PRIORITIES COMMITTEE AGENDA

to be held on
Wednesday, September 29, 2004
at
7:00 p.m.

Councillor
Terry Kett
Chair

Councillor
Frances Caldarelli
Vice-Chair

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Priorities Committee
AGENDA

THIRTEENTH MEETING OF THE PRIORITIES COMMITTEE
*TO BE HELD ON **WEDNESDAY, SEPTEMBER 29, 2004** AT **7:00 P.M.***
*IN THE **COUNCIL CHAMBER**, TOM DAVIES SQUARE*

(PLEASE ENSURE CELL PHONES AND PAGERS ARE TURNED OFF)

The Council Chamber of Tom Davies Square is wheelchair accessible. Please speak to the City Clerk prior to the meeting if you require a hearing amplification device. Persons requiring assistance are requested to contact the City Clerk's Office at least 24 hours in advance of the meeting if special arrangements are required. Please call (705) 671-2489, extension 2475. Telecommunications Device for the Deaf (TTY) (705) 688-3919. Copies of Agendas can be viewed on the City's web site at www.greatersudbury.ca.

COUNCILLOR KETT, IN THE CHAIR

1. Declarations of Pecuniary Interest

ANY ITEMS NOT DEALT WITH BY THE ADJOURNMENT HOUR OF 10:00 P.M. WILL BE CARRIED OVER TO THE OCTOBER 13, 2004 MEETING OF THE PRIORITIES COMMITTEE.

PRESENTATIONS/DELEGATIONS **PAGE NO.**

2. Report - *"Study of Fire Department City of Greater Sudbury"*, Ozhand Ganjavi, Ph.D., Ganjavi and Associations Management Consultants September, 2004. **1 - 17**
(FOR INFORMATION ONLY)

3. Presentation regarding Strategic Fire Services Issues. **18 - 24**
(ELECTRONIC PRESENTATION) (FOR INFORMATION ONLY)

- Dr. Ozhand Ganjavi, Ganjavi and Associations Management Consultants

4. Report dated 2004-09-13 from the General Manager of Emergency Services regarding City of Greater Sudbury Final Master Fire Plan. **25 - 27**

City of Greater Sudbury **Final Master Fire Plan**, September, 2004 **28 - 64**

(ELECTRONIC PRESENTATION)

- Alan Stephen, General Manager of Emergency Services
- Donald Donaldson, Fire Chief

The above presentation has been divided into two parts:

Part 1: Introduction and Current Status Summary

Question & Answer Period at the end of Part 1

Part 2: Risk Assessment

Question & Answer Period at the end of Part 2

RECOMMENDATION:

It is recommended that:

1. Council approve, in principle, the initiatives identified in the Master Fire Plan OPTION 4 and subsequently forward a copy to the OFM;

2. Council authorize the Emergency Services Department to carry on with the fire services system enhancements and investigations as described as OPTION 4, which they have commenced. All new initiatives will require Council approval as part of the 2005/2006 budget.

3. The General Manager of Emergency Services be directed to prepare detailed funding estimates to implement the final MASTER FIRE PLAN, dated September, 2004 as part of the 2005/2006 budget process.

MANAGERS' REPORTS

{NONE}

CORRESPONDENCE - INFORMATION ONLY

{NONE}

ADJOURNMENT (10:00 P.M.)(RESOLUTION PREPARED)

{MAJORITY REQUIRED TO PROCEED PAST 10:00 P.M.}

2004-09-24

COUNCILLOR KETT
CHAIR

CORRIE-JO CAPORALE
COUNCIL SECRETARY

Presentations and Delegations

Study of Fire Department City of Greater Sudbury

A report prepared for
Chief Administrative Officer CGS

Ozhand Ganjavi Ph.D.

Ganjavi and Associates
Management Consultants

September 2004

Introduction

A team of experts were assigned by the CAO of CGS to determine the most practical method of measuring and comparing the status of fire fighting performance of the fire services in the CGS. The team, in alphabetical order, included the following individuals:

Donaldson, Donald M. (Fire Chief, Fire Services)
Ganjavi, Ozhand (Consultant)
Gibbons, Mary Beth (Manager of Quality Service Review)
Jones, Bill (Consultant)
Khan, Kamran (Business Analyst)
Moulaison, Lynn (Special Project Assistance, Emergency Services)
Stephen, Alan (General Manager of Emergency Services)

The sources of information reviewed by the team included:

[1] Comparative Performance Measurements, FY 2001 Data Report published by the International City/County Management Association (ICMA) center for performance measurement (ISBN:0-87326-133-X).
We shall refer to this source as US data
[2] Ontario Fire Marshall.
We shall refer to this source as OFM
[3] Statistics Canada Census Report of 2001.
We shall refer to this source as (Stats-Can 2001)
[4] Municipal Performance Measurement Program (MPMP), Ontario
[5] Comprehensive Risk Analysis for the
Winnipeg Emergency Response Service Department (WERSD)
(http://www.winnipeg.ca/fps/pdfs/emergency_response_risk_analysis.pdf)
[6] Ministry of Municipal Affairs and Housing (2003). Municipal Performance Measurement Program (MPMP). Available at www.mah.gov.on.ca → Municipal Performance Measurement Program.
[7] Volpe, S. and J. Carbone (2002). An evaluation of the Municipal Performance Program. Sudbury, ON: Centre for Local Government.
[8] Internal memo and documents of CGS.

One major difficulty in a study of this nature is obtaining of relevant data. The data gathered on the fire services in the CGS are not necessarily comparable to data gathered in similar communities. More over, in many cases, the data gathered in other communities are not shared with external bodies. As a result of this complication, the team decided to compare Sudbury data with similar data or the closest possible match from US data.

City of Greater Sudbury, a Snapshot

Prior to the amalgamation of the former city of Sudbury and the surrounding towns, the fires services of the city of Sudbury were delivered through 5 fire stations strategically located in the City. The process of amalgamation to create the City of Greater Sudbury (CGS) started in 1999 and was completed by 2001. After amalgamation the new agency that covers the fire and emergency services took over the assets and fire stations of the local towns and now operates from 25 fire stations scattered over the entire CGS. The following table provides a summary of the size of the current fire department. Career firefighters are paid $16.98 per hour during their probationary period. A First class firefighter earns $28.30 per hour and volunteers are paid at a rate of $22 per hour.

Fire Services Personnel and Costs

Fulltime staff (2004)	120
Volunteer On-Call Staff (2004)	319
Total Operating and Personnel Costs (2003)	$13,755,287

The population, homes, and businesses covered by this service are indicated in the following table.

People and Properties in CGS

Population of Sudbury (MMAH Population 2001)	157456
Population in Career Covered Area (Stats Can 2001)	107728
Population in On-Call Covered Area (Stats Can 2001)	47491
Number of Residential Dwellings (OFM Summary)	54092
Number of Commercial and Industrial Structures	6012

The following table indicates the extent of fire incidents in CGS in 2003. Take notice that there are a large number of false alarms that taxes the fire services.

Number of Fires in CGS

Number of Residential Structure Fires	98
Number of Commercial and Industrial Structure Fires	23
Total Number of Structure Fires Including False Alarms	1258
Total Number of Non-Structure Fire Incidents	505

The fires that results in estimated damage of more than one dollar are labeled fires with loss. There have been 247 such fires in the CGS in 2003. Information from the OFM on these fires is presented in the following table. Fortunately, there have been no fatalities in these fire incidents

Breakdown of Fire Losses in CGS

	Fires		Injuries		Estimated Loss	
Property Class	No	%‡	No	%‡	$	%‡
Residential	98	39.7	2	50	$2,623,105	52.0
Industrial Occupancies	14	5.7	0	0	$1,030,300	20.4
Assembly Occupancies	8	3.2	0	0	$475,200	9.4
Business and Personal Services Occupancies	4	1.6	1	25	$42,600	0.8
Mercantile	3	1.2	0	0	$8,500	0.2
Institutional Occupancies	2	0.8	0	0	$3,000	0.1
Structures/Properties not classified by O.B.C.	36	14.6	1	25	$276,103	5.5
Vehicles	82	33.2	0	0	$584,600	11.6
2003 Total	**247**	**100.0**	**4**	**100**	**$5,043,408**	**100.0**

‡ percentage is based on yearly total.

The Fire service responds to variety of settings where their assistance is needed. Situations are categorized through a coding system with 99 codes. The following table indicated the calls served by the service in 2003.

Breakdown of Calls Responded by Fire Services in CGS

Total Number of Fire Incidents 2003 (OFM Codes 1, 2, 21, 22, 23, 31-39)	1921
Total Number of Non-Fire Incidents 2003 (OFM Codes 11, 12, 41-59, 61-69, 71 -89, 91-99)	1882
Total Number of Rescue Calls (OFM Codes 61 - 69)	133
Cardiac Arrest Calls (OFM Code 76)	59

The data for various call types (by code) for the City of Sudbury, Valley, and other areas for 2003 is as follows. Discrepancies in totals is an indication of problems in data gathering.

Breakdown of Calls by Type and Geographical Area

Call description	Codes	Sudbury	Valley	Others	Total	OFM Total
Property Fires	1-2	230	68	149	448	456
Ruptures/explosions no fire	11-12	1	0	0	1	1
Pre Fire Conditions	21-23	246	23	80	349	336
False Fire Calls	31-39	892	73	181	1151	1129
Public Hazard	41-52, 59	292	64	116	478	473
Rescue	61-69	69	13	46	129	133
Medical/Resuscitation Calls	71-89	727	0	75	802	803
Other Responses	91-99	384	21	79	490	472
Total	—	2841	262	726	3848	3803
Missing Codes	—	5	0	6	19	—

False alarms are a constant drain on the resources of the Fire Department. The number of false alarm are high and any efforts to reduce such incidents would be beneficial to all parties involved, that is the fire fighters, the citizens of CGS, and the city administration. The following table indicates the extent of false alarm problem in 2003. The following numbers are estimates based on the overall percentage of false fire alarms within the total number of fire service calls. Commercial / industrial ACTUAL false alarms is likely higher.

False Alarms

Number of Residential False Alarms	869
Number of Commercial / Industrial False Alarms	260
Total Number of False Alarms (OFM Codes 31-39)	1129

The following data has been collected from Municipal Performance Measurement Program (MPMP) 2003 publication .

Opoerating cost for fire services
per $1000 of assessment Some Ontario Cities (2002)

City	Cost
Brant	0.63
Vaughan	0.75
Markham	0.83
Mississauga	0.93
Oakville	0.94
Richmond Hill	0.94
Brampton	1.07
Burlington	1.12
Barrie	1.23
Chatham-Kent	1.26
Pickering	1.26
Greater Sudbury	1.37
Toronto	1.44
Kingston	1.48

City	Cost
Hamilton	1.55
Loondon	1.58
Guelph	1.63
Brantford	1.83
St. Catherines	1.86
Cambridge	1.91
Oshawa	1.93
Kitchener	1.99
Sarnia	2.26
St. Thomas	2.3
Windsor	2.32
North Bay	2.39
Thunder Bay	2.77

Source: MPMP 2003

What to Measure

As it was indicated in the introduction, finding data comparable to data on CGS is not an easy task. We should indicate that there are some measures that have been utilized by other fire services to assess the inputs and outputs of their service.

Statistics on fatalities is not a reliable source for comparison. This is due to the fact that fatalities are rather infrequent events and infrequent events by nature are not reliable.

Because number of injuries is not as infrequent as the fatalities are, one may want to consider number of fatalities per fire incident or per one thousand populations, or per 1000 kilometer square as a measure of performance. The logic is that the sooner the fire fighters reach the scene of a fire the less is the chance for injury.

The amount of loss, in dollars, per fire incident, per 1000 population, or per 1000 kilometer square of coverage may be considered as a measure of success. The difficulty with this measure is that most gathered data by fire officials are loss estimates. The insurance companies who pay for the damages have more accurate data but in majority of cases they do not share their information with the public. Another difficulty with this measure is the fact that a single case of industrial or commercial fire with large loss can skew the data for individual periods under study.

Response time is another measure of success. Response time is measured in variety of ways. Response time is the difference between the time of an "end incident" and the time of a "start incident." Problem is that both start and end incidents are defined in variety of ways. For example the start may be defined at the point when a call for assistance is logged, or the time when the order to send help is given to the fire station, or the time when the vehicle leaves the fire station. The end incident may be defined as the time when the first vehicle arrives to the scene, or the time when at least 4 fire fighters arrive on scene, or ten arrive at the scene or the time when the dispatched vehicle reports back, which may not necessarily be the time it had arrived. One recommended (not mandatory) standard is to have 10 firefighters attending home fires in 10 minutes.

As far as the input to the fire and emergency services is concerned one may consider the number full-time equivalent, the number of dollars spent or any other input per number homes, number businesses, 1000 population, and 1000 kilometer square of coverage.

Number of incidents of fire per 100 populations may be considered as a measure population's knowledge and training regarding fire prevention. Since information on fire prevention is often supplied by and through fire services, this can be considered as a measure of their success.

Having considered all the above measure, the big question is: do we have comparable data on other communities or do we compare our statistics with some managerially defined target levels?

Performance of CGS

The most recent publication of MPMP provides the following information regarding the fire services expenditure.

Fire Services Operating costs
per $1000 Assessment

	2001	2002	2003
CGS	$1.27	$1.37	$1.64
OMBI average		$1.54	$1.61

The sharp increase in 2003 is worthy of some attention. Detailed computation of the above figures are presented in the following table.

Computing Fire Services Operating costs
per $1000 Assessment

	Total Operating Cost	$1000 Assessment	
2001	$10,894,865	8,554,860	1.274
2002	$11,765,343	8,576,008	1.372
2003	$13,755,287	8,395,597	1.638

The increase in operating cost per $1000 assessment is 19.4% in 2003 over the corresponding figure for 2002. About 2.5% point of the increase is due to the fact that total assessment in 2003 was lower than in 2002 as reflected in the above table. Had the assessment in 2003 remained the same (8,576,008) as 2002 the figure would have been lowered from 1.638 to 1.604, which is still too high amounting to 16.9% increase in one year.

