



## 4.0 FIRE PREVENTION AND PUBLIC EDUCATION

The Sarnia Fire Rescue Service carries out a typical fire prevention enforcement and public fire safety education program, within the guidelines of the Fire Protection and Prevention Act, 1997 (FPPA). Under the FPPA, "every municipality shall, establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention; and provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances."

The Office of the Ontario Fire Marshal describes the minimum requirement for a community fire safety program as including:

- a smoke alarm program with home escape planning;
- the distribution of fire safety education material to residents/occupants;
- inspections upon complaint or when requested to assist with code compliance (including any necessary code enforcement); and
- a simplified risk assessment.

The Division's main goal is to minimize the impact of fire risks and to decrease the threat of fire incidents. In 2004 Fire Rescue Services completed the Ontario Fire Marshal's "Simplified Risk Assessment" as well as the "Municipal Fire Protection Information Survey". Risks identified in the community are addressed by targeting vulnerable population groups with programs and activities, including:

- Sarnia Lambton Risk Watch Program;
- TAPP-C arson prevention program;
- Older and Wiser program for senior citizens;
- Chief for a Day school program;
- Inspection of assembly occupancies;
- Enforcement of Fire Code; and
- Public relations (including use of a Fire Safety Trailer).

### Community Profile

According to the 2001 census data from Statistics Canada, the median income in Sarnia is \$22,145, and the median age is 40.5 years. Population density is estimated at 430.5 persons per km<sup>2</sup>, and the average value of a dwelling in Sarnia, in 2001, was estimated to be \$133,176. Out of a total of 29,190 dwellings, census tables show that 70% are owned and 30% are rented, which is fairly consistent with provincial averages. Further, 94% of all dwellings were built prior to 1991, which is 8% higher than the provincial average.

In *Table 4.1* we can see that Sarnia's population is the largest of all municipalities in the region, representing approximately 56% of the 127,000 people residing within Sarnia-Lambton.



**Table 4.1 Sarnia-Lambton - Population by Municipality**

Municipality	Population	%
Sarnia, City	71,571	56.4%
St. Clair, Township	16,502	13.0%
Lambton Shores, City	11,393	9.0%
Plympton-Wyoming, Township	7,359	5.8%
Petrolia, Town	4,849	3.8%
Warwick, Township	4,025	3.2%
Enniskillen, Township	3,259	2.6%
Brooke-Alvinston, Township	2,785	2.2%
Dawn-Euphemia, Township	2,369	1.9%
Point Edward, Village	2,101	1.7%
Oil Springs, Village	758	0.6%
<b>Total</b>	<b>126,971</b>	<b>100.0%</b>

Source - Statistics Canada, 2001 Census

In terms of community profile, **Table 4.2** compares Sarnia’s age characteristics with provincial averages. The vulnerable populations are children less than 15 years of age and seniors 65 years of age and older. In Sarnia, the proportion of children under the age of 15 is 8% lower than the provincial average, while the senior population is 23% higher.

Addressing such demographic risks through public education becomes an important component of any municipal fire service. Older and Wiser is one example of a public education program for seniors delivered by the fire department. Simple facts speak to the importance of such an approach. In the six months preceding the launch of the program in July 1997, 35% of the 84 fire victims in the province were aged over 65.

**Table 4.3** summarizes the department’s priorities in terms of fire prevention and public education. The Division carries out high quality fire prevention and public education programs and is committed to improving and expanding their programs and activities. Staff recently raised private funds to purchase a safety trailer and tow vehicle. These are now used extensively to target youth through public education visits in schools and during fire prevention awareness events.

Population trends should continue to be monitored by the division so efforts continue to be tailored to suit community needs. The current profile indicates that programs should be targeted toward the senior population, given that their proportion within the community exceeds the provincial average. This is currently being addressed through delivery of the Older and Wiser program as well as presentations to senior groups and senior clubs. Inspections of seniors facilities are conducted annually and on a complaint or request basis.

In the broader context, Sarnia Fire Rescue Services are responsible for a much larger industrial risk than most municipalities its size, given that the so called “Chemical Valley” is located within its jurisdiction. This significant risk is specific to only two or three other Canadian municipalities that have such a large petro-chemical representation.



