



St. Thomas Fire Department



Fire Service Strategic Review

Developed by:

Emergency Management & Training Inc.
65 Cedar Pointe Drive, Suite 144
Barrie, ON L4N 9R3



Executive Summary

The St. Thomas Fire Department has made significant strides in the level of service and capabilities over the past 15 years. To evaluate its present service level and the needs of the community, the department chose to undertake a Strategic Review to provide direction and guidance for its continued evolution. This review allows for prudent operating and capital budget forecasting.

Areas that were of particular concern to the community and that are addressed in this report include:

1. Facilities
2. Apparatus
3. Service Delivery
4. Administration
5. Communications
6. Fire Department Dispatch

This review has examined and researched all aspects of the Fire Department operations, planning, fire prevention, training and education, communications, apparatus and equipment, maintenance, human resources, station suitability (accommodations) and locations, and fiscal challenges. During the review process, it was very apparent to Emergency Management and Training Inc. (EMT) that the residents of St. Thomas are served by a dedicated group of personnel (of the St. Thomas Fire Department). The successful completion of this document is in no small part due to the overall support that EMT received from all STFD staff.

Based on the review conducted by Emergency Management and Training Inc., a total of 42 recommendations have been made. The following list has been organized in the recommended timeline implementation. For a more detailed and chronological overview of the recommendations (as seen in order within the document), which include an approximate costing for each recommendation, please refer to the chart found in section eight.

Recommended Timeline	Recommended Solution	Recommendation # (in the order noted in the main document)
No change	The City should maintain 10 on-duty firefighters on duty around the clock to ensure a timely first response.	19
Immediate	During a major emergency where the Incident Commander does not have confirmation that there are enough off-duty firefighters responding in a timely manner, Mutual Aid should be activated immediately after the call back of off-duty firefighters to ensure adequate resources are responding.	21
Immediate	Rescue 7 and Rescue 10 should be replaced with a suitable heavy rescue unit that can carry all the necessary rescue equipment and provide a suitable command	38

	vehicle capability.	
2017	St. Thomas Fire Department should identify life cycles for all major cost equipment, such as vehicles, rescue equipment, building facilities, personal protective equipment and other higher cost items. Based on these life cycles, capital forecasts should be created that identify dates and anticipated costs for replacement.	1
2017	A centralized and electronic inventory control process should be established to track all significant equipment.	2
2017	The City of St. Thomas should encourage the Ontario Association of Fire Chiefs or the Association of Municipalities of Ontario to undertake a comprehensive review of the impacts of 24-hour shifts including the different impacts on large and small career fire departments.	3
2017	The Simplified Risk Assessment should be updated.	5
2017	Annual business planning cycle should be more specific in identifying goals and expected outcomes for property inspections (such as more clearly defining the inspection frequencies) and public education activities and reviewed at least quarterly to assess progress, re-assign resources and/or revise goals as necessary.	6
2017	The expectations for fire department actions and responsibilities regarding Ontario Building Code compliance should be clearly articulated and the Fire Prevention Divisions should re-establish a coordinated approach with the Buildings Department for properties that are of concern to the City.	7
2017	Expansion of the use of an integrated records management system (such as CriSys) should be undertaken to make the most effective use of collected information, including enabling better data access between Fire Prevention, Dispatch and Suppression.	8
2017	Succession planning should be addressed to ensure trained personnel that are familiar with the community and the fire department are ready to take over when the existing personnel retire.	9
2017	Conduct a work load study (as outlined above) to determine whether an additional fire prevention inspector is warranted.	10

2017	Assign Administrative Support time (estimating 21-28 hours a week) to the Fire Prevention Division.	11
2017	<p>It is recommended that greater utilization of the on-duty firefighters be incorporated into an annual Fire Prevention Program. To accomplish this, all Captains should be trained and certified to at least:</p> <ul style="list-style-type: none"> • NFPA 1031 – Fire Inspector I, and • NFPA 1035 – Fire and Life Safety Educator I <p>By having all Captains trained to the above noted levels, STFD will have a greater number of resources to draw upon in its public fire safety education and inspection programs.</p>	12
2017	The RTOs should be separated from the Suppression Division into its own Communications Division.	13
2017	It is recommended that a full cost analysis needs to be completed in relation to the training required to have all RTOs and firefighters fulfilling the role of an RTO meet the NFPA 1061 Standard.	14
2017	Discussions should be initiated with other county and wider area fire services to determine the potential for acquiring dispatch service contracts.	15
2017	Administrative tasks should be assigned to the RTOs to increase their utility and offset potential administrative support costs. This should begin with providing administrative support to the Training and Fire Prevention divisions.	16
2017	Discussions should be initiated with the Association to remove the four current RTO positions from the bargaining unit and have the dispatch service provided by the St. Thomas Police Service. Should this be achieved, discussions with the St. Thomas Police Service should be initiated to ensure that all factors affecting the transfer of communications and dispatch to the police service are comprehensively addressed.	17
2017	Depending on the outcome of Recommendation 17, if STFD maintains their RTOs, additional part-time RTOs should be recruited to ensure that absences (including ones such as the current long-term absence) are filled by qualified staff. Two part-time RTOs would be appropriate, initially. This will require discussion and agreement with the Association.	18
2017	Means should be investigated and acquired to ensure	20

	timely notification of off-duty firefighters of a major emergency and to allow them to notify Communications of their response and estimated time of arrival.	
2017	The CriSys records management system's Training Module should be fully implemented.	24
2017	Officer development program should be more formalized and successful completion incorporated into promotion opportunities.	25
2017	The Shift Training Instructor model should be fully developed to support the required training for each platoon and a schedule for the training be set at the beginning of each year, with the Chief Training Officer, setting the schedule and establishing goals, monitoring and analyzing progress towards goals, and delivering the training when possible.	26
2017	Provide administrative support to the training officer to ensure all training records are documented electronically (7 to 14 hours a week initially).	29
2017	Mobile data terminals should be further developed and implemented on front run vehicles, including making the existing MDT on Rescue 10 mobile data capable and adding MDTs for Pump 6 and Ladder 9.	40
2017	Confined space rescue equipment in use by STFD should be compared with that in use by St. Thomas Environmental Services and standardized, as needed.	41
2017	Radio communication audibility and transmission strength should be monitored and analyzed and problems identified. If warranted, radio repeaters should be purchased and implemented to improve radio communications.	42
Short-term (1-3 years)	The Department should consider and enter negotiations with the Association for the addition of part-time firefighters who would be called to replace vacancies in the shift schedule.	22
Short-term (1-3 years)	The Department should consider hiring up to four additional firefighters (1 per platoon) to be assigned to the Suppression Division to provide more flexibility with staffing and to reduce the reliance on overtime.	23
Short-term (1-3 years)	Consider developing a computer based learning management training system to enable distance learning, coordinate progress toward established learning outcomes and to enable coordinated simulation training.	28
Short-term (1-3 years)	Research and implement a system whereby smoke/fire alarm systems in residential and commercial properties in	30