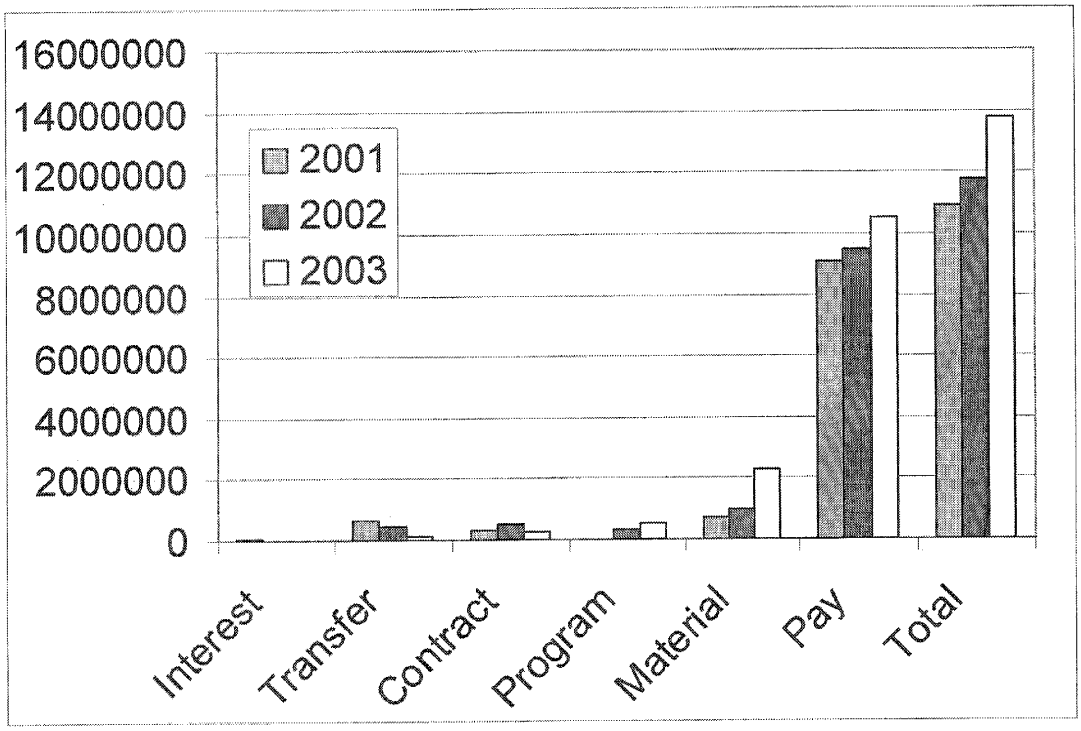
Analysis of cost components reveals that the major increase in costs were in materials purchased and in salaries, wages and benefits. Small variations were observed in other cost components as well.

Details of cost comparison for the last three years are provided in the following table.

Breakdown of Fire Services Operating Costs

	2001	2002	2003
Financial Expenses and Rent	65,714	10,205	4,076
Interfunctional Adjustments	654,679	456,379	150,761
Contracted Services	334,279	505,226	276,646
Allocation of Program Support	0	331,729	516,491
Materials	733,288	1,008,980	2,317,620
Salaries, wages, benefits	9,106,905	9,452,824	10,489,693
Total Operating Cost	**10,894,865**	**11,765,343**	**13,755,287**

The graph of the above data clearly indicates that the major increases were in materials purchased ($1,308,640 increase) and in salaries, wages and benefits ($1,036,869 increase) for a total of $2,345,509 increase.



The notation on the horizontal axis of the above chart is as follows:

Notation	Description
Interest	Financial Expenses and Rent
Transfer	Interfunctional Adjustments
Contract	Contracted Services
Program	Allocation of Program Support
Material	Materials
Pay	Salaries, wages, benefits
Total	Total Operating Cost

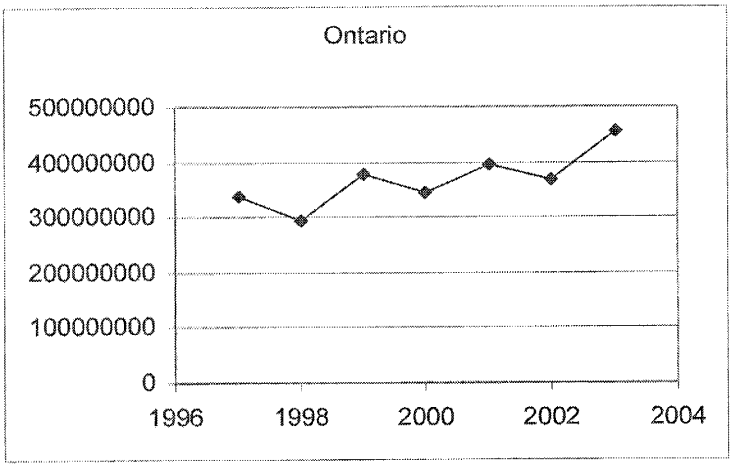
The following table provides the total dollar values of fire losses in the Province of Ontario and CGS for the period of 1997 to 2003.

The Amount of Fire Losses in Dollars

Year	Ontario	Sudbury
1997	336,335,758	6,750,666
1998	294,000,303	4,180,665
1999	378,856,519	3,466,588
2000	345,284,002	3,115,490
2001	396,007,391	5,015,440
2002	367,779,369	4,218,982
2003	457,373,026	5,043,408

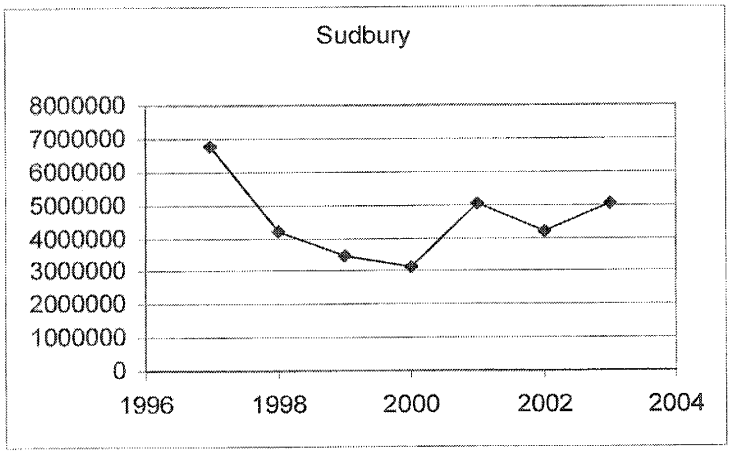
The graph of Ontario data indicates a steady increase in total losses over the seven year period. This increase amounts to a compound growth rate of 5.26% per year.

Annual Fire Losses in Ontario
Dollars



But CGS data does not indicate any particular pattern of change. Considering only the last five years, one does observe a pattern of steady growth in total losses.

Annual Fire Losses in Sudbury
Dollars

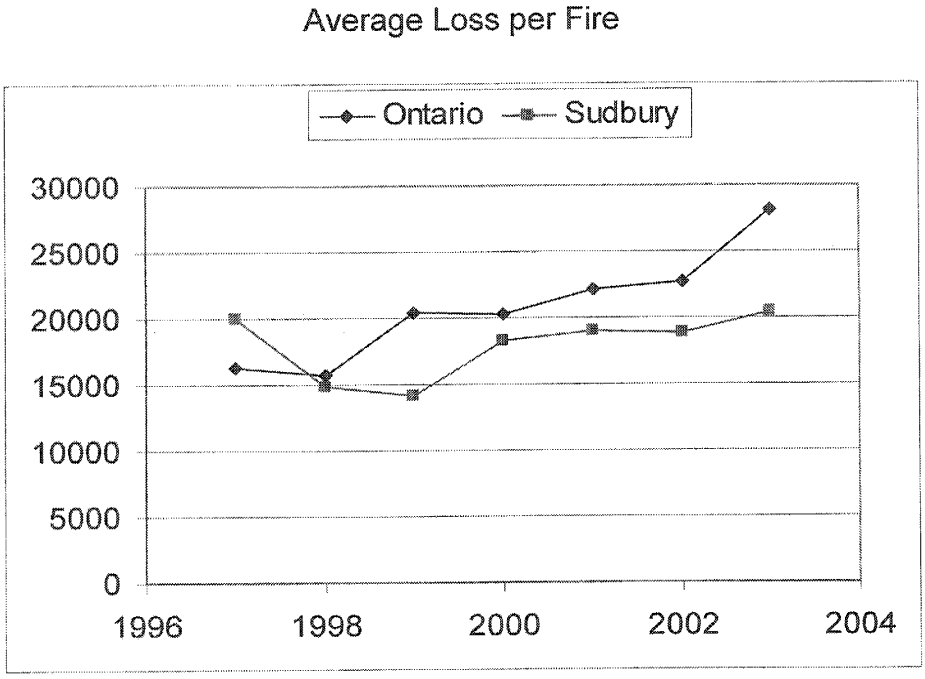


The following table indicates the average loss per fire incident for Ontario and CGS fires for the period of 1997 to 2003.

Average Loss per Fire

Year	Ontario	Sudbury
1997	16237	20032
1998	15708	14825
1999	20434	14207
2000	20229	18219
2001	22112	19070
2002	22763	18919
2003	28193	20419

Comparison of the data in graphical form indicates that average fire loss in Sudbury during the last six years, have been smaller than Ontario fire losses.



However, the average loss per fire has been increasing at a rate of $1119 per year for Sudbury and $2497 per year for Ontario over the past six years. These increases exceed the rate of inflation by a wide margin. The increase from 1988 to 2003 for Sudbury amounts to a compound growth rate of 6.61% per year.

Response time is a measure of performance. The 2003 number of calls with 5 minutes or less response time of (dispatch to on scene) has been 2,368 (62.27%) and the number calls with 8 minutes or less response time of (event created to on scene) has been 2,667 (70.13%). Some comparison with US data is provided in coming sections. The 90the percentile for first vehicle on scene in 2003 has been 9:15 minutes for Sudbury, 11:02 minutes for the former town of Valley East and 15:00 for other areas.

In the following set of tables, US data for 2001 are compared with Sudbury data of the same period. When including fire call data, information from 2003 is used for CGS. The US data are available for cities with population of more than 100,000 as well as those with less than 100,000.

Paid Fire Staffing
per 1000 Population Served

	Population >100K	Population <100K
CGS*	Mean	Mean
1.11	1.42	0.96

Reference: Page 104 Graph 5.4.A
*The areas covered by career firefighters include the former city of Sudbury plus part of Valley East.

Costs Per Capita (CAN $)

		Population >100K	Population <100K
	CGS	Mean	Mean
(1)	$75.07	124.99	100.49
(2)	$82.38	127.77	127.24

Reference: Page 104 Graph 5.4.A
(1) Operating and Personnel cost per capita (OFM 2001)
(2)Total Operating, personnel and capital cost per capita
Exchange Rate used for conversion is 1.324 as recorded in Aug 11, 2004

Total Residential Dwelling Structure Fires

	Population >100K	Population <100K
CGS	Mean	Mean
98*	337	50.9

Reference: Page 111
2001 Data for Dwelling/Structures
2003 for Fires (OFM 2003)
* There has been an estimated 869 false alarms in CGS in the same period

Total Residential Structure Fire Incidents
per 1,000 Residential Structures

	Population >100K	Population <100K
CGS	Mean	Mean
1.8*	3.71	2.8

Reference: Page 115
2001 for Dwelling/Structures, 2003 for Fire Service Activity
* There has been an estimated 869 false alarms in CGS in the same period. This additional load amounts to 16.1 calla per 1000 residential structure.

Residential Structure Fires per 1,000 Population Served

	Population >100K	Population <100K
CGS	Mean	Mean
0.62	1.09	0.75

Reference: Page 117
2001 for Population, 2003 for Fire Service Activity

Commercial and Industrial Structure Fire Incidents per 1000 commercial/Industrial Structures

	Population >100K	Population <100K
CGS	Mean	Mean
3.38*	11.1	13.3

Reference: Page 123
2001 for Structures, 2003 for Fire Service Activity
* There has been an estimated 260 false alarms in CGS in the same period. This additional load amounts to 43.64 calls per 1000 commercial/Industrial structure.

Percentage of False Alarms

		Population >100K	Population <100K
	CGS	Mean	Mean
1	90%	52%	64%
2	59%	50%	52%

Reference: Page 126
(1) False Alarms as a percentage of Total Structure Fire Incidents
(2) False Alarms as a percentage of Total Fire Incidents
2003 Data for CGS

Total Non-Fire Incidents per 1,000 Population Served

	Population >100K	Population <100K
CGS	Mean	Mean
12.0	58	5

Reference: Page 134
2001 for Population, 2003 for Non-Fire Incidents.
Many of the cities in the US documentation provided both EMS and Fire response. Therefore, their numbers for non-fire incidents are higher. Non-fire includes gas leaks, rescues, medical and assistance to other agencies.

Number of Responses to Rescue and Recover
Per 100,000 Population Served

	Population >100K	Population <100K
CGS	Mean	Mean
84.5	31.7	41.3

Reference: Page 147
2001 for Population, 2003 for Rescue and Recovery Incidents
This includes car accidents and extrication. Of the 133 "rescue" calls, 100 of them were car accidents / extrication. Very likely, this is due to the large geography and low population density that is unique when comparing the CGS to the US data set.

Response Time of 5 minutes or less
Dispatched to Arrival On scene

	Population >100K	Population <100K
CGS	Mean	Mean
62.27%	65.90%	74.70%

Reference: Page 149
2003 data for CGS assumed a two minute allowance for dispatching.

Fire Calls - Response Time of 8 minutes or less
Call Entry to on scene

	Population >100K	Population <100K
CGS	Mean	Mean
70.13%	82.40%	50.40%

Reference: Page 153
2003 data for CGS assumed a two minute allowance for dispatching.

The Cost of Fire Protection

Most individuals prefer to avoid a case of fire even if they are compensated for the damages through fire insurance arrangements. There are two components in the cost of protection against fire. They include an individual's share of fire services cost and the other component is the fire insurance premium. A rational and well informed individual prefers to minimize the sum of these two costs.