**Table 4.2 Community Age Profile**

Age Characteristics of the Population	Sarnia		Ontario	
	Total	% Total	Total	% Total
Total - All persons	70,875		11,410,050	
Age 0-4	3,560	5.0%	671,250	5.9%
Age 5-14	9,320	13.1%	1,561,500	13.7%
Age 15-19	5,130	7.2%	769,420	6.7%
Age 20-24	4,295	6.1%	718,420	6.3%
Age 25-44	18,335	25.9%	3,518,010	30.8%
Age 45-54	10,910	15.4%	1,635,280	14.3%
Age 55-64	7,380	10.4%	1,064,000	9.3%
Age 65-74	6,560	9.3%	818,165	7.2%
Age 75-84	4,215	5.9%	503,930	4.4%
Age 85 and over	1,165	1.6%	150,075	1.3%
Median age of the population	40.5		37.2	
% of the population ages 14 and under		18.2%		19.6%
% of the population ages 55 and over		27.3%		22.2%

Source - Statistics Canada, 2001 Census

### **Industrial Fire Prevention**

The City of Sarnia has a large concentration of petro-chemical industries and a considerable amount of time could be directed towards undertaking fire prevention and public education at these facilities. However, department resources are not sufficient to dedicate a fire prevention inspector exclusively to this task. Also, expertise within the realm of the petro-chemical industry is not currently at a level sufficient to provide such a service to all industrial clients.

During interviews with fire protection managers at a number of industrial sites in the city, it was evident that these private fire brigades provide good internal levels of fire prevention programs and services. The requirement for emergency plans, safety procedures, first responder capabilities and fixed extinguishing systems are largely dictated by each organization's insurance provider. Internal audits are conducted and monitored according to regular schedules to assure compliance and minimize risk.

Many of the petro-chemical firms are partners in the provision of mutual aid through the Chemical Valley Emergency Coordination Organization (CVECO) and the Community Awareness Emergency Response (CAER) group. While this is a volunteer organization with voluntary participation it generally ensures that the lines of communication are open between public and private emergency response groups operating in the Sarnia area.

While there may not be sufficient resources for the city to dedicate an inspector to the chemical industries, it is important for the Fire Prevention Division to allocate sufficient time to monitor medium and large industrial installations to be aware of any organizational changes taking place that would impact internal resource levels for fire prevention, protection and suppression. Recent actions by some of the large industrial companies in the area suggest a reduction in the level of staffing devoted to fire suppression and prevention.



Table 4.3 - Priority Setting Worksheet					
Priority	Status	Effectiveness, Goals/Objectives			
Fire Safety Priority (List in order of Priority)	Current fire prevention / public education programs that address the fire safety priority	Existing programs adequately address the fire safety priority & ensure compliance with minimum FPPA requirements?			
		If No, how should this change?			
	Fire Prevention (Inspection) Activities	Public Education Activities	Y/N	Fire Prevention (Inspection) Activities	Public Education Activities
1) Children	Day Care Inspections	School Visits Risk Watch injury prevention TAPP-C arson prevention Chief for a Day Fire Station Open House Fire Safety Trailer	Y Y Y Y Y	Day care facilities inspected annually or by request or complaint	
2) Seniors	Inspection of care facilities (Homes for the Aged, and Nursing Homes)	Older and Wiser program	Y	Seniors care facilities inspected annually or by request of complaint	Presentations are made annually to seniors groups/ seniors clubs
3) All Residents	Inspection of New Construction Burning Permits Inspections by complaint/ request Plans Examination Fire Code and By-law enforcement	Kitchen Fire Education	Y Y Y Y		
4) Industry	Participation in CVECO		N	Additional fire prevention resources needed to address increasing first response duties for industry (e.g. pre-fire planning)	
5) Businesses	Business Inspections		Y	Inspections by complaint/request	



The City of Sarnia includes many smaller industrial businesses that form part of the petro-chemical industry. It would be prudent to initiate a fire prevention program that identifies and targets the smaller industries that do not have the resources or staff to implement in-house fire safety programs such as those delivered in the larger facilities. Current resources do not permit this initiative at present. Additional fire prevention staff would be needed.

It is recommended that the department introduce a procedure to monitor the level of fire prevention programs in the industrial sector and develop a strategy to provide additional staff who would be dedicated to addressing the needs and risks associated with the industrial sector. Though staff resources are scarce, this initiative could potentially be undertaken by freeing up the Fire Prevention Officers' time through provision of additional administrative support.

Sarnia Fire Rescue Services would require significant notice to prepare itself in the event that private fire protection services at a petro-chemical facility were reduced. Depending on the situation, additional reliance on the department could necessitate additional staff, apparatus and training. At present, the department is not prepared for such an increase in workload, given its present staffing levels.