	target areas (where response times are otherwise longer than desirable) are directly connected to the St. Thomas Fire Department Communications Centre to reduce notification time and, therefore, keep total response time within an acceptable timeframe.	
Short-term (1-3 years)	The administration offices at Station 1 should be altered and expanded as necessary to meet accessibility standards, provide a meeting room, secure storage room, and an office for the Chief Training Officer.	31
Short-term (1-3 years)	The crew quarters at Station 1, including the kitchen, dorm and day room, should be renovated making use of hard wearing materials to ensure longevity and ease of maintenance.	32
Short-term (1-3 years)	Alarm notifications for both stations should be standardized using tones and voice announcements.	33
Short-term (1-3 years)	The asphalt at Station 2 should be repaired.	34
Based on the outcome of the 24-hour shift proposal	If the Suppression Division converts to a 24-hour shift, management must take the necessary actions to ensure that attendance is closely monitored to ensure that it improves, operational readiness and effectiveness are not compromised, training is conducted thoroughly and regularly, station and equipment maintenance and cleaning are maintained and that task assignments are completed on time.	4
Discussions in the short-term (1-3 years) implementation in the mid-term (4-6 years)	Develop more comprehensive training facilities that better affords the opportunity to train and practice all the skills needed for the range of services provided by the department. This should be coordinated, where practicable, with other County fire departments, particularly Central Elgin.	27
Apparatus should be ordered 12 months prior to the delivery date	Firefighting apparatus should be replaced at their 20th year. E.g. Ladder 5 should be replaced by 2021, Pump 1 should be replaced by 2024, and Pump 6 should be replaced by 2027	39
Long-term (7-10 years)	Evaluate city owned property or acquiring property that would be appropriate for a fire station in the west end of the City. Some fire departments (e.g. City of Barrie) are leasing space in commercial / industrial plazas to reduce the initial capital costs.	34
Long-term (7-10)	Monitor the city growth, call demand, response times and risks in target areas (where response times are otherwise	35

years)	longer than desirable) in the evaluation of the need for a station in the west side of the City.	
Long-term (7-10 years)	Consideration should be given to the construction of a training facility that can include live fire, rescue simulations, and props at the new fire station.	36

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Project Overview

Purpose

This Strategic Review was developed to provide direction to the St. Thomas Fire Department and to help shape the future course of this fire service over the next ten years. Having a comprehensive plan assists in planning and operations of the fire service to ensure that decisions and initiatives undertaken year by year lead to the established vision for the fire department.

Review Process and Scope

Emergency Management & Training Inc. (EMT) has based its review process on the City's initial Request for Proposal (RFP) and the response document submitted by EMT. EMT follows an established process to systematically and comprehensively assess the current status of the fire service and to ensure that all appropriate factors are considered in conducting a service review.

Documents and data provided by the City of St. Thomas were reviewed and analyzed. Extensive interviews were conducted of involved stakeholders, including:

- City Manager
- Municipal Councillors
- Fire department management
- St. Thomas Professional Firefighters Association representatives
- Staff from each fire department division – Administration, Training, Fire Prevention, Communications, Suppression
- Staff from the Human Resources and Planning Departments
- Other Elgin County fire services
- Fire Chiefs from communities outside Elgin County
- St. Thomas Police Department
- Representative from the Ontario Police Technology Information Cooperative
- Elgin and St. Thomas Emergency Medical Services

The request for proposal identified 6 key areas of Work Plan Project Objectives. These are:

1. Facilities
2. Apparatus

3. Service Delivery
4. Administration
5. Communications
6. Fire Department Dispatch

EMT reviewed these, and other related issues affecting fire service protection for the City using an objective evaluation of available data. The review team considered best practices, current industry standards, and applicable legislation as the foundation for their evaluation and report. EMT also used both quantitative and qualitative research methodologies to develop a strong understanding of current and future needs and circumstances of the community, and customer service demands of the public.

Based on these criteria, through meetings with the Fire Chief and other stakeholders, the consulting team completed a thorough review of what is working well and what areas require improvement within the St. Thomas Fire Department. During the program review, the consulting team assessed staffing, fire facilities, vehicles and related operations. Data provided by the Fire Department was also reviewed in relation to all the previously noted items contained in the City's request for proposal (RFP).

Based on the review of the Fire Department's facilities, equipment, programs and related data, EMT is submitting a total of 42 recommendations (noted in this report) that can be implemented in whole or in part by the City, as it sees fit.

Performance Measures and Standards

Municipal council, as the legal representative of the municipality, is responsible for the delivery of fire protection services in accordance with the *Fire Protection and Prevention Act, 1997* and to ensure compliance with all other regulations that apply to the fire department. Consequently, this Strategic Review has been based upon (but not limited to) key performance indicators that have been identified in national standards and safety regulations such as:

- The Fire Protection and Prevention Act
- The Ontario Fire Marshal's Office and Emergency Management (OFMEM) Public Safety Guidelines
- The National Fire Protection Association (NFPA) Standards
- The Occupational Health and Safety Act.
- Ministry of Labour - Ontario Fire Service – Section 21 Guidelines
 - The Section 21 Committee is based on section 21 of the Ontario Occupational Health

and Safety Act. This committee is charged with reviewing industry safety concerns and developing recommended guidelines to reduce injuries for the worker.

Project Consultants

Although several staff at Emergency Management & Training were involved in the collaboration and completion of this Plan, the overall review was conducted by:

- Darryl Culley, President Emergency Management & Training Inc.
- Paul Leslie, Senior Fire Consultant,
- Lyle Quan, Senior Fire Consultant,
- Richard Hayes, Senior Fire Consultant

SECTION 1: Community and Fire Department Overview

- 1.1 City of St. Thomas
- 1.2 Community Risks
- 1.3 St. Thomas Fire Department

SECTION 1: Community and Fire Department Overview

1.1 City of St. Thomas

The City of St. Thomas covers 32.2 square kilometres in the centre of Elgin County and has the only full-time fire service in the County.

The City has experienced a steady population growth over the last number of years. The current population is approximately 38,000 and it is expected to grow to between 43,900 and 47,000 within the next 10 years. In addition to the population growth, there is an ongoing shift in the aging population with, by far, the largest growth in citizens over the age of 65 years. While the City population grew by 5% between 2006 and 2011, the number of people over 65 grew by 16.6%. This increased age brings with it different expectations and different needs.

St. Thomas – In relation to the surrounding communities



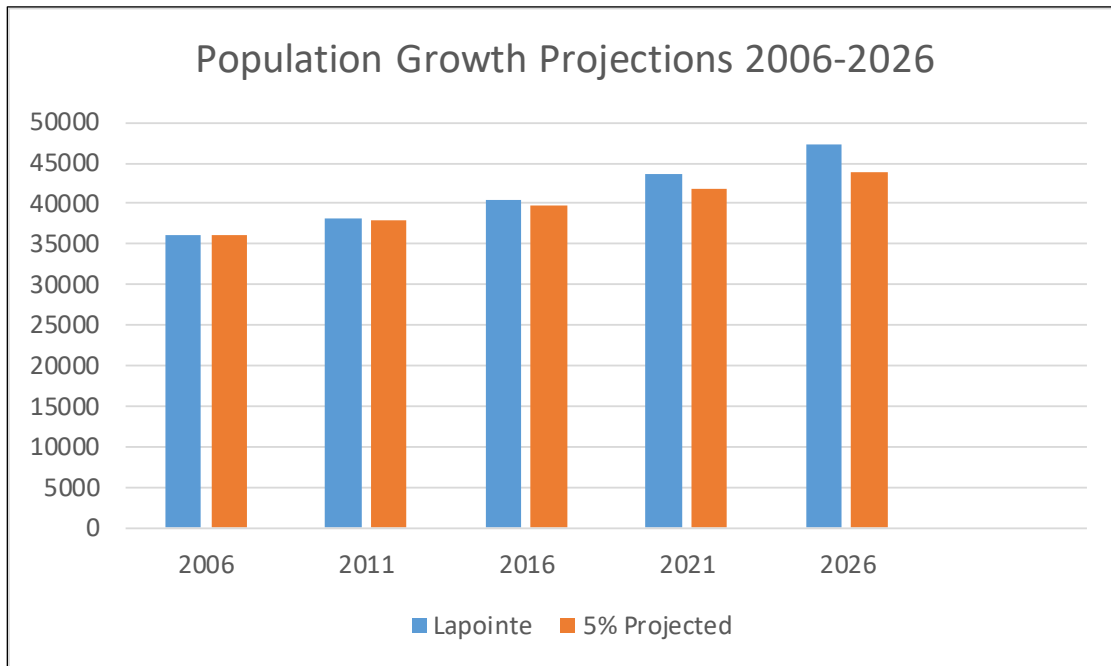
The City has a manufacturing base that continues to grow and expand. Key employers include Formet Industries, Presstran Industries, Masco Canada, and others. St. Thomas also provides significant employment in health care and government with key employers being St. Thomas Elgin General Hospital, the City and the County. In addition to the standard retail and service sector employment, St. Thomas is home to the Starwood reservation centre with 600 employees.

