	91	40	65	105	26	FT	2	0	3	3	3	yes	28,121
Clarington	84,548	611	138	5	16,910	122	52	125	177	35	FT	2	0	5	4	2	no	21,137
Chatham-Kent	103,671	2,458	42	19	5,456	129	62	340	402	21	FT	3	4	0	4	1	no	25,918
Kingston	123,363	451	274	10	12,336	45	120	175	295	30	FT	2	4	4	8	4	yes	15,420
Cambridge	126,748	113	1,122	5	25,350	23	137	0	137	27	FT	2	4	0	7	1	yes	18,107
St Catharines	131,400	96	1,369	6	21,900	16	136	0	136	23	FT	2	4	0	8	3	yes	16,425
Oshawa	149,607	146	1,025	5	29,921	29	161	0	161	32	FT	2	4	0	10	3	yes	14,961
Greater Sudbury	160,274	3,227	50	24	6,678	134	112	340	452	19	FT	2	4	4	8	3	no	20,034
Burlington	175,779	186	945	8	21,972	23	172	65	237	30	FT	2	4	2	8	3	yes	21,972
Oakville	182,520	139	1,313	7	26,074	20	188	0	188	27	FT	3	4	0	8	5	no	22,815
Richmond Hill	185,541	101	1,837	6	30,924	17	140	0	140	23	FT	2	4	0	9	3	yes	20,616
Windsor	210,891	146	1,444	8	26,361	18	285	0	285	36	FT	2	1	0	10	3	yes	21,089
Kitchener	219,153	137	1,600	7	31,308	20	184	0	184	26	FT	2	4	0	12	3	yes	18,263
Markham	301,709	213	1,416	9	33,523	24	240	0	240	27	FT	2	4	0	13	5	yes	23,208
London	366,151	421	870	14	26,154	30	360	0	360	26	FT	3	4	0	19	6	yes	19,271
Hamilton	519,949	1,117	465	26	19,998	43	484	236	720	28	FT	4	4	0	23	7	yes	22,606
Ottawa	883,391	2,790	317	45	19,631	62	903	486	1,389	31	FT	3	4	4	36	11	yes	24,539
Peer Average	196,886	773	255	11	18,295	72	181	114	295	27	FT	2	--	--	9	3	--	21,095

Executive Officers

All of the fire services surveyed, including GSFS, operate with a full-time Fire Chief. The number of Deputy Fire Chiefs varies, ranging between 1 and 4. GSFS operates with 2 Deputy Fire Chiefs. The larger services also employ Assistant Deputy Fire Chiefs (e.g., Hamilton has 3 and Ottawa has 6). GSFS does not employ Assistant Deputy Fire Chiefs.

The FPPA suggests a formula for the number of managers excluded from the bargaining unit based on the number of employees. In accordance with the FPPA, GSFS would be permitted 5 managers based on more than 300 employees. Increasing the number of management exclusions is generally addressed through the collective bargaining process.

Operational Supervision

Career fire services utilize Platoon Chiefs – typically 4 Platoon Chiefs per service. Volunteer fire services utilize District Chiefs – typically 1 District Chief per district. Composite fire services use one or both approaches depending on the size of the service.

Fire Prevention & Public Education (FPPE)

GSFS operates with an approved FPPE complement of 8 officers. Best Practices would suggest that there be one FPPE officer for every 20,000 residents. Given Greater Sudbury's population of about 160,000 persons, one may conclude that the approved FPPE complement of 8 officers is consistent with industry Best Practices.

Fire Training

The Training Section of the GSFS is staffed with 3 officers - a Chief Training Officer and two subordinate officers. This staffing level is consistent with the average among the peers; albeit, guided by the sample services below, it is our opinion that the average among peers does not fully account for the unique geographic scale of GSFS i.e., 24 stations situated over 3,600 sq kms.

Kingston, a composite fire service with 10 stations, operates with 4 Training Officers. Oakville with 7 stations and Markham with 9 stations, both operate with 5 Training Officers. London with 14 stations operates with 6 Training Officers. Hamilton, a composite fire service with 26 stations, operates with 7 Training Officers. Ottawa, a composite fire service with 45 stations, operates with 11 Training Officers.

This information supports the opinion that the GSFS Chief Training Officer (CTO) has been expressing since 2011, as previously affirmed by IBI Group, that in the GSFS, at least 2 additional Training Officers (i.e., a total of 5 Training Officers) are needed.

The proactive involvement of station officers in firefighter training is a feature common to most Fire services. This applies equally regardless as to whether the service is staffed by career firefighters, volunteers or a mix of both.

The approach also applies regardless as to the number of stations i.e., Haldimand designates a volunteer firefighter training officer at each of its 12 stations; Norfolk at each of its 11 stations, Chatham-Kent at each of its 19 stations, etc.

GSFS uses the same approach. Its 3 Training Officers are supported by station officers who proactively participate in firefighter training. At career stations, the responsibility is assigned to one officer per shift, whereas at volunteer stations, it is assigned to one officer per station. Also, several volunteer firefighters are designated as Training Facilitators.

Fire Dispatch

For fire dispatch, GSFS relies on the Communications Division of the Greater Sudbury Police Service. Among the peers, 7 rely on others for fire dispatch services whereas 14 self-dispatch. Of the 14 that self-dispatch, there are the following 7 services that also dispatch for others: Burlington, Kitchener, London, Oshawa, Ottawa, Richmond Hill and St. Catharines.

Operating Costs

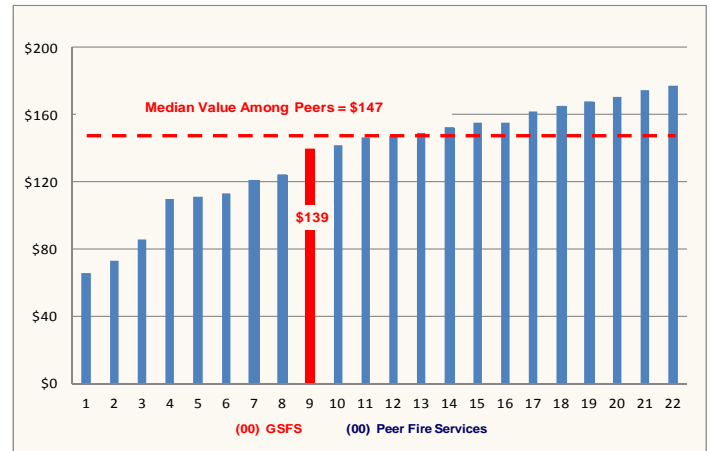
Among the services surveyed, the annual operating cost ranges from \$66 to \$177 per resident, with a median value of \$147. At \$139 per resident, the cost to operate GSFS is about 5% lower than the median value among the peers.

Annual Revenue

Exhibit 4.3 compares the annual revenue from sources other than property taxes. The exhibit excludes one fire service that did not respond to this question and the seven fire services that dispatch for themselves and others as their revenue stream is influenced substantially by the dispatch services that they provide.

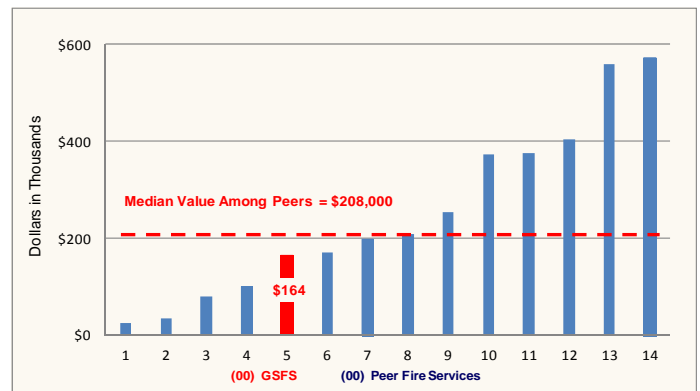
For GSFS, the estimated 2013 revenue from sources other than property taxes is about \$164,000. This includes charges for inspections, provincial highway calls, etc. The median value among similar peers is \$230,000.

Exhibit 4.2
Annual Cost per Resident



The values in this chart are shown from lowest to highest. The sequence does not align to those in Exhibits 4.1 and 4.3.

Exhibit 4.3
Estimated Annual Revenue



The values in this chart are shown from lowest to highest. The sequence does not align to those in Exhibits 4.1 and 4.2.

5. Municipal Fire Risk Profile

5.1 Population

Greater Sudbury houses a population of about 160,000 residents dispersed over an area of about 3,600 square kilometers.

About 55% of the population (88,500 residents) live in District 1, the former City of Sudbury. Seventeen percent (27,300 residents) reside in District 4, the former municipalities of Valley East and Capreol,. The rest is spread out over Districts 2, 3 and 5, which predominately is a large, rural geographic area, with residents residing in suburban communities and small residential settlements that are separated from one-another by relatively long commutes.

A large number of residents are bilingual / 40% speak French as a first language. Sixteen percent (16%) of the population is aged 65 and over. A large number of seniors reside in hospitals, old age homes and long-term care facilities. There also are many who reside at home on their own.

Over the 10-year period 2001 to 2011, Greater Sudbury's population increased by about 5,000 persons (+3%). This averages out at about 500 new residents a year.

Almost 60% of the 10-year growth in population took place in District 1 and about 25% occurred in District 4.²

If the above growth trends are maintained, and it is anticipated that they will, then by 2021 the City's population will increase to 165,000 (5,000 additional residents) and by 2031 it will increase to 170,000 (10,000 additional residents).

Exhibit 5.1
Greater Sudbury Population Trends

Fire District	Former Municipality	Population			Change 2001-11
		2001	2006	2011	
1	Sudbury	85,354	88,708	88,503	3,149
2	Walden	10,101	10,158	10,564	463
3	Rayside Balfour & Onaping Falls	19,933	19,101	19,431	-502
4	Valley East & Capreol	25,860	26,073	27,264	1,404
5	Nickel Centre & adjacent townships	13,971	13,817	14,512	541
Total		155,219	157,857	160,274	5,055
% Change 2001-11					3.3%

Information derived from "Growth & Settlement Background Report and Issues Paper", Official Plan Review, City of Greater Sudbury, May 28, 2012

In 2012 the City had in place about 52 draft approved plans of subdivision and an additional 11 applications seeking draft approval.

About 60% of the proposed dwellings are planned for District 1 (the former City), 20% for the former Valley East in District 4 and 20% for the following outlying suburban communities in Districts 2, 3 and 5: Azilda, Chelmsford, Garson, Lively and Waters).

The population of the City core is forecast to increase by an additional 3,000 persons by 2021 and by an additional 6,000 persons by 2031. The population of District 4 is forecast to increase by an additional 1,000 persons by 2021 and by an additional 2,000 persons by 2031. Similarly the aggregate population of Districts 2, 3 and 5 is forecast to increase by an additional 1,000 persons by 2021 and by an additional 2,000 persons by 2031.

² The above figures are based on information contained in a Background Paper to an Official Plan Review by the City of Greater Sudbury, dated May 28, 2012.

5.2 Economic Activity

Greater Sudbury contains one of the largest mining industrial complexes in the world, as well as a growing mining supply services sector. While this sector remains the foundation of the local economy, the City is also a major centre in Northeastern Ontario for finance, business, health care, education, government and tourism.

Exhibit 5.2 presents a breakdown of the local employment by major economic sector.

The Conference Board of Canada projects a decline in the Greater Sudbury unemployment rate to 6.0% by 2016 (from 7.2% in 2011).

Applying this projection to current population growth trends, results in the following employment forecasts: 86,000 employed (+4%) by 2021 and 90,000 (+8%) by 2031.

A large concentration of employment is situated in District 1 (the former City). It is anticipated that this trend will continue.

Listed below are a number of the major local employers, many of whom are based in District 1:

- Bayshore Home Health
- Cambrian College
- City of Greater Sudbury
- Extendicare
- Health Sciences North
- Laurentian University
- Leuschen Transportation
- Ontario Government
- Rainbow District School Board
- Sudbury Tax Services
- Vale (Copper Cliff)
- Several Public and Catholic District School Boards
- Xstrata (Falconbridge).

5.3 Building Stock

Greater Sudbury contains over 54,000 mixed occupancies, the majority of which are single family or multiple residential buildings.

Most occupancies are located in the City core. The City core contains a relatively large number of old buildings, many with less than desirable spatial separation or fire protection devices. Almost all of the City's high rise buildings are in the core; also numerous mercantile buildings, many having residential units located above.

Exhibit 5.2: Major Economic Sectors

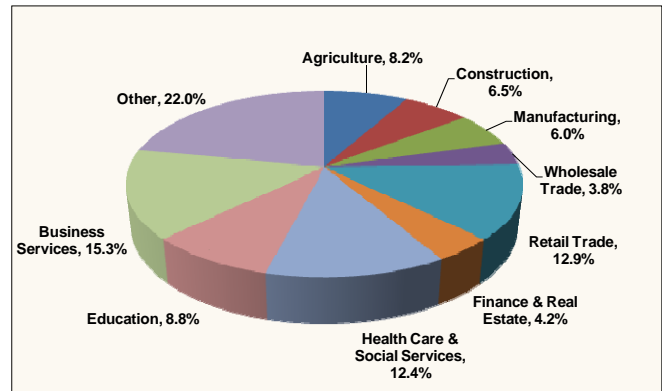


Exhibit 5.3: Employment Trends

	2011	Forecast	
		2021	2031
Total population	160,274	165,000	170,000
Population age 15 and over	139,300	143,000	148,000
Labour force	89,400	92,000	95,000
Employed	83,000	86,500	89,500
Unemployed	6,400	5,500	5,500
Participation rate	64.2%	64.2%	64.2%
Unemployment rate	7.2%	6.0%	6.0%
Employment rate	59.6%	60.5%	60.5%

Sources: "Greater Sudbury At A Glance", Greater Sudbury Development Corporation, 2012 and Conference Board of Canada, Winter 2011

In the core there are multiple places of assembly that frequently host organized events / large numbers of visitors; also multiple institutions.

Annually, the City core experiences an influx of some 9,000 full time and 13,000 part time post secondary students. In this a related concern is the rooming houses or apartments used by students that may not fully comply with Ontario Fire Code standards.

Outside of the core are a number of suburban communities containing residential dwellings, industrial areas (e.g., near Chelmsford); working mines (e.g., near Onaping and Levack); strip retail development along major arterials; and various institutions, including nursing homes, schools, arenas and community halls.

Also outside the core is a large outlying rural area containing natural forests, lakes, numerous small settlements and cottages, many of which are situated in remote areas or on lakefronts.

As discussed previously, about 60% of Greater Sudbury's future growth is expected to take place in the core (District 1), 20% in the former Valley East (District 4) and 20% in the outlying Districts 2, 3 and 5, particularly in the suburban communities of Azilda, Chelmsford, Garson, Lively and Waters.

Current plans of subdivision for the core, which include a mix of low and high rise building developments, propose the construction of about 4,600 additional residential units (over time). For District 4, the plans provide for about 1,500 additional residential units and for Districts 2, 3 and 5, they provide for an aggregate of about 1,600 additional residential units: Lively and Waters (600 units); Chelmsford and Azilda (500 units); Garson (400 units); Dowling and Levack (100 units).

Exhibit 5.4: Building Stock Profile

Occupancy Class	#
Assembly	302
Institutional	70
Single family	43,885
Multi-unit residential	7043
Hotel / motel	63
Mobile homes & trailers	102
Other residential	631
Commercial	897
Industrial	964
Unclassified	427
Total	54,384

Source: "Simplified Fire Risk Assessment" that GSFS carried out in tandem with this Comprehensive Fire Services Review

5.4 Property Dollar Loss due to Fire

Historically, residential occupancies and nursing homes have been the categories of highest fire risk from the perspective of deaths, injuries and property dollar loss due to fire. In 2001, a residential house fire in Hanmer resulted in the death of 3 occupants. In 2006, a nursing home fire resulted in an estimated loss of \$5 million and five injuries.

Over the 3-year period 2009 to 2011 property dollar loss due to fire totalled over \$17.6 million. The residential occupancy classification, at over \$13.4 million, accounted for more than 75% of this figure.

Exhibit 5.5: Property Loss Due to Fire (2009 to 2011)

Occupancy	Fires	Dollar Loss	Deaths	Injuries
Assembly	18	\$276,000	0	0
Institutional	9	\$65,040	0	0
Residential	300	\$13,407,614	2	14
Commercial	25	\$115,960	0	0
Industrial	31	\$970,100	0	0
Mobile homes	6	\$108,000	0	0
Other	513	\$2,715,614	0	1
Total	902	\$17,658,368	2	15

Source: "Simplified Fire Risk Assessment" that GSFS carried out in tandem with this Comprehensive Fire Services Review

These occupancy classifications in particular must continually be attended to in terms of fire prevention, inspection and public safety education.

6. Fire & Rescue Incidents

6.1 Incident Trends

GSFS supplied us with incident records for calls attended between January 1, 2007 and September 30, 2012. GSFS also supplied a separate incident summary for the entire 12 months of 2012. The annual volumes derived from this information are shown in Exhibit 6.1.

In 2007 the fire service responded to 3,762 incidents. In 2011 it responded to 3,970 incidents and in 2012, to 4,141 incidents.

Using this information, we estimate that call volumes are increasing at a relatively modest rate ranging, on average, from a low of 1.4% per annum to a high of 2.0%. The low rate of 1.4% per annum is based on the change in volume from 2007 to 2011. The high rate of 2.0% is based on the change in volume from 2007 to 2012.

Should past trends continue, then by 2021, incident volumes may increase to an annual figure of between 4,700 and 5,000 calls; and by 2031, they may increase to an annual figure of between 5,400 and 6,000 calls.

6.2 Incident Profiles

Over the 69 months from January 1, 2007 to September 30, 2012 GSFS responded to a total of 22,140 calls.

This figure represents station responses – not numbers of vehicles or firefighters responding. The number of vehicles and firefighters responding will depend on the nature of the incident, however at least two vehicles respond to most incidents.

District 1, the former City of Sudbury accounted for 73% of the calls and District 4, the former municipalities of Valley East and Capreol accounted for 10%. Together these two districts accounted for 83% of the calls. In consideration of the future development plans for Districts 1 and 4 (discussed previously in Section 5.1) we anticipate that these two districts will continue to generate the majority of future fire incidents.

Incident types are categorized by Standard Incident Response (SIR) codes defined by the Ontario Fire Marshall Office. The largest incident category is fire / carbon monoxide alarm malfunctions or accidental activations, which collectively

Exhibit 6.1
Fire & Rescue Incident Trends

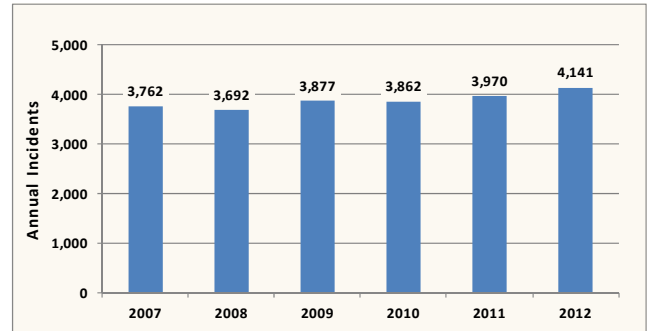
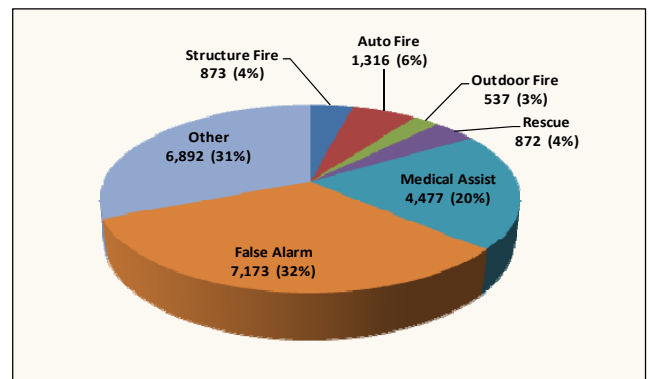


Exhibit 6.2
Incident Profile by District

Incidents from Jan 1, 2007 to Sep 30, 2012	Fire District					Total
	1	2	3	4	5	
Structure Fire	491	63	123	106	90	873
Auto Fire	707	119	167	199	124	1,316
Outdoor Fire	277	43	36	84	97	537
Rescue	544	54	87	123	64	872
Medical Assist	4,186	1	180	108	2	4,477
False Alarm	5,275	271	530	750	347	7,173
Other	4,782	307	699	751	353	6,892
Total	16,262	858	1,822	2,121	1,077	22,140
Percent Total	73%	4%	8%	10%	5%	100%

Exhibit 6.3
Incident Profile by Call Type

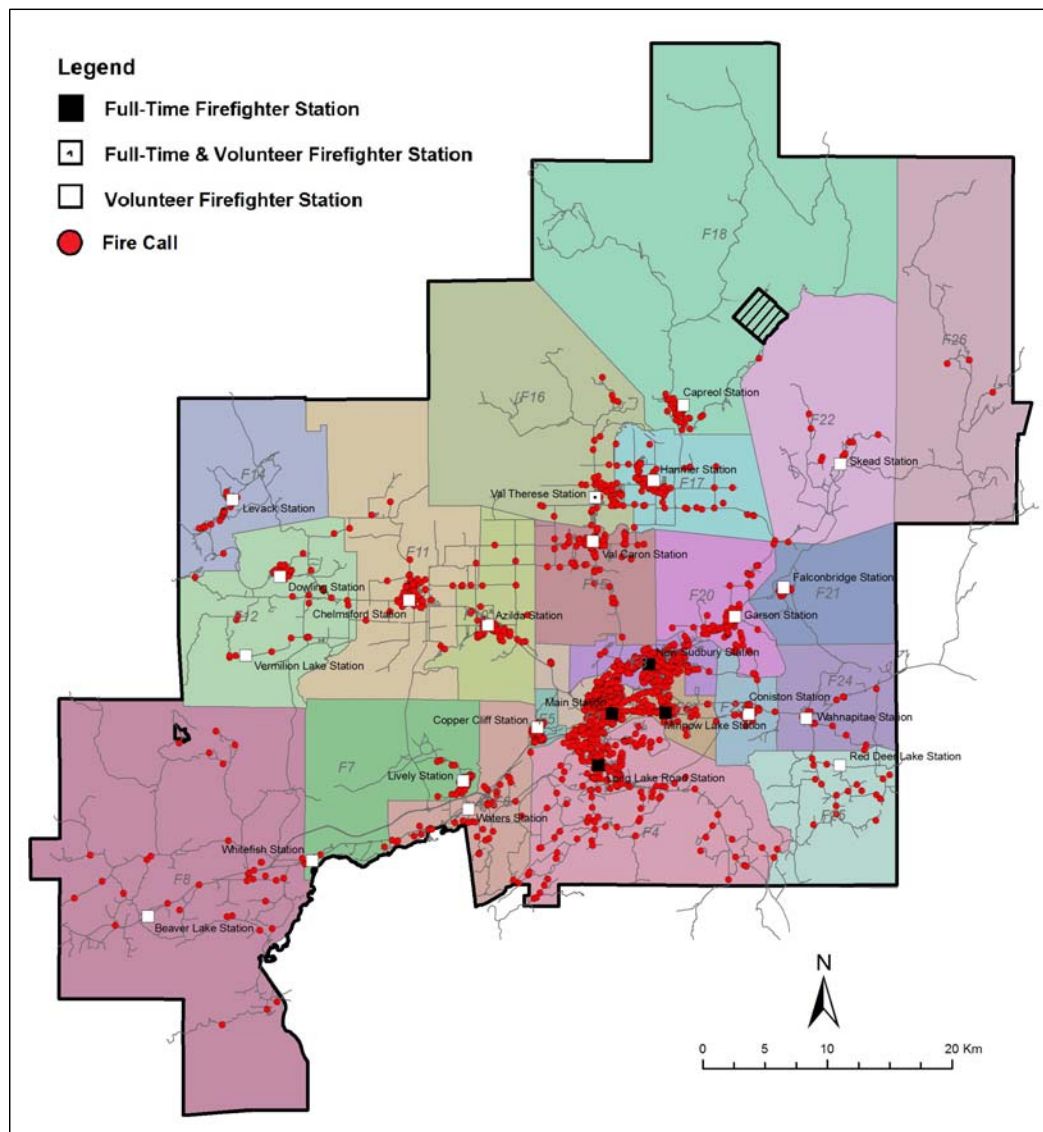


account for 32% of all incidents. The next largest category is medical assists, which accounts for 20%. Fire responses account for 13%, of which 4% involve structure fires (SIR 1) and 9% involve either vehicle or outdoor fires (SIR 2 and 3). Incidents categorized as other account for 31% of the total. These include such items as unauthorized controlled burns, public hazards and calls cancelled on route.