### **Staffing**

The Fire Prevention Division consists of seven staff. The division is headed by the Chief Fire Prevention Officer, a position that is filled on an interim basis. Five members are assigned as Fire Prevention officers, while one person is designated as a Public Education/ Public Information Officer.

The Fire Prevention division provides fire safety services to Lambton Shores and the Aamjiwnaang First Nations Reserve through contracted service agreements. Although it has been reported that the Lambton Shores fire prevention program is successful, the revenue stemming from this agreement (approximately \$20,000 per year) does not seem sufficient. Staff in the Fire Prevention division could provide a higher level of service to Sarnia residents with existing staff by not "losing" a third of one officer's time to this contract.

The resources used to provide contracted services in Lambton Shores is included within the City's Fire Prevention/ Education staffing statistics, which somewhat overstates the resources dedicated to Sarnia residents. Both agreements should be reviewed to determine whether fees should be increased or service discontinued.

**Table 4.4** was prepared using statistics from the Ministry of Municipal Affairs and Housing and Office of the Fire Marshal (OFM). Population data was obtained from Statistics Canada (2001 Census). A combination of full time and composite (i.e. combination of full time and part-time/volunteer staff) fire departments has been included.

Larger cities tend to use a ratio of Fire Prevention/Education Officers to population to determine whether sufficient staff is in place. A ratio of one officer per 15,000 to 20,000 population is considered somewhat typical for larger Ontario cities. However, this ratio does not necessarily apply to smaller municipalities, given the range of different operating structures in place (i.e. from full-time to volunteer), populations and land masses to protect.



Some of the fire prevention activities could be shifted to firefighters through in-service inspections. Many municipalities make use of suppression staff to carry out smoke alarm inspections as well as home and school inspections and/or audits.

City	Population (2001)	Staffing	Coverage Area (Sq.km)	Fire Prevention Staff <sup>2</sup>
North Bay	52,771	Full Time	312	9
Cornwall	45,640	Full Time	62	3
Sarnia	70,876	Full Time	165	7
Peterborough	71,446	Full Time	59	4
Niagara Falls	78,815	Composite	210	7
Clarington	69,834	Composite	611	4
Kawartha Lakes	69,179	Composite	3059	5

With seven fire prevention staff, the City of Sarnia appears to be in a similar range as other peer municipalities. Again, one staff person dedicates about 30% of their time to fire prevention services for Lambton Shores and the Aamjiwnaang First Nations Reserve through service (protection) agreements is counted within Sarnia’s staffing numbers which is not entirely correct. Given the complexity and more prominent presence of industrial risk within Sarnia, as compared to more “typical” Ontario cities, it would be preferred to have a higher level of fire prevention staff within the Sarnia Fire Rescue Services.

**Administrative Support**

One of the key issues affecting the productivity within the division is a lack of administrative support. A major proportion of the fire prevention and public education officers’ time is spent on tasks of an administrative nature such as record entries, filing, completing compliance and enforcement letters or other correspondence. There is also a requirement to manage telephone enquiries and general reception responsibilities. Currently, a part-time secretary fields most department calls, however the Fire Prevention/ Education officers assume these duties during the balance of the time.

Ideally, officers would primarily be devoted to fire prevention activities and education programs with clerical and reception duties delegated to administrative staff. This would increase productivity within the division. Officers could expand their provision of services and complete tasks such as inspections or follow-ups within shorter time frames, effectively increasing the level of service to residents and businesses.

The need for further administrative assistance was identified within other department divisions and is highlighted within this report’s Administration section (**Section 3.0**).

<sup>2</sup> Fire Prevention staffing as provided by the Ontario Fire Marshal’s Office in 2006. Note that public educators are included within Fire Prevention for tracking purposes and that levels of administrative assistance are not shown.



## **Policies and Procedures**

The Fire Prevention Division has not developed formal written policies and procedures to ensure that fire prevention activities are being delivered to customers in a consistent manner. The Division should immediately begin the process of identifying and prioritizing the development of the appropriate operational guidelines and procedures to ensure clear direction for staff.

The review should also include investigating the feasibility of an agreement or procedure that identifies the inspection responsibilities of fire inspectors versus those for building inspectors in order to eliminate the possibility of overlooking a code or safety requirement and to streamline the time required to complete inspections for permit applications. This type of policy would improve the productivity of inspectors and could contribute to reducing overall inspection time from a customer perspective.