Determining the home protection premium is not an easy task for average homeowner. Each region of the Province has a special rating. Within each region there are subcategories, and within each of the subcategories, there are property-related

parameters. Being located in a region served by full-time firefighters and being close to a fire hydrant are two factors in reducing premiums. One assumes that with such a system, all insurance companies would arrive at the same price for a given property. Average consumers would be surprised to see the extent of variation in premiums across the insurance industry.

In the summer of 2001, a telephone survey of 7 insurance companies on premiums for two identical properties in Sudbury and Hanmer produced the following results.

Home Information:
10 year old, 1100 sq. ft. bungalow, with 3 bedrooms and 2 baths (one full and one two piece)
Natural gas forced air heating with central air
No fireplace, woodstove or air exchanger
16' x 24' wood deck
Unfinished basement
Fire Hydrant next door
Within 5 km. of a fire station
Brick front with siding (3 sides)

Insurance Information:
Full coverage, including flood
$500 deductible
$1,000,000 liability
$110,000 replacement cost
$80,000 contents insurance
No previous claims
Insured for 5 years

Comparison of House Insurance Premiums

Insurance Company	Sudbury south end	Hanmer	Difference
A	$275.40	$523.44	$257.04
B	$406.00	$443.88	$38.00
C	$363.96	$473.04	$109.08
D	$375.84	$471.96	$96.12
E	$375.84	$446.00	$122.00
F	$442.80	$453.00	$11.00
G	$355.00	$355.00	$0
			Avg. $90.46

If **"A"** and **"G"** (the extreme high and extreme low) are removed the average difference is still a substantial **$75.44**

It must be noted that home owners are not free to purchase "fire only" insurance protection. Insurance companies offer a package of protection where fire insurance is one component of the total protection. Experts believe that the fire component of home insurance is rather small any gains in regional ratings may translate to small gain for home owners. However, given that there are a large number of homes in Sudbury, the total gain may be substantial. The commercial premiums do have a large component of fire protection. Naturally, any gains in the regional ratings is expected in resulting large reductions in commercial premiums.

It would be very beneficial to find a reasonably accurate estimate of the savings by tax payers, in their premiums, as a result of any expenditure that would improve Sudbury's fire rating.

Study of Fire Department
City of Greater Sudbury

A report prepared for
Chief Administrative Officer CGS

Ozhand Ganjavi Ph.D.

Ganjavi and Associates
Management Consultants

September 2004

1

City of Greater Sudbury

Population in Career Covered Area *	107,728
Population in On-Call Covered Area *	47,491
Total Population	**155,219**
Residential Dwellings *	54,092
Commercial and Industrial Structures *	6,012
Fulltime staff (2004)	120
On-Call Volunteers (2004)	319
Total Staff	**439**
Fire Loss (2003)	$5,043,408
Operating Cost (2003)	$13,755,287

* Stats Can 2001

2

City of Greater Sudbury
Number of Fires and False Alarms (2003)

Residential Structure Fires	98
Commercial and Industrial Structure Fires	23
False Alarms	**1137** *
Non-Structure Fires	505
Total	1763
Residential False Alarms	869
Commercial / Industrial False Alarms	260
Total	**1129** *

* Discrepancies exist between data from different sources

3

Operating cost of fire services for Ontario Cities
Dollars per $1000 of Assessment (2002)

City	Cost
Brant	0.63
Vaughan	0.75
Markham	0.83
Mississauga	0.93
Oakville	0.94
Richmond Hill	0.94
Brampton	1.07
Burlington	1.12
Barrie	1.23

Source: MPMP 2003

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Operating cost of fire services for Ontario Cities
Dollars per $1000 of Assessment (2002)

(Continued)

City	Cost
Chatham-Kent	1.26
Pickering	1.26
Greater Sudbury	**1.37**
Toronto	1.44
Kingston	1.48
Hamilton	1.55
London	1.58
Guelph	1.63
Brantford	1.83

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Operating cost of fire services for Ontario Cities
Dollars per $1000 of Assessment (2002)

(Continued)

City	Cost
St. Catherines	1.86
Cambridge	1.91
Oshawa	1.93
Kitchener	1.99
Sarnia	2.26
St. Thomas	2.3
Windsor	2.32
North Bay	**2.39**
Thunder Bay	**2.77**

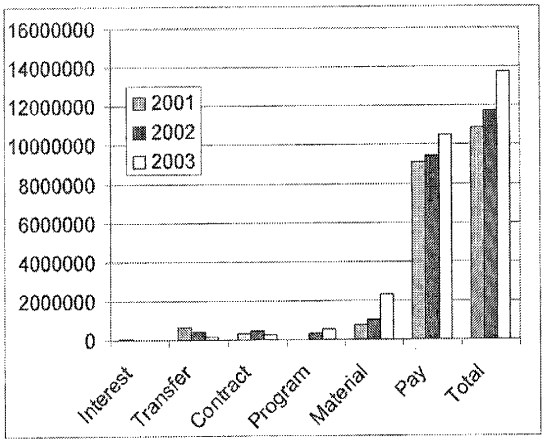
6

City of Greater Sudbury
Breakdown of Fire Services Operating Costs

	2001	2002	2003
Financial Expenses and Rent	65,714	10,205	4,076
Inter-functional Adjustments	654,679	456,379	150,761
Contracted Services	334,279	505,226	276,646
Allocation of Program Support	0	331,729	516,491
Materials	733,288	1,008,980	2,317,620
Salaries, wages, benefits	9,106,905	9,452,824	10,489,693
Total Operating Cost	**10,894,865**	**11,765,343**	**13,755,287**

7

City of Greater Sudbury
Breakdown of Fire Services Operating Costs



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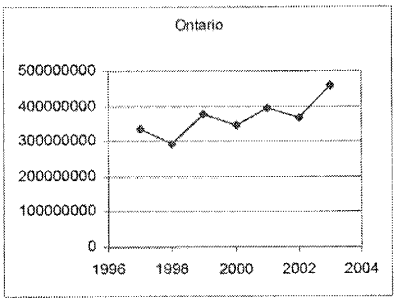
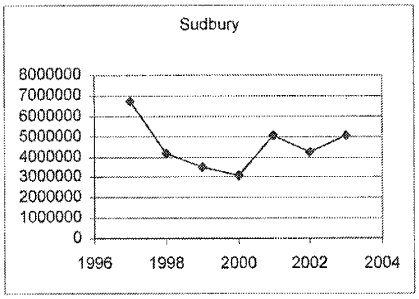
Total Fire Losses (Dollars)





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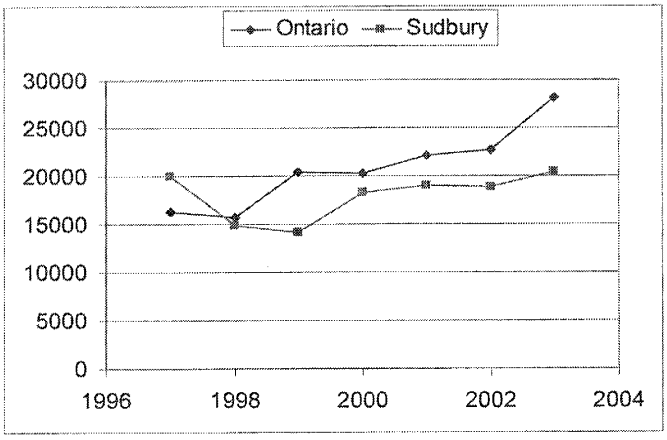
Average Loss per Fire (Dollars)



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Performance Comparison of CGS with average of US cities

Description	CGS	Large	Small
Paid Fire Staffing per 1000 Population Served	1.11	1.42	0.96
Costs [Oper.] Per Capita (All in CAN $)	75.07	124.99	100.49
Costs [Oper.+ Capital] Per Capita (All in CAN $)	82.38	127.77	127.24
Total Residential Dwelling Structure Fires	98 *	337	50.9
Residential Structure Fires per 1,000 Res. Str.	1.8 *	3.71	2.8
Residential Structure Fires per 1,000 Population	0.62	1.09	0.75
Comm. & Indu. Str. Fires per 1000 comm. /Indu. str.	3.38 *	11.1	13.3
False Alarms as Percentage of structural fires	**90%**	52%	64%
False Alarms as Percentage of All fires	**59%**	50%	52%
Non-Fire Incidents per 1,000 Population	12.0	58	5
Rescue and Recover Per 100,000 Population	84.5	31.7	41.3
5 minutes or less: Dispatched to Arrival On scene	62.3%	65.9%	74.7%
8 minutes or less: Call Entry to Arrival on scene	70.1%	82.4%	50.4%

* Excluding false alarms
Large = Average performance in US cities with population of more than 100,000.
Small = Average performance in US cities with population of less than 100,000.

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Issues

1) The need for a more uniform system of data collection in Northern Ontario

2) The need to share data gathered by various municipalities in the North

3) The need to reduce the number of false alarms
   - Education
   - Penalty

4) The need to assess the impact of investment in fire services on residents' total cost
   - Portion of one's taxes going to fire services
   - Premiums paid for fire insurance

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Thank you

Ozhand Ganjavi

13

Study of Fire Department
City of Greater Sudbury

A report prepared for
Chief Administrative Officer CGS

Ozhand Ganjavi Ph.D.

Ganjavi and Associates
Management Consultants

September 2004

14

Request for Recommendation
Priorities Committee

Greater | Grand Sudbury
www.city.greatersudbury.on.ca

Type of Decision

Meeting Date	September 29th, 2004				Report Date	September 13th, 2004			
Recommendation	X	Yes		No	Priority	X	High		Low
	Direction Only				Type of Meeting	X	Open		Closed

Report Title

City of Greater Sudbury Final Master Fire Plan

Policy Implications + Budget Impact

X	This report and recommendation(s) have been reviewed by the Finance Division and the funding source has been identified

Policy Implications:

The City is legislated by the Province of Ontario to prepare and implement a Master Fire Plan.

Budget Impact:

Upon the adoption of Recommendation Number 3 of this Report, the General Manager Emergency Services will prepare a detailed funding estimate to implement the final MASTER FIRE PLAN.

X	Background attached

Recommendation

It is recommended that:

1. Council approve, in principle, the initiatives identified in the Master Fire Plan OPTION 4 and subsequently forward a copy to the OFM;

2. Council authorize the Emergency Services Department to carry on with the fire services system enhancements and investigations as described as OPTION 4, which they have commenced. All new initiatives will require Council approval as part of the 2005/2006 budget.

	Recommendation attached

Recommended by the General Manager

Alan Stephen
General Manager Emergency Services

Recommended by the C.A.O.

Mark Mieto
Chief Administrative Officer

Title: City of Greater Sudbury Final Master Fire Plan **Page: 1**
Date: September 13th, 2004

Report Authored By	Division Review
Alan Stephen General Manager Emergency Services	

RECOMMENDATION CONTINUED:

3. The General Manager Emergency Services be directed to prepare detailed funding estimates to implement the final MASTER FIRE PLAN, dated September, 2004 as part of the 2005/2006 budget process.

In July 2002, the Emergency Services Department released a Business Plan in which a recommendation to develop a Master Fire Plan "based on an analysis of needs and risk" was included as a cornerstone activity. In October 2002, a provincial Coroner's Report on the 2001 Roy Street fire tragedy re-emphasized the City's need to develop a Master Fire Plan.

On February 27th, 2003, City Council authorized Emergency Services staff to proceed with the preparation of the Plan and to engage IBI Group to assist in its development. Work on the Plan commenced in early March 2003, and in February 2004 a Status Report prepared by IBI Group was presented to Council. The Status Report described economic circumstances and identified that a community fire risk and fire prevention risk assessment have been completed. It also described general emergency responses and broad initiatives that the group felt were necessary for improvement of the fire protection system for the City.

Following the municipal review model, Optimizing Public Fire Safety published by the Office of the Fire Marshal, all options for fire protection services identified in the draft report have now been assessed and the operational impacts of each evaluated.

The Master Fire Plan identifies new programs or projects and areas that can improve or enhance existing services. The plan also describes additional costs to implement those that are outside the normal operating budget.

During the Master Fire Plan process, areas were also identified that required immediate attention and these were presented and approved by Council as each were encountered. Some of these items included: an approval of a new organizational structure in June 2003; additional staff for the Fire Prevention and Training Sections in 2003/2004; Computer Aided Dispatch (CAD) in May 2004; a Records Management System in June 2004; and, an increase in career and volunteer staffing for Valley East in 2003/2004.

The final approved Master Fire Plan will provide clear direction to both Fire Division staff and the public regarding the fire protection services Council expects to be provided for the City of Greater Sudbury.

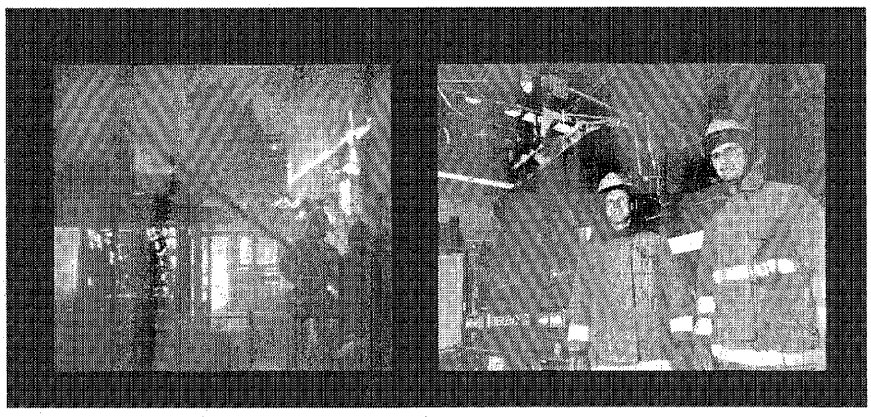
The Master Fire Plan will provide the direction for CGS Fire Services to follow over the next 5-year period. There are several options for Council to review and once approved, will allow for a enhanced level of service to be delivered to the citizens.

There are several Reports attached setting out all of the relevant details, including an Executive Summary.

As identified in the Status Report, the findings of this review affirm that the City of Greater Sudbury's current fire service has improved over that which existed one year ago. The changes are attributed largely to the diligent efforts of the senior management of the Emergency Services Department and the Fire Services Division.