St. Thomas population growth charts

**St. Thomas 20-Year Projected Population, 2006-2026
Strategic Growth Scenario**

Year	Population	Change	
		5-Year	%
2006	36,110		
2011	38,216	2,106	5.8
2016	40,327	2,110	5.5
2021	43,564	3,237	8.0
2026	47,219	3,655	8.4

Source: Lapointe Consulting 2009



The chart above compares the Lapointe growth projection study to a straight-line projection using Statistics Canada's 2006 to 2011 population numbers which showed a 5% growth during that time. According that projection, the 2026 population will be approximately 43,900 people.

1.2 Community Risks

The City of St. Thomas has a population of 38,000 people with approximately 14,000 properties. The population demographics include a growing percentage of the population over the age of 65.

Residential properties comprise the largest component of the City's building stock with approximately 12,000 single family dwellings, a sizeable number of condominiums (approximately 460) and numerous multi-unit residential properties (approximately 70). Residential buildings have the highest risk to life and injury due to fire. Coupling that with the increasing aging population, residential properties will continue to be the largest risk due to fire.

St. Thomas has an aging downtown core with mixed commercial/residential properties in close proximity to each other.

Hospitals, long-term-care facilities, retirement residences, and group homes are also significant risks due to the vulnerability of occupants who may require assistance to protect themselves in the event of fire, having multiple occupants with limited staffing, and behavioural issues with some occupants. Many of fires in these health care and group home occupancies across Ontario and Canada demonstrate the risks.

Commercial and industrial properties pose a risk due to the potential effect of any considerable losses on the local economy.

Public buildings are a risk due to the public and community (or Provincial) reliance on these properties for the order and good governance of the community.

Building Stock Profile

Occupancy Classification		# of Occupancies
Group A	Assembly	164
Group B	Institutional	1
Group C	Single Family	11,880
	Multi-unit residential	69
	Hotel/Motel	2
	Residential/Condo	458
Groups D & E	Commercial	531
Group F	Industrial	207
	Other	42
Totals		13,358

* The building stock profile was provided by the St. Thomas Fire Department

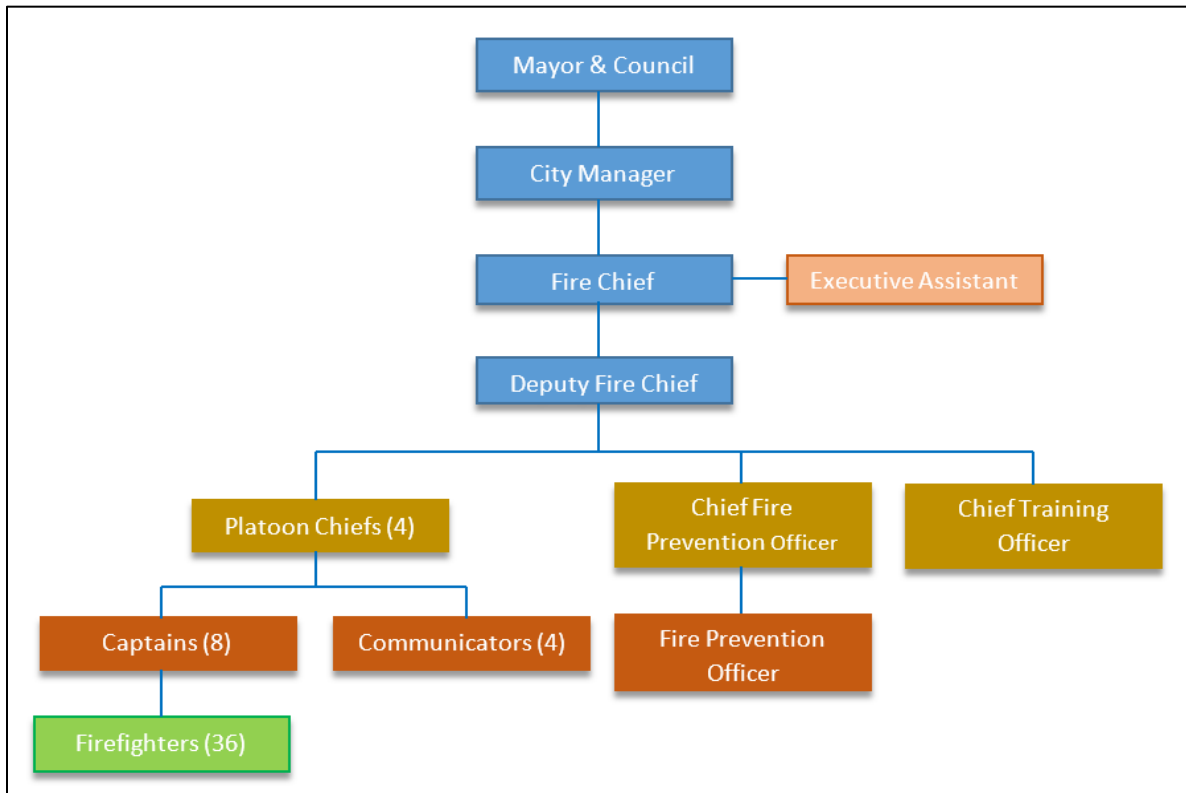
1.3 St. Thomas Fire Department

The City of St. Thomas has been served by a fire department since 1850, when it was a mere village. The St. Thomas Fire Department, originally known as the Beaver Fire Company, is a full-time service providing fire suppression, rescue, and emergency medical response. The Department operates 24 hours a day, 365 days a year and maintains a minimum staffing, at all times, of ten emergency responders operating from two fire stations. The Department has not increased staff since 2004 when the last of the additional 16 firefighters were hired to comply with the inquest recommendations and 2001 OFM Report.

The Fire Chief of the St. Thomas Fire Department reports to the City Manager and is thereby accountable to the City Council. The Fire Chief serves as the head of the Fire Department and is supported by a Deputy Fire Chief who has the authority to act in for the Chief in his absence. An Administrative Assistant provides secretarial and administrative support and completes the Administration Division.

The St. Thomas Fire Department is comprised of five divisions: Administration, Fire Prevention, Training, Communications and Suppression. The department has a total compliment of 58 staff members.

Fire Department Organizational Chart



SECTION 2: Fire Protection Services

- 2.1 Administration
- 2.2 Fire Prevention
- 2.3 Dispatch/Communications
- 2.4 Suppression
 - 2.4.1 Mutual Aid and Fire Service Agreements
- 2.5 Training

SECTION 2: Fire Protection Services

Fire protection that can be provided to a community is best described in accordance with the doctrine of the Office of the Fire Marshal and Emergency Services as “*Three Lines of Defence*”. The Three Lines of Defence are described here as background to understanding fire protection services in the City of St. Thomas.