In addition to the current inspection and education programs delivered, there should be more emphasis on pro-active assembly occupancy inspections (e.g. meeting places, religious buildings, restaurants). A comprehensive list of critical community buildings should be developed and a schedule assigned to ensure that higher risk properties receive regular inspections.

Enforcement of the Fire Code and the Building Code is essentially affecting meaningful improvements to minimize fire risk. In order to ensure that compliance violations are consistent and meaningful there is a need for the division to meet with Sarnia legal representatives and the appropriate Provincial legal authorities to develop a formal written procedure to prepare and expedite legal charges.

As identified in the Ontario Fire Marshal Municipal Fire Protection Information Survey (MFPIS), the Sarnia Core Review of Services and interviews with staff there are no approved departmental policies for fire prevention, public education or fire cause determination. These policies should be developed with clearly stated goals and objectives. The use of OFM Fire Prevention Effectiveness Model – PFSG 04-39-12 and related guidelines will aid in their development and will formalize the department's responsibilities with respect to fire prevention. When the current Fire Services Establishing By-law is reviewed it should include the above noted policies.

The municipality should also direct legal staff to investigate the advantages of appointing Fire Prevention Officers as Building Code Inspectors for Part Three of the Ontario Building Code. As identified in the MFPIS, appointing Fire Prevention Officers as Building Code Inspectors could provide improved liability protection for the individual inspectors and the municipality.

## **Training**

Training and certification levels of inspectors appears to be adequate although there is no records management system in place to easily track training levels staff have reached in their respective programs, nor are there strategic training initiatives planned for the future. This could be improved by the development of a policy identifying the certification expectations of staff and upgrading the Fire Department records management system (FDM software) to include training records for the division. Recommendations in this regards are made as part of the information technology portion of **Section 8.0**.



It was also identified that there is no formal training process for new personnel assigned to the Fire Prevention Division. Since there is a considerable amount of time required for new inspectors to attend and complete certification courses, the Division should develop a training policy that includes objectives for new staff, which adopts specific training manuals in order to establish consistency. As noted earlier, the development of guidelines and procedures will assist in this regard.

### **Work Environment**

The Fire Prevention Division is currently located at the East Street station (Station 1). The lack of office work space is a serious issue. Desks and filing cabinets are extremely close together and it is difficult to talk on the phone without noise interruptions. In addition, there is no designated space for internal meetings or with customers, the nature of some of which could be confidential.

The division is located on the second floor of Station 1, which does not have an elevator. Since the first floor was designed to accommodate fire vehicles, the stairs are unusually long, which is a further hindrance to anyone who might have mobility difficulties. This facility is not considered customer friendly, although in light of all the current fire service facilities, there is no other suitable location. In conjunction with station location plans (discussed in **Section 5.0**), adequate provisions should be made for the Fire Prevention Division.

### **Summary of Recommendations**

Review the Fire Prevention agreements in place with Lambton Shores and the Aamjiwnaang First Nations Reserve to determine whether these should be revised or discontinued.

Introduce a procedure to monitor the level of fire prevention programs in the industrial sector and develop a strategy to provide additional staff who would be dedicated to addressing the needs and risks associated with the industrial sector.

Include the additional needs of the Fire Prevention Division as part of the review of administration support. Removing more of the fire prevention officers' clerical duties would allow more focus to be placed on prevention activities.

Consider the space needs of the Fire Prevention Division as part of the fire station review.

Introduce a basic training program for new employees in the division and document certification levels expected of fire prevention officers.

Include the completion of the Ontario Fire Marshal Fire Prevention Effectiveness Model (Public Fire Safety Guideline 04-39-12) as part of division responsibilities and include annual reviews of programs and activities delivered.

Establish an evaluation committee to report on an upgrade to the Fire Department's records management software (FDM software) and/or related training requirements. This committee would also identify City programs and resources that could be of assistance to the development of fire safe community.

Develop fire prevention, public education and fire cause determination policies for the department and include within municipal by-laws.



Investigate the need to have fire prevention officers formally designated as Building Code Inspectors under part three of the Ontario Building Code (OBC).

Initiate a process to ensure that standard operating guidelines, procedures and policies are developed, reviewed and followed by the fire prevention division.

Develop policies with Building Services and Legal Services to ensure that fire code and building code infractions are not overlooked and enforcement procedures are followed.