6.3 Fire Incident Location Mapping

Incident mapping was carried out by the City's Growth and Development department. Exhibit 6.4 displays the location of fire incidents (SIR 1 to 3) generated over the 69 months from January 1, 2007 to September 30, 2012. The graphic readily demonstrates the high concentration of fire calls in both the former City of Sudbury and former municipality of Valley East.

Exhibit 6.4
Fire Incidents (SIR 1-3)



6.4 2012 Incident Volumes by Fire Station

In 2012 GSFS responded to 4,141 incidents. Exhibit 6.5 presents a breakdown of the 2012 incident volumes by fire station.

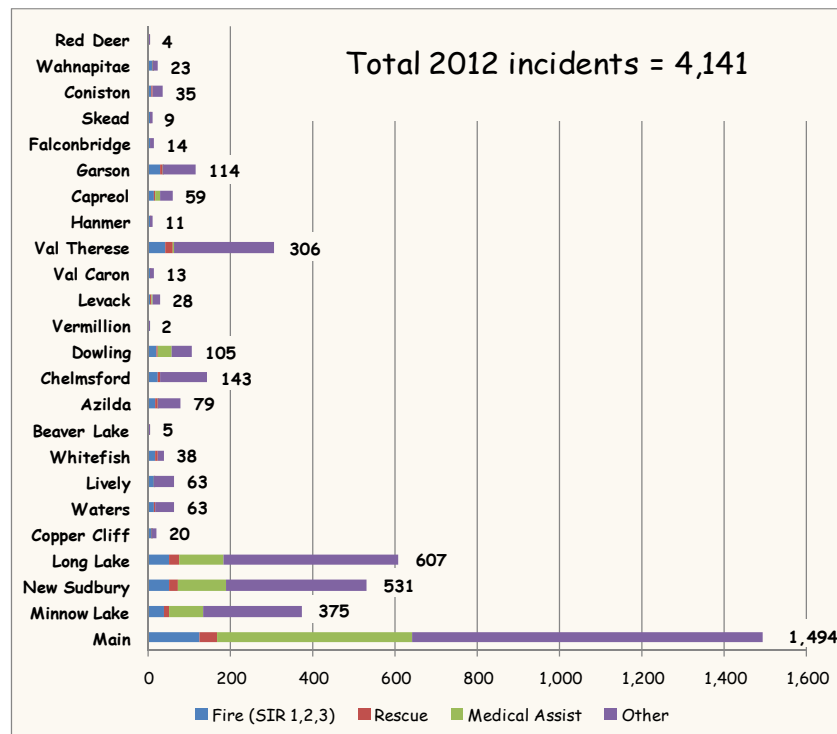
In this context the term station is intended to mean the station to which the dispatch centre assigned the call. Typically, this would be the closest station with the appropriate firefighting resources. Firefighters operating from the assigned station are generally first to arrive on the scene of the incident.

Main Station was assigned by far the largest volume - 1,491 calls (36% of the total). Minnow Lake was assigned 375 calls (9%), New Sudbury was assigned 531 calls (13%) and Long Lake was assigned 607 calls (15%). Collectively these four career stations were assigned 73% of the total volume. The composite station (Val Therese) was assigned 306 calls (7%) and the following three volunteer stations were collectively assigned 362 calls (9%): Dowling, Garson and Chelmsford.

In summary, the 8 stations noted above were assigned 89% of the total call volume, while the 16 other stations (volunteer stations) were assigned only 11% of the total call volume, and as shown by the exhibit, several of these stations were respectively assigned 40 or fewer calls.

From IBI Group's past experience, it appears that a number of volunteer fire services are of the opinion that 150 to 200 calls a year represents an upper threshold for the potential capacity of a volunteer station. Relative to this figure, a number of GSFS volunteer stations are operating well below the potential capacity of a volunteer station.³

Exhibit 6.5
Incident Volumes by Fire Station



³ The reader is advised that the above threshold represents an opinion based on practice and may not be supported by research or reference documents.

7. Fire Service Response Times

7.1 Response Time Summary

The continuum of events in a fire department response to an emergency incident is as follows.

1. Time to detection and 9-1-1 notification
2. Time from when the telephone rings at 9-1-1 to the time that the fire station is notified / paged
3. Volunteer assembly / career turnout time: time between station firefighters being notified / paged and fire apparatus departing from the fire station
4. Drive time: time from fire station departure to initial fire vehicle arrival on scene
5. Initial setup time following arrival on scene.

Within the above continuum, all but the first event (time to detection and 9-1-1 notification) are within the control / influence of the fire service or their dispatch operation. Times for events 2 to 5 are carefully measured and maintained as part of each call record.

Exhibit 7.1 shows the dispatch, assembly/turnout and drive time history for GSFS fire stations summarized for two performance levels - 50th and 90th percentiles.⁴ The results are discussed below.

Exhibit 7.1: Response Time Summary

Fire Station		Fire Calls (SIR 1-3)	50th Percentile			90th Percentile		
			Assembly	Assembly & Drive	Dispatch, Assembly & Drive	Assembly	Assembly & Drive	Dispatch, Assembly & Drive
District 1	Van Horne	691	1:40	5:08	5:39	2:39	8:01	8:58
	Minnow Lake	179	1:32	5:09	5:36	2:29	7:33	8:04
	New Sudbury	283	1:36	5:14	5:46	2:29	8:22	9:39
	Long Lake	265	1:49	6:21	6:53	2:46	14:46	15:07
	Copper Cliff	57	3:55	6:13	6:49	5:19	9:03	9:25
District 2	Waters	66	6:15	11:27	12:28	9:06	17:17	20:05
	Lively	72	5:40	9:29	9:57	9:08	17:07	18:13
	Whitefish	81	7:11	13:33	15:34	10:51	25:38	26:07
	Beaver Lake	6	4:12	11:17	16:09	8:54	32:22	32:30
District 3	Azilda	89	6:13	9:50	10:35	9:11	14:42	17:06
	Chelmsford	103	5:54	9:02	9:26	8:02	15:00	17:15
	Dowling	85	6:05	10:34	11:31	9:33	21:01	21:34
	Vermillion	2	6:35	11:18	11:25	8:01	13:28	14:20
	Levack	47	4:57	6:56	7:12	6:59	13:00	13:29
District 4	Val Caron	59	2:34	6:35	7:37	4:37	12:21	12:32
	Val Therese	182	1:56	7:14	7:48	4:38	12:31	13:29
	Hanmer	68	3:57	7:21	8:11	6:21	13:07	14:02
	Capreol	80	4:47	8:11	9:19	7:41	18:38	21:12
District 5	Garson	157	5:47	8:36	9:29	8:19	14:20	15:55
	Falconbridge	25	5:31	7:48	8:49	6:58	10:00	11:57
	Skead	17	6:24	14:06	14:26	9:13	17:51	18:19
	Coniston	45	4:47	8:15	9:01	7:15	15:12	16:31
	Wahnapiatae	58	4:46	10:32	11:22	8:28	20:57	23:09
	Red Deer	9	6:29	15:42	17:45	16:36	24:07	25:27
Total		2,726	2:08	6:32	7:16	6:57	13:33	15:01

Times are shown in minutes and seconds. Figures are based on fire incidents from January 1, 2007 to September 30, 2012

⁴ 50th and 90th percentiles are defined as follows. The 50th percentile value will be attained or bettered by 50% of the reported incidents. Similarly, in the case of 90th percentile, the value will be attained or bettered by 90% of the reported incidents.

Dispatch

The Communications Division of the Greater Sudbury Police Service has adopted 1:30 as their fire dispatch target. Based on a review of the incident records we can affirm that when dispatching career and composite stations GSPS attains this target 90% of the time or better, and when dispatching volunteer stations, which require paging in addition to the radio function, GSPS meets the target at least 80% of the time.

In reviewing the statistics we note the following occasional anomalies. First, that on occasion it may take several minutes to dispatch because the GIS system is unable to verify an address for the incident location provided by the caller, e.g.: MVC or bush fire incident (where there is no definitive address). In these instances the dispatcher will manually override the system and enter a location or address.

Second, that on occasion the dispatch time may be logged into the computer aided dispatch system before a page goes out to the fire service. In these instances, it would appear that the time between the call being logged and the fire station being notified is being added to the assembly time, thus making dispatch times for some volunteer stations to appear shorter than what they actually are, and making assembly times for some volunteer stations appear longer.

Volunteer Assembly / Career Turnout

For career stations that are staffed-at-base the standard for turnout suggested by NFPA 1710 is 80 seconds (1:20) at the 90th percentile. For volunteer assembly there is no single industry standard as it will depend on volunteer availability and location (distance) at the time of the incident.

For GSFS career stations (Main, Minnow Lake, New Sudbury and Long Lake), turnout times at the 50th percentile are a minimum of 1:32 while those at the 90th percentile are significantly longer ranging upward from 2:29. Based on these statistics, we may conclude that the GSFS does not consistently meet the industry standard for career firefighter turnout.

For the composite station (Val Therese) the assembly/turnout time is reported to be 1:56 at the 50th percentile and 4:38 at the 90th percentile. For volunteer stations, assembly times at the 50th percentile generally range between 4 and 6 minutes; whereas, at the 90th percentile they range between 8 and 10 minutes.

Assembly/Turnout & Drive

Distance to an incident is the single most influential factor affecting drive time. Other influential factors that may influence the drive time to calls include: traffic volumes, posted speed, road condition, weather, visibility and traffic accidents.

For assembly/turnout and drive, fire stations should show times that are shorter at the 50th percentile than at the 90th percentile, where times are more strongly influenced by distance. The GSFS fire stations fit this scenario.

For GSFS career stations turnout and drive times at the 50th percentile range between 5:08 and 6:21, and at the 90th percentile they range between 7:33 and 8:22 – with one exception, that being Long Lake which, because of its relatively large fire service area, is at 14:46.

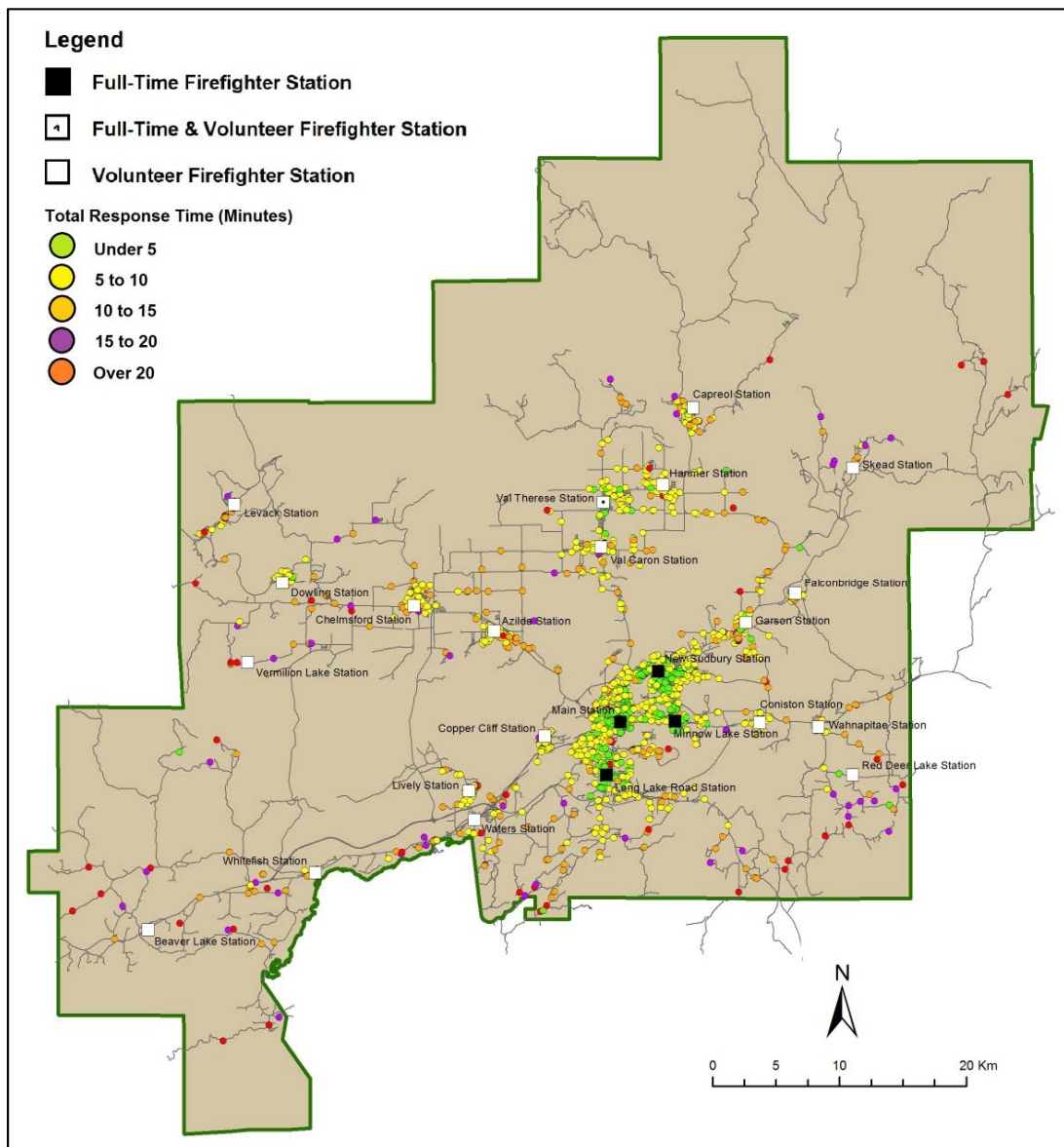
For the composite station (Val Therese) the assembly/turnout and drive time is reported to be 7:14 at the 50th percentile and 12:31 at the 90th percentile. For volunteer stations, assembly and drive times at the 50th percentile generally range between 7 and 11 minutes; whereas, at the 90th percentile they range between 12 and 17 minutes.

7.2 Incident Response Time Mapping

Exhibit 7.2 shows a mapping of response times to fire calls (SIR 1-3). In this instance response time is intended to mean the sum of dispatch, assembly and drive times. The response times are for the initial crew to arrive on scene. The response times are plotted using a colour code to signify 5 minute increments.

The exhibit illustrates a direct relation between distance from a fire station and response time to the scene of an incident. In the City core and the former Valley East, the majority of the responses are less than 10 minutes in duration, which is consistent with the summary in Exhibit 7.1. City-wide, relatively few responses exceed 15 minutes, which again is consistent with the previous summary. Responses that exceed 15 minutes involve incidents occurring at a distance from a fire station.

Exhibit 7.2
Response Times to Fire Calls



These are response times to Fire calls (SIR 1-3) between January 1, 2007 and September 30, 2012

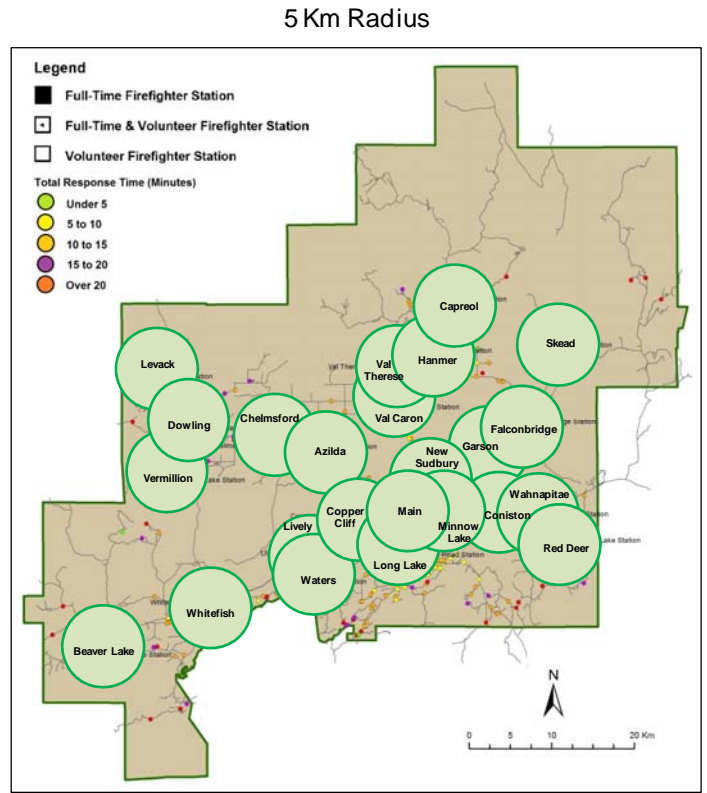
7.3 Station Coverage

Coverage capabilities by the 24 existing stations are illustrated in Exhibit 7.3.

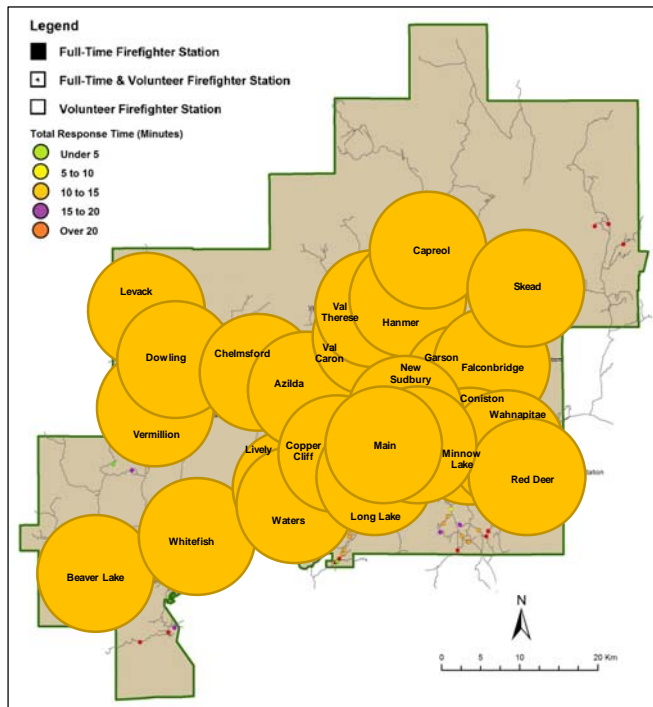
They are derived by overlaying onto the previous map a set of concentric circles centred on the fire stations with diameters of 5, 7.5 and 10 kilometres. Each 2.5 kilometre increase in radius adds 2 to 3 minutes to the fire station response time.

The 24 existing stations provide significant overlap in coverage. About 95% of all fire incidents (SIR 1-3) occur within 5 kilometres of a fire station. Ninety-eight percent (98%) are within 7.5 kilometres and 99% are within a 10 kilometre radius.

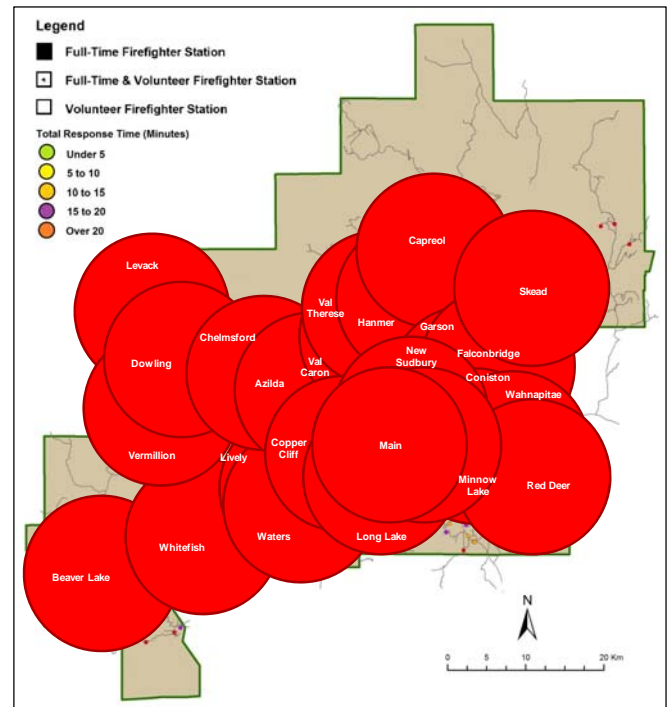
Exhibit 7.3: Existing Coverage



7.5 Km Radius



10 Km Radius



8. Fire Station Locations

Drawing from the information contained in the previous sections of this report, it is our opinion that the following is a fundamental challenge facing the GSFS.⁵

... Finding solutions by which GSFS may continue to provide City residents and businesses with fire and emergency services protection that responds to community needs, is reasonable when compared to peer Best Practices and is operationally cost-effective ...

This section investigates a number of alternative fire station location arrangements as a potential means by which to address this challenge. Section 9 will investigate alternative solutions that are based on resourcing and placement of key apparatus.

8.1 Principle Considerations

From a Fire services planning perspective, no discussions are as contentious as those which endeavour to define an optimum number of Fire stations and their placement within a municipality. Our team clearly recognizes the sensitivities associated with any recommendations to close, merge or relocate an existing Fire station. Sensitivities notwithstanding, in this section we offer an assessment of alternative fire station location arrangements that is based on the principles, facts and considerations set out below.

Principles

- Services should align to Fire risks and service needs.
- One City / decisions should respond to the needs of the entire municipality, allocating available resources based on priorities.
- Decisions should give consideration to both current settlements and anticipated future growth.
- Public safety, financial sustainability and value for money should be fundamental to any decision.
- Fire prevention and public education should be promoted aggressively as the principal lines of fire defense, particularly in areas distant from a station or fire suppression services.
- Operating model for Fire suppression should give consideration to response time / coverage capabilities and the capabilities of firefighter staffing.
- Fire suppression operations should make best use (and utilization) of resources (both career and volunteer).
- Fire suppression operations should not be impeded by artificial barriers and restrictions.
- Operating model should take advantage of automatic aid agreements where reasonable.

Escalating Costs to Operate GSFS

While population and employment in the greater City is growing at a relatively slow pace (forecast at +6% and +8% respectively by 2031), fire service incidents are forecast to increase by over 30% by 2031, and operating costs are forecast to increase by +90% by 2031.

In 2012 the GSFS capital requirement for fleet and equipment replacement amounted to \$4.52 million. Despite City Council's infusion of supplementary capital dollars, GSFS incurred a capital shortfall of \$1.23 million. GSFS anticipates a recurring capital shortfall of a similar amount in 2013 and beyond. If current trends prevail, then the unfunded capital requirement is projected to increase to over \$5 million by 2017, to \$10 million by 2022, and to \$15+ million by 2027.

⁵ To be clear, this is not the only challenge but it is a fundamental challenge. Other challenges, such as those pertaining to the 24-hour shift rotation for fire suppression, fire training and fire prevention, are discussed elsewhere in this report.

Sixty percent (60%) of the existing 24 stations, including all four of the career firefighter stations in the City core, are in need of major capital attention i.e., roof replacement, window replacement, new insulation, building expansion, internal renovations, etc. Repairs are likely to cost millions of dollars and in some cases, it may be necessary to replace a structure rather than effect repairs.

Fire Risk Profile

The City core, housing 55% of the population (almost 90,000 residents) and most mercantile and industrial employment, is the area of highest fire risk in terms of call volume, number and type of occupancies, and potential for adverse consequences from fire. Based on approved plans of subdivision the core will be allocated 60% of City's future growth forecast.

Within the core there are a large number of relatively old buildings, many with less than desirable spatial separation or fire protection devices. Almost all of the City's high rise buildings are in the core. There are multiple institutions and places of assembly that frequently host organized events / large numbers of visitors. There also is an annual influx of some 9,000 full time and 13,000 part time post secondary students.

The former municipalities of Valley East and Capreol collectively house 17% of the City's population (27,300 residents). The rest of the City's population is spread out over a large, predominately rural geographic area, with residents residing in small residential settlements that are separated from one-another by relatively long commutes.

Within this outlying rural area, there also are numerous seasonal cottages, many of which are situated in remote areas or on lakefronts; various industrial areas (e.g., near Chelmsford); several working mines (e.g., near Onaping and Levack); strip retail development along major arterials; and within settlement areas, various institutions, nursing homes, schools, arenas and community halls.