As described in the Master Fire Plan, in addition to the changes which the management team have implemented with Council approval, there are a number of initiatives underway, and others being examined or planned for implementation in the short term. Once implemented, City residents can expect additional fire service improvements over the coming months and years.

Final Master Fire Plan



FINAL

Master Fire Plan

City of Greater Sudbury
September 2004

Alan Stephen
General Manager, Emergency Services

GREATER·GRAND SUDBURY
EMERGENCY SERVICES
SERVICES D'URGENCE

Greater | Grand Sudbury
www.greatersudbury.ca

Executive Summary Master Fire Plan

Prepared by: General Manager Emergency Services **Date:** 22 Sep 2004

On Advice from: Senior Fire Staff of CGS Fire Service, Deputy Director Emergency Planning and Strategic Services, CGS Fire Advisory Board, Office of the Fire Marshal, and Mr. Bill Jones – Contractor

AIM

The aim of this executive summary is to provide CGS Council with the necessary information to assist in making recommendations, which will provide direction and vision to their fire service for the period 2004 to 2010.

BACKGROUND

In July 2002 the Emergency Services Department released a Business Plan in which a recommendation to develop a Master Fire Plan *'based on an analysis of needs and risk'* was included as a cornerstone activity. In October 2002 a provincial Coroner's report on the 2001 Roy Street fire tragedy re-emphasized the City's need to develop a Master Fire Plan.

On February 27, 2003 City Council authorized emergency services staff to proceed with the preparation of the Plan and to engage IBI Group to assist in its development. Work on the Plan commenced in early March 2003 and in February 2004, a STATUS REPORT, prepared by IBI Group, was presented to Council. The STATUS REPORT described economic circumstances and identified that a community fire risk and fire prevention risk assessment have been completed. It also described general emergency responses and broad initiatives that the group felt were necessary for improvement of the fire protection system for the City.

Following the municipal review model, Optimizing Public Fire Safety, published by the Office of the Fire Marshal, all options for fire protection services identified in the draft report have now been assessed and the operational impacts of each evaluated.

The MASTER FIRE PLAN identifies new programs or projects and areas that can improve or enhance existing services. The plan also describes additional costs to implement them that are outside the normal operating budget.

During the MASTER FIRE PLAN process areas were also identified that required immediate attention and these were presented and approved by Council as each was encountered. Some of these items included: an approval of a new organizational structure in June, 2003; additional staff for the Fire Prevention and Training Divisions in 2003/2004; Computer Aided Dispatch (CAD) in May, 2004; a Records Management System in June, 2004; and an increase in career and volunteer staffing for Valley East in 2003/2004.

The final approved MASTER FIRE PLAN will provide clear direction to both Fire Department staff and the public regarding the fire protection services Council expects to be provided for the City of Greater Sudbury.

DISCUSSION

Greater Sudbury's Fire Department serves and protects a population of approximately 155,000 persons distributed over an area of 3,600 square kilometers. The majority of the population resides in the City core located generally, in the area known formerly as the City of Sudbury. The rest of the City's geography is a mixture of small urban communities separated by rural development and vast tracts of undeveloped land.

Records for Greater Sudbury indicate that 60% of all recorded fires are residential. Between 1997 and 2002, there were 608 recorded residential fire incidents contributing to a dollar value loss of $15,324,000. Within the residential property class itself, there is a significant variance in fire risks.

The majority of Greater Sudbury's residential fires, and almost all the fatalities due to fire, have occurred in single-family dwellings – as opposed to multiple dwelling structures.

The frequency of emergency calls and the potential risks to life and residential property have become measures by which one gauges the effectiveness of a municipality's fire service. A primary objective of many municipalities is to ensure the availability of a sufficient number of trained fire fighters and apparatus, to carry out a rapid rescue and / or fire suppression response.

The MPAC database classifies structures by age of construction. According to the data there are a significant number of relatively old buildings throughout the city - many constructed prior to 1975. From a fire prevention perspective these are of particular concern, since at the time of their construction they did not require the installation of smoke alarms etc, hence the absence of an early warning detection system for residents.

An area of particular concern is the downtown core. It is a relatively older area occupied by numerous businesses, stand-alone residences and upper storey residences above commercial / business uses. The City's residential dwellings; approximately 90% were constructed prior to 1991 and many have since been renovated by owners / tenants. This occupancy class is of particular concern to the Fire Service. Many have not been inspected for some time. For a large percentage the occupancies, processes and uses are unknown; and the built in detection and suppression systems have not been tested recently, or evaluated.

While the City may not anticipate a significant change in population over the Master Fire Plan's 5-year planning horizon, there are a number of major developments, either planned / proposed. According to the City's Economic Development & Planning Services Department growth is forecast as follows: in the residential class over thirty current major development proposals; over one-half involving plans to develop 100 or more residential units; in the commercial class there are three major development proposals, one proposes a 140,000 sq. ft. development and two plans exceed 200,000 sq. ft; in the industrial class there is a proposal for an industrial 75 acre plan; and in the institutional class there are several retirement / seniors facilities; each proposing to house over 100 beds.

The MASTER FIRE PLAN presents the vehicle fire statistics for the 6-year period 1997 to 2002. According to available records there have been 530 vehicle fire incidents over the 6-year period, with a recorded dollar loss due to fire of $13,529,000.

The MASTER FIRE PLAN presents Greater Sudbury's fire and rescue call volumes for the 7-year period 1997 to 2003. According to City records, last year the fire service responded to 3,953 fire and rescue calls. Based on the data of the last three years (2001, 2002 and 2003)-call volumes are on the rise. The PLAN provides a breakdown of the annual calls by classification code. The face of the fire service is changing! Calls, which are designated as actual 'fire' calls represent about 13% of the total, call volume. Medical calls are 20% of the total; rescues are 3%; public hazard responses are 12%; and assistance to police and other agencies are 13%. False alarms account for 30% of the total. For reasons of risk-management the fire department must respond to each.

The fire service has a 25-year vehicle acquisition program which has been developed to support a 25 fire station structure. The 25-station structure is no longer required and the MASTER FIRE PLAN is recommending a combination of closing and re-locating of stations. This coupled with an immediate requirement to undertake an extensive building renovation and upgrade plan will cause this closure and re-location plan to be fast-tracked to ensure the city is not spending money on infrastructure which is no longer a viable part of our fire deployment plan.

The city has a staffing challenge with Career, Composite and Volunteer stations. The career Core Stations and the Composite Station require up-staffing by two firefighters (each) to maintain our

response capability and to safety and efficiently staff the designated equipments. In addition, if growth is experienced in other areas there maybe a requirement to place career firefighters in those locations to provide day-time coverage – the periods where Volunteer firefighters are not available to provide coverage. The total staffing complement required for the period 2004 to 2006 is 20 new firefighters. With respect to volunteer staffing we are experiencing challenges in achieving the number of firefighter required to arrive at a scene in a specified period of time. This is especially true for the daytime hours. In addition we are experiencing challenges in achieving the commitment required by volunteer firefighters to attend the extensive training required.

At this time the city has a very limited capability to respond to non-fire emergencies. The most significant area of concern is in the following areas: hazardous material and CBRN, over-ice and over water and rough-terrain rescue, and technical rescue (high-angle and confine space). In the same vein the fire services has a responsibility to respond to airport fire emergencies as either the backup force (7:00am to 11:00pm) and as the first responder from 11:00pm to 07:00 am. At this time the fire service has a very limited capability in terms of personnel training and equipment to respond to either on airfield or off airfield crashes.

CONCLUSION

As identified in the STATUS REPORT, the findings of this review affirm that the Greater City's current fire service has improved over that which existed one year ago. The changes are attributed largely to the diligent efforts of the senior management of the Emergency Services Department and the Fire Services Division.

As described in the MASTER FIRE PLAN, in addition to the changes which the management team have implemented, with Council approval, there are a number of initiatives underway, and others being examined or planned for implementation in the short term. Once implemented, City residents can expect additional fire service improvements over the coming months and years.

Most of the ongoing and planned initiatives can be funded from within the current and anticipated operating and capital budgets. Council approval of additional funding will be required to accommodate capital funding and a few specific activities and acquisitions.

For these items, fire services management will submit individual detailed reports as they arise.

RECOMMENDATION

It is recommended that:

1. Council approve, in principle, the initiatives identified in the Master Fire Plan OPTION 4 and subsequently forward a copy to the OFM;

2. Council authorize the Emergency Services Department to carry on with the fire services system enhancements and investigations as described as OPTION 4, which they have commenced. All new initiatives will require Council approval as part of the 2005/2006 budget;

3. The General Manager Emergency Services be directed to prepare detailed funding estimates to implement the final MASTER FIRE PLAN, dated September, 2004 as part of the 2005/2006 budget process.

Master Fire Plan Implementation 2004

1. INTRODUCTION

The City of Greater Sudbury was created in 2001 through a provincially mandated amalgamation of the Regional Municipality of Sudbury with the former Cities of Sudbury and Valley East, the Towns of Capreol, Nickel Centre, Onaping Falls, Rayside-Balfour and Walden and the former unincorporated areas of Fraleck, Parkin, Aylmer, Dryden, Mackelcan, Rathbun, Scadding, Cleland and Dill.

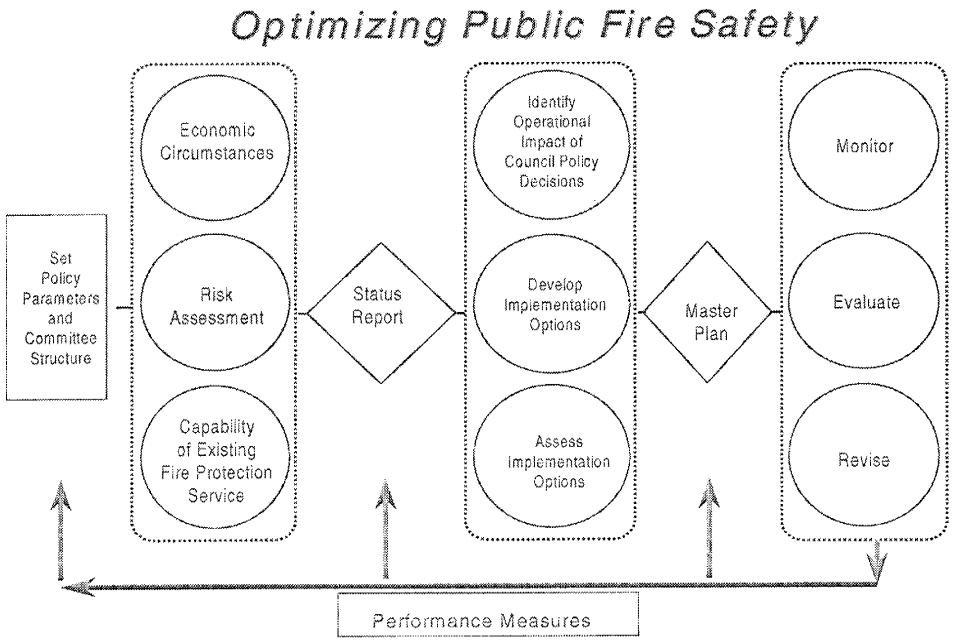
Since that time a major focus has been on transitioning, integrating and harmonizing the amalgamated City's emergency services.

In July 2002 the Emergency Services Department released a Business Plan in which a recommendation to develop a Master Fire Plan *'based on an analysis of needs and risk'* was included as a cornerstone activity. In October 2002 a provincial Coroner's report on the 2001 Roy Street fire tragedy re-emphasized the City's need to develop a Master Fire Plan.

On February 27, 2003 City Council authorized emergency services staff to proceed with the preparation of the Plan and to engage IBI Group to assist in its development. Work on the Plan commenced in early March 2003.

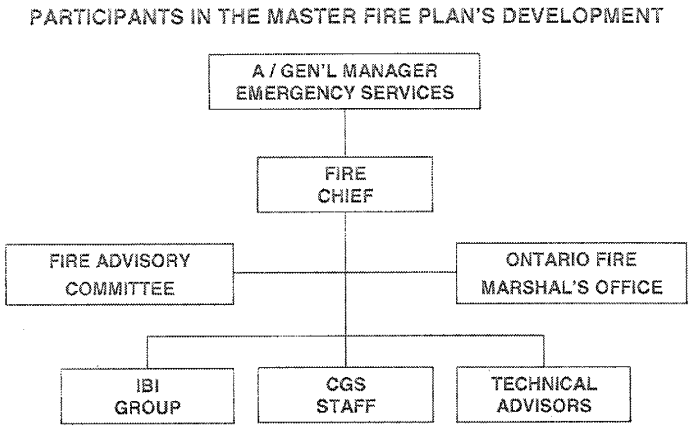
1.1 Plan Process

The process used to develop the master fire plan incorporated the Optimizing Public Fire Safety Model published by the Office of the Fire Marshal.



1.2 Plan Participants

A number of individuals participated in the development of the Master Fire Plan. They included:



- The Acting General Manager of Emergency Services,
- The Fire Chief and Fire Department staff,
- Police services responsible for fire dispatch communications,
- Municipal staff from the planning, finance and GIS departments,
- External technical resources.

A Fire Advisory Committee was also established with the Fire Chief as the committee chair. The membership included: 2 City Councillors, representatives from the Career and Volunteer Firefighter Associations, 3 citizen representatives and the Ontario Fire Marshals Office functioning in an advisory capacity.

In February 2004 a draft Master Fire Plan, prepared by IBI Group, was presented to Council.

The draft plan was also presented to the advisory committee, stakeholders, the Office of the Fire Marshal and the public. Comments on the plan were received through:

- 7 Public meetings held across the City with approximately 300 attendees
- Posting on the City of Greater Sudbury website
- Meetings with all Fire Department staff
- A letter from the Office of the Fire Marshal
- The June, 2004 meeting of the advisory committee

All of the comments received from the various groups have been carefully considered and several have been incorporated into the implementation of the plan.

The draft that was presented serves as a status report and an information base for this implementation report of the final Master Fire Plan.