Three Lines of Defence

The identified Three Lines of Defence as noted by the Office of the Fire Marshal and Emergency Management (OFMEM) are:

1. **Education** – Fire safety education is the key to mitigating the fire and life hazards before they start.
2. **Inspections and Enforcement** – If the public education program does not prove effective, then the next step is for the fire department to enforce fire safety requirements through inspections and possible charges.
3. **Emergency Response** – If the first two lines of defence fail for whatever reason, the community, through its fire department, should be prepared to respond in an efficient and effective manner to put the fire out and/or mitigate the emergency itself.

The three lines of defence form the basis for the fire service priorities and all divisions are designed to support these.

2.1 Administration

The St. Thomas Fire Department has an Administration Division that consists of the Fire Chief, Deputy Fire Chief and Administrative Assistant. The Fire Chief reports directly to the City Manager and thus to City Council. This team works and communicates well together.

Section 6 (3) of the *Fire Protection and Prevention Act* states:

“A fire chief is the person who is ultimately responsible to the council of a municipality that appointed him or her for the delivery of fire protection services. With the noted working relationship between the Fire Chief, City Manager and Council, the Fire Chief is provided with this opportunity to update Council of related fire department issues and successes.”

The Fire Chief shares all management responsibilities with the Deputy Fire Chief. With only two persons sharing responsibilities for on-call response to emergencies and other management issues that routinely arise with a 24/365 emergency services operation, there can be difficulties in ensuring coverage is maintained despite vacation, training, and absences due to illness or injury. As call volumes and other work demands continue to develop, this will need to be monitored.

As salary increases for unionized firefighters continue to increase at a significant rate, a factor for the City to keep under consideration is the compression issues of management salary compensation. The salary issue is exacerbated by the fact that the two senior officers are not compensated for overtime or on call duties.

Emergency Preparedness

Although Emergency Preparedness was not within the scope of this report, it is important to note that the Deputy Fire Chief is the Community Emergency Management Coordinator (CEMC) and is responsible for emergency planning, training, and conducting annual exercises. The Fire Chief is the Alternate CEMC. Although it is reported that the emergency program is working well, the extra workload in addition to the daily operations and administration of the department is a challenge.

Having both the Deputy Fire Chief and the Fire Chief as the CEMC and Alternate CEMC could create an issue in the event of a major emergency requiring their presence on site, causing conflicting responsibilities.

Finance

The St. Thomas Fire Department has an annual operating budget of approximately \$8,400,000.00 and a capital forecast that fluctuates based on the equipment that has been identified for replacement.

Growing salary and overtime costs have been identified as a concern by Council members and is discussed in Section 2.4 (below).

A capital planning committee has been recently established and has created a 10-year capital plan for apparatus and support vehicles. At this time, however, there is no established identification of capital replacement costs for major equipment such as self-contained breathing apparatus, rescue equipment, hose, etc. This can pose a financial and political challenge for timely replacement of needed equipment.

Inventory Controls

Currently, tracking of inventory, including major equipment and life cycles, is not centralized. It would be helpful for ensuring all inventory is clearly tracked to have a centralized electronic means of tracking order dates, receipt, costs, life cycle, assignment, and condition of all significant equipment such as personal protective equipment, self-contained breathing apparatus, fire hose, rescue equipment, ladders etc.

Human Resources and Collective Bargaining

The majority of the Department staff are members of the St. Thomas Professional Firefighters' Association (apart from the Administration Division). The current Collective Agreement expires in December 2016.

The City has enjoyed a cooperative relationship with the St. Thomas Professional Firefighters' Association (the Association) and previous contract negotiations have been reached through collective bargaining without need to refer to outside arbitration. It is understood that one potentially contentious issue being put forward by the Association this session is a 24-hour shift for the Suppression Division.

The Department has an effective performance appraisal system in place. This should continue to be applied diligently to ensure that positive performance is recognized, difficulties are identified and improved upon, and training and succession planning are appropriately addressed.

Twenty-Four Hour Shift for Suppression Division

The Suppression Division firefighters currently work a four-platoon shift comprised of ten-hour day shifts and 14-hour night shifts wherein each firefighter works approximately 14 days of every 28 (not including absences due to vacation, banked time, illness, etc.). The Association hopes to have this changed, as a result of bargaining, to a 24-hour shift, wherein they would work 7 days of every 28.

There are two factors for the City to consider regarding the potential switch to 24-hour shifts. The first consideration is the likelihood of the Association being successful in their efforts to implement the 24-hour shift; many arbitration decisions in Ontario have awarded the 24-hour shifts to the firefighters. It is generally perceived to be a matter of bargaining strategy on the part of the employer, as to whether they will willingly attempt to bargain a 24-hour shift or to refute the proposed shifts, including going to arbitration on the matter.

There has not been a comprehensive review of the effectiveness and long-term impacts of the 24-hour shifts on firefighting in Ontario. We would encourage the Ontario Association of Fire Chiefs or the Association of Municipalities of Ontario to undertake a comprehensive review of the impacts of 24-hour shifts including the different impacts on large and small career departments. Some of the impacts would appear to be amplified in a small career fire department versus a large department where adequate resources allow for relief during busy periods.

Making the switch to a 24-hour shift does have the potential of achieving some management gains including the improvement of vacation entitlement from 56-hour average tours to 48-hour tours. This is a matter for the City's bargaining team to consider.

Operational Guidelines

The St. Thomas Fire Department has developed a well-organized and comprehensive set of Operational Guidelines (OG's) that address most services provided by the Department. These OG's are reasonably current, but their updating falls to the Chief and Deputy, adding to their workload.

Part of the training schedule is the review of two OG's per month for each platoon to provide thorough guidance to staff on expectations for safe operations.

Recommendation(s)

1. St. Thomas Fire Department should identify life cycles for all major cost equipment, such as vehicles, rescue equipment, building facilities, personal protective equipment and other higher cost items. Based on these life cycles, capital forecasts should be created that identify dates and anticipated costs for replacement.
2. A centralized and electronic inventory control process should be established to track all significant equipment.
3. The City of St. Thomas should encourage the Ontario Association of Fire Chiefs or the Association of Municipalities of Ontario to undertake a comprehensive review of the impacts of 24-hour shifts including the different impacts on large and small career fire departments.
4. If the Suppression Division converts to a 24-hour shift, management must take the necessary actions to ensure that attendance is closely monitored to ensure that it improves, operational readiness and effectiveness are not compromised, training is conducted thoroughly and regularly, station and equipment maintenance and cleaning are maintained and that task assignments are completed on time.

Associated Costs (all costs are approximate)

- There are no direct costs associated with these recommendations.

Timeline

- Recommendations 1, 2, and 3 should be implemented by the end of 2017.
- Recommendation 4 will be based on the outcome of the 24-hour shift proposal.

2.2 Fire Prevention

The Fire Prevention Division consists of two staff – the Chief Fire Prevention Officer and a Fire Prevention Officer. The Division provides a full range of prevention activities including public fire safety education, code enforcement inspections, and fire investigations.

For fire prevention initiatives to be effective, an organization needs to accomplish three distinct tasks:

1. Complete a needs analysis to identify the significant fire risks to the community
2. The selection, development and implementation of appropriate programs to address the identified risks
3. An evaluation of the effectiveness of the fire prevention programs

To assist with a review of this section, reference will be made to the:

- *Fire Protection and Prevention Act*, and
- The NFPA 1730 Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations

Needs Analysis:

Needs analysis for fire prevention programming involves assessing the relative fire risks in a community and identifying the significant risks which should be addressed. It also involves compiling adequate information to conduct the analysis and for appropriate program selection, development and implementation.

Information including fire losses and implications of fire occurrence (such as types of building losses, the overall building stock and demographics of the community) must be gathered and assessed by the Department to identify areas of high risk and prioritization for the Fire Prevention Division.