Fire Incident History

Across the greater City, the number, type and frequency of incidents vary significantly. The City core generates almost 75% of the City's total fire responses (about 3,000 incidents a year). Suburban communities and rural settlements collectively generate about 1,000 incidents a year and of these, of which about 40% originate in Valley East and Capreol.

The core generates about 300 incidents a year involving structure, auto or outdoor fire and about 900 incidents a year that are rescues or medical assists. In comparison, Valley East and Capreol collectively generate 75 incidents a year involving structure, auto or outdoor fire, and 20 incidents a year that are rescues or medical assists; and other smaller communities generate an average of about 10 incidents a year involving structure, auto or outdoor fire, and 5 or fewer incidents a year that are rescues or medical assists.

8.2 City Core Scenarios (District 1)

The City core is served by 5 fire stations. Main, Minnow Lake, New Sudbury and Long Lake stations are staffed at base with full-time fire fighters. Copper Cliff station is staffed with volunteers. The aggregate cost to operate the five stations is about \$16 million a year.

New Sudbury, at 60 years of age, is one of the oldest fire stations in the City. Main and Long Lake are 40 years old. Minnow Lake is 35 years and Copper Cliff is over 25 years. The stations are small and crowded relative to current needs. New Sudbury station in particular, is in need of capital attention, requiring repairs such as roof replacement, window replacement, new insulation, repairs

to plumbing, heating and ventilation, and expansion of internal space and renovation to address overcrowding.⁶

Repairs and capital improvements are likely to cost millions of dollars and in one particular case (i.e., New Sudbury), it may be more cost-effective to replace a structure rather than effect repairs.

The City core houses almost 90,000 residents (55% of the City's total population). By 2021 the population of the core is forecast to increase by an additional 3,000 persons and by 2031, an additional 6,000 persons are expected to take up residence in the core.

By all accounts, Main and Long Lake stations are reasonably well situated relative to existing and anticipated future development in the City core; whereas, based on the above, it has been suggested that New Sudbury station would be better positioned if re-located to the west, to the vicinity of Lasalle and Notre Dame. It also has been suggested that for this to work, Minnow Lake station would have to be re-located slightly to the north to fill the ensuing void in coverage, potentially to the vicinity of Falconbridge and Auger.

Alternatively and predominately for purposes of cost-containment, it has been suggested that consideration should be given to eliminating one or more City core stations. One such scenario is to merge the two easterly stations, New Sudbury and Minnow Lake, into one new station, which would be situated in the vicinity of Lasalle and Falconbride.

Another such scenario is to eliminate the Copper Cliff station; this for several reasons, which include the low volume of incidents in the Copper Cliff service area, the potential opportunity to contain costs, and given that standard operating procedures essentially relegate Copper Cliff to a secondary / support status.⁷

We have examined these scenarios and the findings are discussed below.

8.2.1 Relocate New Sudbury & Minnow Lake Stations

Assumptions:

- New Sudbury station to be re-located to the west, near Lasalle and Notre Dame
- Minnow Lake station to be re-located slightly to the north, near Falconbridge and Auger
- Service area boundaries for New Sudbury and Minnow Lake stations to be adjusted to reflect their new locations / also, some adjustments to Main and Long Lake service area boundaries
- Each new station to maintain existing firefighter staffing (i.e., 4 full-time firefighters 24/7)
- Each new station to maintain existing fire apparatus
- Each new station to be sized to accommodate firefighter needs, including a minimum of 3 bays
- Potentially, provision of additional space to offload overcrowding at Main station and for EMS.

Exhibit 8.1 (next page) shows the fire coverage at 5 and 7.5 kilometre radii of the relocated New Sudbury and Minnow Lake stations.

Overlaid onto the exhibit is the general location of planned occupancies in the core. Current plans of subdivision, which include a mix of low and high rise building developments, provide for an additional 1,100 residential units near Main Station, 1,500 near Minnow Lake station, 1,400 near Long Lake and 600 near New Sudbury station.

⁶ Throughout this report, information pertaining to station age, condition, functionality and the cost of facility capital improvements is drawn from a February 2013 "Fire Station Overview" prepared by GSFS personnel. Additional details are included in Appendix A.

⁷ In this, the reference is to current standard operating procedures that require the communications centre to dispatch either Main or Long Lake career stations before dispatching Copper Cliff. We understand that this operating procedure applies to all calls not just those involving structure fire incidents.

For existing City core occupancies, there is likely to be no significant change in fire response times. Similarly, we anticipate no significant change in fire response times for planned occupancies near the existing New Sudbury and Minnow Lake stations.

For planned occupancies to the north of Main Station (which would be near the relocated New Sudbury station), there may be a 2 to 3 minute improvement over a response from existing station locations.

Relocating the two stations will not adversely affect current standard operating procedures for station deployment. GSFS will continue to deploy a minimum of two stations to structure fires and three stations to institutions (hospital, university, college, etc). As discussed previously in Section 3, New Sudbury will continue to back up Main and Minnow Lake stations; and Minnow Lake will continue to back up Main and New Sudbury stations.

Relocating the two stations is not expected to adversely affect the support (as second in) that one or the other may occasionally provide to neighbouring stations such as Coniston and Garson.

The capital implications would be a minimum of \$2 million per station for construction. The cost of land acquisition would be an additional cost.

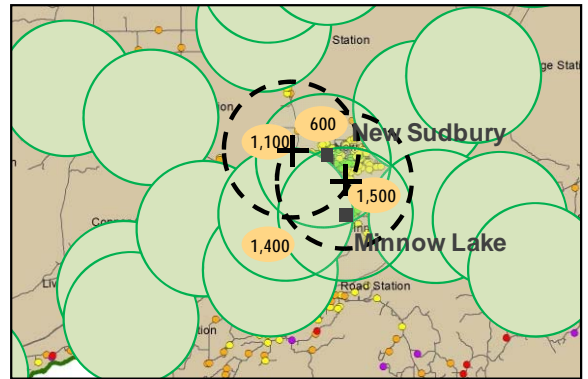
Relocating the two stations will not significantly change the ongoing cost of operations. The operating cost per station will continue to be about \$2.3 million a year.

In consideration of the following facts, it is our opinion that the New Sudbury station should be replaced with a new structure. The station is 60 years of age. It is small and crowded relative to current needs, and it is in need of extensive / expensive capital repairs.

Given the planned growth and development to the north of Main Station, and GSFS' desire to improve response times, we recommend that the new structure should be situated to the west (near Lasalle and Notre Dame). In our opinion, this will improve response times by 2 to 3 minutes over a response from existing station locations.

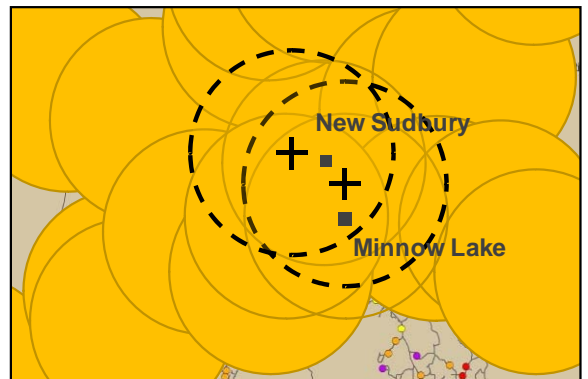
It also is our opinion that rebuilding / re-locating Minnow Lake station is not currently warranted. Despite its age (35 years) and relatively small size it continues to function reasonably well. Were it to be relocated as was proposed above, in our opinion there is likely to be no significant improvement in fire response time capability, and there could be an adverse change in response times to existing occupancies situated to the south.

Exhibit 8.1
Relocate New Sudbury & Minnow Lake
5 Km Radius



For the reader's convenience, we have simplified this exhibit by applying an opaque colouring to all but two coverage areas, namely those of New Sudbury and Minnow Lake. For these two, we highlight only the periphery of the coverage area (in green), thus enabling the reader to see the location of historical calls and planned occupancies.

7.5 Km Radius



8.2.2 Merge New Sudbury & Minnow Lake Stations

Assumptions

- Merge New Sudbury and Minnow Lake into one new station, to be built near Lasalle and Falconbride / close existing New Sudbury and Minnow Lake stations
- Service area boundaries to be set for the new merged station / also, some adjustments to Main and Long Lake service area boundaries
- New station to be sized to accommodate the combined firefighter complement (8 full-time firefighters 24/7) and corresponding fire apparatus, including a minimum of 5 bays
- Potentially, provision of additional space to offload overcrowding at Main station and for EMS.

Exhibit 8.2 shows the fire coverage implications of merging the New Sudbury and Minnow Lake stations as described above.

For most existing City core occupancies, there is likely to be no significant change in fire response times; albeit for both existing and planned future occupancies to the west of the existing New Sudbury station, response times are likely to increase by 5 to 10 minutes.

Similarly, for calls originating to the south of the existing Minnow Lake station, response times are likely to increase by 5 to 10 minutes.

Merging the two stations will not adversely affect current standard operating procedures for station deployment. The new merged station will provide back up Main station when necessary.

Merging the two stations is not expected to adversely affect the support (as second in) that may occasionally be provided to neighbouring stations such as Coniston and Garson.

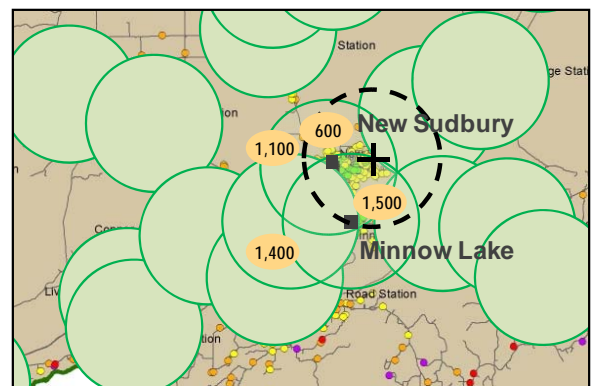
The capital cost to construct a single merged facility could be \$4 million or less (versus a minimum of \$2 million per station if they are rebuilt as separate structures). The cost of land acquisition would be an additional cost.

Given that merging the two stations will not significantly change the number of resources and apparatus, the ongoing cost of operations is also unlikely to change significantly. It currently costs about \$2.3 million a year to operate New Sudbury station, and an equal amount to operate Minnow Lake. The cost to operate a single merged station will be about \$4.6 million a year.

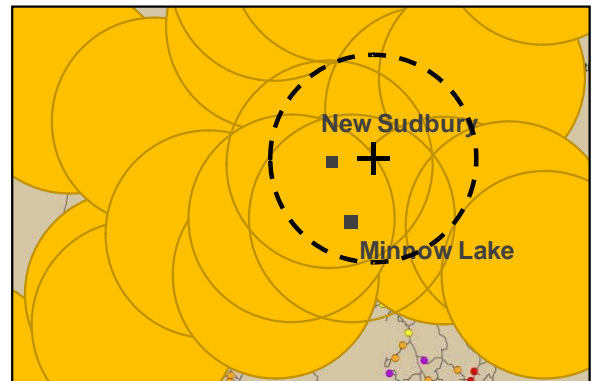
In our opinion, the above information does not support a merging of New Sudbury and Minnow Lake stations. Rather, the information reinforces the Scenario 1 findings; specifically, that consideration should be given to replacing the New Sudbury station with a new structure at a more westerly location near Lasalle and Notre Dame, and that rebuilding / re-locating Minnow Lake station is not currently warranted.

Exhibit 8.2
Merge New Sudbury & Minnow Lake

5 Km Radius



7.5 Km Radius



8.2.3 Close Copper Cliff Station

In this scenario Copper Cliff station will be closed and occupancies situated in the current Copper Cliff service area will receive fire services protection from the neighbouring Main and Long Lake fire stations. Our findings in respect to this scenario are as follows.

While Copper Cliff station is about 25 years of age, it is our understanding that it is in relatively good condition; albeit prone to spring flooding due to site grading issues.

The station functions well; however being located in a bedroom community, it is occasionally challenging to attain volunteer turnout during weekdays.

The volume of incidents, 20 or fewer incidents a year, is low and one would argue well below a volunteer station's potential capacity of 150+ calls a year.

Current plans of subdivision provide for an additional 1,400 residential units near Copper Cliff. However, since the planned units will also be located in the service areas of Main and Long Lake stations, it is expected that their fire response may come from any one of the three stations. This is consistent with current operations where Main and Long Lake are dispatched in advance of Copper Cliff, as discussed below.

Standard operating procedures require the communications centre to dispatch either Main or Long Lake career stations before dispatching Copper Cliff. From these stations, calls originating in the Copper Cliff service area currently receive an 8 to 10 minute fire service response. Taking volunteer assembly into account, calls in this area also receive an 8 to 10 minute fire service response from Copper Cliff. Oftentimes, the two sets of resources (career and volunteer) will arrive on scene within seconds of one-another.

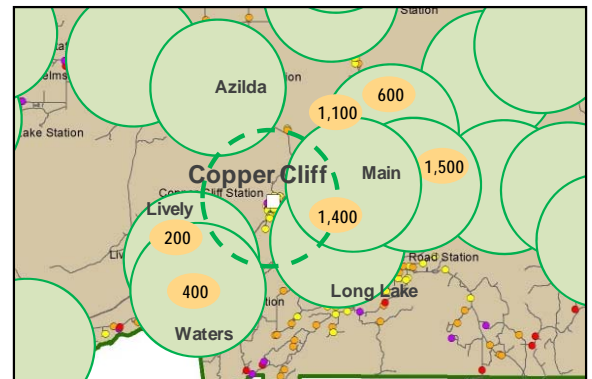
Given the above, were Copper Cliff to be closed then, for occupancies in this area, there is likely to be no significant change in fire response times.

We estimate that it costs about \$60,000 a year to operate the Copper Cliff station. Were the station to be closed, we estimate the potential for future cost savings to be between \$40,000 and \$60,000 a year, depending on the number of Copper Cliff volunteers who may be willing to work out of another GSFS station.

The potential cost savings in future apparatus replacement is estimated to be about \$350,000, since it would no longer be necessary to replace the apparatus stationed at Copper Cliff. That apparatus, which includes a 1993 pumper and a '99 van, would be designated as surplus. There also would be a capital cost savings by eliminating future upkeep of the Copper Cliff facility.

Given the overlap in geographic coverage, the low volume of incidents, operating procedures whereby Main and Long Lake are dispatched in advance of Copper Cliff, and the potential to contain costs, we are of the opinion that the Copper Cliff station could be declared surplus to GSFS requirements.

Exhibit 8.3
Close Copper Cliff Station
(5 Km Radius)



8.3 Valley East / Capreol Scenarios (District 4)

District 4 houses over 27,000 residents (17% of the City's total population). By 2021 the population of the district is forecast to increase by an additional 1,000 persons and by 2031, an additional 2,000 persons are expected to take up residence in this district.

The district generates about 400 incidents a year (10% of the City's total incidents). Of these, about 75 incidents a year involve structure, auto or outdoor fire and 20 incidents a year are rescues or medical assists. The rest are a mix of fire / carbon monoxide alarm malfunctions, accidental activations, unauthorized controlled burns, public hazards and calls cancelled on route.

The district is served by 4 fire stations. Val Therese is a composite fire station with 2 full-time firefighters on duty 24/7 and 14 volunteers. Val Caron, Hanmer and Capreol operate with an aggregate complement of 57 volunteer firefighters. The aggregate cost to operate the 4 stations is about \$2.6 million a year.

By most accounts Val Caron, Val Therese and Capreol stations are in relatively good condition and well positioned to provide local occupancies with fire protection services coverage. Hanmer Station however, at about 50 years of age, is one of the City's oldest stations. It also is small, crowded and maintaining the facility has become an issue.

Given the low volume of incidents in the Hanmer service area and the extensive overlap with the service areas of adjacent stations (shown in Exhibit 8.4), it has been suggested that consideration should be given to its abandonment.

A similar suggestion was made with respect to the Val Caron station; this due predominately to its service area overlap with Val Therese.

We have examined these scenarios and our findings are presented below.

8.3.1 Close Hanmer Station

In this scenario Hanmer station will be closed and occupancies situated in the current Hanmer service area will receive fire services protection from the neighbouring Val Therese and Capreol fire stations.

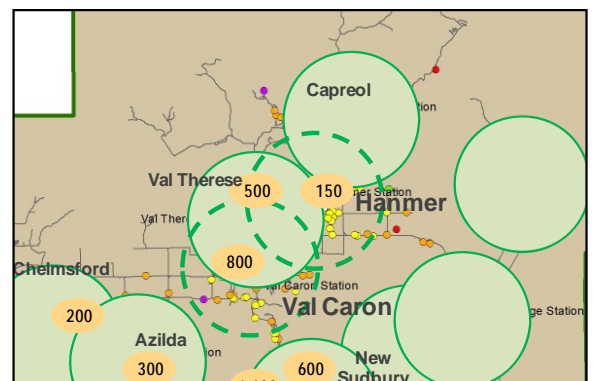
Our finding in respect to this scenario is that, based on coverage, practicality and economics Hanmer station is surplus to GSFS requirements. The facts are as follows.

The station is about 50 years of age. It is small, crowded and the facility is in need of significant attention (e.g., windows, siding, eve trough and roof).

The volume of incidents in the Hanmer service area, (11 in 2012 and 24 in 2011), is low and well below a volunteer station's potential capacity of 150+ calls a year.

Located in a bedroom community, attaining volunteer turnout during weekdays is challenging.

Exhibit 8.4
Hanmer & Val Caron
(5 Km Radius)



There is considerable overlap in geographic coverage with the adjacent Val Therese and Capreol stations.

Current plans of subdivision provide for an additional 150 residential units near Hanmer station. However, since the planned units will also be located at the confluence of the Val Therese and Capreol service areas, it is expected that their fire response may come from any one of the three stations. This is consistent with current operating procedures whereby the composite Val Therese station (or occasionally the volunteer Capreol station) responds as a secondary support to Hanmer when required.

Response times in the Hanmer service area currently average around 8 minutes from station paging to an initial crew's arrival on scene. Response time at the 90th percentile is over 13 minutes. In comparison, response times for the composite Val Therese station are similar. Therefore, for occupancies in the area, there is likely to be no significant change in fire response times if Hanmer station were closed.

Staffed with both career and volunteer firefighters, Val Therese is readily capable of assuming the Hanmer offload of about 24 or fewer calls a year. Capreol, with 60 incidents a year, is operating at well below a volunteer station's potential capacity of 150+ calls a year, and should be capable of assuming a small portion of the Hanmer offload.

A number of the existing 19 Hanmer volunteers may be willing to work out of the Val Therese or Capreol stations.

Were the station to be closed, we estimate the potential for future cost savings to be about \$30,000 to \$40,000 a year in operating, depending on the number of volunteers who may be willing to work out of one of the other neighbouring fire stations.

The potential cost savings in future apparatus replacement is estimated at about \$500,000. This includes an estimated \$300,000 for a 1999 pumper which would be surplus and \$200,000 for a 2007 tanker which would either be surplus or be relocated potentially deferring another purchase.

There also will be a significant cost savings of several hundred thousand dollars in facility improvements.

8.3.2 Close Val Caron Station

In this scenario Val Caron station will be closed and occupancies situated in the current Val Caron service area will receive fire services protection from the neighbouring Val Therese fire station. Our findings in respect to this scenario are as follows.

While Val Caron station is about 30 years of age, it is our understanding that it is in relatively good condition and functions well; albeit being located in a bedroom community, it is occasionally challenging to attain volunteer turnout during weekdays.

Over the past 6 years the volume of incidents in the Val Caron service area has fluctuated from a low of 12 to a high of 50, averaging at about 30 incidents a year.

Current plans of subdivision provide for an additional 800 residential units near Val Caron. Given the extensive overlap between the Val Caron and Val Therese service areas (shown previously in Exhibit 8.4) the planned units will also be located well within the Val Therese service area, and it is expected that their fire response may come from either of these two stations. This is consistent with current operating procedures whereby the two stations respond as secondary support to one-another.

Response times in the Val Caron service area currently average around 7 minutes from station paging to an initial crew's arrival on scene. Response time at the 90th percentile is over 12 minutes. Given the extensive overlap between the Val Caron and Val Therese service areas, for many occupancies there is likely to be no significant change in fire response times if the Val Caron station were closed; albeit, for occupancies to the south of Val Caron, beyond the overlap area, response times are likely to increase by 5 to 10 minutes.

We estimate that it costs about \$50,000 a year to operate the Val Caron station. Were the station to be closed, we estimate the potential for future cost savings to range between \$40,000 and \$50,000 a year, depending on the number of volunteers who may be willing to work out of the neighbouring Val Therese fire station.

The potential cost savings in future apparatus replacement is estimated to be about \$500,000, since it would no longer be necessary to replace the apparatus stationed at Val Caron. That apparatus, which includes a 1995 pumper and a 1995 tanker, would be designated as surplus.

Despite the significant overlap in geographic coverage and despite the potential to contain costs, we are of the opinion that the Val Caron station should not be closed; this in consideration of the following. The station is in relatively good condition and functions well. It is an area that is anticipated to grow appreciably. Were the station to be closed then for both existing and planned occupancies to the south of Val Caron, response times are likely to increase by 5 to 10 minutes without recourse.

8.4 Outlying Rural Area Scenarios (Districts 2, 3 & 5)

The area covered by Districts 2, 3 and 5 contains a number of relatively small communities and rural settlements that are separated from one-another by relatively long commutes. The area also contains industrial activity, working mines, natural forests, lakes, and remote or lakefront cottages.

The outlying rural areas collectively generate about 600 response incidents a year, or an average of about 40 incidents a year per suburban community. For each, this includes about 10 incidents a year involving structure, auto or outdoor fire, and 5 or fewer that are rescues or medical assists.

The area is served by an aggregate complement of about 240 volunteer firefighters operating out of 15 stations with a fleet that includes 2 aeriels, a telesquirt, 13 pumpers, 8 tankers, 4 rescue trucks, 6 bush trucks and 2 boats. The aggregate cost to operate these stations is about \$3 million a year.

The stations range in age from about 40 years to 60 years. Despite age, many of the stations are generally in good condition and function reasonably well (Azilda, Chelmsford, Coniston, Dowling, Garson, Lively, Skead, Wahnapiatae, Waters and Whitefish).

Others (Beaver Lake, Falconbridge, Levack, Red Deer and Vermillion) are small and crowded, or maintaining the facilities has become an issue. For the following station service areas low incident volumes also are an issue: Beaver Lake - 5 incidents in 2012; Falconbridge - 14 incidents; Red Deer - 4 incidents; Skead - 9 incidents; and Vermillion - 2 incidents in 2012.

It was suggested that this review should investigate the following scenarios:

- Merge Lively and Waters stations
- Merge Beaver Lake and Whitefish stations
- Close Vermillion station
- Close Falconbridge or Skead station
- Merge Wahnapiatae and Red Deer stations.

We have examined these scenarios and our findings are presented below.

8.4.1 Merge Lively and Waters Stations

Assumptions

- Merge Lively and Waters volunteer firefighters into the existing Waters station
- Close the existing Lively station
- Maintain the Waters station apparatus / surplus the Lively station apparatus
- Occupancies situated in the current Lively service area will receive fire services protection from Waters station.

Our finding in respect to this scenario is that, based on coverage, practicality and economics Lively station is surplus to GSFS requirements. The facts are as follows.

Lively, at age 40 years, is a small station relative to current needs. Waters is the larger of the two stations. It also houses EMS. The two stations are generally in good condition and they function reasonably well.

The stations are situated within 2.5 kms of one-another. As demonstrated by Exhibit 8.5, their service areas almost entirely overlap one-another.

The area served by the stations is divided by a rail line, which historically carried a relatively high volume of rail traffic to/from the Vale mine, and necessitated the establishment of two fire stations (one to serve either side of the rail line).

With a decline in mining activity, rail traffic on this line has declined to a maximum of 4 trains a day (2 outbound and 2 inbound), and there is no longer a need to sustain both fire stations.

Lively and Waters respond to similar incident volumes. Annually, they respond to an aggregate total of about 130 incidents a year. One would suggest that this volume is well within a volunteer station's potential capacity of 150+ calls a year; more so, given that within this scenario, the proposal is to merge the two firefighter complements into one station.