The status report describes economic circumstances and identifies that a community fire risk and fire prevention risk assessment have been completed. It also describes

general emergency responses and broad initiatives that the group felt were necessary for improvement of the fire protection system for the City.

This process also brought out areas that required immediate attention and these were presented and approved by Council as they were encountered. Some of these items were remaining amalgamation issues that have now been implemented and this report will identify these areas as well as the few that are remaining as part of the ongoing plan.

2. IMPLEMENTATION PLAN

This Implementation Plan will become the progressive working document for Council, Fire Department Management and Staff that:

- Identifies current accomplishments
- Links current Fire Department capabilities to the community fire risk
- Incorporates the 3 Lines of Defence for public fire safety
- Suggests appropriate service levels to satisfy the fire risk
- Identifies the programs and resources required to deliver these services

This report summarizes the community fire risk and current Fire Department capabilities to ensure fire protection services and service levels are appropriate for the entire City.

While all available options were explored, this report identifies the preferred option for each program or service to be amended if necessary and approved by Council.

3. COMMUNITY FIRE RISK SUMMARY

One of the first steps in the Optimizing Public Fire Safety models for the master fire plan process is to conduct a community fire risk. This was completed and the assessment is included from the IBI document as Appendix A of this report.

This fire risk includes:

- A demographic profile of the City
- A profile of the building stock by occupancy for each area of the City
- Major development plans for the next 5 years
- Fire loss statistics for the past 6 years
- Fire and rescue call activity by area

This information has been used to identify and verify the fire protection services and service levels required for each area of the City. These are identified in the Suppression and Rescue section of this report.

As each fire station location and response area was assessed, the community fire risk for the actual response area of the station was identified and discussed. The impact on the fire risk was evaluated in each instance where a new station was proposed or where stations were considered for relocation, amalgamation or closure.

In June 2003, a comprehensive fire prevention risk assessment was also completed as a key portion of the Municipal Fire Protection Information Survey (MFPIS) conducted in collaboration with the Office of the Fire Marshal (OFM).

This assessment utilized the same criteria as the community fire risk but was directed at the fire prevention and public education activities of the City. This assessment identified existing programs with potential enhancements as well as new programs to improve the overall fire protection system. The changes and new initiatives are identified in the Fire Prevention and Public Education section of this report.

The completed fire prevention risk assessment was evaluated and accepted by the OFM as part of the requirements for the certificate the City received in December 2003.

3.1 Managing the Fire Risk – 3 Lines of Defence

Managing the community fire risk is best accomplished by initiating three key areas of fire protection.

1. **Fire Prevention and Public Education**

The public must be educated to recognize basic fire hazards, precautions they should take and the action to take if a fire occurs.

For the residents this means keeping their homes free of fire hazards, installing working smoke alarms, developing and practicing their home escape plan and notifying the Fire Department as soon as possible.

For building owners and occupants it also means learning why it is necessary to keep fire doors closed, detection and alarm systems maintained and fire safety plans current.

2. **Codes, Standards and Enforcement**

Once the public and building owners or managers understand the reasons for fire safety measures, they are more likely to ensure that buildings are constructed to codes and standards and associated fire equipment is installed and maintained correctly.

For example, people living in remote areas should understand the vital importance of installing their woodstove in the safest possible manner to prevent accidental fires.

Where the Fire Department becomes aware of infractions to the codes and standards, they should make every effort to have the owner correct the situation through education and only prosecute where owners refuse to take the necessary remedial action.

3. Effective Emergency Response

Even where the first two lines of defence are strictly adhered to, accidental fires and other emergencies will occur that require mitigation by the Fire Department.

The Fire Department is expected to respond to emergencies in a timely manner with sufficient fire fighters trained and equipped to meet local needs and circumstances associated with the fire risk of the community.

The municipal Council is solely responsible through the Municipal and Fire Protection and Prevention Act for the provision of fire protection services. They must establish the levels of service required throughout the city to meet the local needs and circumstances of the fire risk, based upon information provided by Fire Department management team.

Each of the three key areas has been applied to the fire risk to determine the most appropriate delivery.

For example, those people choosing to occupy remote properties should be informed of all fire prevention safeguards and potential delays of responding fire fighters so they can take the appropriate action specific to their potential emergency.

The fire risk should be matched to the capabilities of the existing fire protection services described in the next section of this report to assist in determining changes or additions that are required to meet the local needs and circumstances.

4. CURRENT FIRE DEPARTMENT CAPABILITIES

To arrive at the appropriate planning position for informed decisions, Council must be aware of the current services and capabilities of their Fire Department.

The 2001 amalgamation resulted in a diversity of fire protection services available to the City of Greater Sudbury. The service levels varied with local circumstances of each of the former municipalities or communities.

In April 2003, the Fire Department managers and the Office of the Fire Marshal (OFM) conducted an Emergency Services workshop to determine:

1. The services and levels provided by each former department and/or station,
2. If the provided service was authorized by their former Council,
3. If the fire fighters were trained to provide the service, and,
4. If the department had the appropriate equipment to provide the service.

Representatives attended the workshop from the eight former areas of Capreol, Nickel Centre, Onaping Falls, Sudbury, Rayside Balfour, Red Deer, Valley East and Walden.

The workshop participants provided valuable information indicating that many had not received appropriate training or equipment to conduct some of the basic core services such as interior fire fighting and rescue.

Services such as Marine Fire Fighting were also deemed not applicable for any areas.

It was also apparent that several of the former Fire Departments were offering services without validated training or the specific authorization of their respective Councils.

4.1 Current Core Services Provided

Since this evaluation, improvements have been made to ensure that each station is equipped and is receiving the training to provide basic fire suppression, rescue and medical assistance services the public expects of a Fire Department.

These core services include:

1. Basic firefighting – no expected rescue component
2. Structural firefighting including rescue – where possible
3. Grass, brush, forestry firefighting
4. Automatic aid
5. Mutual aid
6. Vehicle firefighting
7. Vehicle accidents
8. Vehicle extrication
9. Police assistance
10. Public assistance
11. Public utilities assistance
12. Urban search and rescue for persons
13. Basic medical assist
14. Advanced med assist/defibrillation at selected strategic stations
15. Community emergency plan participation

4.2 Limited Services

These are services where stations have not received sufficient training or appropriate equipment to provide the service.

The limited services include:

1. Hazardous materials – awareness
2. Hazardous materials – operations
3. Hazardous materials – technician
4. Water and ice – shore based
5. Water and ice – water entry
6. Water and ice – boat
7. High angle rescue
8. Confined space rescue

The extent of required training has been evaluated for each selected service Council approves.

For example, all stations require awareness level hazardous material training to begin appropriate operations as soon as possible and to support the selected stations that will receive operations or technician level training to actually handle the hazardous material incidents.

As with required training, appropriate equipment has also been identified with the level of service offered for each area.

Each station is now equipped to offer basic shore based water rescue because they all have swimming pools, streams or potential areas for persons to require rescue. The more complex equipment for vessel or boat based rescue is only required for selected strategic stations who require these levels in their coverage area but are also positioned to assist other areas in a reasonable time.

These services and levels are matched to the community fire risk and described in the Suppression and Rescue section of this report.

4.3 Fire Station Locations

The workshop identified the services and levels provided with comments on training and equipment provided to perform the task. It could not address the ability of former areas to assemble sufficient fire fighters in a short enough time to effectively mitigate the fire emergency.

Greater Sudbury currently provides responses from 25 fire stations located throughout the city. Strategic placement of fire stations is a critical factor in providing the most appropriate emergency responses. This is true for assembling initial attack teams as well as the complete fire attack team that may require utilizing one or more additional stations.

To evaluate current station locations and responses, a computer-based program for fire station location and suppression resource deployment was incorporated with the existing Geographic Information System (GIS) for the city.

With this program tailored to the specific needs of Greater Sudbury, many fire response factors have been analysed including:

- *Existing and proposed station locations measured against population or area covered and a standard of chosen time performance,*
- *Best and alternate emergency response routes to specific locations,*
- *Closest hydrant locations that may be relayed to responding crews by dispatch,*
- *Ability to input actual floor plans of specific buildings into the program,*
- *Ability of pumper, aerial, rescue and support crews to cover all parts of the city within the accepted time standard of performance,*
- *Emergency response times for first, second and additional arriving fire attack and support vehicles and personnel, and,*
- *Areas that potential mutual or automatic aid responses may occur in.*

4.4 Station Location Program Evaluation Results

The overall objective is to achieve identified response standards for 90% of the calls received. This allows for inclement weather, calls where the station is out of the station performing non-emergency work and for occasional simultaneous emergencies, which have already committed the station.

The program also identified time on each of the streets or roads enabling us to produce a map to show the coverage area. From the maps produced in the IBI report, we can determine that it is technically possible for first arriving emergency vehicles to achieve the 90% results identified as the reasonable overall objective for emergency responses in under 10 minutes for 83% of the population of the entire City.

In addition to population, the program identified all of the actual areas that are beyond a 10-minute response time where enhanced remote property fire prevention and public education programs will be applied.

4.5 Responses by Apparatus

The following table shows the travel times for first and second responding emergency vehicles to arrive at selected occupancies across the city.

Location	*1st Station*	*Time*	*2nd Station*	*Time*
Laurentian Hospital Sudbury – Paris Cresc	Long Lake Road	2 min. 18 sec.	Main	3 min. 23 sec.
Southridge Mall Sudbury - Paris/Regent	Long Lake Road	0.8 sec	Main	5 min. 27 sec.
Industrial Park Valley East – Belisle Dr	Val Caron	2 min. 33 sec.	Val Therese	5 min. 42 sec.
Seniors Complex Lively - R.R. 24	Waters	52 sec.	Lively	2 min. 18 sec.
Train Station Capreol – Front Street	Capreol	38 sec.	Railway	1 min. 49 sec.
Levack High School Levack - 100 High St	Levack	1 min. 54 sec.	Dowling	11 min. 53 sec.
Schoolway Bus Lines Red Deer Lake Road	Red Deer Lake	1 min. 23 sec.	Wahnapitae	4 min. 11 sec.
Sudbury Airport Garson – Skead Road	Skead	4 min. 57 sec.	Falconbridge	7 min. 47 sec.

The program also provided travel times from all 25 stations to selected sites to factor in subsequent arrival of apparatus or specific apparatus such as aerials into the total fire compliment required. This information was also be used to determine if a station location was essential as a second in station to supplement personnel or apparatus.

The responses have been run from each of the 25 stations for their entire response area with the times of each of the 2nd and 3rd responding stations arriving.

4.6 Assembly of Fire Fighters

Assembly time is the amount of time it takes fire fighters to get ready and leave the station with the appropriate apparatus.

For full time fire fighters 1 minute, 90% of the time is the assembly time when they are in or around the fire station. The volunteer fire fighters time is 4 minutes, 90% of the time, because they must leave their homes or places of employment and travel to the fire station before they can respond with the apparatus.

The full time fire fighters are assigned to a vehicle therefore, we can easily determine that if 3 pumpers are responding, there are 12 fire fighters arriving with the apparatus.

The volunteers, however, may respond to the station or directly to the scene once they know the vehicles have left the station. These procedures did not allow Fire Department officers to know when volunteers arrived at the emergency scene. A procedure has now

been initiated which requires the volunteers who respond directly to the scene to log the time with dispatch that they actually arrive at the emergency.

To ensure that sufficient volunteers do respond, a policy is in place to dispatch 2 or 3 stations for all reported structure fires or automatic alarms. This is being monitored but there was insufficient data for reported volunteer turnouts in 2003 to average numbers on scene at a specific time or reach a definite conclusion.

There are several reasons for the lack of information including:

- The policy was new and additional training was required for reporting
- Many of the calls were cancelled prior to responding volunteers arriving on scene
- Calls such as carbon monoxide alarms or ambulance assist do not require full crews

The following chart shows the emergency responses, fire and automatic alarm calls each volunteer or composite area responded to in 2003 up to September 1.

Call volume by former municipality

Date	Municipality	# of Calls	Total # calls CGS	% of calls
2003-01-01 to 2003-08-29	Capreol	27	2749	0.98%
2003-01-01 to 2003-08-29	Nickel Centre	92	2749	3.35%
2003-01-01 to 2003-08-29	Onaping Falls	78	2749	2.84%
2003-01-01 to 2003-08-29	Rayside-Balfour	94	2749	3.42%
2003-01-01 to 2003-08-29	Valley East	189	2749	6.88%
2003-01-01 to 2003-08-29	Walden	86	2749	3.13%
	Total Calls	**566**	**2749**	**20.59%**

The former Sudbury full time stations responded to the remaining 2183 calls.

In 2003, the Fire Department responded to a total of 3,953 emergencies of all types with former Sudbury attending 2886 or 73%, Valley East 356 or 9%, Nickel Centre, Onaping Falls, Rayside Balfour and Walden 158 or 4% for each and Capreol 79 or 2% of the responses.

Realizing that where turnouts are low and second in vehicles will normally be more than 10 minutes arriving such as the examples in Levack and Skead may require the service levels to be adjusted to ensure that fire fighters are not placed at unnecessary risk.

The first responding officer or person in charge will be required to determine if there are sufficient fire fighters on scene or on the way during the size up of the emergency. If the fire is a pot on the stove or confined to the room of origin, a sufficient initial attack crew could resolve it. On the other hand, if there are less than four fire fighters available and the fire has extended to the entire ground floor or through the roof, an exterior attack may be the only immediate option. This is identified in the IBI report under "What Residents May Expect in the Event of a Structure Fire."

4.7 Dispatch

If the objective is to assemble a total fire attack team in the shortest period of time, it is essential that 2nd and 3rd required stations are dispatched simultaneously with the 1st. If dispatch must wait until the 1st station acknowledges the alarm receipt before notifying the next, minutes will be lost between each response.

This situation was identified by the Fire Department managers and resolved in May 2004.

The information in the station location program is also being used for computer-aided dispatch. This permits communicators to provide immediate information to responding fire crews regarding hydrant locations, next in stations or apparatus and specific hazards identified in floor plans for larger buildings or complexes.

This information has been programmed with the assistance of the QSR staff and is now working well but is identified with the ongoing preplanning project in the master fire plan.