Program Selection:

There are minimum fire prevention programs required for a community under the Fire Protection and Prevention Act. The minimum acceptable level that a municipality must provide includes the following:

- Simplified Risk Assessment
- Smoke Alarm Program

- Fire Safety Education materials distributed to residents / occupants
- Inspections upon complaint or request to assist with code compliance (including any necessary code enforcement)

Additional programs may also be required based upon the risks identified by the needs analysis, with consideration for available resources.

Program Evaluation:

Evaluation of the effectiveness of fire prevention programs is essential to ensure the most appropriate use of the community's resources and to also identify the needs for more staffing as a community grows in population. Regular evaluation is an ongoing function for the fire service managers and should incorporate a regular application of the model's process of Needs Analysis, Program Selection, and Program Evaluation.

To accomplish these three components, an organization needs to conduct a Simplified Risk Assessment to recognize the risks and identify programs required to address these risks.

Simplified Risk Assessment (SRA)

The Simplified Risk Assessment (SRA) is a tool to help guide the fire prevention activities.

Public Fire Safety Guideline, PFSG 04-40-12A, states that a Simplified Risk Assessment must be completed for the community to determine the needs and circumstances of the municipality along with establishing the level of fire prevention and public fire safety education required. Any significant risks identified through the analysis should be addressed; if the risk assessment indicates a significant threat to life or fire loss in multi-unit residential buildings, a program that will adequately improve their fire safety, such as routine inspections, would be appropriate to address the specific need of the community.

As an accepted practice, an SRA should be completed every three to five years. However, if there is significant growth or change in the community, an annual update should also be conducted to present a more realistic review and set of program upgrades/changes that are required to meet the needs of the community. The St. Thomas Fire Department last updated its SRA in 2010.

The Simplified Risk Assessment and the ensuing fire concern profile will assist in identifying the degree to which these activities are required in accordance with local needs and circumstances. The Simplified Risk Assessment is made up of the following components:

- demographic profile

- building stock profile
- local and provincial fire loss profiles
- information analysis and evaluation
- priority setting for compliance
- implementing solutions

Conducting a Simplified Risk Assessment is a practical information gathering and analyzing exercise intended to create a community fire profile that will aid in identifying appropriate programs or activities that can be implemented to effectively address the community's fire safety needs.

The SRA is an integral building block in the data gathering process to understand the community that is served by the fire department. As the community continues to change, the document should not remain stagnant as the results are only accurate to the time of which the review was conducted.

NFPA 1730 (relating to fire prevention) notes that this review should be conducted at a minimum every five (5) years or after significant change within the community has occurred. This standard also establishes a process to identify and analyze community fire risks. This standard refers to the process as a Community Risk Assessment. There are seven (7) components of a Community Risk Assessment outlined in NFPA 1730. These components are very similar in nature to that of the OFMEM Simplified Risk criteria:

1. Demographics
2. Geographic overview
3. Building stock
4. Fire experience
5. Responses
6. Hazards
7. Economic profile

It is recommended that STFD update its SRA to ensure that inventory of any risk occupancies be maintained by the St. Thomas Fire Department and regularly updated as new information becomes available (either from other city departments or through actions of the Suppression Division). This should include properties such as vulnerable occupancies, multi-unit residential, industrial, and commercial properties of concern and public buildings.

The Fire Prevention Division responds in a timely manner to any complaints brought to their attention regarding fire safety matters. They also provide inspections upon request and, where appropriate,

charge fees for this service (for example, liquor licence inspections).

Although there is an expected frequency of inspection for many properties that are identified as significant risk – including vulnerable occupancies (such as group homes and daycares), restaurants, apartment buildings and schools – there is not adequate staff time to routinely inspect these properties. The division conducts approximately 430 inspections and a further 400 public education activities as well as conducting 15 fire investigations per year.

The Fire Prevention Division also assists the Buildings Department with Ontario Building Code compliance. This is an effective means of ensuring that newly constructed properties are provided with the required fire safety features. The two departments have also coordinated inspection activities in the past for properties that are of concern to the community; however, this has not been done recently. There is no written understanding of division of responsibility between the two departments for relative building code provisions.

Fire Prevention works in coordination with the Suppression Division to conduct annual fire drills in schools. Also, the Suppression Division is supported by Fire Prevention through their conducting life safety checks and pre-planning of commercial properties. Fire Prevention follows up on any noted violations.

Record keeping for division activities is primarily done in paper copy. Although the Department and the Division have access to a records management computer program (CriSys), it is not fully utilized for inspections.

Succession planning is a factor that needs to be addressed for the Fire Prevention Division. It is probable that both firefighters assigned to this division will retire within three years.

Training for the division staff is done on an ad hoc basis as opportunities arise as well as attendance and educational symposiums such as the Ontario Municipal Fire Prevention Officers (OMFPOA) seminars and the Fire Prevention Officers seminars at the Ontario Fire College. Both staff are certified Fire Prevention Officers and Fire Investigators.

EMT concludes that the staff assigned to the Fire Prevention Division are encountering challenges in meeting the desired outcomes of the division. The current work load and potential for additional staff should be studied in further detail. It is probable that an additional staff person, assigned specifically to public safety education as well as to assist with inspections and fire investigations would be warranted.

Administrative support would assist in moving the division towards electronic record keeping, tracking

division tasks, and follow-up.

Further, the use of on-duty firefighters could provide available resources, allowing for greater implementation of the fire prevention and safety education programs. This would be enhanced by having the Captains trained to the NFPA 1031 Fire Inspector 1 and NFPA 1035 Fire and Life Safety Educator 1 levels.

The facilities and equipment provided effectively meet the Division's needs. However, it was observed that there are times when one of the divisions two assigned vehicles was otherwise in use and not available to division staff; this should be monitored to ensure adequate transportation is provided. Also, future vehicle replacements should be planned to be able to provide towing capacity for the Division's public education trailer.

Integrated Risk Management Web Tool

The Ontario Fire Marshal's Communiqué 2014-12 introduced the Integrated Risk Management Tool to the Fire Service. The document notes:

The IRM Web Tool was developed as part of a commitment made by the OFMEM to the Ontario Association of Fire Chiefs (O AFC) and other stakeholders. The IRM Web Tool can be used by all Ontario's municipalities and fire departments to determine building fire risks in their respective communities by considering building characteristics (Building Factors) and the three lines of defence against fire (*Three Lines of Defence*):

Line one: Public fire safety education

Line two: Fire safety standards and enforcement

Line three: Emergency response

The Integrated Risk Management Web Tool is built around the Three Lines of Defence and intended for municipal and fire service decision-makers. The tool was designed to assist municipalities in fulfilling the responsibilities prescribed in Section 2 of the Fire Protection and Prevention Act, 1997 (FPPA).

The concept of the IRM is a "building-by-building" assessment, but its goal is to go beyond simply taking stock of buildings within the community; it was intended to be a holistic approach that is meant to combine all fire department's efforts in relation to:

- Fire prevention and education initiatives, which includes updated community reviews through the use of the OFMEM Simplified Risk Assessment
- Fire station locations and ability to respond in an efficient and effective manner
- Identification of hazardous situations/locations within the community

- Training and equipping of the firefighters to execute their duties in a safe and efficient manner

As such, the IRM approach is a combination of all facets of the fire service that is meant to combine a review of building stock, fire safety and prevention related issues to be addressed, ability to effectively and efficiently respond to emergencies, and how well-equipped and trained the firefighters are to deal with emergencies within the community.