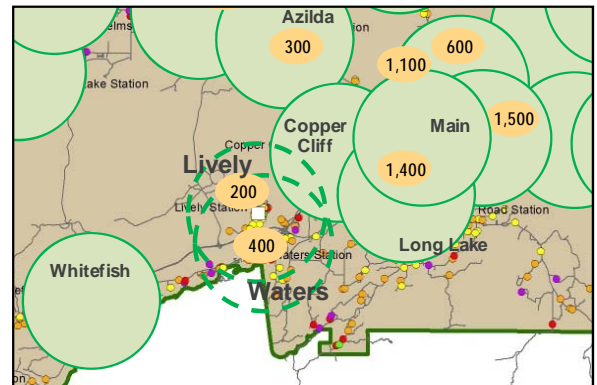
We did not survey the volunteer firefighters, but given that the stations are within 2.5 kms proximity of one-another, that the stations essentially cover the same service area, that they serve as backup support to one-another and that the volunteers of both stations frequently train together, we anticipate that many of the Lively volunteers would be willing to work out of the Waters station.

Their combined workforce should also be capable of responding to anticipated area growth. Current plans of subdivision provide for an additional 600 residential units.

Lively station response times average about 10 minutes from station page to an initial crew's arrival on scene. Response time at the 90th percentile is about 17 minutes. Response times for Waters station are similar. In consideration of this, and the extensive overlap in coverage, we do not anticipate a significant change in fire response times if the two stations are merged.

Were the Lively station to be closed, we estimate the potential for future operating cost savings to be about \$40,000 to \$50,000 a year. In arriving at this estimate, we have assumed that all of the Lively volunteers will transfer to Waters and that there will not be any reduction in volunteer firefighter costs.

Exhibit 8.5
Merge Lively and Waters
(5 Km Radius)



The potential cost savings in future apparatus replacement is estimated at about \$450,000. This includes an estimated \$300,000 for a 1995 pumper which would be surplus and \$150,000 for a 2005 bush truck which would either be surplus or be relocated potentially deferring another purchase. There also would be a capital cost savings by eliminating future upkeep of Lively station.

8.4.2 Merge Beaver Lake and Whitefish Stations

Assumptions

- Merge Beaver Lake and Whitefish volunteer firefighters into the existing Whitefish station
- Close the existing Beaver Lake station
- Maintain the Whitefish station apparatus / surplus the Beaver Lake station apparatus
- Occupancies situated in the current Beaver Lake service area will receive fire services protection from Whitefish station.

Our findings in respect to this scenario are as follows.

Beaver Lake station is 40 years old. The building is not insulated. It is served by septic and well, and is heated by overhead propane heaters.

Whitefish station is situated in the Whitefish community centre. The station, which includes space for a Captain's office and a dedicated training area, is in good condition and functions reasonably well.

Beaver Lake incident volumes are very low, ranging between 3 and 5 incidents a year. Incident volumes at Whitefish range between 30 and 40 a year. These volumes are well within a volunteer station's potential capacity of 150+ calls a year.

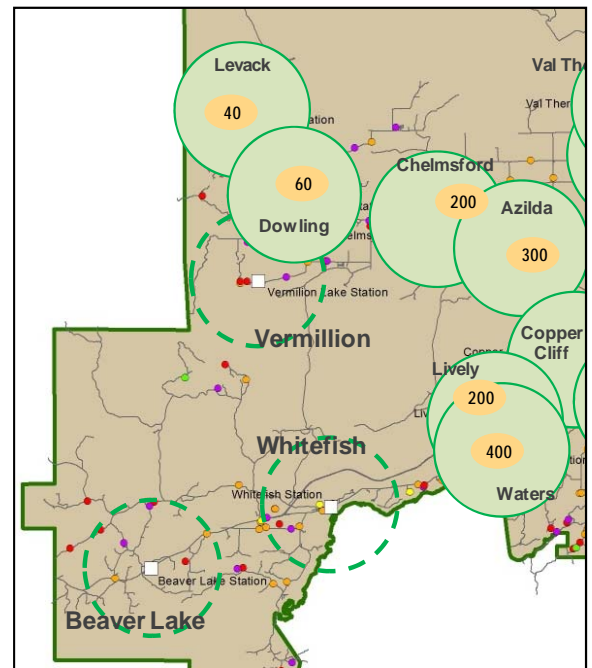
Beaver Lake operates with 11 volunteer firefighters. Whitefish operates with 21 volunteer firefighters. The two groups of volunteers frequently train together. They also provide backup support to one-another.

We did not survey the volunteer firefighters, but based on the above, we anticipate that some Beaver Lake volunteers would be willing to work out of the Whitefish station.

Beaver Lake station response times average about 11 minutes from station page to an initial crew's arrival on scene. Response times for Whitefish station are slightly longer, averaging 13 minutes. At the 90th percentile, both stations exhibit relatively long response times, which for Whitefish station is 25 minutes and for Beaver Lake station it is 32 minutes.

The two stations are situated about 15 kms apart and their service areas at a 5 km radius are separate and distinct. At 7.5 kms the service areas slightly overlap. If Beaver Lake station were to be closed in favour of services that would be based at Whitefish (as proposed under this scenario), one may anticipate that for occupancies in the current Beaver Lake service area, response times are likely to increase by 10 to 15 minutes depending on the location of the incident.

Exhibit 8.6
Beaver Lake, Whitefish & Vermillion
(5 Km Radius)



Were the Beaver Lake station to be closed, we estimate the potential for future operating cost savings to be about \$10,000 a year. In arriving at this estimate, we have assumed that the Beaver Lake volunteers will transfer to Whitefish and that there will not be any reduction in volunteer firefighter costs.

The potential cost savings in future apparatus replacement is estimated at about \$550,000. This includes an estimated \$400,000 for a 2013 pumper/tanker and \$150,000 for a 2006 support unit, both of which would either be surplussed or be relocated potentially deferring other purchases. There also would be a capital cost savings by eliminating future upkeep of the Beaver Lake station.

We are of the opinion that the Beaver Lake station should not be closed; this in consideration of the following. If the station were to be closed there would be relatively little in the way of cost savings whereas, for occupancies in the Beaver Lake service area, response times are likely to increase by 10 to 15 minutes without recourse.

8.4.3 Close Vermillion Station

In this scenario Vermillion station will be closed and occupancies situated in the current Vermillion service area will receive fire services protection from the neighbouring Dowling and Chelmsford fire stations.

Our finding in respect to this scenario is that, based on coverage, practicality and economics Vermillion station is surplus to GSFS requirements. The facts are as follows.

The station is about 30 years of age. It is small and crowded. Ventilation is an issue. The fire hall apron slopes down from the road, which periodically causes the door to freeze.

Incident volumes in the Vermillion service area are almost non-existent. There were 2 incidents in 2012, 1 in 2011 and no incidents in 2009 and 2010. This is not a growth area. Increases in incident volumes are not anticipated.

The station operates with very few volunteers (about 7 in total). Located in a bedroom community, attaining additional volunteers and volunteer turnout is challenging. For fire protection the area relies as much on services from Dowling and Chelmsford fire stations as it does the local station at Vermillion.

Were the Vermillion station to be closed, we estimate the potential for future cost savings to be about \$20,000 a year. The potential cost savings in future apparatus replacement is estimated at about \$300,000; this by eliminating future replacement of a 1999 pumper stationed at Vermillion. There also would be a capital cost savings by eliminating future upkeep of the Vermillion station.

8.4.4 Close Falconbridge or Skead Stations

This scenario considers two alternative options:

- 1) Falconbridge station will be closed, its apparatus will become surplus and its firefighters will either be disbanded or assigned to other stations. Occupancies situated in the current Falconbridge service area will receive fire services protection from the neighbouring Garson fire station, or
- 2) Skead station will be closed, its apparatus will become surplus and its firefighters will either be disbanded or assigned to other stations. Occupancies situated in the current Skead service area will receive fire services protection from the neighbouring Falconbridge and Garson fire stations.

The facts are discussed below.

Falconbridge station is about 50 years old. It is a small single-storey station. The apparatus bays are short with limited clearance and the roof is in need of attention. Skead station is about 40 years old. It also is a small single-storey station with short apparatus bays of limited clearance.

The Falconbridge station is located near the Xstrata Smelter complex. Proximity to the smelter may potentially pose a risk. Both stations are situated relatively close to the Sudbury airport. Falconbridge is located to the south of the airport and Skead is located to the northeast.

Because the main road in the area is circuitous, the distance to the airport from Falconbridge station is about 10 kilometres. From Skead station the distance is 8 kilometres.

Falconbridge incident volumes are low, averaging about 11 incidents a year over the past six years. Incident volumes at Skead are slightly lower, averaging about 8 incidents a year.

Falconbridge operates with 9 volunteer firefighters. Skead operates with 13 volunteer firefighters. Located in bedroom communities, both stations have difficulty attaining additional volunteers and volunteer turnout is challenging.

Volunteer assembly times are similar for both stations, averaging about 6 minutes. Falconbridge station response times average about 8 minutes from station page to an initial crew's arrival on scene. Response times for Skead station are longer, averaging 14 minutes. This, we attributed to the distribution of incidents over a larger geographic area.

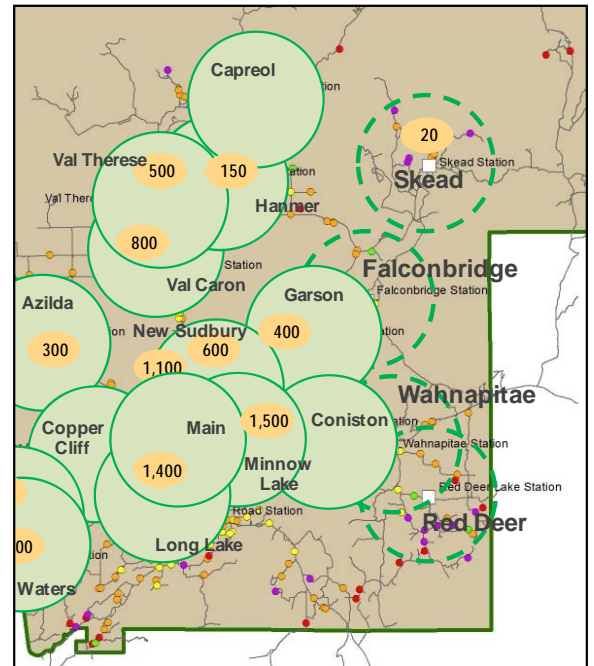
Neither station is situated in a growth area. Increases in incident volumes are not anticipated. Both stations rely on Garson for ongoing backup and secondary support services.

As shown by Exhibit 8.7, there is extensive overlap between the Falconbridge and Garson service areas. Were the Falconbridge station to be closed, for many occupancies there will likely be no significant change in fire response times.

The two stations are situated about 18 kilometres apart and the drive is about 15 to 20 minutes. Were the Skead station to be closed, one may anticipate that for occupancies in the current Skead service area, response times are likely to increase by at least 15 to 20 minutes depending on the location of the incident.

Were the Falconbridge station to be closed, we estimate the potential for future cost savings to be between \$10,000 and \$20,000 a year. The potential cost savings in future apparatus replacement is estimated at about \$700,000. This includes an estimated \$500,000 for future replacement of a 1987 telesquirt and \$200,000 for a 2008 tanker which would either be surplussed or be relocated potentially deferring another purchase. There also would be a capital cost savings by eliminating future upkeep of the Falconbridge station.

Exhibit 8.7
Falconbridge & Wahnapiitae
(5 Km Radius)



Were the Skead station to be closed, we estimate the potential for future cost savings to be similar to that of Falconbridge (also between \$10,000 and \$20,000 a year). The potential cost savings in future apparatus replacement is also estimated to be similar, at about \$500,000. This includes an estimated \$300,000 for future replacement of a 1987 pumper, \$150,000 for future replacement of a 2005 bush truck and \$50,000 for future replacement of a boat and trailer. There also would be a capital cost savings by eliminating future upkeep of the Skead station.

In consideration that each station operates with relatively few volunteers and that each responds to very low incident volumes, it is our opinion that both stations are not required, and that at least one of the two stations should be declared surplus to GSFS requirements and closed.

Given the following, we suggest that consideration should be given to closing the Falconbridge station whereas the Skead station should be maintained. Skead station is situated closer to the airport and when necessary, it can provide a more rapid response. Given the extensive overlap with the Garson service area, we do not anticipate a significant change in fire response times if Falconbridge station is closed. Were the Skead station to be closed, one may anticipate that for occupancies in the current Skead service area, response times are likely to increase by at least 15 to 20 minutes.

8.4.5 Merge Wahnapiatae and Red Deer Lake Stations

Assumptions

- Merge Wahnapiatae and Red Deer volunteers into a single firefighter complement. They would operate out of one station, either the Wahnapiatae station or the Red Deer station
- One station would be closed and its apparatus would become surplus
- The two service areas would be merged. Occupancies situated in the combined service area will receive fire services protection from one station in lieu of the existing two.

Our finding in respect to this scenario is as follows.

Wahnapiatae is about 40 years old. It is a small single-storey station. The apparatus bays are short with limited clearance. The roof was tended to in 2012. Red Deer station also is a small single-storey station of about 40 years in age. Both function reasonably well; albeit historically, Red Deer station has a spring flooding problem.

Wahnapiatae incident volumes average about 25 incidents a year. Incident volumes at Red Deer are considerably lower, ranging between 3 and 5 incidents a year.

Wahnapiatae operates with 13 volunteer firefighters. Red Deer operates with 6 volunteer firefighters. Located in bedroom communities, both stations have difficulty attaining additional volunteers and volunteer turnout is challenging. The two groups of volunteers frequently train together. They also provide backup support to one-another.

We did not survey the volunteer firefighters, but based on the above, we anticipate that some volunteers would consider transferring from one of the two stations to the other.

Neither station is situated in a growth area. Increases in incident volumes are not anticipated. The combined volunteer workforce operating out of a single station should be capable of handling the adjusted service area's total incident volume. Regardless, both stations currently rely on the neighbouring Coniston station for backup and secondary support services. We have assumed that Coniston will continue to provide support services the single merged station.

Volunteer assembly at Wahnapiatae averages about 5 minutes. Volunteer assembly at Red Deer averages about 7 minutes. Wahnapiatae station response times average about 11 minutes from

station page to an initial crew's arrival on scene. Response times for Red Deer station are longer, averaging 16 minutes. We attribute the longer times at Red Deer to the challenges in working with relatively few volunteers who are not always available when an incident arises.

As shown previously by Exhibit 8.7, there is considerable geographic overlap between the Wahnapiatae service area and those of Red Deer and Coniston, and in our view, for many local incidents a fire response could come just as easily from any one of the three stations (depending of course on the availability of volunteers). In this, our view is consistent with current operating procedures whereby Wahnapiatae and Red Deer provide backup support to one-another, and they also receive backup / secondary support from Coniston.

Were the Wahnapiatae station to be closed (and the firefighters assigned to work out of Red Deer) then, for many occupancies in the existing Wahnapiatae service area there will likely be no significant change in fire response times; albeit for incidents to the northeast of Wahnapiatae, response times may increase by 3 to 5 minutes.

Similarly, were the Red Deer station to be closed (and the firefighters assigned to work out of Wahnapiatae) then, for many occupancies in the existing Red Deer service area there will likely be no significant change in fire response times; albeit for incidents to the south of Red Deer, response times may increase by 3 to 5 minutes.

Coniston, with 35 incidents a year and 20 volunteers, is operating at well below a volunteer station's potential capacity of 150+ calls a year, and should be capable of assuming a small portion of any potential offload arising from the closure of either Wahnapiatae or Red Deer.

Were the Wahnapiatae station to be closed, we estimate the potential for future cost savings to be about \$20,000 a year. The potential cost savings in future apparatus replacement is estimated at about \$500,000. This includes an estimated \$300,000 for a 2003 pumper and \$200,000 for a 2003 tanker both of which would either be surplus or be relocated potentially deferring other purchases. There also would be a capital cost savings by eliminating future upkeep of the Wahnapiatae station.

Were the Red Deer station to be closed, we estimate the potential for future cost savings to be about \$10,000 a year. The potential cost savings in future apparatus replacement is estimated at about \$450,000. This includes an estimated \$400,000 for a 2013 pumper/tanker and \$50,000 for a van, both of which would either be surplus or be relocated potentially deferring other purchases. There also would be a capital cost savings by eliminating future upkeep of the Red Deer station.

Both scenarios would also require a facility capital investment to renovate and expand the single remaining station (either Red Deer or Wahnapiatae) to accommodate the combined volunteer firefighter work force.

In consideration of the relatively low incident volumes and the considerable geographic overlap between the Wahnapiatae and Red Deer service areas, it is our opinion that both stations are not required, and that at least one of the two stations should be declared surplus to GSFS requirements and closed. In conjunction with this decision, the Wahnapiatae and Red Deer volunteers should be consolidated into a single facility.

Given the following, we suggest that consideration should be given to closing the Wahnapiatae station whereas the Red Deer station should be maintained, renovated and expanded as necessary to accommodate the combined volunteer firefighter work force. Given the extensive geographic overlap of the Wahnapiatae service area with those of Red Deer and Coniston, in our opinion closing Wahnapiatae station will not significantly affect fire response times for most local occupancies. Were the Red Deer station to be closed then for incidents to the south of Red Deer, response times may increase by 3 to 5 minutes without recourse.

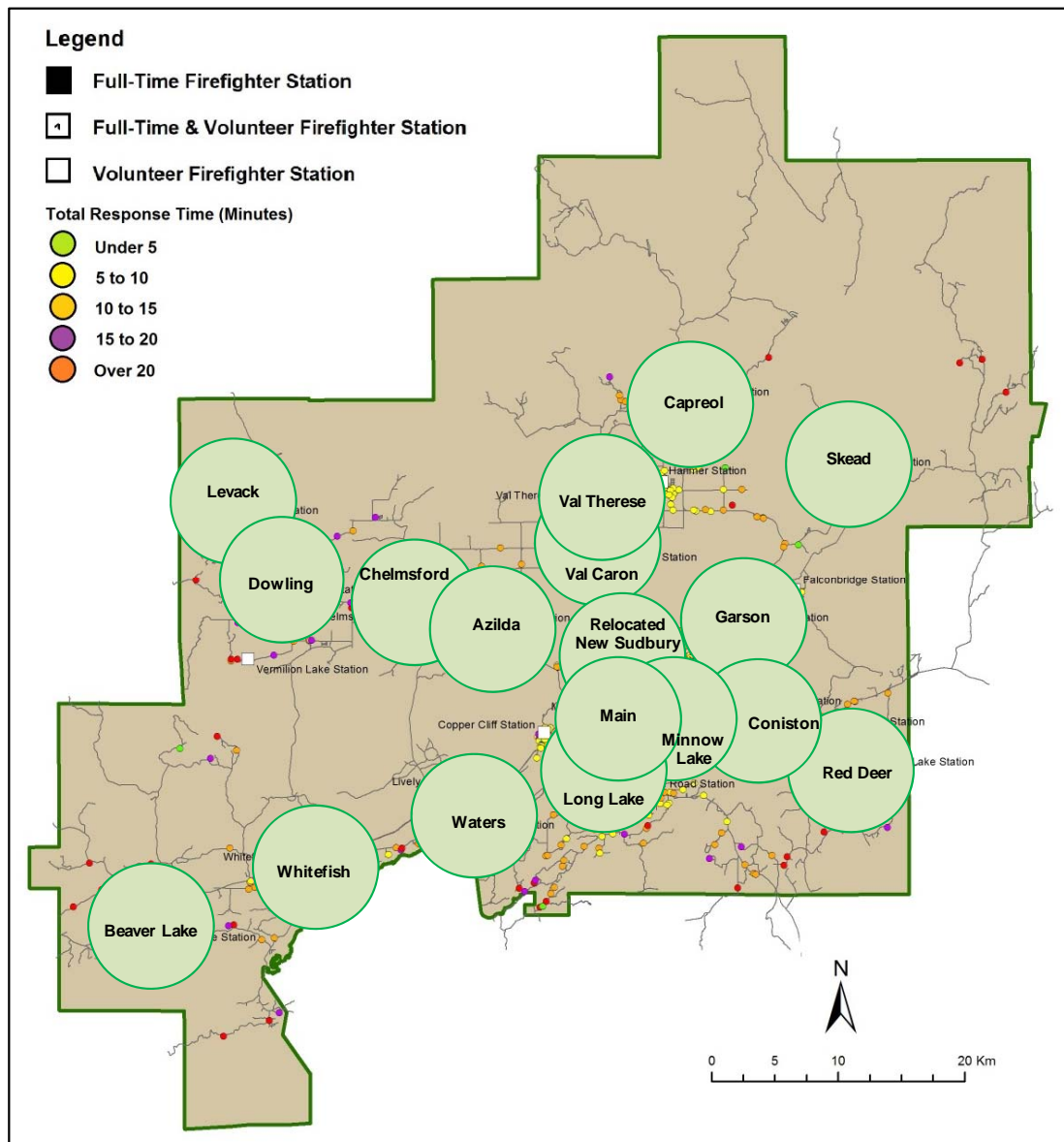
8.5 Preferred Station Arrangement

Fire Stations

Exhibit 8.8 shows the preferred station arrangement arising from our assessment. The preferred arrangement would include a total of 18 fire stations (down from the existing 24 stations). The proposed station location changes are summarized below:

- New Sudbury station is relocated to the west near Lasalle and Notre Dame
- Lively station is closed and Lively firefighters are merged with Waters station
- Wahnapiatae station is closed and Wahnapiatae firefighters are merged with Red Deer station
- Copper Cliff, Falconbridge, Hanmer and Vermillion stations are closed.

Exhibit 8.8
Preferred Station Arrangement
(5 Km Radius)



Geographic Coverage

As demonstrated by Exhibits 8.8 and 8.9, we anticipate that the preferred station arrangement (consisting of 18 stations) will continue to provide a reasonable level of coverage, including geographic overlap; albeit less than at present. Presented below are the anticipated changes in fire incident coverage:

- Coverage projected at 92% within 5 kms of a fire station (compares to current 95%)
- Coverage projected at 98% within 7.5 kms of a fire station (no change from current)
- Coverage projected at 99% within 10 kms of a fire station (no change from current).

Firefighters

Volunteer firefighters who currently work out of stations that are earmarked for closure may either disband or continue to serve from neighbouring fire stations.

Assuming that most of the displaced volunteer firefighters will continue to serve from neighbouring fire stations, we estimate that under the preferred station arrangement, GSFS will operate with an average of about 25 firefighters per station.

This figure is up from the present 19 firefighters per station, and it is consistent with peer fire services, where as discussed previously in Section 4, the number averages about 27 firefighters per station.

Operating Costs

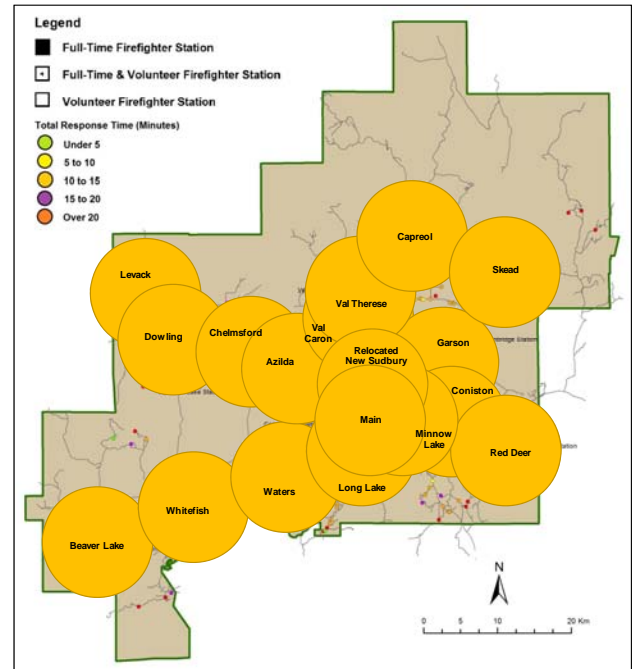
Career firefighter wages and benefits are the most significant operating cost components. They alone represent two-thirds of the total. Other operating cost components include vehicle and equipment maintenance, fuel, supplies, firefighter training, and the cost of fire prevention and public education programs.

Under the preferred station arrangement, we are not recommending a reduction in the number of firefighters. Therefore we do not anticipate a significant change in operating costs.