4.8 Fire Prevention and Public Education

A workshop was also conducted with the fire prevention officers from the entire City to determine what services and programs they had offered prior to amalgamation.

This workshop contributed immensely to verification of the building stock and through the audits performed, provided a reasonably complete list of all of the buildings other than single family in each of the former areas. The information also identified the need for several programs to be standardized and for retrofit inspections to be expanded from the former City and Valley East.

It was also apparent that required fire prevention and public education services could not be delivered with the current structure or staff and the division was reorganized as described in the Fire Prevention and Public Education section of this report.

5. ADMINISTRATION

This section addresses organization and management of the Fire Department including bylaws, agreements and records management systems.

5.1 Organization

In June 2003, City Council approved an organizational structure designed to ensure that the necessary level of programs and training are put into place to meet the fire risks and needs of the City.

The organizational structure is designed to reflect the City's composite fire operation, and to ensure leadership and appropriate levels of staffing for core services and relative support functions.

The Fire Department management team consists of the Fire Chief, two Deputy Fire Chiefs and two District Chiefs. Four persons are required to fully staff the District Chief positions. Two District Chief vacancies remain in the new organizational structure but they were approved by Council in June 2003, and are in the plan to be filled in 2005.

Fire suppression and rescue staffing consists of 97 full-time and 319 volunteer fire fighters. The number of volunteers fluctuates but remains around this general number.

Chief Fire Prevention and Chief Training Officers have been appointed in 2004. Twelve full time persons are now assigned to fire prevention and public education and training divisions.

There is also four additional administrative and clerical support staff.

An organizational chart for the Emergency Services department is included in the draft report however a specific organizational chart for the fire services division is required to form part of the Establishing and Regulating Bylaw.

The chart should clearly reflect staff and line authority that also serves as the reporting structure or chain of command for the entire Fire Department.

The IBI report also references a mission statement to affirm what services the public may expect of the Fire Department. The statement in the report has been revised to read as follows:

The City of Greater Sudbury Fire Services will provide professional, effective and efficient fire and emergency responses to protect the citizens, property and environment of this community and deliver quality fire prevention and public education so our citizens will be better prepared to protect themselves.

This mission statement also forms an appendix of the Fire Department Establishing and Regulating Bylaw and is added to the master fire plan initiatives for 2004.

5.2 Bylaws and Agreements

The City has bylaws that prescribe how Council wishes certain activities to be carried out or conducted. The following describes the current status of those relating to the Fire Department and public fire safety.

An establishing and regulating bylaw is necessary to describe to staff and the public how Council wishes the Fire Department to operate. It also contains the authority for the Fire Department members to carry out their duties.

A draft Establishing and Regulating Bylaw has been prepared however it cannot be finalized until Council approves the fire protection services it will provide. Once the master fire plan has been approved this draft bylaw can go to legal services for final amendment and presentation to Council for their approval in 2004.

An existing burning bylaw was revised, approved and passed by Council as the "Open Air Burning Bylaw" in June 2004.

There are two other fire prevention bylaws included in the master fire plan for revision and updating in 2005 to address the entire City and current conditions. They are:

- Fire Routes
- Fees for Services

The City has several fire protection agreements with neighbouring communities where they either provide or receive suppression and rescue services. These include:

- Whitefish Lake First Nations – provide services
- Nairn – receive services
- Markstay – receive services
- Estaire – receive services

There are also agreements with Ministry of Natural Resources to cover fire on Crown Land within or adjacent to the City and a Transport Canada approved agreement with the Greater Sudbury airport to provide backup and aircraft fire suppression and rescue when the airport staff is not available.

All of these agreements are being updated in 2004/2005 and will be sent to legal for processing and Council approval.

All of the bylaws and agreements pertaining to the Fire Department will be reviewed annually as part of the normal duties of Fire Department management staff and Quality Services Review (QSR) *(Strategic Services and Support)* staff.

5.3 Records Management

Over the past year the Fire Department management team has standardized reports and tracking forms for fire calls, fire prevention initiatives, public education initiatives, fire inspections, training and development initiatives and the maintenance of vehicles and apparatus.

In June 2004, the City adopted the City View Records Management System corporately and the standardized Fire Department reports can now be formatted to the data based system. This is presently underway by QSR and as the data is available and entered it will demonstrate the results.

This is included in the master fire plan as part of the performance measures for 2004 and 2005 to ensure the records and reports are flowing as they should and provide the information required by the management teams.

There were several references in the IBI report to the responsibilities of the Fire Chief regarding the budget process, annual reports and updating the various components of

the master fire plan. During subsequent discussions it was agreed that these are part of the job description and normal administrative duties of the Fire Chief and would not be specified as initiatives in the master fire plan.

5.4 Economics and Budget

For the purposes of municipal comparisons, the IBI report list Fire Department costs for 15 municipalities and Greater Sudbury is below the average and is in the middle of the municipalities identified. The comparison also illustrates costs for the four amalgamated communities increase accordingly with the population and size of the Fire Department.

The report also identified a capital budget shortfall of $1. 2 million for apparatus and equipment, however, with the approval of the 2004 budget and anticipated percentile inflation increase for 2005 this shortfall should be eliminated.

Area fire rating was also examined and discussed at length and this is included in the master fire plan for further discussion in 2005 and possibly again in 2006 if services do change again.

6. FIRE PREVENTION and PUBLIC EDUCATION

As previously noted, a fire prevention workshop and a comprehensive fire prevention risk assessment were conducted. It was determined that the programs identified as necessary could not be successfully delivered with the existing structure and staff.

In June 2003, Council approved the addition of staff and the fire prevention division was reorganized as follows:

1 Chief Fire Prevention Officer
6 Full time Fire Prevention Officers
4 Volunteer Fire Prevention Officers
2 Public Education Officers
1 Clerical support staff

With this change, fire prevention and public education are now available to all citizens at the same level across the entire City.

The following are the programs that are delivered as core services in the fire prevention and public education division:

Complaint or Request Inspections

The Fire Protection and Prevention Act, R.S.O. 2003, (FPPA) requires that each municipality perform fire prevention inspections upon complaint or request. Fire prevention personnel conduct these throughout the municipality.

The OFM has verified this through the Municipal Fire Protection Information Survey they recently conducted.

Tracking forms to tabulate the inspections have been developed and staff will also develop standard operating guidelines to ensure fire prevention officers handle all complaints and requests in the same fashion.

Scheduled Fire Prevention Inspections

Fire prevention officers conduct scheduled fire prevention inspections of all occupancy types on an established priority basis. These are comprehensive inspections of all fire and life safety components of the building.

The division is also exploring the possibility of introducing self-compliance inspections for selected occupancies that are found compliant as noted in the master fire plan for 2005.

Home and In Service Inspections

During visits to residential occupancies, crews check the smoke alarms and provide the occupant with a bilingual package on smoke alarms, home escape planning, kitchen, and barbeque safety.

The residential inspections conducted by in service crews addressed two key areas in 2003 – multi unit residential and smoke alarm checks. The multi unit residential target is the result of the rate of fire incidents noted in the fire risk assessment.

Crews targeted 3000 single-family dwelling and 280 multi unit residential home safety inspections and the 20 high-rise buildings.

As part of the master fire plan for 2005, the industrial occupancies will also be audited in each response area and the in service crews will carry out a basic inspection and notify fire prevention officers if they believe a more comprehensive inspection is required.

The master fire plan also includes small commercial and business occupancies for the in service program for 2005.

Public Fire Safety Education

There are two programs mandated by the FPPA. They are a smoke alarm and home escape program and distribution of fire safety educational material to occupants.

The department has implemented both of these programs across the city and the OFM verified this as part of the 2003 Municipal Fire Protection Information Survey. The City received their certificate of compliance with these basic programs in December 2003.

TAPP-C

TAPP-C - The Arson Prevention Program for Children is a program designed to assist children who have been determined by a mental health professional to have a problem with fire setting or playing with fire.

It is a partnership with the Clarke Institute and the Fire Department personnel are trained to deal with the child and their families in the early intervention stages of this growing fire problem. The police now have authority under the revised youthful offenders act to order children to be evaluated, if they determine there is a fire-setting problem.

Sudbury fire prevention personnel are acting as initial contacts on behalf of the entire district. Because the City has experience with the program, they would assist a place like Espanola if a problem were identified there. It should be emphasized that Sudbury staff would not conduct the program elsewhere, but rather, assist local fire and police with advice, information and establishment of TAPP-C in their respective community.

Risk Watch

The Learn Not to Burn program for school children was introduced but not across the City. Risk Watch is a current program for school children and includes participation of health services and the police making it a more complete child safety program. The Learn Not to Burn program will be used as a launch for Risk Watch in 2004/2005.

Older and Wiser

Older and Wiser is a fire safety program geared for seniors. Fire prevention personnel initially coordinate and deliver the program. Senior volunteers from the service groups could eventually deliver the program to other seniors, with some minor coordination and assistance from the Fire Department.

This program is developed for seniors and various components may be adapted to the specific needs of the audience. In downtown Sudbury, apartment fire safety would be delivered while in outlying areas it may be home safety. Both would have the same message for smoke alarms and cooking safety.

Several components of this packaged program are already being delivered and using this format will standardize available information for the entire City.

Miscellaneous Programs

There are other programs geared to cubs, brownies, guides and baby sitters that have fire components participants must complete for badges or to complete a course. These are currently conducted in varying degrees across the City and are being standardized.

Fire prevention officers also coordinate activities and materials for public displays at malls or other public functions during fire prevention week and similar undertakings.

Fire Incident Evaluations

This program is identified in the IBI report and it was implemented in 2004 to assist with the building aspects of fire cause determination at specific fires.

Fire prevention officers now perform a building audit or inspection when a fire occurs that the officer in charge determines is:

- A fire with a fatality or potential fatality
- A fire as a result of an explosion
- A fire determined to be arson
- A large loss fire
- A fire where an identified component or appliance has failed or caused the fire

Retrofit Inspections

The Ontario Fire Code requires owners of certain assembly, health care and residential buildings to bring them up to current standards. Without advice from the Fire Department, this may not be possible.

It is clearly the responsibility of the owner to comply, however, some of these owners do not know about the retrofit requirements. The requirements include municipally owned buildings such as community centres and arenas.

This project consists of a building audit and classification, inspections as necessary and developing appropriate compliance schedules with building owners or prosecution where they refuse to cooperate.

Retrofit Sections of the Ontario Fire Code apply to:

- 9.2 – Assembly Occupancies
- 9.3 – Boarding, Lodging and Rooming Houses
- 9.4 – Health Care Facilities
- 9.5 – Buildings up to and including 6 stories with residential (low rise)
- 9.6 – Buildings higher than 6 stories with residential (high rise)
- 9.8 – Two Unit Residential (basement apartments)

The following is the priority order of conducting and completing this program:

i) Municipally owned buildings first – community centres, arenas, libraries
ii) Institutional occupancies – high priority because of potential life hazard
iii) Residential – through building audit and as they become known

Municipally owned buildings have been audited and the inspections are proceeding.

This program appears in the master fire plan for 2004 through 2006 to ensure all known applicable buildings are retrofitted throughout the entire City. It then becomes an

ongoing program as basement apartments or other applicable occupancies are found by in service crews or fire prevention officers.

Remote Properties Program

The public education officers have developed a fire safety literature package that will be distributed to residents in areas identified beyond a 10-minute response from the nearest fire station. Local fire station crews will distribute the packages and others may be mailed or distributed through local public events or open houses of the fire stations.

The fire prevention and public education division will track this program for the QSR performance measures during 2005 as identified in the master fire plan.

Other Considerations for Master Fire Plan

With the addition of new staff and the changes in the division, training and professional development are essential. The Chief Fire Prevention Officer implemented a program where the less experienced personnel are partnered with more senior inspection staff.

A basic fire prevention course has been completed and arrangements have been made through the Ontario Fire College to have the fire prevention and public education officers attend the more comprehensive courses delivered there.

With this necessary training and development time commitment, scheduled inspection numbers may be down for at least the next year or even two. This rationale is sound however, as all inspections will be complete and the focus will be on quality rather than just quantity.

Over the first two years of the master fire plan it may also be necessary to add or revise programs to ensure that all mandated legislation could be met. This includes pending Objective Based Codes for new construction that has been discussed with the Building Department for training and implementation when it is passed.

The fire prevention and public education programs will also be evaluated and revised as necessary through performance measures identified by the QSR near the end of 2005 after the programs have been in place long enough to obtain results.

7. TRAINING

During the master fire plan process, it was identified that fire fighters and officers were at differing stages of required knowledge and skills and documentation of training varied greatly following amalgamation.

Both training and documentation are now standardized for the entire Fire Department.

The Training Division was reorganized in 2004 and now consists of a Chief Training Officer, 2 Training Officers and 1 clerical support person.

These people develop, organize, coordinate and in some cases conduct training for the suppression and rescue fire fighters and officers of the Fire Department.

Basic Suppression and Rescue Training

The training programs have been reviewed and a performance based program for basic fire suppression, rescue, extrication and incident command was developed using the International Fire Service Training Association *(IFSTA)* standards. These employ the same Essentials of Fire Fighting standards used in the OFM curriculum to meet the Ontario Firefighters Standard.

All fire fighters and officers are required to complete the program and each will be tested to ensure they can perform the identified competencies. This basic program is expected to be completed in September 2004 and is identified in the master fire plan.

Officer Training and Succession Planning

As fire fighters qualify to become officers, both career and volunteer are required to take additional training in roles and responsibilities, health and safety and incident command. The courses are conducted in the evenings for the volunteers and on shift for the career fire fighters. All fire fighters must pass an examination to qualify for promotion.

Officers are also required to complete a Trainer Facilitator course that qualifies them to conduct skill based performance tests for the fire fighters. This is an OFM course that also includes an examination and a post course assignment that must be completed.

All career Fire Department officers will be scheduled to attend Company Officer courses at the Ontario Fire College and the Chief Training Officer is currently negotiating with fire college management to have advanced Emergency Management courses delivered locally through the Trillium Centre and ALERTech. This is identified in the master fire plan for 2005 however delivery will be largely dependent upon the OFM and the Ontario Fire College.