It should be realized that conducting a review of every building within the City of St. Thomas may not be practical. Utilizing NFPA 1730 definitions of risk categories may guide Council in deciding the focus and service level within the community. Council should decide what the acceptable risk to manage in the community is, based off the needs of the community and balanced with the circumstances to deliver the services. NFPA 1730 defines the risks in three categories and provides examples for each. These risk categories are:

High-Risk Occupancy – An occupancy that has a history of high frequency of fires, high potential for loss of life or economic loss, or that has a low or moderate history of fire or loss of life, but the occupants have a high dependency in the built-in fire protection features or staff to assist in evacuation during a fire or other emergency.

Examples of high-risk occupancies are multi-unit residential buildings, hotels, dormitories, lodging and rooming, assembly, child care, detention, educational, and health care.

Moderate-Risk Occupancy – An occupancy that has a history of moderate frequency of fires or a moderate potential for loss of life or economic loss.

Examples of moderate-risk occupancies are ambulatory health care, and industrial.

Low-Risk – An occupancy that has a history of low frequency of fires and minimal potential for loss of life or economic loss.

Examples of low-risk occupancies are storage, mercantile, and business.

Utilizing the IRM tool, in conjunction with the guidance from NFPA 1730, will provide a picture of the resources, time, and tools required to keep the fire risk in the community to a manageable level, as defined by Council. It is important to note the number of buildings within St. Thomas and the continual growth that is expected. This current and future building stock adds pressure on the Fire Prevention Officers to accomplish an adequate amount of inspections to ensure fire code compliance within the community.

The utilization of the IRM tool will provide an understanding of a fire risk building-by-building that can be extrapolated to show the risk in given areas. Along with the Simplified Risk Assessment, this tool will aid in the building and providing for the fire prevention inspection and education programs. Upon updating the Simplified Risk Assessment, the IRM tool could be used to begin the process of measuring the community for fire risk. A thorough risk assessment can also avoid invalid comparisons between your fire department and others. A municipality with a similar population may have very different fire risks, and therefore very different fire protection needs. A proper risk assessment will ensure that such comparisons are valid. By providing a valid basis for comparison, a fulsome risk assessment can also provide confidence that innovations introduced elsewhere can be successfully applied in your municipality.

Fire Prevention Staffing

To determine the current fire prevention staffing needs, NFPA 1730 outlines a five-step process within Annex “C” of the standards. This sample staffing exercise is not part of the requirements of the standard, but forms a guide for informational purposes. It is important to restate that it is Council that sets the level of service within the community. This level of service must be based off the local needs and circumstances.

The five-step process involves a review of the following items:

Step 1: Scope of Service, Duties, and Desired Outputs

Identify the services and duties that are performed within the scope of the organization. Outputs should be specific, measurable, reproducible, and time limited. Among the elements can be the following:

- Administration
- Data collection, analysis
- Delivery
- Authority/responsibility
- Roles and responsibilities
- Local variables
- Budgetary considerations
- Impact of risk assessment

Step 2: Time Demand

Using the worksheets in Table C.2.2(a) through Table C.2.2(d), quantify the time necessary to develop,

deliver, and evaluate the various services and duties identified in Step 1, considering the following:

- Local nuances
- Resources that affect personnel needs

Plan Review - Refer to Plan Review Services Table A.7.9.2 of the standard to determine Time Demand.

Step 3: Required Personnel Hours

Based on Step 2 and historical performance data, convert the demand for services to annual personnel hours required for each program [see Table C.2.3(a) through Table C.2.3(e)]. Add any necessary and identifiable time not already included in the total performance data, including the following:

- Development/preparation
- Service
- Evaluation
- Commute
- Prioritization

Step 4: Personnel Availability and Adjustment Factor

Average personnel availability should be calculated, considering the following:

- Holiday
- Jury duty
- Military leave
- Annual leave/vacation
- Training
- Sick leave
- Fatigue/delays/other

Example: Average personnel availability is calculated for holiday, annual, and sick leave per personnel member (see Table C.2.4).

Step 5: Calculate Total Personnel Required

Division of the unassigned personnel hours by the adjustment factor will determine the amount of

personnel (persons/year) required. Any fractional values can be rounded up or down to the next integer value. Rounding up provides potential reserve capacity; rounding down means potential overtime or assignment of additional services conducted by personnel (personnel can include personnel from other agencies within the entity, community, private companies, or volunteer organizations).

Correct calculations based on the following:

- Budgetary validation
- Rounding up/down
- Determining reserve capacity
- Impact of non-personnel resources (materials, equipment, vehicles) on personnel

More information on this staffing equation can be found within the NFPA 1730 standard. The Fire Prevention Division should assess the previous five steps and evaluate their present level of activity and the future goals of the Divisions.

To assist in this process, the Fire Prevention Division should more closely track the actual time spent on each of the Fire Prevention Office activities (ranging from site plan reviews, routine inspections, licensing, complaints, and requests, to name a few). Further, reporting should also include clearly identifying the number of Public Education events including the numbers of adults and children reached at each event. By identifying the time spent on each project and collating this into baseline (approximate) times, then the Fire Prevention Division can now use those hours spent as a point of reference in applying future initiatives.

Remembering that it is Council that sets the level of service, there is no Council direction as to what buildings or building types are required to have routine inspections. Fire Prevention Officers are duty-bound to conduct inspection upon request or complaint in accordance with the *Fire Prevention and Protection Act* (FPPA). However, this requirement is the minimum level of inspections mandated by the FPPA.

Future Planning

The Fire Prevention Division responds in a timely manner to any complaints brought to their attention regarding fire safety matters. They also provide inspections upon request and, where appropriate, charge fees for this service. Property inspections are routinely done on properties that are identified as significant risk, including care occupancies, group homes and motels/hotels.

The Fire Prevention Division also assists the Building Department with Ontario Building Code compliance. This is an effective means of ensuring that newly constructed properties are provided with the required fire safety features. There is no written understanding in relation to division of responsibility between the two departments for relative building code provisions, but at this time, the joint program appears to be working well.

Record keeping for division activities is primarily done in paper copy. Although the Department and the Division has access to a records management computer program (CriSys) it is now used for event logging and notes only. Future incorporation of the CriSys program for records management is recommended.

Recommendation(s)

5. The Simplified Risk Assessment should be updated.
6. Annual business planning cycle should be more specific in identifying goals and expected outcomes for property inspections (such as more clearly defining the inspection frequencies) and public education activities and reviewed at least quarterly to assess progress, re-assign resources and/or revise goals as necessary.
7. The expectations for fire department actions and responsibilities regarding Ontario Building Code compliance should be clearly articulated and the Fire Prevention Divisions should re-establish a coordinated approach with the Buildings Department for properties that are of concern to the City.
8. Expansion of the use of an integrated records management system (such as CriSys) should be undertaken to make the most effective use of collected information, including enabling better data access between Fire Prevention, Dispatch and Suppression.
9. Succession planning should be addressed to ensure trained personnel that are familiar with the community and the fire department are ready to take over when the existing personnel retire.
10. Conduct a work load study (as outlined above) to determine whether an additional fire prevention inspector is warranted.
11. Assign Administrative Support time (estimating 21-28 hours a week) to the Fire Prevention Division.

12. It is recommended that greater utilization of the on-duty firefighters be incorporated into an annual Fire Prevention Program. To accomplish this, all Captains should be trained and certified to at least:

- NFPA 1031 – Fire Inspector I, and
- NFPA 1035 – Fire and Life Safety Educator I

By having all Captains trained to the above noted levels, STFD will have a greater number of resources to draw upon in its public fire safety education and inspection programs.