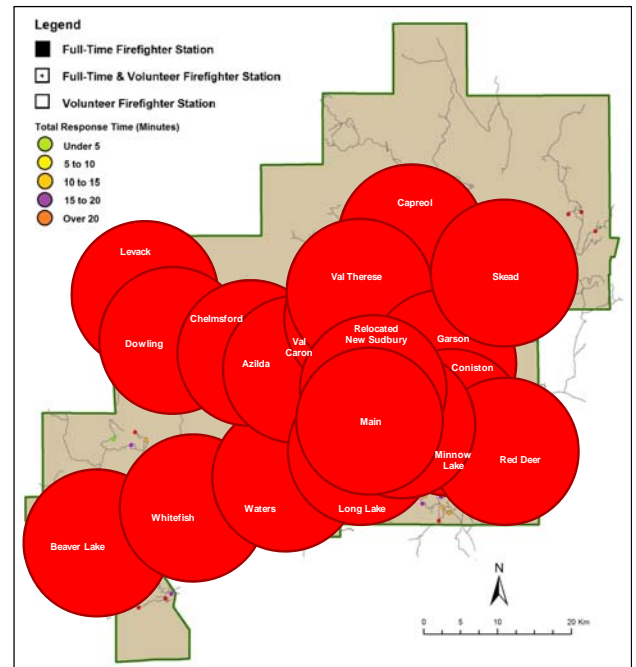
Potentially, there could be a relatively small savings in operating costs of about \$200,000 a year due to the rationalization of stations. However in our opinion this is not likely to be the case

Exhibit 8.9
Coverage at 7.5 and 10 Kms

(7.5 Km Radius)



(10 Km Radius)



because, as discussed in subsequent sections of this report, there are identified needs for additional staffing in both the Fire Training and FPPE sections. The best case scenario, in our opinion, is that the rationalization of stations will help to contain future cost increases beyond the operating cost projections shown previously in Section 3. For the reader's convenience those projections are repeated below.

The operating cost for 2013 is projected to be \$22.3 million and based on past trends, it is projected to increase by 3.4% a year to \$30 million by 2021 (+35%), and to over \$40 million by 2031 (+90%).

Facilities Capital

The capital implication of relocating the New Sudbury station is estimated to be about \$2 million. The cost of land acquisition would be an additional cost. A capital investment may also be required to renovate and/or expand the Red Deer station to accommodate the Wahnapiatae volunteer firefighters.

On the other side of the ledger, we anticipate that there will be a capital savings of several hundred thousand dollars in facility improvements arising from the closure of the six stations, and that the facility costs identified above could be offset by selling off these facilities and properties.

We acknowledge the absence of specificity in the anticipated facility costs and savings; however, we anticipate that these items will be the subject of much scrutiny by City staff once City Council commences its deliberations in respect of the preferred 18 station arrangement.

Fleet & Equipment Capital

Under the preferred station arrangement 11 fire vehicles (listed below) will either be surplus or be relocated deferring other purchases. In addition, as will be discussed in Section 9, we also are recommending that the spare 75' aerial at Chelmsford be phased out over time and replaced with a commercial pumper.

- Copper Cliff: '93 pumper & '99 van
- Hanmer: '99 pumper & '07 tanker
- Lively: '95 pumper & '05 bush truck
- Vermillion: '99 pumper
- Falconbridge: '87 telesquirt & '08 tanker
- Wahnapiatae: '03 pumper & '03 tanker.

Using information provided by the Client, we estimate that the existing apparatus inventory (fleet and equipment) is valued at about \$31 million (based on replacement costs at current dollars). This includes \$23.5 million in fleet and \$7.5 million in equipment.

- With 11 fewer fire vehicles the fleet inventory value would be reduced by about \$2.8 million.
- Replacing the spare 75' aerial at Chelmsford with a commercial pumper will yield a net reduction of about \$600,000.
- With the closing of the six stations, there also will be a reduction in equipment inventory, which we have estimated at about \$1.1 million.
- In total, we estimate a potential cost savings in future apparatus replacement (fleet and equipment) of about \$4.5 million (based on replacement costs at current dollars), which is equivalent to a 15% reduction.

Our gap analysis of the anticipated future annual capital requirements (Exhibit 8.10) indicates that under the preferred station arrangement there will be a significant reduction in future unfunded capital requirements; however to close the gap entirely, will require an increase in capital spending.

Exhibit 8.10
Gap Analysis: Preferred Station Arrangement

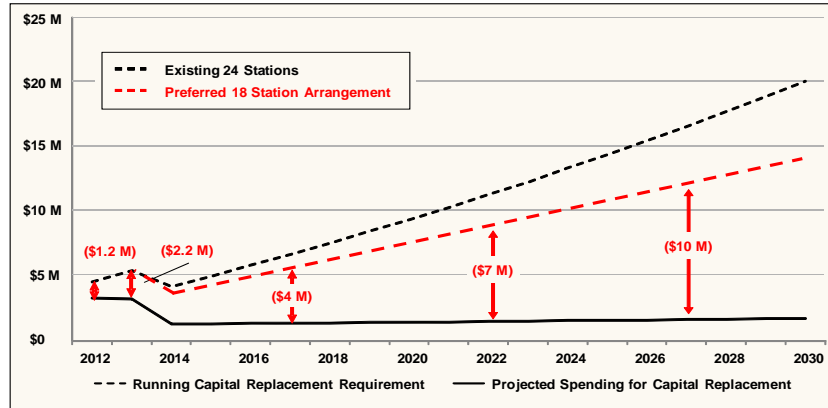


Exhibit 8.11 shows the unfunded capital projections for both the existing 24 stations and the preferred 18 station arrangement. For the existing 24 stations, capital spending would have to be increased to \$2.2 million a year to eradicate the unfunded capital within 15 years (up from the planned capital spending of \$1.2 million in 2013). Under the preferred station arrangement, this could be achieved within the same time frame by increasing capital spending to \$1.9 million a year.

Further, under the preferred station arrangement, by increasing capital spending to \$2.0 million a year the unfunded capital could be eradicated within 10 years, and by increasing capital spending to \$2.3 million a year the unfunded capital could be eradicated within 5 years (compared to 10 years under the existing 24 stations).⁸

Exhibit 8.11
Unfunded Capital Projections

Annual Capital Spending	Existing 24 Stations			Preferred 18 Stations		
	2017	2022	2027	2017	2022	2027
\$1.2 M (current)	\$5.3	\$9.8	\$14.9	\$4.2	\$7.1	\$10.4
\$1.5 M	\$4.2	\$7.2	\$10.7	\$3.1	\$4.5	\$6.1
\$1.6 M	\$3.8	\$6.2	\$9.1	\$2.7	\$3.5	\$4.5
\$1.7 M	\$3.4	\$5.3	\$7.5	\$2.3	\$2.5	\$2.9
\$1.8 M	\$3.0	\$4.3	\$5.9	\$1.8	\$1.5	\$1.3
\$1.9 M	\$2.6	\$3.3	\$4.3	\$1.4	\$0.6	--
\$2.0 M	\$2.2	\$2.3	\$2.7	\$1.0	--	--
\$2.1 M	\$1.8	\$1.4	\$1.1	\$0.6	--	--
\$2.2 M	\$1.4	\$0.4	--	\$0.2	--	--
\$2.3 M	\$0.9	--	--	--	--	--
\$2.4 M	\$0.5	--	--	--	--	--
\$2.5 M	\$0.1	--	--	--	--	--
\$2.6 M	--	--	--	--	--	--

⁸ The reader is reminded that the above cost projections pertain only to fleet and equipment capital. They do not include future capital requirements to remediate / sustain fire service facilities, which are being investigated by an independent professional resource; also, that in the opinion of GSFS personnel (based on a station inventory that they conducted), additional millions of dollars will be required to effect the station renovations that they have identified.

9. Firefighter Suppression Resources & Apparatus

This section reviews and offers suggestions for enhancing GSFS' use of firefighter resources and apparatus. The review is derived from a synthesis of the following information: Greater Sudbury fire risk profile, GSFS operating model, fire incident volumes, our knowledge of best practices pertaining to Fire department operations and input provided by GSFS staff who by way of a 2-day workshop, carried out a high level review of the service's apparatus.

9.1 Firefighter Suppression Resources

In keeping with the Comprehensive Fire Safety Effectiveness Model third line of defense, *Emergency Response*, GSFS employs 112 career firefighters, almost all of whom work in the City core stations. Dividing this figure into the City core population yields a ratio of about 1 career firefighter per 1,000 population. GSFS also employs 340 volunteer firefighters, almost all of whom work in suburban and rural communities outside of the City core. Dividing this figure into the population residing outside of the City core yields a ratio of about 5 volunteer firefighters per 1,000 population. City-wide, the ratio of GSFS firefighters to residents averages out at about 3 firefighters per 1,000 population. These ratios are consistent to those of the career, volunteer and composite services that we surveyed.

Volunteer firefighters who currently work out of stations that are earmarked for closure may either disband or continue to serve from neighbouring fire stations. Assuming that most of the displaced volunteer firefighters will continue to serve from neighbouring fire stations, we estimate that under the preferred station arrangement, GSFS will operate with an average of about 25 firefighters per station. This figure is up from the present average of 19 firefighters per station, and it is consistent with peer fire services, where as discussed previously in Section 4, the number averages about 27 firefighters per station.

From the above we may conclude that for the greater City's population, the number of firefighters currently employed by GSFS is reasonable (within both career and volunteer operations).

As shown in Appendix A, the volunteer complement at a number of volunteer stations is well below the present average of 19 firefighters per station, with some having 13 volunteers or fewer (e.g., Beaver Lake, Falconbridge, Levack, Red Deer, Skead, Wahnapiatae and Vermillion). For such stations, and others that are situated in bedroom communities such as Copper Cliff, Hanmer, Capreol and even Val Therese, it is difficult to attain sufficient turnout particularly during weekdays, without either resorting to a second page or paging out multiple stations.

Reducing to an 18 station arrangement (which will yield a higher average of about 25 firefighters per station) will help to address this situation and also relieve the oversight workload among GSFS management. The recommended change also provides opportunity to introduce alternative / more effective volunteer deployment strategies.

We note that GSFS experiences an annual turnover in the number of volunteer firefighters of about 15%. As discussed in Section 13 of this report, this compares to turnover rates of 10% to 30% for peer fire departments, and is attributed to a variety of factors, including: an aging volunteer force, volunteers underestimating the actual time commitment, volunteers losing interest, employment related constraints and cultural issues within the GSFS organization.

It is recommended that, in conjunction with the preferred 18 station arrangement, GSFS should review and adjust the volunteer recruitment process to meet current and ongoing needs. In particular, the process should be designed to include a targeted recruitment of applicants for specific geographic locations and hours.

9.2 Barriers to Operationally Effective Fire Suppression Services

Best practices pertaining to Fire department operations repeatedly affirm the following as two key principles for effective fire suppression operations: (a) that Fire suppression operations should not be impeded by artificial barriers or restrictions, and (b) that the closest available and appropriate resource should be dispatched to the site of a fire / emergency incident.

Contrary to best practices, fire suppression operations in Greater Sudbury are adversely impeded by two artificial restrictions. One is the collective agreement governing career firefighting operations and the other is the area ratings system that aligns career and volunteer fire suppression services to specific geographic areas.

The collective agreement delineates career firefighting from volunteer fire services. Under the terms of the present collective agreement most of the geographic area in the City core is served by career firefighters and there are relatively few instances when a volunteer firefighting crew may be called for assistance, regardless of availability, proximity or cost considerations. For example, should it be necessary to backfill a career station, the collective agreement requires that initial consideration be given to calling career firefighters who would be paid overtime wages rather than a lower cost volunteer firefighter crew that also may be readily available.

In this, we recommend that the collective agreement be reviewed and adjusted where possible to eliminate restrictions and to give greater consideration to the services being provided, and by extension to make more effective use of available career and volunteer firefighter resources in keeping with the principles set out above. Due consideration should be given to maintaining the current and past practice of a volunteer station providing services within the core, i.e. Copper Cliff. In addition, as the Fire Beats are reviewed and revised, there may be additional opportunities to improve response effectiveness through the coordination of both career and volunteer stations.

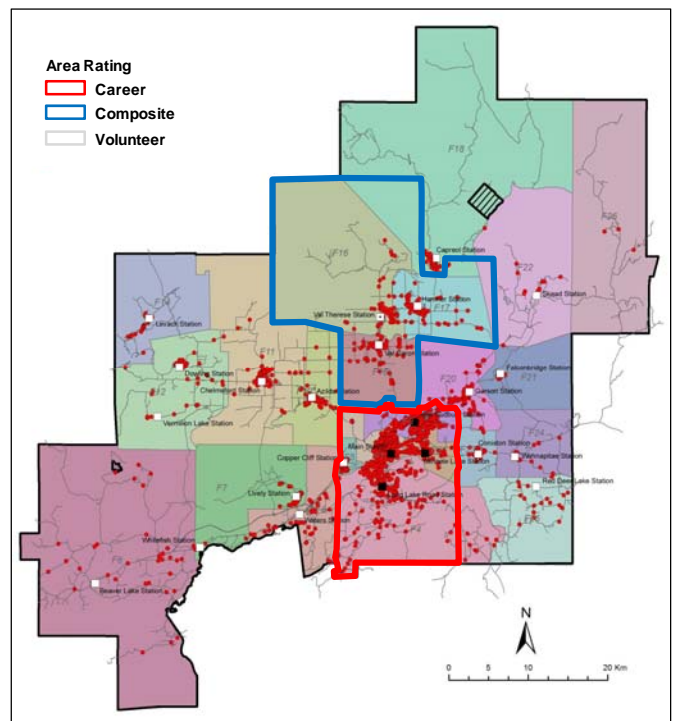
Fire area ratings were instituted during the 2001 amalgamation process as a means by which to address the variation in fire service levels across the newly amalgamated municipality without adversely affecting the combined fire operating budget, or property taxes of all City residents.

Under the City's area rating system, shown in Exhibit 9.1, City residents receive one of three fire service levels, ranging from full-time (career) firefighter coverage to volunteer firefighter coverage, and their property taxes are levied accordingly to cover the respective cost of the service received.

In particular, residents in the City core (more specifically the former municipality of Sudbury) are area rated for full-time firefighter coverage and their property taxes are levied accordingly.

Residents of the former municipality of Valley East (including the communities of Val Caron, Bleazard Valley, Val Therese

Exhibit 9.1
Existing Area Ratings for Fire Suppression



and Hanmer) are area rated for composite coverage, consisting predominately of volunteers whose services are augmented full-time by a crew of 2 career firefighters based at Val Therese station. For this level of service, the residents of the former municipality of Valley East are assigned a lower tax levy, which covers the cost of the composite coverage.

The rest of the City is area rated for volunteer firefighter coverage and for this level of service the residents are assigned an even lower tax levy.

The above notwithstanding, we note that under current practices, career firefighters will occasionally travel beyond the career area rating boundary to assist neighbouring volunteer stations despite area rating designations, e.g.: Minnow Lake career firefighter station which serves as secondary support to residents of the Coniston service area, even though those residents reside in an area that is rated for volunteer fire suppression services.

This in itself presents a particular anomaly, in that the service by Minnow Lake on behalf of Coniston residents is similar to that which Main station provides on behalf of Copper Cliff residents, yet while Copper Cliff residents pay a higher tax levy for career services, Coniston residents do not.

In keeping with the best practices principles for effective fire suppression operations (that Fire suppression operations should not be impeded by artificial barriers or restrictions, and that the closest available and appropriate resource should be dispatched to the site of a fire / emergency incident), we offer the following opinions / recommendations.

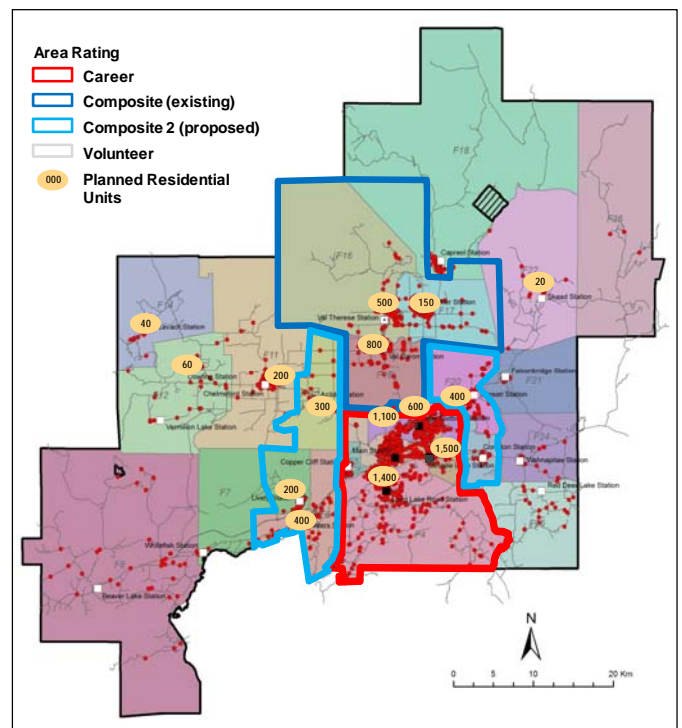
Area rating boundaries should be adjusted to reflect the greater City's current growth and geographic development; giving particular consideration to areas where sending career firefighters outside of the core would potentially contribute to better services, and concurrently make more effective use of career resources.

Distance (travel time) to the site of an emergency will severely constrain the effectiveness (practicality) of sending career firefighter resources outside of the core. Therefore, there is no need to entirely eliminate area rating.

An alternate area rating scenario is shown in Exhibit 9.2. In this scenario, the core area boundary would be adjusted slightly to align more closely with the service areas of the existing City core stations and in addition to the existing composite area, a new one covering the suburban communities of Waters, Lively, Azilda, Garson and Coniston would be created. For convenience we refer to the new composite area as Composite 2.

Conditions within these suburban communities have changed significantly since the 2001 amalgamation, in terms of: their respective population growths and the relatively large number of incidents that they generate (relative to those of smaller outlying settlements). Introducing

Exhibit 9.2
Alternate Area Rating Arrangement



Composite 2 as described by this scenario will better reflect not only past changes but also the anticipated future changes associated with their ongoing growth and development.

Unlike the existing composite area covering the former Valley East, the new Composite 2 area will not require that career firefighters be based at local stations (albeit Val Therese staffing with both volunteer and career firefighters would continue unimpeded). Rather, the Composite 2 area will be defined to mean a geographic area where volunteer firefighters will be supported actively by career firefighting resources that are stationed in the City core, e.g.:

- Response protocols governing the composite area may require that career firefighters stationed in the City core shall respond to all incidents in the composite area that involve structure fire.
- Similarly, the protocols may require that aerials / elevated master stream devices stationed in the City core shall respond to all incidents in the composite area that involve structure fire.
- Alternatively, the protocols may require that career firefighters (and equipment) shall respond to the composite area for incidents involving a large number of situations i.e., structure, auto and outdoor fire; multi-vehicle collisions; rescue calls; medical assists; etc.
- One might also consider a “temporary standby” protocol similar to EMS, where City core resources may be moved closer to the location of an incident to respond if resources on-scene require additional support.

The career stations in the City core collectively respond to about 3,000 incidents a year. The volunteer stations in the Composite 2 area collectively respond to about 350 incidents a year of which, about 100 incidents a year (28%) involve fire, rescue and medical assist. If we assume that the career stations will also respond to the Composite 2 area for incidents involving fire, rescue and medical assist then we may anticipate that the workload of the career stations will increase to about 3,100 incidents a year (i.e., a 3% overall increase in workload).

The annual cost to operate the career stations in the City core is currently projected to be about \$13.9 million. Wages and benefits account for about 90% of the cost whereas fuel, supplies, etc account for 10%. In the subject scenario (where the career stations will also respond to the Composite 2 area for incidents involving fire, rescue and medical assist), we anticipate that labour costs will likely not be affected however, in anticipation of the increased volume of call activity, the cost of supplies, fuel, etc, is likely to increase by about \$40,000 a year.

Exhibit 9.3 summarizes the tax implications associated with the alternate area rating arrangement. They are presented for two scenarios: Scenario A, which assumes a separate tax levy for the Composite 2 area and Scenario B, which assumes a single tax levy for both the existing and proposed composite areas.

Exhibit 9.3: Tax Implications

	\$ per Dwelling		
	Existing	Scenario A	Scenario B
City Core (Career)	\$425	\$420	\$420
Val Caron, Val Therese & Hanmer (Existing Composite)	\$265	\$265	\$222
Garson, Coniston, Azilda, Lively & Waters (Composite 2)	na	\$180	
Other Suburban Communities & Rural Settlements (Volunteer)	\$154	\$154	\$154

If the Composite 2 area were expanded to include Chelmsford then in Scenario A the value would be \$174 per dwelling (instead of \$180) and in Scenario B the value would be \$211 (instead of \$222).

Underlying the tax levy projections are the following principal assumptions:

- a) In the rural areas served by volunteer firefighters, the cost per dwelling would remain unchanged. We estimate that cost to currently be \$154 per dwelling. That figure applies to all scenarios.
- b) The increased cost of supplies, fuel, etc (which we have estimated to be about \$40,000 a year) is applied to the Composite 2 area.
- c) While we anticipate that career labour costs will not be affected, we have applied 1.5% of the existing labour cost to the Composite 2 area (i.e., one-half of the 3% overall increase in workload).

Based on the Scenario A calculations we project the following separate tax levy for the Composite 2 area: \$180 per dwelling. This figure is up from the \$154 that the dwellings in this area currently pay.

In our opinion a single tax levy for both the existing and proposed composite areas (as per Scenario B) does not make sense, for several reasons. The existing composite area (Val Caron, Val Therese and Hanmer) is served by volunteers and locally-based career firefighters whereas the Composite 2 area would have no locally-based career firefighters. Despite this significant difference, under this scenario the residents of both areas would be asked to pay the same amount \$222 per dwelling. For dwellings in the Composite 2 area, \$222 is a significant increase from the current \$154 per dwelling.

9.3 Impediments Posed by CAD

The following information is extracted from a separate report commissioned by the City which has examined Fire dispatch.

The term “Recommends” is used to describe the pre-determined strategy setting out the resources that will be dispatched to the site of a fire / emergency incident. The strategy takes into account the station location, station service area, the nature of the emergency, the number and type of resources required and the number and type of resources available at the station(s). The pre-determined strategies are pre-programmed into the Computer Aided Dispatch (CAD) system. When an emergency arises, the CAD automatically presents an appropriate fire services response based on the pre-programmed recommends.

The 2001 municipal amalgamation would have initiated development of a set of recommends reflecting the amalgamation of municipal boundaries and former municipal fire department services. We understand that the last significant update to the recommends occurred in 2004 and little change has been made since.

Over the years, fire apparatus has been added or changed, new fire responsibilities have been introduced and in some cases fire service area boundaries have been modified. Regardless, requisite changes to mapping, station apparatus assignments and recommends have not always kept pace and as a result, some of the fire related data in the CAD is outdated to the point of being questionable.

In this, it is concluded that updating the fire related data within CAD, including the recommends, is a priority, and that in concert with the above:

- Response standards and protocols to various incident types should be standardized.
- Response standards and protocols should reflect the principles for effective fire suppression operations that are set out above i.e., that Fire suppression operations should not be impeded

by artificial barriers or restrictions, and that the closest available and appropriate resource should be dispatched to the site of a fire / emergency incident (regardless as to whether the resource is career or volunteer).

- CAD recommends should be redesigned to reflect the changes to response standards and protocols set out above. They also should be designed to reflect the preferred 18 station arrangement set out previously in Section 8.
- As the recommends are revised, GSFS should take advantage of the CAD system's ancillary supports to attain more effective fire suppression operations i.e., focused / single purpose paging, volunteers tracking software, etc.

9.4 Main Station Workload

A review of incident volumes indicates that Main Station responds to about 1,500 incidents a year. This incident volume is more than twice that of Long Lake station, 3 times that of New Sudbury station and almost 4 times that of Minnow Lake station..

In our opinion GSFS should review and adjust the response boundaries in the City core to alleviate the Main Station workload and potentially improve response times.

9.5 False Alarms

As discussed previously in Section 6 of this report, the largest incident category is fire / carbon monoxide alarm malfunctions or accidental activations, which collectively account for 32% of all incidents.