Company officers assist the training division by conducting scheduled in service training programs for the fire fighters at their particular stations.

Specialty Training

The training division has identified training beyond the basic fire fighters and officers training as Specialty Training.

By the end of 2004, all fire fighters will have received training for shore-based water and ice rescue and awareness level hazardous material incidents.

The Chief Training Officer has also identified the necessary training for boat or vessel based water rescue, operations level hazardous materials, high angle and confined space rescue as these services become approved as part of the master fire plan.

The fire fighters who provide protection and backup through a fire protection agreement with the Greater Sudbury municipal airport have received basic training and the Chief Training Officer has identified practical "Aircraft Fire Suppression and Rescue" training as a training budget item for 2006.

Live Fire Training

The need for live fire training has been identified by the Fire Chief and also referenced in the recent Barrie inquest into a fire fighter death in that city. There is unquestionably no substitute for this type of training to prepare fire fighters for the hazards they face when performing actual fire suppression and rescue activities.

Operating in concert with the Trillium Centre, ALERTech is a state of the art facility for all types of company officer, fire suppression and rescue training and this will be a major influencing factor in the pending decision by the OFM to authorize Ontario Fire College courses locally.

This facility hosted basic Fire Prevention and Fire Cause Determination courses that were provided by the OFM in 2004. In addition to the Sudbury participants, fire fighters attended from several North Eastern Fire Departments and each has expressed interest in continuing this type of exchange with Sudbury.

The Chief Training Officer is working closely with other North Eastern training officers to develop a network that would improve training and development initiatives for all of the officers and fire fighters of both Greater Sudbury and the other departments.

Live fire training was provided at ALERTech during 2004 for the Greater Sudbury fire fighters with 6 weekends allocated for the volunteers, flashover training for career fire fighters in June and incident command and rapid intervention team training for career staff in September.

The master fire plan process recognized the need for live fire training to be included as part of the specialized and in service training programs and this is identified for 2005.

Training Records and Reports

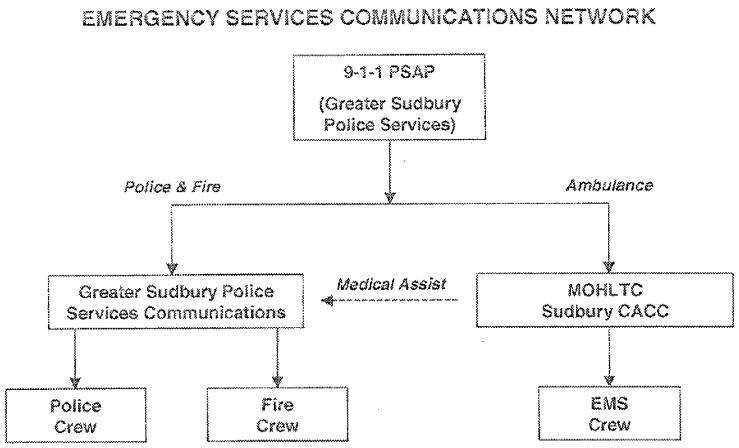
As these training initiatives progress, the training records are also being developed to enable Fire Department managers to identify what training has been conducted by both subject and individual.

The training division will also maintain records for fire prevention and public education personnel and the Chief Training Officer currently works with the Chief Fire Prevention Officer to coordinate the records and outside courses attended by his division.

This program is identified in 2004 and in 2005 it will be monitored by Quality Services Review section as part of their continuing benchmarking and performance measure role with the Fire Department.

8. COMMUNICATIONS

Greater Sudbury Police Services is the 911 Public Safety Answering Point (PSAP), and handles communications and dispatch for the City's police and fire services.



Police communicators transfer medical emergencies to the Central Ambulance Communications Centre (CACC) operated by the Ministry of Health and Long-Term Care.

A May 2003 discussion paper by IBI Group concluded the police communications centre was staffed with well-trained professional communicators using state-of-art radio and computer-aided dispatch (CAD) systems. One noted exception was the continuing use of a stand-alone, time-consuming voice paging system to contact volunteer fire fighters.

This system could alert only a single station at a time with an interval often exceeding a minute between each dispatch to ensure the volunteers received the alarm.

With City Council's approval, Police and Fire services electronically interfaced the fire paging system with the radio / telephone and CAD systems in May 2004. This now enables the City to page groups of volunteers simultaneously and should improve fire service response time performance capability throughout the entire City.

Quality Services Review staff is working closely with the dispatch centre and have developed monitoring information to verify response activities. This includes various critical times, numbers of vehicles and fire fighters who attend the emergency scene.

This is specifically included in the master fire plan for 2004 and 2005 as the collected data will be essential to determine necessary staffing levels for the services provided once sufficient information is available to reach a conclusion.

QSR will also assist dispatch to input preplanning information for the higher hazard occupancies throughout the City as this information becomes available.

Both the monitoring and preplan identification projects are identified with more detail in the Suppression and Rescue section of this report.

Other identified technological issues include limited radio access in the more remote fringe areas of the City and the need to replace a number of relatively outdated pagers.

These are being monitored and are also identified in the plan for 2005 and 2006.

9. FIRE STATIONS

The fire service currently operates from 25 fire stations located throughout the City. The locations are identified by city ward in the following IBI chart with the staff and vehicles assigned to that station as of February 2004.

FIRE SUPPRESSION & RESCUE STAFFING & FLEET

Station	Suppression Staff				Fleet						
	Description	Captains	F.F's	Total	Pumper	Tanker	Rescue	Aerial	Squirt	Bush	Total
Ward 1											
4 Long Lake (Note 2)	career 4-pers 24/7	4	12	16	1	1		1			3
5 Copper Cliff	vol's	3	10	13	1						1
6 Waters	vol's	3	15	18		1	1		1		3
7 Lively	vol's	2	16	18	1						1
8 Whitefish	vol's	3	15	18	1	1	1				3
9 Beaver Lake	vol's	1	6	7		1					1
Ward 2											
10 Azilda	vol's	3	15	18	1		1				2
11 Chelmsford	vol's	4	19	23	1	1	1		1	1	5
12 Dowling	vol's	4	14	18	1	1	1			1	4
13 Vermillion	vol's	1	6	7	1						1
14 Levack	vol's	3	11	14	1					1	2
Ward 3											
15 Val Caron (Note 3)	vol's	2	15	17	1				1		2
16 Val Therese	career 2-pers 24/7	4	5	9	1	1	1			1	4
	vol's	1	16	17							
17 Hanmer	vol's	1	16	17	1	1					2
Ward 4											
18 Capreol	vol's	3	15	18	1		1				2
19 Railway Ave (Note 1)	vol's				1						1
20 Garson	vol's	3	16	19	1		1			1	3
21 Falconbridge	vol's	2	10	12	1						1
22 Skead	vol's	2	10	12	1					1	2
Ward 5											
1 Van Horne (Main)	career 6-pers 24/7	8	32	40	2		1	1			4
23 Coniston	vol's	2	12	14	1					1	2
24 Wahnapitae	vol's	2	8	10	1	1					2
25 Red Deer	vol's	2	4	6	1						1
Ward 6											
2 Minnow Lake	career 4-pers 24/7	4	12	16	2						2
	vol's	2	12	14							
3 Leon (new Sudbury)	career 4-pers 24/7	4	12	16	1					1	2
TOTAL		73	334	407	25	9	9	2	3	8	56

1. Railway Ave station is staffed from Capreol station
2. The aerial assigned to Station 4 (Long Lake) is 30 years old and of limited operational use. It is not staffed and is maintained strictly for standby purposes.
3. The telesquirt assigned to Station 15 (Val Caron) is used strictly as a spare pumper. The elevated master stream component has been disabled permanently.

The preceding chart shows the stations by ward however the City is actually divided into five operational response districts as listed below:

- District 1 – stations 1 – 4
- District 2 – stations 5 – 9
- District 3 – stations 10 – 14
- District 4 – stations 15 – 19
- District 5 – stations 20 – 25

As previously noted, considerable time was devoted to evaluating the stations in relation to the specific response area fire risk. New stations, amalgamations and station closings were discussed in detail.

The following are the major amalgamations discussed that could be accomplished:

- Station 6 – Waters and Station 7 – Lively
- Station 8 – Whitefish and Station 9 – Beaver Lake

These would necessitate a new station to be constructed for each merger and it was decided this cost would be greater than any savings that may be realized. Almost the same number of fire fighters would still be required to cover the combined response areas.

A physical assessment of Station 25 – Red Deer Lake was conducted to evaluate the possibility of closing the station and it was determined that because of the local fire risk, road conditions and travel distances, the station should remain to operate in conjunction with Station 24 – Wahnapitae.

There was also consideration of closing Station 19 – Railway Ave however the station operates using the volunteers from Station 18 – Capreol with a single pumper so the savings at this time would be limited to the maintenance of the building.

It was concluded that each of these potential changes would again be evaluated when the costs for station renovation was significant or if problems with recruiting volunteers for the station arose.

The potential for a new station in the core area was also examined and the options are detailed are in the IBI draft. The Fire Chief will monitor the need for the additional station and associated staffing and present a report to Council in 2006.

Station Repairs and/or Renovations

The fire stations are an integral part of the municipal building stock of Greater Sudbury and represent a significant investment that must be maintained to ensure they meet the standards expected by Council and the public.

The four stations in the core area; Van Horne, Minnow Lake, Leon and Long Lake are being renovated in 2004 to accommodate cohabitation with the ambulance service. The renovation estimates are $250,000 however the funds are from the Emergency Medical Services reserves ***not*** from the Fire Department budget.

The Fire Chief assessed each of the 25 stations and prepared a report detailing repairs or renovations required and the following are the stations selected by priority for 2005 through 2009.

2005 – Station 10 – Azilda

2006 – Station 9 – Beaver Lake

2007 – Station 8 – Whitefish

2008 – Station 22 – Skead

2009 – Station 25 – Red Deer Lake

The Fire Chief has allocated a total of $450,000 over the five years for these repairs or renovations and this estimate will be reviewed and adjusted accordingly in each year of the master fire plan.

In August 2004, an additional health and safety situation arose in four and possibly five of the fire stations. A complaint was received regarding vehicle exhaust emissions and when the building department inspected the stations, they also found problems with fire separations and means of egress from the stations.

The problems were identified at:

- Station 6 – Waters
- Station 12 – Dowling
- Station 18 – Capreol
- Station 20 – Garson

The fifth is Station 17 – Hanmer, however, this was not verified at the time of this report.

The potential cost for the required repairs to meet the current building code could be as high as $250,000 for each station. If these are absolutely necessary, the amalgamation of Station 6 – Waters and the closing of Station 19 – Capreol should now be evaluated.

These are identified and noted in Appendix B of this report for further consideration with a potential cost of $1.2 million dollars, if all repairs are necessary.

Generally, the volunteer stations are located in centres where fire fighters live or work and are available to respond to emergencies as required. The level of fire protection services they are able to deliver is dependent upon the number of volunteers available in these centres and/or the time for others to arrive from a second station. These are described in more detail in the Suppression and Rescue section of this report.

10. APPARATUS and EQUIPMENT

Apparatus

The Fire Department currently operates a fleet of 57 emergency response vehicles with a replacement value approaching $20,000,000 that consists of:

27 Pumpers,

4 Elevating Devices – aerials, telesquirts and platform

8 Rescue Vehicles

9 Water Tankers

8 Bush Trucks

The Fire Chief has prepared a vehicle forecast that identifies the replacement year of each of the fleet vehicles over the next 25 years.

There are two other initiatives under way that may see a gradual reduction in vehicles over the next several years and a lease to purchase plan that will reduce the annual expenditures to replace the necessary vehicles.

The first is the assignment of vehicles to each of five districts with one rescue vehicle supported by a rescue pumper rather than rescue vehicles at each station. This also applies to tankers where each district has pumpers with large water tanks supported by 2 larger water tankers.

The following apparatus replacements are based upon purchase at current values for the life of the master fire plan.

Year	*Apparatus*	*Estimated Cost*
2005	2 – Pumpers, 2 – Tankers, 1 – Bush, 1 Airport Vehicle	$1.5 million
2006	2 – Pumpers, 1 – Tankers	$1.0 million
2007	2 – Pumpers, 1 – Bush	$1.3 million
2008	2 – Pumpers, 1 – Bush, 1 – Rescue	$1.6 million
2009	2 – Pumpers, 1 – Rescue	$.75 million
2010	2 – Pumpers, 1 – Bush, 2 – Rescue, 1 – Aerial	$2.4 million

This $8.25 million is based upon replacement purchase cost and if the lease to own plan proves feasible this cost could reduce to $4.9 million over the same time period.

Part of this apparatus replacement strategy is to purchase for five years and then stop for the next five years with a continuing vehicle reserve fund that could build for the next purchase period. This would permit technological advances while the fleet would still have several vehicles in the same vintage era, which will assist with the standardization strategy for the emergency vehicles.

The Fire Department has an excellent preventative maintenance program that will ensure the maximum life of each vehicle is reached. An officer is responsible for the program and works in conjunction with Quality Services Review section monitoring this important function. The City also has a "Solutions Team" monitoring the preventative maintenance for the Fire Department and a report of their results is forthcoming.

Equipment

The equipment costs identified in this report are for both capital expenditures and operation and maintenance.

Capital expenditures are for new equipment necessary to provide the extended services identified in the Suppression and Rescue section of this report including boat or vessel water rescue, operations level hazardous materials, and high angle and confined space rescue.

Year	*New Equipment*	*Capital Estimate*
2005	Water and ice rescue	$200,000
2006	Hazardous material	$150,000
2007	High angle and Confined space rescue	$100,000

Operating and maintenance costs are to enhance and replace worn out breathing apparatus, hose, nozzles, ladders and all associated equipment necessary for the fire fighters to carry out their normal emergency operations.

Approximately $300,000 is included in the annual operating budget for equipment replacement or maintenance. $100,000 of this equipment replacement is placed in reserve for the more costly self-contained breathing apparatus (SCBA) replacements.

During the master fire plan process it was necessary to replace protective clothing for the volunteer fire fighters and $650,000 was budgeted for 400 sets of bunker gear. This is identified in the IBI report but was completed in 2004.