Associated Costs (all costs are approximate)

- Recommendation 5, 6, 7, 8, 9 - no additional monetary costs are projected. There would be considerable staff time involved however.
- Recommendation 10 –this review may potentially identify the need for an additional Fire Prevention Officer – salary and benefit costs estimated at \$130,000 per annum
- Recommendation 11 – salary and benefit costs estimated at \$30-40,000 per annum unless the work is assigned to the on-duty communications officers
- Recommendation 12 - the costs for this recommendation are minimal as the training and certification of the firefighters to the noted levels can be done in-house or online.

Timeline

- These recommendations should be implemented by the end of 2017.

2.3 Dispatch/Communications

St. Thomas Fire Department operates a dispatch service that provides dispatch and communication support for the Department as well as back-up telephone coverage for other city departments. To provide this service, the Department employs four Radio Telephone Operators (RTOs) and maintains a dispatch office at Station 1. Although the Department has, in the past, provided dispatching services to other fire departments in the County for a contracted fee, they are currently only dispatching their own fire crews. In 2015, this constituted approximately 1,913 emergency response calls per year, plus an additional 1,000 non-emergency and administrative vehicle movements.

The Radio Telephone Operators (RTOs) are responsible for:

- The answering of all 9-1-1 calls
- All fire related dispatch procedures
- Incident related dispatching procedures and ongoing communications with the scene commander
- Coordination of Mutual Aid support, as required
- Contacting and initial dispatching of other agencies, such as Police, Ambulance, Hydro, Gas, etc.
- Documenting of related data required by the Office of the Fire Marshal and Emergency Management, such as time of call, turnout of firefighters, drive time, etc.
- Maintaining the CriSys database
- Reception and telephone answering at the Fire Department headquarters
- After hours call reception for other city departments

One RTO is on duty 24-hours a day, 365 days a year, and reports to the duty Platoon Chief. In the event of a major emergency, it is procedure to call back an additional RTO to assist with radio traffic and incident command and control, however, this occurs very infrequently.

The four RTOs work the same shift and are considered part of the compliment of on-duty firefighters for scheduling purposes. On-duty firefighters are used to fill in for absences amongst the RTOs. This does not always work well as the skill sets required for these two positions are quite different.

Having the RTOs included with the firefighters' schedule also complicates vacation selection. It would be more appropriate to have the RTOs operate as a separate group, although still reporting to the on-duty Platoon Chief for operational direction.

The Fire Department communications centre serves as the back-up for the police in the event that the St. Thomas Police Service Communications becomes unusable.

The primary communications facility is located at Station 1 with a back-up capability maintained at Station 2. Dispatch is supported by a CAD (computer aided dispatch) software program (CriSys) that effectively assists with timely dispatch. It is reported that the system is reasonably reliable with infrequent operation interruptions and timely system support. The hardware is on a three-year cycle for replacement which ensures that this needed and sophisticated equipment is up-to-date and reliable.

The RTOs are currently exceeding the NFPA standard to process calls (call taking and alerting the closest fire station) within 64 seconds, 90% of the time. The St. Thomas Fire Department RTO have a 90th percentile of 56 seconds.

Currently, the call volume does not strain the capacity of the on-duty RTOs. It can be concluded that they are under utilized.

Integration with Police Dispatch

It has been suggested that there would be cost savings if the Fire Department dispatch was integrated into the existing police department dispatch service.

The St. Thomas Police Service has stated that they can accommodate this work with their current staffing and without a charge to the fire service. St. Thomas police dispatchers currently handle approximately 14,359 (2015) calls for service.

Previously, the St. Thomas Police Service also dispatched the Aylmer Police, handling approximately 2,850 calls per year. This service provision ended at the end of 2013, opening capacity to handle the fire service.

The police also identify a benefit in having a single dispatch of one set of communicators being familiar with all aspects of a call since the police also respond to many of the fire calls and this enhances inter-operability in a major emergency.

We have estimated savings of amalgamation of dispatch centres to be approximately \$280,000 in salaries (based on the 2016 collective agreement rate) plus \$56,000 in benefits (estimating 20%) for an annual savings of \$336,000.

Several police service dispatch centres across Ontario provide dispatch services to fire services including: Strathroy-Cardoc (dispatches 15 fire departments); Sarnia (dispatches 2 fire departments); Woodstock (dispatches 6 fire departments); City of Greater Sudbury (dispatches 24 fire stations); Owen Sound (dispatches 10 police services and 18 fire services); Timmins (dispatches 9 fire departments); Kawartha Lakes (dispatches 19 fire stations); and Chatham-Kent (dispatches 19 fire stations). These police services are part of the Ontario Police Technology Information Cooperative (OPTIC), as is the St. Thomas police service and dozens of other police services across Ontario. Through OPTIC the police services have access to the Intergraph CAD (computer aided dispatch) system which includes both police and fire service dispatch capabilities, although some upgrades would be required including the report management system.

Moving the fire dispatch to the police department requires addressing several issues, specifically:

- Resolve the Collective Agreement matters with the St. Thomas Professional Firefighters Association, as removing dispatch from the Fire Department would likely violate the no-contracting out provisions of the Collective Agreement.
- Ensuring that all police dispatchers are adequately trained (NFPA 1061) to provide the dispatch and communications support required by the Fire Department
- Updating the police computer aided dispatch system to utilize the fire dispatch component in use by the two services, including the report management system. In speaking with OPTIC representatives, they estimate approximately \$50,000 in hardware, software and implementation costs.
- Merging the fire response database into the police CAD.
- Ensure adequate staffing at the dispatch centre for any major emergencies – this may require calling in an additional communicator during a major incident.
- Closely monitoring the operation to ensure that the fire service is provided with timely and thorough dispatch and with the necessary communications support during emergency responses.
- Ensuring the police dispatchers understand the importance of their role within the fire communications system. The fire activities will constitute a minor share of their total workload and will be quite different, in some respects, to the services they provide to police officers.
- The City must identify another after hours call service for Animal Control, Board of Works, and other city departments that call-forward their lines to the fire dispatch centre after hours.

Further, the Fire Department must create a plan to deal with the current administrative functions such as telephone answering and reception.

Rather than merge the dispatch centres, the Fire Department would like to again offset the costs of the dispatch service through the provision of dispatch services to other fire departments under contract. While this may have potential in the longer term, currently, the other county fire departments have contracts with Tillsonburg that they are committed to and that they have advised that they are satisfied with.

A third option is to increase the value and utility of the RTOs while keeping them with the Fire Department. This would be done by increasing and enhancing their use as administrative and data management support for other divisions within the fire service and the municipality. Assisting with electronic records management and data entry for things such as fire prevention inspections and fire safety plans, staff training records, and inventory controls could improve the efficiency of the Fire Prevention, Training, Suppression and Administration Divisions by freeing those staff from some of their administrative and data inputting tasks. This would require adjustments to the RTO (Radio/Telephone Operator) job description, adding the clerical responsibilities.

Recommendation(s)

13. The RTOs should be separated from the Suppression Division into its own Communications Division.
14. It is recommended that a full cost analysis needs to be completed in relation to the training required to have all RTOs and firefighters fulfilling the role of an RTO meet the NFPA 1061 Standard.
15. Discussions should be initiated with other county and wider area fire services to determine the potential for acquiring dispatch service contracts.
16. Administrative tasks should be assigned to the RTOs to increase their utility and offset potential administrative support costs. This should begin with providing administrative support to the Training and Fire Prevention divisions.
17. Discussions should be initiated with the Association to remove the four current RTO positions from the bargaining unit and have the dispatch service provided by the St. Thomas Police Service. Should this be achieved, discussions with the St. Thomas Police Service should be initiated to ensure that all factors affecting the transfer of communications and dispatch to the police service are comprehensively addressed.