From a fire suppression perspective, false alarms present a major challenge in that they are not determined to be false until after a response is initiated. With false alarms representing 32% of all response activity one may surmise that these types of calls contribute both to excessive wear and tear of resources and to excessive operating costs. One might also suggest that by initiating an emergency response, such calls also increase emergency response risk for firefighters and the public.

In 2005 GSFS introduced a by-law to reduce the number of false alarms received by local fire stations i.e., false alarms resulting from alarm systems that are not operating properly due to poor maintenance or faulty equipment, and false alarms resulting from alarm systems that are tested without advance notification. The by-law applies to alarm systems that automatically notify the fire service when activated. It does not apply to battery operated and hardwired smoke detectors used in most homes.

In consideration of the above, we suggest that GSFS should develop a strategy for dealing with false alarm offenders (particularly repeat offenders), and implement actions to reduce the overall number. This may include: more emphasis on code compliance by the Fire Prevention section, increased emphasis on this issue by the Public Education program, pro-active enforcement of the by-law, charging repeat offenders, and tracking and periodic reporting of false alarm activity to ascertain the strategy's overall effectiveness.

9.6 Apparatus

It appears to us that many decisions with respect to number and placement of apparatus are a carry over from pre-amalgamation. In this study we have endeavoured to review these decisions taking potential risk and historical data into account; also, the opinion of GSFS personnel as expressed during casual conversations and more formally, following the conclusion of a two-day internal

workshop where such items were primary subjects of discussion. Our findings and suggestions are discussed below.

Aerials / Telesquirt

An aerial is a device capable of providing an elevated master fire stream through a pre-piped waterway and nozzle. GSFs operates two types of aerial apparatus: one that operates with a telescoping ladder, and another that operates with a telescoping rectangular platform. Both units are capable of providing high access firefighting and rescue.

A telesquirt is similar to an aerial in that it also is capable of providing an elevated master fire stream through a pre-piped waterway, nozzle and ladder. The ladder however, is not designed / technically designated for rescue activities.

GSFS has 5 vehicles that are capable of providing an elevated master fire stream. They include: a 100' operating aerial at Main station (staffed 24/7 by career firefighters), two 75' aerials (at Waters and Chelmsford) that operate as front line vehicles in lieu of pumpers, a spare 75' aerial at Minnow Lake, and a 55' telesquirt at Falconbridge that operates as a front line vehicle in lieu of a pumper.

Having reviewed the available data, we offer the following opinions / recommendations:

- Maintain the 100' operating aerial at Main Station for a variety of reasons including: The City core generates about 300 incidents a year involving structure, auto or outdoor fire. Main station responds as the initial responder to about one-half of these calls. The City core houses about 55% of the population (almost 90,000 residents) and most mercantile and industrial employment. Almost all of the City's high rise buildings are in the core. In terms of call volume, number and type of occupancies, and potential for adverse consequences from fire, the City core is the area of highest fire risk.
- Maintain the 75' spare aerial at Minnow Lake Station: This aerial is situated close enough to Main station to serve as a replacement should the primary aerial be out of service (e.g., due to maintenance). Should an incident require a multiple aerial response, this vehicle can be staffed by on-shift firefighters who we understand, are trained in the aerial's operations.
- The available data does not support a need for two aerials to be operating in suburban communities outside of the City core. In our view, one aerial would be sufficient. We therefore recommend that the 75' aerial at Waters Station be maintained and that the 75' aerial at Chelmsford be surplus. Herein, our rationale is that of the two communities, Waters has at least one high-rise building whereas Chelmsford does not. Because of Waters proximity to the City core, an aerial situated at this location could readily respond to the core should it be required. The Chelmsford aerial should be replaced with a pumper (preferably one with a 5 person cab).
- Surplus the 55' telesquirt at Falconbridge Station: This 1987 telesquirt is near its end-of-life. In our opinion (and that of GSFs personnel), when the opportunity arises, it should be replaced with a pumper (preferably one with a 5 person cab).
- As discussed previously in Section 9.3, response standards and protocols should be amended to reflect the principles for effective fire suppression operations (i.e., that Fire suppression operations should not be impeded by artificial barriers or restrictions, and that the closest available and appropriate resource should be dispatched to the site of a fire / emergency incident). This should include identifying specific locations and occupancy types that will require the dispatch of an aerial as part of the initial apparatus sequence.

In our opinion, the above suggestions are in keeping with fire best practices, and they will continue to provide GSFS with a reasonable elevated master stream capability, while also providing opportunity to contain costs.

Pumpers and Tankers

Pumpers are generally considered to be the first response unit in a fire station.⁹ Fire vehicle manufacturers will either custom build an entire unit based on the customer's specifications / desired features, or they may incorporate an off-the-line commercial cab and chassis into the unit's construction. According to GSFS figures, a custom pumper costs about \$600,000 whereas a commercial pumper is about \$300,000.

A tanker's function is to shuttle water to the scene of an incident and operating in conjunction with other on-scene apparatus, to provide an on-scene water source through a large on-board tank. A tanker costs about \$200,000. A pumper/tanker, which is a hybrid of both vehicles, costs about \$400,000.

GSFS operates with 21 pumpers, 9 tankers and 2 recently purchased pumper/tankers, which are situated at two outlying, relatively low volume stations (Beaver Lake and Red Deer).

In keeping with generally accepted fire best practices, GSFS typically stations one pumper in each station and it strategically positions tankers and pumper/tankers in non-hydrant areas.

GSFS currently has 10 custom pumpers. The data with which we have been provided does not contain sufficient information to warrant continued replacement of custom pumpers with like units. In consideration of the existing and projected fire capital deficit and the price differential for a custom pumper (which is twice that of a commercial pumper), it is our opinion that end-of-life pumpers be replaced with commercial units, unless the purchase request is accompanied by a business case that clearly demonstrates the need for a custom vehicle.

It also is our opinion that for other relatively low volume stations that are situated in non-hydrant areas, GSFS should consider replacing end-of-life pumpers and tankers with the more economical combined pumper/tanker units.

Spare Pumpers and Tankers

Regular maintenance and testing requires that pumpers and tankers be out of service an average of six days a year. In addition there also are occasional apparatus breakdowns. For such purposes we suggest that GSFS should consider introducing several spare vehicles.

For such purposes, a ratio of 1 spare for every 6 vehicles would be consistent with industry best practices. Under the preferred 18 station arrangement 5 pumpers, 3 tankers and a telesquirt will be designated as surplus. Several of these vehicles could potentially be retained to occasionally serve as a spare.

Rescue Units

GSFS operates with 7 Rescue units. The units, described below, are designated as either "Heavy Rescue" or "Light Rescue" in terms of the equipment and resources that they carry.

A Heavy Rescue unit situated at Main station is equipped with auto extrication equipment including airbag systems and vehicle stabilization (cribbing), scene lighting and additional air cylinders. This unit augments on-scene staffing at emergency calls in the City core.

⁹ They may be referred to as quads because they can provide pump, water, hose and ground ladders.

Light Rescue units are stationed outside of the core at Whitefish, Dowling, Capreol and Garson. These units provide transport for additional resources. Their on-board equipment includes vehicle stabilization (cribbing) materials. GSFS manages the size of its Light Rescue fleet by including rescue equipment on board several of the pumpers.

A former heavy rescue unit stationed at Azilda serves as a reserve rescue unit, which also is used to pull a fire boat. A Light Rescue unit located at Main Station serves as a dedicated resource for the water/ice rescue team.

Having reviewed the available data, we offer the following opinions / recommendations:

- So as to further manage the size of its Light Rescue fleet, GSFS should consider placing additional rescue equipment onboard pumpers.
- If this is not feasible, then GSFS should develop a specific dispatch protocol (and CAD recommend) for Light Rescue units so as to avoid paging-out the entire station.
- If a Light Rescue unit is being used primarily to transport personnel, then GSFS should give consideration to the acquisition of a vehicle that would be more appropriate to this function.
- There appears to be an air cylinder transportation issue. Light Rescue units should be used to resolve this issue.
- Rescue unit resources are integral to GSFS' overall response capability. Therefore, their use should not be constrained by artificially transposed response boundaries.
- GSFS personnel have suggested that additional Light Rescue units are needed. We have considered this suggestion but are unable to find any data to support this proposal.

Bush Trucks

GSFS operates with 11 Bush Trucks situated at New Sudbury, Lively, Whitefish, Chelmsford, Dowling, Levack, Val Therese, Capreol, Garson, Skead and Coniston stations.

Fire Services similar to GSFS that serve large predominately rural areas containing natural forests, lakes, numerous small settlements and cottages situated in remote areas or on lakefronts, also include Bush Trucks as an integral component of their fleets. They are used primarily as support units to the first-in apparatus, generally being dispatched upon request and serving either to combat fires in off-road areas (in bush or brush) and/or to transport firefighter personnel.

Having reviewed the available data, we offer the following opinion: that in lieu of the existing 11 Bush Trucks, GSFS should give consideration to a fewer number that would be positioned strategically to respond without boundary constraints. One such scenario is to reduce to 5 bush trucks that would operate from the following stations: Whitefish, Chelmsford, Val Therese, Coniston and Skead – the rationale being as discussed below.

These stations are neither concentrated in the City core nor are they situated far afield in outlying rural and remote communities. Rather they, and the apparatus housed therein, are distributed centrally throughout the greater City.

The bush trucks operating from these locations would not be constrained by service area or other artificially imposed boundaries. They would serve the local area adjacent to their base, and when required travel either into the City core or to rural and remote areas of the City.

The scenario described above is not unlike the situation in Ottawa, where the Fire service is responsible for a geographic area of some 2,790 sq kms, consisting of an urban core surrounded by a suburban / rural area. The Fire service operates from 45 stations with a relatively large fleet, within which there are 7 brush vehicles (4 brush trucks, 1 brush tanker and 2 brush ATV).

In deciding upon such a scenario it will be important to establish a response protocol clearly defining the role and use of a bush truck within the context of the fleet vehicle mix.

Volunteer Transport

Our review also reveals the following to be an ongoing challenge: the ability to transport volunteer personnel to the scene of an incident. Currently, volunteers must resort to multiple vehicles for transport.

To mitigate this issue, we suggest that GSFS should consider adopting a policy of purchasing only vehicles capable of seating at least 5 personnel. Relative to a vehicle's purchase price the cost differential is generally not significant.

9.7 Specialty Services

Water / Ice Rescue

As outlined in the Establishing and Regulating by-law, currently all GSFS firefighters are trained to perform "Shore Based" rescue for water and/or ice incidents. Main, Azilda and Skead stations are resourced with firefighters and marine equipment to perform "In Water" rescue. Main station has resources capable of performing "Ice/Cold Water and Swift Water" rescue. Whitefish Station houses a fourteen foot boat and trailer and Chelmsford Station houses a Zodiac boat and trailer but are not designated as "in water" rescue stations.

Having reviewed the available data, we offer the following opinions / suggestions:

- GSFS' approach to train all of its firefighters to perform "Shore Based" rescue for water and/or ice incidents appears reasonable, given the size of the greater City and its make up which includes natural forests, lakes and numerous small settlements and cottages situated in remote areas or on lakefronts.
- For the reason set out above, it is reasonable that 3 stations are resourced with firefighters and equipment to perform "In Water" rescue. Main station is a practical site for both "In Water" and "Ice/Cold Water and Swift Water" rescue, given Ramsey Lake and the recreational activities in the area.
- Skead was selected for "In Water" rescue at the request of the airport authority / federal government but it too may serve local boating activities. It is unclear why Azilda was selected for this role. Potentially, this is something that GSFS may wish to review / reaffirm
- Why a boat and trailer is stationed at Whitefish and Chelmsford stations is also unclear as neither station is resourced to perform "In Water" rescue. Our suggestion is that GSFS take a closer look at this and subsequently, either relocate the equipment to a more appropriate location or train the station resources in this function (and amend the by-law to reflect the additional services at these stations).

Trench Rescue

The need for a Trench Rescue program has been identified as a requirement for Water/Wastewater as part of an Occupational Health and Safety requirement. The municipal budget includes

Water/Wastewater funding to support the start-up of such a program by which GSFS would deliver the services to city departments, utilities, industrial sector and the public. The program would also promote risk avoidance. We suggest that the requirements for such a program need to be defined and taken to City Council for approval.

Hazmat Rescue

Currently all GSFS firefighters are trained to the Awareness Level for hazmat response. They also are capable of providing decontamination for those who may have come in contact with harmful substances. Some initial response equipment is carried on frontline apparatus and a hazmat unit with response trailer is housed at Long Lake Station.

GSFS personnel recommend continuing at the awareness plus decontamination across the City. They also recommend relocating the hazmat rescue unit to Val Therese Station. The rationale for this is unclear, since the career service at Val Therese would be out of service completely if one of the two existing crew were called upon to transport the hazmat unit whereas, Long Lake which is staffed with a crew of 4 career firefighters could still respond with a three person crew. In our opinion, this is an operational issue that needs to be clearly thought through before a decision is taken.

Currently, there are partnership agreements in place with Vale, Xstrata and the railways to complement hazardous materials incident responses of a more significant nature. To complement these arrangements GSFS may wish to consider introducing an "Operations" level hazmat response capability at specific stations where there is a demonstrated need based on local risk. These specific stations could also respond to other designated areas of the city when needed.

Sudbury Airport

City resources are carrying on with their assessments-in-progress including examination of specialty services and aid agreements with the airport authority.

10. 24-Hour Shift Rotation

In 2012 the City of Greater Sudbury and the Sudbury Professional Firefighters Association (IAFF Local 527) entered into a Letter of Understanding, agreeing to trial a 24-hour work schedule for the for the Fire Suppression Division. This decision is consistent with similar initiatives taken by numerous other Ontario fire services.

The trial (or pilot) commenced on January 1, 2013 and is expected to run for two years to December 31, 2014, unless extended by mutual agreement.

Previously, firefighters worked a shift rotation consisting of a 10 hour day and a 14 hour night. The shift rotation averaged out at a 42-hour work week over a twenty-eight day cycle, or 14 shifts a month (168 shifts a year).

In the current 24-hour shift rotation, firefighters continue to work an average 42-hour work week over a twenty-eight day cycle; however, as shown by Exhibit 10.1, this is accomplished by working 7 shifts a month (84 shifts a year), each one being 24 hours in duration.

Exhibit 10.1: 24-Hour Shift Rotation

Mon	Tues	Wed	Thurs	Fri	Sat	Sun
24 Hr	Off	Off	24 Hr	Off	Off	Off
Off	Off	Off	Off	24 Hr	Off	24 Hr
Off	Off	24 Hr	Off	Off	24 Hr	Off
Off	24 Hr	Off	Off	Off	Off	Off

The terms governing the agreement specify that the 24-hour shift rotation will be evaluated throughout the trial period, using the parameters listed below as the primary performance measures:

- Operational needs of the Fire Services Division
- Divisional effectiveness
- Overall attendance / sick time (hours and cost)
- Overtime (hours and cost)
- WSIB lost time injuries and number of claims
- WSIB lost time (hours and cost)
- Ability to call back staff during emergencies
- Hours of training and completion of assigned training
- Crew involvement in departmental programs
- Health and Wellness of employees
- Morale
- Employer-Association relationship.

In the context of the Comprehensive Fire Services Review, IBI Group was asked to comment on the current 24-hour shift rotation arrangement. Our comments are set out below.

For firefighters the 24-hour shift rotation trial, underway for the past 9 months, has been a benefit resulting in more personal time at home with family and for activities other than firefighting; whereas, as discussed below, for the Fire Services Division, the 24-hour shift rotation trial has been a challenge creating a number of issues that in particular are adversely impacting the Fire Training Section.

A Fire Training Officer works 218 shifts a year. We are advised that as a result of the 24-hour shift rotation, which translates to 84 shifts a year, it has become almost impossible to recruit Fire Trainers from Fire Suppression – this despite a 15% salary increase i.e., the difference in pay between 1st class firefighter and a Fire Training Officer. We also are advised that the existing 2 Fire Training Officers are considering a resumption of duties in Fire Suppression.

For a 10/14 shift arrangement, the training syllabus suggests that firefighters should allocate 2 hours per shift to training. By adhering to this practice a firefighter would readily complete each year's annual requirements. By extension, in a 24-hour shift rotation (i.e., a rotation involving one-half as many shifts), one would suggest that an average of 4 hours per shift would need to be allocated to training.

Drawing from the experience of other Fire services, it is unlikely that GSFS firefighters are following such a practice. For this to take effect, one would require some form of active oversight, testing and the use of a documented quality management program / process.

Peer Fire services also report that in their organizations:

- Sick time decreased in the first year of the trial and increased in the second year. In tandem, WSIB increased.
- More could be achieved during training tower sessions because the crews could stay longer.
- There has been some disconnect between supervisors and firefighters due to less frequent interaction.
- There have been some issues with respect to station chores e.g., truck checks, station cleanliness and maintenance.

In IBI Group's opinion, going forward GSFS may wish to give consideration to alternate shift schedules e.g., a 12-hour shift that may align Fire and EMS. This in particular, is something that merits consideration if, as is the case in GSFS, there is a desire to consolidate to an integrated Fire and EMS service.

Also, solutions are needed for keeping firefighters active and productive over a 24-hour shift. GSFS may wish to consider a 24-hour work schedule that assigns estimated times for different programs and routine activities, i.e.: in-service training, fire prevention inspection activities, public education, pre-incident planning, apparatus maintenance, fire station maintenance and break periods.

11. Fire Prevention & Public Education

Fire prevention and early detection through the use of smoke alarms is the first of three lines of fire defence. Public safety education, including home fire escape planning, is the second line of defence, and the third (should the first two lines of defence falter) is fire suppression services by trained firefighters.

The Provincial Fire Protection and Prevention Act, 1997 requires every Ontario municipality to establish a fire prevention and inspection program that reflects the needs of the community. Greater Sudbury has established such a program. Authority for the program rests within the City's Establishing and Regulating Fire By-law (By-law #2012-146).

The By-law defines the mandate of the Fire Service to be as follows: "To provide fire protection services and emergency response, 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". The By-law includes the following components specific to Fire Prevention: Inspection; Fire regulation enforcement; Investigation-regulatory compliance; Investigation-origin and cause; Plan review and permitting-fire regulation only; Public fire extinguisher training; Youth arson prevention training; and Public awareness and education.

Further, within the By-law "Fire Protection Services" is defined to mean Core Services and Specialty Rescue Services which includes fire suppression, fire prevention, fire safety education, communications and support services, training of persons involved in the provision of fire protection services, rescue and emergency services and the delivery of all those services as directed by Council.

The Office of the Ontario Fire Marshal (OFM) requires each municipality to conduct an annual self-assessment of their fire prevention related activities. The annual compliance (self-assessment) report is to include:

- Simplified Risk Assessment update, which would describe changes in factors that may have an impact on fire risk and include a program evaluation.
- Smoke alarm program update, which would describe the number of smoke alarms distributed and the number of smoke alarms inspected, including violations and resulting actions.
- Fire safety education update, which would describe the quantity and type of public education material distributed, as well as public education initiatives and events.
- Ontario Fire Code inspections upon complaint or request update, which would describe the number of inspections conducted upon complaint or request and resulting actions, as well as routine inspections and resulting actions.

2011 Review

In 2011 the Chief of the Emergency Services department undertook a high level strategic review of the Department, including the Fire Prevention function. Presented below are the findings and recommendations of that review as they pertain to the Fire Prevention function:

"Fire Prevention services are adversely impacted by a number of factors, including staffing shortages; pending retirement of the Chief Fire Prevention Officer; limited clerical support; lack of internal processes and technological supports for such items as scheduling work, records management, time management, etc; and lack of defined processes beyond initial inspections e.g., for follow up inspections, work audits and code enforcement.

As a result Fire Prevention operates primarily in a reactive mode responding to concerns as they arise. In this mode the approach to Fire Prevention varies across the Greater City with less emphasis in areas outside the City core. Also, the inspection process may occasionally go awry i.e., where work order inspections may be delayed or forgotten or where the same structure may be inspected repeatedly, each time exhibiting the same deficiencies. In this, several questions have been raised, including questions regarding potential risks and regulatory compliance.

1. Emergency Services Department should ask the Office of the Fire Marshal to conduct an external review of the current Fire Prevention program to satisfy any concerns pertaining to potential risks and regulatory compliance.
2. Current staffing shortages need to be resolved. Additional resource requirements that will enable a more pro-active approach to Fire Prevention activities also need to be investigated - including clerical support, external assistance, requisite knowledge and technical training, etc.
3. Fire Prevention needs to develop a pro-active building inspection strategy that clearly defines process, expectations and penalties. Concurrently, a work plan that sets out a pro-active inspection schedule and key milestones needs to be developed. The work plan should give priority to assembly, care facilities and large business / mercantile buildings.
4. The Service should review and update Fire Suppression staff's involvement in in-service programs pertaining to Fire Prevention (both career and volunteer) including potentially an expansion of their role, and need for additional training and quality oversight. Also, internal processes and technological support requirements need to be addressed, with particular emphasis on the acquisition of a records management system (RMS) suitable to the needs of Fire Prevention (in such terms as data collection and storage, remote access to complement inspections in the field and a link to Fire Suppression reporting requirements)."

2012 OFM Audit

On the strength of the above recommendations, the Chief of Emergency Services submitted a request for an external review to the Office of the Ontario Fire Marshal. The OFM review, which was completed in the spring of 2012, examined the Establishing and Regulating By-law; a Simplified Risk Assessment completed by GSFS staff; and practices and protocols pertaining to Fire inspection, investigations and public safety education.

The OFM review arrived at a number of conclusions, many of which are similar to the findings of the previous 2011 strategic review by the Chief of Emergency Services. In particular, it was concluded that:

- While GFFS is conducting activities that would be expected of a fire prevention and public education program, there are no clearly defined Fire Prevention program objectives, outcome expectations or formal work plan with defined timelines and milestones.
- The simplified fire risk assessment is out of date as it is based on the use of information that had not been updated in many years.
- The Fire Prevention section lacks a routine fire safety inspection program.

In consideration of such findings, the OFM presented GSFS with 25 recommendations that are intended to assist GSFS in meeting their responsibilities under Provincial regulation – the premise being, that by addressing these recommendations GSFS will improve the effectiveness and efficiency of the Fire Prevention and Public Education Section (FPPE); improve the safety of the public and front-line fire service personnel; and reduce the liability to the municipality.

The OFM recommendations include such actions as:

- Carry out a community risk assessment
- Prioritize building stock to develop an inspection program that targets extreme and high-risk occupancies
- Develop/update public education, fire safety inspection and investigation programs and services
- Review property files to ascertain all outstanding fire code violations or fire hazards
- Develop an evaluation process for public education activities and programs for specific occupancies and demographics
- Enforce municipal fire by-laws on a 24 hour basis.

In concert with the above, and notwithstanding the existing workload / staffing challenges, OFM recommended that GSFS should also review / update the standard operating policies relevant to the function of the FPPE section. This may also require the development of new procedures to ensure that program goals and objectives are achieved.

In September 2012, the Chief of Emergency Services presented Council with a going forward work plan and timetable by which GSFS propose to address the OFM recommendations. It's our understanding that, with Council's endorsement the work is underway, and that the OFM is providing periodic advice and assistance.

FPPE Staffing

FPPE operates with an approved staff complement of 8 officers and 1 clerical position. The officers are: Chief Fire Prevention Officer, 5 Fire Prevention Officers and 2 Public Safety Officers.

It is our understanding that at present the FPPE section is operating with a full staff complement. There were a number of vacancies in 2011; however, they all have been filled. Also, a new incumbent has filled an additional vacancy created by the retirement of the former Chief Fire Prevention Officer.

As demonstrated by our survey of peer fire departments discussed in Section 4 of this report, Best Practices would suggest that there be one FPPE officer for every 20,000 residents. Given Greater Sudbury's population of about 160,000 persons, one may conclude that the approved FPPE complement of 8 officers is consistent with industry Best Practices.

This notwithstanding, time and resource estimates to complete FPPE tasks continue to be grossly underestimated and FPPE personnel continue to be overwhelmed by the volume of work.

In our opinion the reason for this is that new incumbents have little training in the FPPE function and they require considerable mentoring and oversight not only in the technical requirements but also in the various work processes. Also, given the present workload, seasoned FPPE Officers have little time available to train / mentor new incumbents. The City's geographic scale of some 3,000+ sq kms is another contributing factor.