The amalgamation also brought some outdated apparatus and equipment to the City that was not suitable for the current expected performance and it will take some time to identify and replace all of these items.

11. SUPPRESSION and RESCUE

The IBI draft plan identified several areas of consideration that range from operational considerations to staffing.

Since February 2004, several improvements have been made and information gathered that allows Fire Department management to report to Council regarding implementation of the master fire plan initiatives.

The Suppression and Rescue division is currently staffed with 319 volunteer and 97 career officers and fire fighters.

Deployment Principles

With the May 2004 commencement of the Computer Aided Dispatch (CAD) system, the station that can arrive at the site in the shortest time with the appropriate apparatus and equipment is dispatched to the emergency. The CAD running assignment also specifies the next two stations to be dispatched and identifies the closest stations with specialized resources such as an aerial or tanker.

Dispatch protocols specifying the resources required for specific emergency types are identified in the IBI report. These provide general guidelines across the City, however protocols for Valley East will be reviewed over the next year. If career staff is increased, they will be able to handle some emergency calls without the volunteers being alerted.

QSR now has developed a computer database and they are monitoring all emergency calls in the City. This project provides valuable information for Fire Department managers including:

Time of emergency call to 911

Time Fire Department is notified

Time fire fighters are dispatched

Time the vehicles leave the fire station

Time the vehicles arrive at the emergency

Type and status of emergency attended

How many fire fighters are at the scene and the times they arrived

Time that vehicles are released from emergency scene

Total time spent at any emergency

This information will also provide information by geographic area enabling managers to determine specific resource needs for each response area of the City.

An important part of the CAD is preplanning information for higher hazard occupancies of each response area. The pre-plans identify such things as immediate and secondary water supplies, specialized resources required and specific hazard locations within the property.

The program commenced with properties such as the hospitals, airport and higher hazard industries and will continue for the life of the master fire plan. QSR is assisting dispatch with inputting the information as it becomes available from the fire fighters.

Standard Operating Procedures for the fire fighters are also identified in the IBI draft and the review and revision of these has also commenced. This is an ongoing program and the Fire Chief and Deputies now have a process to review, revise and develop new standard operating procedures as they become necessary.

This is also an area where QSR will play a continuing role with their benchmarks and performance measures program.

Expanded Core Services

As identified under current capabilities, suppression and rescue personnel are trained and equipped to handle the basic cores services including shore based water rescue and hazardous material awareness.

The following are expanded or new services that were identified as necessary to meet the identified fire risk during the master fire plan process and included here as excerpts from the IBI draft.

Water and Ice Rescue

Boat or vessel water rescue was determined essential because of the 300 lakes, rivers and streams that offer the potential for a water rescue emergency across the City. The Fire Department responded to several water and ice emergencies over the past year.

- **Expanded ice and water rescue beyond the present shore-based capability:** Of the options under consideration, this one is considered to be of highest priority. Firefighters are already receiving a basic level training in shore-based ice and water rescue. The proposal is to provide training and equipment for a higher level ice and water rescue response to a select number of stations and firefighters: as a minimum to Van Horne station in fire District 1, and to two stations in each of the other four volunteer fire districts. Equipment needs include several boats and cold-water immersion suits, as well as the potential seasonal rental of snowmobiles. The cost to implement this option is estimated at a one-time expenditure of $200,000.

Confined Space and High Angle Rescue

Confined spaces are defined as anyplace a person could be trapped. This includes such things as the City sewers and hydro vaults, industrial pipes, tanks and boilers and construction trenches or tunnels. A bulk petroleum plant or one of the mining premises could easily have hundreds of potential confined spaces on their property.

The Fire Department currently receives several inquiry calls a week from industries that are now required to have a plan for confined space areas of their premises.

High angle rescues apply to such things as window washers or maintenance staff on high-rise buildings, industrial pipes, stacks and elevated walkways and persons doing recreational rock climbing.

- **Confined space and high angle rescue:** The two situations utilize the same equipment and require similar training and thus are treated together. The proposal is to ensure that all firefighters are given a basic level training as part of their ongoing in-service training program. In addition, that a select number of stations and firefighters be provided with training for a higher level response: as a minimum to Van Horne station in fire District 1, and to two stations in each of the other four volunteer fire districts. Equipment needs will include tripods, ropes, harnesses, spreader bars etc. The cost to implement this option is estimated at a one-time equipment expenditure of $100,000 plus $20,000 annually for training and equipment maintenance.

Hazardous Materials Operations Level

Potential for a serious hazardous material incident is very high in Greater Sudbury with over 450 industries and the railways, airports and major highways that run through the municipal boundaries. In August 1998, a truck carrying high explosives detonated on Highway 17 at Walden.

These potentials have also been identified and described in the municipal emergency plan.

- **Hazardous materials (HAZMAT) response**: There are three defined levels of HAZMAT response: awareness, operations and technician. At the awareness level emergency responders are apprised of local hazards, placards used for the transport of dangerous goods and basic mitigation strategies. At the operations level emergency responders are equipped and trained in basic containment, rescue and decontamination (e.g., chemical spills). At the technician level emergency responders are trained to a higher level of decontamination, clean up and removal of contaminants. Very few fire services are trained to the technician level; provincially designated technician teams have been established in Toronto, Ottawa and Windsor. The evolving proposal is initially, to train all of Greater Sudbury's firefighters to the awareness level and over time expand the fire services' capabilities to include a multi station response at the operations level. Current information indicates that the City's fire service should be able to achieve the initial objective within the existing budget and training program.

The fire fighters have received the awareness level training and this application is for the Operations Level only as noted in the excerpt. The estimated cost for this equipment will be $150,000 and the training up to $300,000.

Aircraft Fire Suppression and Rescue

The fire protection agreement with the airport, approved by Transport Canada, requires the Fire Department to assume responsibility for aircraft fire suppression and rescue when airport staff is not on the premises.

The area surrounding the airport is the sole responsibility of the Fire Department and this area includes considerable rough terrain and lakes to be considered should an aircraft incident occur outside the airport boundaries.

The facility has been pre-planned and the responding fire fighters have received basic training however the Chief Training Officer has identified the need to provide practical aircraft suppression and rescue training in 2006. Estimated costs for this training are $100,000 over two years.

This cost is primarily because live fire training for aircraft will have to be arranged at a facility having appropriate aircraft mock-ups such as those available at Sault Ste. Marie or North Bay.

Suppression and Rescue Staffing

The IBI report identifies the number of fire fighters required for a single family dwelling as described in NFPA Standard 1710 and the OFM Public Fire Safety Guidelines.

GUIDELINES FOR FIREFIGHTER RESPONSE TO
TWO STOREY RESIDENTIAL DWELLING IN URBAN SETTING

OFM	NFPA
10 firefighters on scene within 10 minutes of alarm	14 to 16 firefighters on scene within 10.5 minutes of alarm
Provides interior fire suppression *OR* rescue operations	Provides full interior attack *AND* rescue, with aerial operations as required
1.5 minutes for call taking & dispatch 1 minute turnout for full-time salaried (career) firefighters 90th percentile performance target	

Based upon these documents and local needs and circumstances of Greater Sudbury, the following are the operational response objectives of the fire service:

a) 10 fire fighters on scene for an urban residential fire within 10 minutes,

b) 12 fire fighters on scene for a rural residential fire within 14 minutes, and,

c) 16 fire fighters on scene for apartments, hospitals, industries, etc within 10 minutes

There are two areas of incremental staffing increases addressed in the IBI draft report:

- Incremental improvements in the City core
- Incremental improvements in Valley East

The City core currently operates with a total of 18 on duty fire fighters responding from the 4 stations located at Van Horne with 6 fire fighters and Minnow Lake, Leon and Long Lake with 4 fire fighters at each.

In 2003, these stations responded to 2862 emergency calls, 241 of which were actual fire calls. Each of these calls requires the commitment of at least one vehicle and crew of 4 fire fighters until the emergency has been mitigated or at least contained.

To achieve the response objective of 10 fire fighters in 10 minutes, it is necessary to use the main station with 6 and the next closest station with 4 fire fighters or all 3 of the stations that are staffed with 4 fire fighters.

Simultaneous calls do occur and when 2 or 3 of the stations are committed for a fire or any other incident, there is not enough on duty staff left to respond to another working fire. From March 1 to July 15, 2004, 168 calls occurred having overlapping times under 30 minutes with 136 involving 1 station, 30 involving 2 stations and 2 with 3 stations.

The Van Horne station responds with a pumper and 4 fire fighters and a rescue and aerial each staffed with 1 fire fighter. If the on duty staff was increased by 2 fire fighters, the station could adequately staff the aerial and rescue vehicles and also provide the proposed City wide technical rescue team.

Valley East was monitored throughout 2003 by the Fire Department and the OFM to determine if the 10 in 10 guideline could be met. The 3 stations at Val Therese, Val Caron and Hanmer responded to 297 emergency calls, 70 of which were actual fire calls.

For reported structural fires, all 3 stations responded with 2 career and 17 volunteer fire fighters responding from Val Therese and 17 volunteer fire fighters each from Val Caron and Hanmer. As noted in the IBI report, the combined 3 stations frequently did not meet the 10 in 10 target.

The primary reason for this was the stand-alone paging system that required each station to be alerted separately with a pause between each of the three pages. This has been corrected with implementation of the CAD in May 2004, and the results are now being closely monitored through QSR.

Options for improving the responses are described in the IBI report and the preferred option of increasing the career staff by 2 fire fighters at Val Therese is detailed with the associated costs and impact on the area fire rating.

In addition to the benefits of a guaranteed initial attack team of 4 fire fighters as detailed in the report, the response protocol could be adjusted so that the volunteers would not have to be alerted for every call. A fire fighter crew of 4 could handle most non-fire calls and many of the small fires such as grass or garbage bins and even some of the remote alarms where a secondary telephone protocol was developed with the occupancy.

There would be a considerable cost avoidance in wages realized here if the volunteers were not required for these specifically defined types of emergency calls.

This would also assist with volunteer fire fighter retention by not requiring the volunteers to leave work or respond in the middle of the night for medical assist or similar calls that would be handled by the on duty career staff.

The Fire Department management team now has compiled the necessary information to present detailed reports to Council and they are identified in the master fire plan for the City core in 2004 and Valley East in 2005. Once Council approves or amends these recommendations, the master fire plan will be adjusted to reflect when any additional staff will be added.

Volunteer Staffing

A report on volunteer staffing has also been prepared to increase the total compliment of volunteers to 400 from the current 319 for Council approval with the master fire plan.

This increase is necessary for several reasons including pending retirements and/or resignations at 10-15 per year, difficulty in getting standby weekend crews and a low current compliment at some of the stations that may not assemble an adequate initial attack team.

Daytime assembly of volunteers is particularly difficult when the fire fighters are at work away from their response area or where employers cannot permit them to leave work to respond to emergencies. Attendance at emergencies over the past six months is lower than 50% of the compliment at some stations.

The IBI report also addresses volunteer recruitment and retention and Fire Department management is now utilizing selective recruitment with a long-range goal to platoon the volunteer stations. This system has half of the compliment on call for a specified time and allows the other half to be free from calls, other than major emergencies. This has worked well in many volunteer fire departments and should assist with retention of these valuable people.

The time demand on the volunteers also includes required attendance for training and while this is conducted on evenings and weekends, they must still be away from their homes and families.

Initial Assembly of Volunteers

As described in the existing capabilities of the Fire Department, there is a concern with the time for second in vehicles that may be required at some stations to assemble an appropriate fire attack team on scene.

The following stations are listed with their February 2004 compliment as stations where the next arriving vehicle will normally be 10 minutes or longer in arriving.

Station 8 – Whitefish – 18 compliment,

Station 9 – Beaver Lake – 7 compliment

Station 13 – Vermillion – 7 compliment,

Station 14 – Levack – 14 compliment

Station 22 – Skead – 12 compliment

These stations are currently being monitored to determine how many fire fighters are available at any given time and the personnel may be limited to exterior fire suppression activities at present.

With personnel compliments of 7, it is not possible to achieve the on scene goal of 10 fire fighters in 10 minutes and even where there are 12 or 14 fire fighters, the probability of 10 being available and on scene in 10 minutes at all times is unlikely.

The volunteer system will work successfully only as long as sufficient fire fighters are available to respond for emergency calls at any time of the day or night.

Increasing the volunteer compliment to 400 and the selective recruitment, previously referenced, will also assist with this situation. The final cost will be dependent upon the

number of volunteers recruited however the $3,000 required to initially equip each new fire fighter is identified in Appendix B.

Remote Property Program

The stations that have initial responses to properties exceeding 10 minutes have been identified and the public education officers have prepared a package of fire prevention and public education literature for distribution to the owners of remote property. The emphasis of this program is for these property owners to keep their premises fire safe, install heat producing appliances according to current codes, to have working smoke alarms and home escape plans and know the appropriate action to take in event of a fire or emergency.

Some of the volunteer stations have received initial training from the fire safety officers and will be commencing this program in September 2004. The program is identified in the master fire plan for 2004, 2005 and 2006.

The fire prevention division will compile and track the program and it is expected this will be one area where QSR will do a survey of results at the end of 2005 to determine the effectiveness of the program.

12. PERFORMANCE MEASURES

As identified throughout this report, Quality Services Review has a responsibility to the Fire Department to monitor and evaluate various aspects and functions of the service as part of their normal duties.

The following are some examples of the master fire plan initiatives that QSR will be monitoring and assisting with.

Administration – records management system and fire statistic data

Fire Prevention – comprehensive tracking system and database for inspections

Public Education – comprehensive tracking, database and surveys for effectiveness

Training – records management and database for training by subject and individual

Suppression – emergency and fire call monitoring, statistics and database

Communications – response monitoring, database and inputting pre-plan information

The manager of the Quality Services Review section is also a participant of the OFM Benchmarking Project and will eventually be able to retrieve information from the other member Fire Departments for benchmarking comparison with Greater Sudbury. This program is expected to be functional at the beginning of 2005.

The Fire Department management team will also take an active role with performance measures and make the necessary revisions and updates to the master fire plan.