The solution to this situation may be that, for a temporary period, GSFS may have to secure additional staff to deal with the work in hand, while in tandem providing the resident incumbents with the requisite training. For this to take effect there are several potential options (as listed below). In this context the GSFS collective agreement will need to be given consideration:

- External temporary hire(s) or contracting with retirees having the requisite FPPE experience
- Possibly by authorizing increased overtime for existing FPPE staff
- Having suppression staff (career and volunteer) take on a larger / more active role in Fire inspections, prevention and education activities

- Potentially, seconding seasoned FPPE personnel from other Fire departments; this, for a period of a few months to provide assistance / complete specifically defined tasks.

Providing incumbents with the requisite FPPE training also presents a significant challenge. No single generic solution will be applicable to all incumbents. FPPE training needs to be appropriately tailored each incumbent's requirements, giving consideration to a host of possible approaches, including, on-the-job training, mentoring, and Ontario Fire College or Community College courses. Another possibility, is to introduce an exchange program where incumbents requiring training get their experience working temporarily for another Fire department while a seasoned FPPE officer from the other Fire department is seconded to provide GSFS with temporary assistance as described above.

Building Inspection Strategy

Both the 2011 review and the OFM Audit have recommended that FPPE needs to develop a proactive building inspection strategy and prioritized work plan based on occupancy category and risk, giving priority to assembly, care facilities and large business / mercantile buildings..

We are advised that GSFS is currently addressing this recommendation as part of a Comprehensive Fire Risk Assessment that is underway and that a 5 year agreement with the Building Department to perform the plans review function has been established.

The work in process includes a review of Fire Prevention files to ascertain which buildings require an inspection, or follow up based on a past inspection, and a building stock inventory, giving initial consideration to extreme and high-risk occupancies.

The work also includes development of a strategy to deal with potential fire risks from a Fire Safety Standards and Code Enforcement perspective. The strategy will include a pre-fire inspection by suppression firefighters. Public education will also play a significant role, thereby utilizing the three lines of defence to avert potential risks posed by the building, its contents or occupants.

As noted above FPPE personnel are overwhelmed by the current volume of work, and they would be hard pressed to successfully implement the proposed strategy described above, despite the OFM's participation in the process. For this reason, we again reiterate that the solution to this situation may be that, for a temporary period, GSFS may have to secure additional staff.

Public Safety Education

FPPA requires all municipalities to have a public education program with respect to fire safety. GSFS has successfully established a public education program that comprehensively addresses community residents, businesses and all age groups.

The program promotes information and public safety announcements (in both official Languages) pertaining to smoke alarm requirements, CO alarms and fire escape planning. The program includes basic components for school-age children (e.g., Learn Not to Burn and Risk Watch), which are delivered by teachers with the assistance of GSFS and components tailored to more mature audiences (e.g., NFPA's Older and Wiser).

The program successfully involves partnerships with local media, private industry and commercial outlets. The programs referenced require a great deal of commitment on the part of the supporting organizations due to their complexity and time requirements, and GSFS pro-active participation is needed to ensure their ongoing use and success.

Fire suppression crews (career and volunteer) promote the public education program by conducting voluntary home inspections, smoke alarm checks and school visits.

RMS System Requirements

The management of information and data has historically been an issue for FPPE and only since 2011 has there been a concerted effort to establish a credible approach to the development of a comprehensive data base for occupancy inventory and related inspections. This issue was revisited by the OFM as part of their external review. The OFM presented several recommendations requiring a more rigorous approach to file maintenance and record keeping, including acquisition of a robust Records Management System (RMS) to support the Section (and Departmental) needs.

There currently is an initiative underway to purchase and implement a new RMS for the Emergency Services Department. The Section eagerly awaits the new RMS to address their ongoing information management needs and requirements. The introduction of the new RMS will also have an influence on Section staff deployment and how the Section will carry out future work.

Suppression Staff's Involvement in FPPE Functions

Both the 2011 Strategic Review and a more recent review of Volunteer Firefighter Operations (discussed in Section 13 of this report) have recommended that there should be a greater role for suppression staff (career and volunteer) in inspection, prevention and education activities. Also, that internal processes and technological support requirements need to be addressed, with particular emphasis on the acquisition of a records management system (RMS) suitable to the needs of Fire Prevention.

Given the myriad of initiatives facing the FPPE Section, it is our opinion that greater emphasis should be placed on the role that suppression personnel play in alleviating some of the Section's workload in addition to promoting prevention and public fire safety education throughout the community. Having said this, one needs to be mindful of the ancillary requirements for training, resources and time.

It is recommended that the Chief Fire Prevention Officer should assess and report on the role of staff (career and volunteer) relevant to the department's FPPE requirements in terms of time allocation, program effectiveness, pre-incident planning, required training and enforcement requirements.

12. Firefighter Training

The mandate of the GSFS Fire Training Section is generally to develop, coordinate and deliver a training program that will provide firefighters (career and volunteers) with knowledge and skills necessary to safely operate fire services equipment, perform firefighting and respond to emergencies involving medical aid, rescue and hazardous materials operations.

The GSFS training program aligns to the Ontario Fire College's suggested firefighter training curriculum. The program is adjusted periodically to reflect changes in service demands, changes in fire service industry standards or governing regulations, technological advances, etc. While the Training programs are currently under review, a prime objective should be to align the programs to identified risks.

The training of today's firefighter starts by placing the onus of competence directly with the firefighter and their station officer, as there is no one better to recognize and / or identify any areas that require attention or to assist with preparation for additional capabilities. This process is instilled during recruit training.

To complement the on-shift training, the Training Section develops a schedule of topics for both the career and volunteer firefighters, delivered by the station officers, on-shift trainers or qualified trainer facilitators and generally extends over multiple years. The on-shift training is meant to develop and promote operational consistency across the fire suppression section. The expectation is that volunteers must attend at least 75% of their monthly four hour allotment while career firefighters will train four hours per shift when on duty.

The Training Section is responsible for providing the live burn fire training conducted at the LEL Tower as the fire crews attend their annual sessions. In support of their mandate, the Training Section ensures that any specific mandatory certifications for various emergency services are achieved.

While the Training Section produces documented scheduled training requirements, in our opinion it is difficult to determine: how the schedule translates into the required training hours for career or volunteer firefighters; how the quality or the retention of training is measured or ensured; if those accountable to deliver the training are actually being held accountable to ensure the training is being completed as required and that the training meets the Training Section's standards.

2011 Back to Basics Program

In 2011 the Training Section implemented a "Back to Basics" training program that is intended to ensure that all firefighters (career and volunteer) receive basic training, knowledge and skill sets necessary to ensure a safe and successful Fire response to emergency incidents. The program focuses predominately on firefighting and emergency response fundamentals e.g., fire attack, ventilation, forced entry, ladders, etc.

Challenges to the delivery of the "Back to Basics" training program were encountered from the outset. They include:

- Additional Training Officers needed: The work involved in meeting the needs of some 470 personnel, including 112 career fire fighters and 340 volunteers, operating out of 24 stations situated over 3,600 square kilometres quickly overwhelmed the Training Section complement, which at that time consisted of 3 officers (Chief Training Officer plus two subordinate officers); this, despite the assistance provided by station officers. The Chief Training Officer was of the

view that at least 2 additional Training Officers were needed. A 2011 review by IBI Group affirmed the Chief Training Officer's opinion.¹⁰

- Additional clerical support needed: The Training Section shared a clerical position with others. Based on workload (clerical, data entry, scheduling, record keeping, etc.) the Chief Training Officer suggested a need for at least 1 dedicated FTE. IBI Group affirmed the Chief Training Officer's opinion.
- Comprehensive records management system (RMS) needed: Records were principally paper-based or maintained using rudimentary excel spreadsheets. It was generally acknowledged that if there is a desire to maintain comprehensive and current documentation on each firefighter's progress through the training curriculum, and a capability to readily access / retrieve that information when needed, then an RMS system would have to be purchased.

The 2011 review by IBI Group also recommended that:

- An on-shift Platoon Training program should be re-established. Under this program 4 career firefighters (1 for each shift) would be designated as on-shift platoon trainers who, when time permits, would provide career station officers and firefighters with additional training support.
- Management of the Emergency Services department should investigate feasibility of consolidating Fire and EMS Operations Support, which among other items would include aspects of the respective training programs where the goals and objectives are common to both Fire and EMS or where there is an opportunity to share training resources.
- The Emergency Services department should also investigate the future of the training tower located at CLELC, including services, programs and opportunities for partnering with potential external users and community groups.

Peer Comparison

The Training Section of the GSFS is currently staffed with 3 officers - a Chief Training Officer and two subordinate officers. This staffing level is consistent with the average among other Ontario fire services that we surveyed (refer to previous Exhibit 4.4).

This notwithstanding, it is our opinion that the average among peers does not properly account for the unique geographic scale of GSFS i.e., 24 stations situated over 3,600 square kilometres. Therefore, in addition to looking at the peer average we also have taken into consideration the following additional information, for peers that exhibit somewhat similar geography:

- Kingston, a composite fire service with 10 stations, operates with 4 Training Officers
- Oakville with 7 stations and Markham with 9 stations, both operate with 5 Training Officers
- London with 14 stations operates with 6 Training Officers
- Hamilton, a composite fire service with 26 stations, operates with 7 Training Officers.

This additional information supports the opinion that the GSFS Chief Training Officer (CTO) has been expressing since 2011, as previously affirmed by IBI Group, that in the GSFS, at least 2 additional Training Officers are needed.

Current / Ongoing Training Challenges

In anticipation of being allocated 2 additional Training Officers (as recommended by the 2011 review), the CTO undertook development of the following:

¹⁰ "Review of Greater Sudbury Emergency Services", IBI Group, January 2012.

- 5-year work plan for Training Section staff
- 5-year program and topic schedule for the Training Section
- 5-year curriculum for Volunteer firefighters
- Volunteer Training activity reporting framework.

Despite expectations to the contrary, the Training Section was not allocated 2 additional Training Officers, thus impeding the advancement of the above initiatives.

The Emergency Services Department is in the process of tendering for a comprehensive RMS. It is anticipated that a new system will be purchased in the first quarter of 2014, and that it will be fully implemented by year's end 2014.

The Emergency Services department work plan for 2014 includes a proposal to undertake a study to investigate the feasibility of consolidating Fire and EMS operations support, including aspects of the respective training programs where the goals and objectives are common to both Fire and EMS or where there is an opportunity to share training resources.

Responsibility for making increased use of the training tower located at CLELC has been delegated to the Fire Training section. Given the staffing and workload constraints (discussed above) the Section is unable to actively pursue opportunities for partnering with potential external users and community groups.

Additional current and ongoing training challenges include:

- Intake and ongoing training for new firefighter recruits
- Training needs in support of a new radio system that is being implemented
- Transition of the existing training curriculum from OFM to NFPA training standards specific to the professional qualifications for firefighters
- Work in support of a more active FPPE participation by Fire suppression staff (both career and volunteer)
- Present workload constraints, which severely restrict the Training Officers capabilities to oversee (and support) the training activities by station officers, on-shift platoon trainers and volunteer trainer facilitators
- Absence of a documented quality management program by which to ascertain (or attest to) individual firefighter proficiency in the application of knowledge, skills and training, so as to ensure a safe and successful Fire response to emergency incidents.

As a result of the above, it has been difficult for the Chief Training Officer to perform the duties of the position.

Recommendations

The staffing needs of the Training Section need to be addressed as a priority initiative, to ensure the ongoing responsibilities of the Section and that firefighters (career and volunteer) are receiving the requisite orientation, training and skills enhancement support, to ensure a safe and successful Fire response to emergency incidents.

In conjunction with the above there needs to be a strategy for addressing the ancillary needs of any new Training Officer hires i.e., scheduling, workspace, resources, technology and vehicle needs.

The Training Section should consider implementing a documented quality management program by which to ensure that the training curriculum is appropriate to the needs of the service as defined by the Chief Training Officer in consultation with senior fire management, and to track firefighter training activity progress and proficiency.

13. Volunteer Firefighter Operations

In the context of this Comprehensive Fire Services Review we were specifically asked to examine the volunteer firefighter operations, including:

- Role of volunteer firefighters
- Volunteer recruitment and retention
- Volunteer training
- Volunteer emergency response operations
- Volunteer / career organizational culture.

Our investigation included focus group consultations with GSFS volunteers of assorted rank and district representation, and a survey of other Ontario Fire services that either are entirely volunteer operations or composite operations involving volunteers working in tandem with career firefighters. The services surveyed include Kawartha Lakes, Chatham-Kent, Caledon, Burlington, Halton Hills, Ottawa and Halifax.

The findings and recommendations arising from this portion of the investigation are discussed below.

13.1 Role of the Volunteer Firefighter

Intervention

GSFS employs about 340 volunteer firefighters who, operating from 20 fire stations situated in suburban communities / rural areas outside of the City core (including the Val Therese composite station), respond to over 1,100 fire and emergency rescue incidents a year.

GSFS volunteers are trained to provide fire suppression services, hazardous materials response (awareness level), “low angle” rope rescue and shore based water rescue. Select volunteer fire stations (not all) also are trained in wildland firefighting, tanker shuttle, aerial ladder operations, vehicle extrication, boat based water rescue and emergency medical assistance.

Our survey indicates that the role of GSFS volunteers is similar to that of volunteers in other organizations; albeit in some jurisdictions volunteers are given a relatively higher level of training based on local circumstances and needs (e.g., in specialty rescue and emergency medical support).

From our various interactions with GSFS volunteers, it is our opinion that they are a dedicated, public service minded residents who, in the interest of public safety, are willing to assume additional fire services responsibilities as and where needed.

It is recommended that GSFS should consider increasing volunteer firefighter training and participation in a broader range of emergency response services based on local needs, and volunteer and equipment availability. This may include emergency response services such as vehicle extrication, water rescue and emergency medical response.

Fire Prevention / Public Education

At GSFS the volunteers’ annual participation in fire prevention and public education activities is budgeted at 80 hours per station for “Home Awareness” activities and 100 hours of public relations activities. In comparison, volunteers working at peer services play a relatively larger role.

Given the Ontario Fire Marshal's recent audit, it is IBI Group's opinion that all fire suppression personnel, including the volunteers, should be playing a greater role in fire prevention and public education activities. With additional training, volunteer firefighters could also assume specific inspection duties that would complement the Fire Prevention Division inspection, enforcement and public education duties.

It is recommended that the Chief Fire Prevention Officer should assess and report on the role of the volunteer firefighters relevant to the department's Fire Prevention and Public Education requirements in terms of time allocation, program effectiveness, pre-incident planning, required training and enforcement requirements.

13.2 Volunteer Recruitment & Retention

GSFS experiences an annual turnover in the number of volunteer firefighters of about 15%. Focus group discussions with GSFS volunteer firefighters indicates that the relatively rapid turnover in volunteers is attributed to factors such as: an aging volunteer force, volunteers underestimating the actual time commitment, volunteers losing interest, employment related constraints and cultural issues within the GSFS organization.

Peer Fire departments report turnover rates ranging from 10% to 30%. They also report similar reasons for volunteer firefighter turnover.

GSFS undertakes a recruitment process for volunteers annually. The number of recruits per session ranges from 30 to 50 volunteers. Applicants are expected to possess a Grade 12 education, be at least 18 years of age, be physically fit, hold a valid Class 'G' driver's license and have access to own transportation. Having a First Aid Certificate or training in Cardio Pulmonary Resuscitation (CPR) are considered additional assets.

Peer Fire departments generally follow a volunteer recruitment process similar to that of CGS. Among some of the peers, the process may be undertaken as frequently as 2 to 3 times a year depending on needs. Several departments conduct targeted recruitment campaigns in an attempt to recruit applicants that are available in specific geographic locations and during the daytime hours.

In the case of GSFS the recruitment process and retention strategies have not been reviewed for some time. In this regard, the GSFS volunteers and peer fire services with whom we consulted, offered a number of insights and suggestions. These are discussed below under the following headings: Employment Orientation and Recognition; Recruit Training; Remuneration; Clothing and Equipment; and Ongoing Retention Efforts.

Employment Orientation and Recognition

The annual volunteer recruitment process, without a targeted focus, continues to select applicants who predictably will leave within a year or two. There is little in the way of a volunteer orientation process that would instil the department's mission or values and that would prepare new recruits for what they can expect in terms of role, time commitment, etc.

Many of the peers surveyed have a documented orientation process to ensure the appropriate integration of new volunteer recruits from the outset. The process endeavours to act on every opportunity to integrate career and volunteer firefighter activities. Many also have recognition programs and several either pay for volunteer recruit training or they reimburse the recruits following satisfactory completion of the training program. GSFS does not presently have either such program in place.

It is recommended that GSFS should review and adjust the volunteer recruitment process to meet current and ongoing needs. This should include a best practices review of recruitment and retention

strategies used by peers. It should also include targeted recruitment to recruit applicants for specific geographic locations and hours.

In conjunction with the above, GSFS should consider introducing an orientation component intended to instil volunteer recruits with the service's mission and values at the outset, and a recognition program that recognizes volunteer achievements throughout recruitment and training, at career milestones, for special services that the volunteer carries out (i.e., off-duty rescue, fundraising, etc.). Such programs should align with similar corporate initiatives.

In addition, GSFS volunteers should be eligible to apply for career opportunities after a minimum of five years' experience. Also, career firefighters be encouraged to serve as volunteer firefighters in their respective communities.

Recruit Training

Prior to 2012 the GSFS volunteer recruit training session was 40 hours in duration. Currently it is a 24-hour program scheduled over a 4-hour evening followed by two 10-hour day long sessions. In comparison, among peer organizations, volunteer recruit training ranges from 140 to 250 hours in duration and in GSFS, training for career firefighter recruits is 5 weeks in duration.

The volunteer recruit training program is delivered by Fire Training Division staff and volunteer trainers. The current program is based on the Firefighter Curriculum and the Ontario Fire Service Firefighter Standards, Volunteer Firefighter Module "A" and is designed to develop basic firefighting skills.

At the conclusion of the intake training period new recruits are assigned to their respective stations at which time the station officers play a lead role in assessing their skill levels and in determining what additional items need to be addressed as the recruit moves through the probationary period and prepares to take on a broad range of emergency response duties.

GSFS volunteers with whom we consulted were critical of the time reduction in the volunteer recruit training program. Their view is that the material covered in those lost hours contributed significantly to the recruit's early sense of confidence.

It is recommended that GSFS consider reviewing and adjusting the volunteer recruit training program to ensure clearly defined objectives and learning outcomes, and that key elements are part of the initial instruction and/or in-station training. A testing and/or evaluation component should be introduced as a means to ensure acceptable volunteer recruit understanding / performance.

Remuneration

During our consultations with GSFS volunteers, it became apparent that money is not a driving factor in most cases, but rather there is an issue vis-à-vis fairness. There was considerable discussion in regard to what the volunteers perceive to be a constant short-changing due predominately to their status as volunteers. The following is an example of one such item: that career firefighter recruits are paid during their initial training, whereas volunteer recruits are not paid. Volunteers also are not paid for any expenses associated with recruit training.

It is recommended that GSFS consider paying volunteer recruits upon successful completion of the recruit training program, as is the practice pertaining to career firefighter recruits.

Clothing and Equipment

This is an area where the treatment of volunteer and career firefighters varies significantly. Volunteer firefighter recruits receive a mix of new and used protective gear / equipment and no

station wear for 18 months, whereas career firefighter recruits receive new gear / equipment from the outset.

Our survey of peer Best Practices into outfitting would support a goal wherein both career and volunteer firefighters should be treated equally. Herein the argument being that it would contribute to a single team culture and have a direct bearing on the retention of the volunteers.

We recommend that GSFS should consider a policy that would treat volunteer and career firefighters equally as it relates to the provision of station wear, department identification and protective clothing. It should also develop a strategy to address temporary clothing and equipment issues encountered during recruitment/employment, such as; improper fitting gear/clothing, quality of used bunker gear, items not immediately available, etc.

Ongoing Retention Efforts

GSFS has recently introduced an “exit” interview process in an attempt to identify the primary reasons for volunteer firefighter turnover. This approach is consistent with those taken by several peer Fire departments that not only have made concerted efforts in this regard but also have seen positive results arising from those efforts.

To date the GSFS process has had limited success; albeit, it has reaffirmed that the problem stems from various factors, including volunteers underestimating the actual time commitment, volunteers losing interest, employment related constraints and cultural issues within the GSFS organization which, in addition to volunteer firefighters includes career firefighters.

In our view, and those of the volunteers with whom we consulted, the adverse affects of cultural differences should not be underestimated. Rather, as evidenced by the fact that the volunteers opted to organize in February of 2013, this matter should be given particular attention.

We recommend that GSFS should consider introducing an annually “Climate Evaluation” whereby the division’s volunteers would be given an opportunity to express their views candidly and anonymously. Using this information and peer Best Practices GSFS should develop a strategy that promotes the retention of its volunteer firefighters.

13.3 Volunteer Training

Training was a common thread through the focus group discussions. In particular, many volunteers are concerned with the impact of the changes in recruit training, the state of readiness of the volunteer firefighter recruit, the ability of the training syllabus to accommodate their training needs, differentials in the training of volunteer and career firefighters, and the lack of standardized training resources across the department. The volunteers feel the department should be making better use of the existing trainer facilitators and they would not support 24 hour training officers.

The Training Division has produced a 5-year training curriculum for the volunteers with five topics to be covered in this calendar year. There also are a number of mandatory training areas that must be achieved as well.

The volunteer training program requires two sessions per month with the volunteer Captains performing the training duties. Remuneration is two hours per session, total of four hours per month. Some stations conduct weekly sessions to accommodate as many as possible but still only get paid for two sessions.

Volunteer firefighters are expected to attend 70% of scheduled training activities, however, a review in 2012 indicates that many volunteers are not achieving their target attendance. One hundred and twenty-seven (127) volunteer firefighters have attended less than 70% of their scheduled training

sessions. Out of the 127 volunteer firefighters, 72 have attended less than 50% of their scheduled training sessions.

Peer departments have similar training with the best practices resulting in the same level of training for volunteers as career firefighters because of identical job performance requirements. The programs may have different completion targets due to volunteer availability but their end goal is consistent.

We recommend that GSFS should consider developing an ongoing evaluation process to assess the quality and effectiveness of the Training Program against the curriculum being used. They should investigate / take advantage of opportunities to combine volunteer and career training, to promote unity in operations and reinforce the “one department” philosophy. In addition, the volunteers should be surveyed to determine their level of satisfaction with the Training Program and the department should consider adding an additional 2 hours per month to the existing 4 hours for each volunteer.

13.4 Volunteer Emergency Response Operations

Standards / Targets

At the present time there are no response standards / targets in place for the volunteer fire operations. The Communications Centre monitors the page-out and assembly of the volunteers to determine whether or not to re-page or call out additional resources.

Several peer departments surveyed have established standards and/or targets based on NFPA 1720 for volunteers which suggests; time for the dispatch process, established assembly/turnout times, response times and on-scene staffing targets.

Although there is no legislative requirement of what performance measure or standard to meet, municipalities are tasked with setting the service level that meets the needs and financial capabilities of their municipality.

We recommend that GSFS should establish and strive to achieve response standards/targets for the Volunteer Fire Operations based on NFPA 1720 and consider incorporating into an internal operating policy.

Assembly / Turnout

Currently there are a number of concerns pertaining to the assembly and turnout of the volunteers when paged out for an emergency. Several stations experience low daytime turnout that results in a re-page or paging out another station(s).

To date, little has been done to actually assess the assembly times to determine what is realistic in each area, based on the volunteer responding from their residence or place of employment.

Another challenge is actually knowing who and how many volunteers are responding. Currently, the only means of reporting this is over the radio in the station when someone arrives and reports the status to dispatch. The current data is somewhat suspect in its accuracy which makes it more difficult to identify realistic assembly times.

The best practices offered by peer departments support the use of tracking software tools to better determine assembly/turnout requirements and accurate data provided through RMS links for further analysis and any necessary follow-up.

We recommend that GSFS should implement tracking software solutions and monitor results in order to capitalize on the software's ability to compliment the assembly/turnout process. GSFS should also designate a communications liaison to work with the Police Services Communications Division and the RMS Project Team to ensure that dispatch and response data can be used to accurately reflect the assembly/turnout times.

Volunteer Deployment Models

Currently, GSFS volunteers are paged out according to the CAD recommends with the system having the ability to identify additional resources as required. There also are "Captain's Calls" which only require specific individuals for pre-determined responses to eliminate the need for paging out everyone and there are seasonal stand-by duties at specific stations. For emergency calls in the former Valley East, the career crew based at Val Therese (Station #16) is dispatched regularly into the adjacent volunteer areas.

Deployment model options/variations identified by peer department surveys include: utilize training and fire prevention staff (considered technicians) to complement response requirements; provide day-time only career support as needed; encourage off-duty career firefighters to serve as volunteers; establish dedicated groups for specific call types (CO, medical, auto -ex, etc.); and establish platoons for on-call rotation and availability.

In our view, assembly/turnout numbers need to be consistent before the department can consider alternate deployment models / variations. Peer interviews indicate that advance dialogue with the volunteers is a prerequisite to the successful evolution to any new model.

We recommend that GSPS should evaluate the results of the station rationalization review to see if they may present opportunities e.g., if one or more stations are being merged then potentially, the larger group could be configured to avoid the unnecessary costs of paging out more volunteers than needed.

In addition, GSFS should review the response data for the Valley East stations (Stations #15, 16 and 17) to assess the day/night volunteer assembly times and actual fire calls to consider whether the career compliment is required 24/7 or whether the crew could be reassigned elsewhere during low volume periods.

Rank Structure

The primary difference in the ranking structure between volunteers and career firefighters is the use of lieutenants versus acting captains, district chiefs (responsible for a designated volunteer district) versus platoon chiefs (responsible for the entire City during their shift) and that volunteers serve 18 months' probation and move to the rank of firefighter while the career move from probationary through classifications outlined in their collective agreement.

In the current situation, there's a perception that the volunteer fire operation "ranks" below that of the career and appears to be creating some concerns amongst the volunteers.

Best practices have departments striving for as much uniformity as possible in all areas of their operations; acting ranks, span of control for officers, adhering to accepted practices within the ICS (Incident Command system) and standardizing responses to specific emergencies.

We recommend that GSFS should consider similar ranking structure for career and volunteer and establish a pre-determined complement of officers for each station, regardless of career or volunteer. Consistent with career stations, in-station responsibilities for the volunteer captains should be implemented. Incident Command Training should reinforce the concept that the first officer on scene is the incident commander until relieved by a higher ranking officer or he/she

transfers command to another officer on scene and that when the CAD recommends are revised, the volunteer District Chiefs get dispatched to specific types of calls to eliminate self-dispatching.

It is also recommended that GSFS develop a job description for the District Chief's position and that specific sections pertain to the reporting requirements to the Platoon and Deputy Chiefs and also demonstrated leadership and the promotion of positive relationships with the career firefighters.

It is further recommended that an evaluation process for the Division's Chief Officers be developed and that management / leadership training be made available to promote and support succession planning.

13.5 Volunteer / Career Organizational Culture

The decision to include a section on the organizational culture of the GSFS was made due to the tension and dissension presently seen within the organization.

Based on volunteer focus group discussions, it would appear that the tension stems from the following perceived, and in some cases, real conflicts: Volunteer firefighters dedicating their time to fire services on behalf of their local community who feel that Divisional management and senior officers are not giving them the respect that is due. In the opinion of several volunteer firefighters, the City is not being served by one fire department, but rather two departments of which, one is staffed with career firefighters and the other with volunteers, where career firefighters are given preference and volunteer firefighters are treated as second class citizens (whose inputs are neither requested or valued).

In IBI Group's opinion, it does no good to debate the existence of such issues, what is important to note is that, to many volunteer fire fighters, these issues matter, as evidenced by the fact that the volunteers opted to organize in February of 2013. Moreover, these issues need to be addressed if the City is to continue to rely on a volunteer firefighter force for rural fire fighting services.

This point is all the more important in light of the current direction toward the integration of fire and emergency medical services.

Our research of other amalgamated fire departments shows that many have successfully addressed such issues by promoting a "One Fire Department" approach, joint career / volunteer activities, and pro-active recognition and reward of achievements.

We recommend that GSFS should develop a strategic statement supporting a "One Fire Department" approach, including mission, vision and values that extend to both volunteer and career firefighter resources. It is further recommended that in conjunction with the City's Human Resources Department, GSFS should explore alternate means by which this may be implemented.

14. Fire Capital Management

GSFS operates with a fleet of about 100 vehicles including 4 aerials, 1 telesquirt, 21 pumpers, 2 pumper/tankers, 9 tankers, 7 rescue trucks, 11 bush trucks and 3 boats. There also are several thousand pieces of equipment including various lengths of hoses, SCBA equipment, mobile radios and pagers, portable generators, extrication tools, bunker gear and water rescue gear.

Despite GSFS' best efforts, the service operates with some vehicles and equipment that exceed (no longer comply) to industry standards for fleet and equipment useful life. The following are some of the older vehicles in the fleet: 1986 and 1987 Ford pumpers, 1987 Ford Telesquirt and a 1988 Freightliner tanker.

By applying generally accepted industry standards for the useful life of fire fleet and equipment, we have estimated the life cycle replacement cost of the present fleet and equipment inventory. In 2012 the GSFS capital requirement for fleet and equipment replacement amounted to \$4.52 million; however, the service's capital spending envelope was only \$1.02 million. The projected capital replacement requirement for 2013 is \$4.16 million; however, the operating budget for 2013 includes only \$1.21 million for capital spending. These and other annual capital shortfalls are being carried into future years.



We anticipate that if current trends prevail, then the unfunded capital requirement will increase to over \$5 million by 2017, to \$10 million by 2022 and to \$15+ million by 2027. Under the proposed rationalization to 18 stations (from the current 24 stations) we anticipate that there will be a significant reduction in future unfunded capital requirements (as shown in Exhibit 8.10).

To close the unfunded capital gap entirely, an increase in capital spending will be required. In this, our estimates (as presented previously in Section 8) are as follows:

- For the existing 24 stations, capital spending needs to be increased to \$2.2 million a year to eradicate the unfunded capital within 15 years.
- Under the preferred 18 station arrangement, this could be achieved within the same time frame by increasing capital spending to \$1.9 million a year.
- Further, under the preferred 18 station arrangement, by increasing capital spending to \$2.0 million a year the unfunded capital could be eradicated within 10 years, and by increasing capital spending to \$2.3 million a year the unfunded capital could be eradicated within 5 years.

In Section 9 of this report we have offered several additional suggestions by which fleet and equipment capital may be better managed, e.g.:

- Surplus the 75' aerial at Chelmsford station and the 55' telesquirt at Falconbridge station
- Replace end-of-life custom pumpers with commercial units, unless the purchase request is accompanied by a business case that clearly demonstrates the need for a custom vehicle
- For relatively low volume fire stations that are situated in non-hydrant areas, GSFS should consider replacing end-of-life pumpers and tankers with more economical combined pumper/tanker units
- In lieu of the existing 11 Bush Trucks, GSFS should give consideration to a fewer number that would be positioned strategically to respond without boundary constraints
- As a means by which to manage vehicular requirements for firefighter transport, GSFS should consider a policy of purchasing only vehicles capable of seating at least 5 personnel.

City resources are carrying on with their assessments-in-progress including examination of facility capital improvement requirements.

Listed below are several additional observations and recommendations.

Assign accountability for Fire capital management to one position. Currently, the responsibility is apportioned to multiple positions and departments, and there is little if any coordination of activities, e.g.: Chief Fire Mechanical Officer is responsible for fleet; Deputy Fire Chief of Operations is responsible for day-to-day upkeep of facilities and communications equipment; responsibility for major facility capital and technology systems is shared by the Manager of Finance and Facility Administration, Emergency services and others within the Corporation; etc.

Alternatively, or as an adjunct to the above, consider the formation of a committee of key individuals who would be responsible for information sharing, coordination and the development of joint recommendations with respect to Fire capital management. This would be similar to the approach taken by several Fire peers.

Current absence of a “documented” framework for capital management needs to be addressed. A documented framework would include such items as:

- Identification of accountabilities and responsibilities, including responsibility for tracking, condition assessments, budgeting and reporting requirements
- Capital management policies for facilities, vehicles, apparatus and technology
- End-of-life targets and protocols
- Refurbishment protocols and strategies for extending useful life (e.g., relocating vehicles and equipment across high and low volume stations)
- Generic design specifications for replacement vehicles and apparatus

To further facilitate future capital management, one might also consider having Council approve specific aspects of the framework (e.g., design specifications, targets, etc) as is the approach that has been taken by several peers (e.g., Kawartha Lakes).

Need for additional personnel to carry out the above activities / support Section Chiefs needs to be addressed, as does succession planning for Section Chief positions e.g., were the Chief Fire Mechanical Officer to retire GSFS would be hard pressed to identify someone else in the organization who currently is suitably trained to perform the Section Chief’s function.

15. Fire Revenue & Cost Containment

In Section 4 we undertook a select survey of 21 Ontario peer fire services. The following was one of the items asked of the peers: what is your estimated 2013 revenue from sources other than property taxes (i.e., from sources such as inspections, provincial highway calls, etc).

The results, which were presented previously in Exhibit 4.3, show a median value among peers of \$230,000. For GSFS, the estimated 2013 revenue from sources other than property taxes is about \$164,000 (about 30% below the peer median).

We also consulted with several Fire peers to gain a better understanding of revenue sources and cost containment strategies. The Fire department peers with whom we consulted are those serving Barrie, Burlington, Caledon, Chatham-Kent, Halifax, Halton Hills, Kawartha Lakes, Milton and Ottawa. Our findings are presented below.

- The OFM supports / encourages Ontario fire departments to charge user fees if such fees will help to improve public fire / life safety.
- Fire Prevention fees are typically charged for: fire permits, fire works permits, mandatory inspections for licensing (or annual requirement), property records search, officer incident report and freedom of Information requests.
- In addition to Fire Prevention, generally accepted service fees include charges for: MTO and non-resident highway calls; hazardous materials response and recoveries; false alarm calls; installation and maintenance of smoke alarms; and open air burning violations.
- GSFS is aware of the above generally accepted practices; however, for a variety of reasons including the absence of sufficient administrative supports and a records management system, GSFS does not aggressively pursue the practice of charging for all of the services rendered (hence the 30%+ variance in revenue relative to peers).
- Peers are continuously on the look out for ways to generate additional revenue and to contain costs; albeit, containing costs is a challenge since wages and salaries make up the lion's share of the operating budget and discretionary spending is but a relatively small component.
- For several peers, containing costs has become a high profile issue / municipal (Council) priority. In these instances, peers have resorted to more severe cost containment approaches, including hiring freezes, operating with staff vacancies for extended periods and elimination of senior officers positions.
- Extending fire vehicles beyond generally accepted end-of-life standards is common among peers (and also to GSFS).
- Rationalization of stations and apparatus is another approach that a number of peers are looking at (as is GSFS by way of this study).
- More attention to attendance management i.e., as a way to reduce overtime.
- Use of technology to page and track volunteer turnout, so as to reduce overstaffing and associated costs.
- Alternate volunteer / career deployment strategies e.g., 12 hour daytime coverage augmented by volunteers at night in lieu of 24 hour coverage.

- Several peers have engaged Fire Marque to provide cost recovery services as discussed below.

Many home insurance policies provide Ontario householders with insurance coverage for costs associated with a Fire Department response to a fire and other specifically insured emergencies. Under the terms of the policies, the insurance company will pay the municipality for the costs incurred. Fire Marque acts on behalf of Ontario municipalities in the recovery of the costs. For their services, Fire Marque retains a percentage of the recovered fee (i.e., about 30%).

Port Hope, Huntsville, Meaford, Owen Sound, Bradford, Tay Township, Kitchener and Middlesex Centre are examples of Ontario municipalities that have contracted with Fire Marque. The fire departments of these municipalities provide Fire Marque with information on the calls that they have attended and the services that they have performed. Fire Marque reviews the insurance coverage of the property owner and where applicable, it submits an invoice to the insurance company and commences cost recovery efforts. Property owners are not invoiced / held responsible for municipal fire department costs.

GSFS has met with and are interested in retaining Fire Marque's services. In consideration of this, we offer the following suggestion: that before GSFS enters into a contract with Fire Marque it would be appropriate to survey peer experience; specifically, to ascertain the following information on which to base a decision: (a) How much money has Fire Marque recovered i.e., over the past 12 months; and (b) How much effort, resources and data has the municipality committed on an ongoing basis to support Fire Marque's recovery efforts.

APPENDIX A

FIRE STATION INVENTORY

Appendix A – Fire Station Inventory

This inventory is extracted from the following sources: (a) Fire apparatus inventory supplied by Lynn Webster, Manager of Finance and Facility Administration, Emergency Services, as affirmed in January 2013 by Russell van der Jagt, Chief Mechanical Officer; (b) Discussion paper prepared by Dave Wickenden, Deputy Fire Chief, GSFS, entitled “Fire Station Overview”, February 28, 2013 (as amended March 1, 2013); and (c) Updated apparatus inventory that GSFS prepared in conjunction with a 2-day Spring workshop.

Station	Circa	Sq. Ft.	# Bays	Fire Apparatus	Firefighters	Incidents (2012)	EMS	Condition / Functionality
1 Main 193 Van Horne	1976	17,321	3	2003 Lafrance 100' Aerial 2010 Fort Garry Pumper 2005 Lafrance Rescue 1991 GMC Ice/Water Rescue truck Trailerred 2006 Zodiac boat Platoon Chief 2007 GMC Yukon 1998 Ford van – crew carrier	Career 45 (1 Platoon Chief, 2 Captains, 6 ff per shift)	1,494	Yes	This is the Fire HQ building. Two storeys containing Fire crew quarters and office space for Fire Prevention, Fire Captains, Platoon Chief, Chief Fire Prevention, Deputy Fire Chief, Media Centre and SPFFA. Also contains EMS crew quarters. Relatively old station. Maintaining the building is becoming an issue. Roof, windows, pavement et al require attention. The station was not designed to accommodate Fire and EMS. Fire requires additional space for apparatus storage & tests, office space, training, meetings, etc. EMS also pressing for more space. No room for building expansion. Proximity to CP rail tracks and yard is considered a potentially high risk.
2 Minnow Lake 114 Second Ave	1981	6,624	2	2010 Pierce Pumper Spare 2005 Lafrance 75' Aerial	Career 16 (1 Captain, 3 ff per shift)	375	Yes	Relatively old one-storey building containing Fire crew quarters including kitchen, living room, lockers and dorm. No dedicated training room. Also contains EMS crew quarters. Situated in a built up residential area immediately in front of a rail crossing, the station is not well positioned for rapid fire response. Roof and windows require attention. As the area continues to develop consideration should be given to relocation of this station.
3 New Sudbury 1199 Leon St	1955	6,544	2.5	2010 Pierce Pumper 2008 Pierce Reserve Pumper 2000 Ford bush truck	Career 16 (1 Captain, 3 ff per shift)	531	Yes	Single storey station which is almost 60 years old. Contains Fire crew quarters but no dedicated training room. Also contains EMS crew quarters. Quarters are small. Requires internal renovations including a new kitchen.
4 Long Lake 2069 Long Lake Rd	1977	5,547	3	1996 Friehtliner Hazmat #1 and trailer 2009 Pierce Pumper 1988 Friehtliner Super Tanker	Career 16 (1 Captain, 3 ff per shift)	607	Yes	Relatively old 2-storey station. Contains Fire crew quarters but no dedicated training room. Also contains EMS crew quarters. Overcrowded. Maintaining the building is becoming an issue. Windows, ventilation, plumbing, water leaks and generator require attention. The property to the south of the station has been purchased by the City and could potentially be used for expansion of the station. Number of high rise residential buildings are located in the immediate area. Expanding the station would enable the Service to house an aerial in this location.
5 Copper Cliff 7A Serpentine St	1988	3,790	2	1993 Fort Garry Pumper 1999 Fort Van which serves as a crew vehicle	Volunteers 18	20	No	Single storey station which was previously used as a fleet utility garage. Contains a Captain's office, common training area, change room and storage. The site needs to be regraded to alleviate the occurrence of flooding. Challenge to attain sufficient volunteer turnout during weekday days.

Comprehensive Fire Services Review, City of Greater Sudbury

Station	Circa	Sq. Ft.	# Bays	Fire Apparatus	Firefighters	Incidents (2012)	EMS	Condition / Functionality
6 Waters 25 Black Lake Rd	--	--	3	2005 Lafrance 75' Aerial 2000 Ford Support 1999 GMC Almonte Tanker	Volunteers 21	63	Yes	Two-storey building containing an office and training room on the second floor. Station also has a hose tower (the only one in the district). Also contains EMS crew quarters. Station is in good condition and functions well.
7 Lively 229 Ninth Line	1975	2,166	2	2005 GMC Bush Truck 1995 Freightliner Pumper	Volunteers 23	63	No	Single storey station containing a small office and training area, change room and storage Despite age, the station is in generally good condition; albeit, ventilation requires attention. Question of need is at issue given its location which is within 2.5 kilometres of Waters (Station 6).
8 Whitefish 4895 Municipal Road 55	1965	5,595	3	2003 Freightliner Pumper 1990 GMC Rescue 1983 Dodge Bush truck 2004 Freightliner Tanker 2004 Ford Expedition (District Chief's vehicle)	Volunteers 21	38	No	Fire Services shares the building with the Whitefish Community Centre. There is a Captain's office and a dedicated training area. Station is in good condition and functions well.
9 Beaver Lake 7535 Hwy 17 West	1975	2,840	2	2013 Fort Gary Pumper / Tanker 2006 Support Unit	Volunteers 11	5	No	Formerly the Beaver Lake Town Garage. For many years Fire used only 1 of the 3 bays. Fire currently uses 2 bays and a small office at the rear of the building. The building is not insulated. Served by septic and well. Heated by overhead propane heaters. Volunteers assigned to this station train and respond jointly with those assigned to Whitefish (Station 8). Very low call volume.
10 Azilda 239 Monte Principale	--	--	4	2009 Sutphen Pumper 1997 Freightliner Rescue 2006 Zodiac with trailer for water rescue	Volunteers 21	79	No	Located at the rear of the Lionel E. Lalonde Centre. Two of 4 bays house apparatus. The other 2 bays are used for training and storage. Contains a hose tower, which is considered to be too short. Station is in good condition and functions well.
11 Chelmsford 3400 Hwy 144	1985 / expanded in 2000	17,933	3.5	2005 Lafrance 75' Aerial 2000 Ford Support 2004 Freightliner Tanker 1997 Suzuki Quad for bush fire 2000 Bush Truck 2005 Ford Expedition (District Chief's vehicle)	Volunteers 24	143	Yes	This 2-storey building houses a combined Fire and EMS station. Fire portion contains offices in front, male and female change rooms, bunker gear room and a training room. EMS portion contains EMS living quarters and offices to the rear of the building. Station is in good condition and functions well.
12 Dowling 65 Main St	1965	4,516	3	2003 Freightliner Pumper Ford Rescue GMC Bush truck Freightliner Tanker	Volunteers 17	105	No	Two-storey station containing a Captain's office and training room on the upper level. Bays are minimum length. Apparatus floor is crowded.

Comprehensive Fire Services Review, City of Greater Sudbury

Station	Circa	Sq. Ft.	# Bays	Fire Apparatus	Firefighters	Incidents (2012)	EMS	Condition / Functionality
13 Vermillion 2214 Vermillion Lake Rd	1985	1,620	1	1999 GMC Pumper	Volunteers 7	2	No	Small single-storey building containing an office and training area. The bay is short and can house only a relatively small 2-door pumper. Water is drawn from the lake and there is an inside reservoir. The septic system consists of a holding tank that must be pumped out. The fire hall apron slopes downgrade from the road which periodically may cause the door to freeze in winter. Ventilation is also an issue. Very low call volume.
14 Levack 50 Nickel St	1975	3,916	3	2008 International Pumper 1994 Bush Truck	Volunteers 11	28	Yes	Single storey station containing open training room, Captain's office and hose tower. Also houses living quarters for an EMS crew. Bays are short. Roof leaks in hose tower. Main water supply line leaking.
15 Val Caron 3064 Leduc St	1985	8,760	2	1995 Freightliner Pumper 1995 Freightliner Tanker	Volunteers 20	13	No	Station houses a Captain's office, storage for Public Safety and Fire Prevention, a hose tower and a kitchen on the upper mezzanine floor. Located in a bedroom community with some light industrial. Challenge to attain sufficient volunteer turnout during weekday days. Relatively low call volume.
16 Val Therese 4200 Hwy 69 North	1985	6,400	3	2009 Pierce Pumper 1997 Ford Bush truck Spare 1999 Almonte Pumper 2000 Support Unit 2003 Ford Expedition (District Chief's vehicle)	Career 8 (2 ff per shift) / Volunteers 14	306	Yes	This is the only Composite station within the department. Contains Fire living quarters, Captain's office, full kitchen and dining room. The station is also shared with EMS. Generator and windows are in need of attention. Occasional long run times. Refuelling is done outside response area. Located in a bedroom community with some light industrial. Challenge to attain sufficient volunteer turnout during weekday days.
17 Hanmer 4680 Lafontaine St	1965	1,935	2	1999 International Pumper 2007 Fort Garry Tanker	Volunteers 19	11	No	Two-storey station containing crew quarters/training room and Captain's office. The second floor is used by the Valley East Food Bank. The building is old and the interior crowded. The building envelope (windows, siding, eave trough and roof) are in need of attention. Located in a bedroom community with some light industrial. Challenge to attain sufficient volunteer turnout during weekday days. Relatively low call volume.
18 Capreol 65 Railway St	1975	8,400	5	1986 Ford Pumper 1994 GMC Rescue 2008 GMC Bush truck Antique 1926 Bickel fire truck used for promotional purposes	Volunteers 18	59	No	This building is a former public works garage that has been renovated into a fire station. The entire station has recently been painted and renovated to include office space and a training room. The roof was tended to in 2012. Located in a bedroom community with some light industrial. Challenge to attain sufficient volunteer turnout during weekday days.
20 Garson 206 Church St	1965	5,596	3	1997 Freightliner Pumper 1996 Ford Rescue 1995 Ford Crew Cab Bush truck 2008 Ford Escape (District Chief vehicle)	Volunteers 22	114	No	Two-storey station housing crew quarters, Captain and District Chief offices and a large training room. Also contains a compressor for SCBA and a hose tower. Station is in good condition and functions well.

Comprehensive Fire Services Review, City of Greater Sudbury

Station	Circa	Sq. Ft.	# Bays	Fire Apparatus	Firefighters	Incidents (2012)	EMS	Condition / Functionality
21 Falconbridge 21 Edison Rd	1965	2,200	2	1987 Ford Squirt 2008 Pierce Tanker	Volunteers 9	14	No	Single-storey station located directly across from the Xstrata Smelter complex. Contains an open training room and Captain's office. Apparatus bays are short with limited clearance. Roof is in need of attention. Proximity to Xstrata Smelter may potentially pose a risk. Also, question of need given relatively low call volume and location which is within 5 kilometres of Garson (Station 20).
22 Skead 20 Maclellen Dr	1975	2,200	2	1987 Ford Pumper 2005 GMC Bush truck Marine Rescue boat with trailer (parked at marina in summer months)	Volunteers 13	9	No	Single-storey station situated about 8 kilometres from the Sudbury airport. Contains an open training room and Captain's office. The station is on a septic and well system. Apparatus bays are short with limited clearance. Community is isolated. Very low call volume.
23 Coniston 7 Second Ave	1955	2,200	2	1999 International Pumper 2005 GMC Bush truck	Volunteers 20	35	No	Single-storey station located centrally within community. Contains small training area and Captain's office. Apparatus bays are short with limited clearance.
24 Wahnapiatae 162 Hill St	1975	2,080	2	2003 Freightliner Pumper 2003 Freightliner Tanker	Volunteers 13	23	No	Single-storey station located centrally within the community. Contains training area and Captain's office. Roof was tended to in 2012. Apparatus bays are short with limited clearance.
25 Red Deer 566 Red Deer Lake N.	1975	1,650	2	2013 Fort Gary Pumper / Tanker 2004 Ford Van (crew vehicle)	Volunteers 6	4	No	Single-storey station containing training area and Captain's office. The station is on a septic and well system. History of flooding in spring. Also, question of need given very low call volume and location which is about 6 kilometres from Wahnapiatae (Station 24). Also responds and trains with Wahnapiatae Station.