18. Depending on the outcome of Recommendation 17, if STFD maintains their RTOs, additional part-time RTOs should be recruited to ensure that absences (including ones such as the current long-term absence) are filled by qualified staff. Two part-time RTOs would be appropriate, initially. This will require discussion and agreement with the Association.

Associated Costs (all costs are approximate)

- Recommendation 13 has no costs associated with it.
- Recommendation 14 has no expense related to the cost analysis
- Recommendation 15 will require considerable management staff time.
- Recommendation 16 will require management staff time to set up, but could offset administrative support costs recommended elsewhere in the report by up to \$80,000
- Recommendation 17 will initially require significant staff time to set up proper administrative support from the dispatch centre, \$50,000 in initial hardware/software costs, plus training costs for the police dispatchers, but would provide an ongoing savings of up to \$330,000
 - Note: administrative support staffing that have been recommended for the training and fire prevention divisions have an approximate cost of \$70,000 (salary and benefits) which would be required if not assigned to the current RTOs – hence, the total savings would be closer to \$260,000.
- Recommendation 18 will incur training costs approximately \$30,000, but ongoing salaries will be offset by overtime savings.

Timeline

- These recommendations should be implemented by the end of 2017.

2.4 Suppression

The Suppression Division consists of 48 firefighters assigned to four platoons. They are assigned to the two stations with eight on duty at Station 1 and four on duty at Station 2. The Platoon Chief oversees all the firefighters on duty and is quartered at Station 1 (and is counted amongst the eight firefighters on duty there). Up to two firefighters are permitted to be off at any time to maintain a minimum of ten firefighters on duty (six at Station 1 and four at Station 2). These absences include vacation, sick time, WSIB, bereavement, training, banked time, etc. If there is an absence that causes the number of firefighters to fall below ten, then an off-duty firefighter is brought in on overtime.

Response Time

When considering the response times, reference to the fire response curve (FIG. 4) presents a graphic representation of how fire can grow within a structure over a short period of time. This curve is based on a basic room with furnishings. Several factors affect the speed of growth of a fire and its intensity and devastating power. It is important to recognize that a fire in a structure can grow very quickly to a point where survival within the structure is not possible.

Response time is part of a broader term known as “Intervention Time”. Intervention Time is the time from when an uncontrolled fire begins until effective action is taken to control it. Intervention Time consists of:

- Detection time
- Notification time including calling 9-1-1
- Call handling time
- Assembly time for firefighters
- Travel time
- Set-up time

When we look at the response time for the St. Thomas Fire Department, response time includes call handling time, assembly time and travel time. This response time can be affected by various factors including, but not limited to:

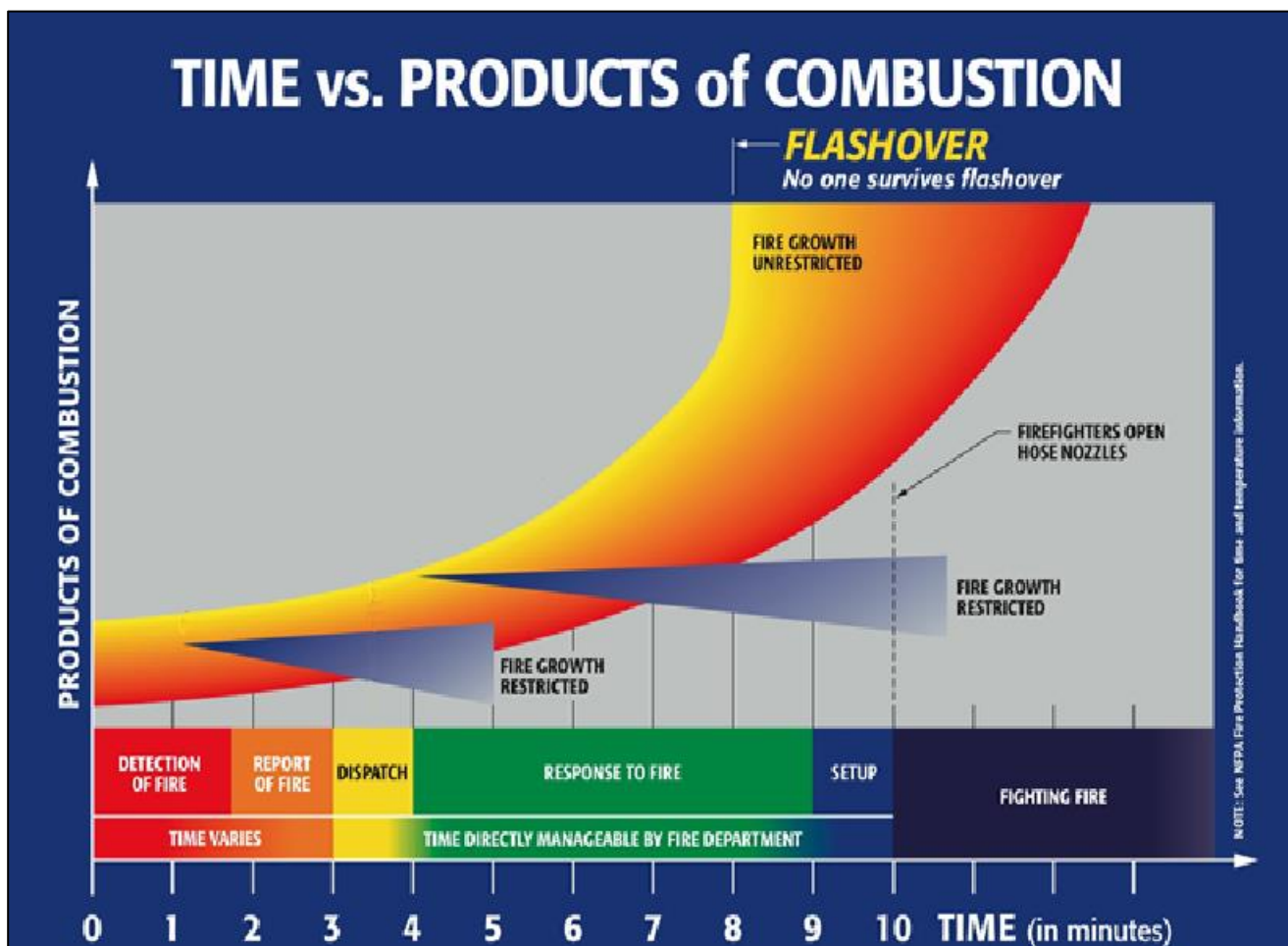
- The distance between the fire department and response location
- The layout of the community

- Impediments such as weather, construction, traffic jams, lack of direct routes (rural roads)

As noted in the following fire propagation diagram, the need for initiating fire suppression activities as soon as possible is critical.

It must also be noted that STFD responds to more than just fires. For example, motor vehicle collisions can create a medical or fire emergency that needs to be dealt as soon as possible – hence, the reason to be as efficient and effective as possible in responding to calls for assistance.

Fire Response/Propagation Curve



Based on this fire response curve information, the overall goal of the fire department is to arrive at the scene of the fire and/or incident as quickly as possible. There must be sufficient firefighters arriving at the incident (with the appropriate equipment) to effectively and relatively safely mitigate the emergency. The minimum number of firefighter to do an interior attack or rescue in a residential

fire is 10 firefighters, hence, the reason why St. Thomas Fire Department needs to maintain ten (10) firefighters on duty at all times. This provides for enough firefighters on scene, to take effective action.

Should there be fewer firefighters available, then the activities that can be undertaken may be seriously reduced and the hazard to the responding firefighters can increase. There are standards and guidelines that provide restrictions as to what can safely be undertaken – most compelling are the Occupational Health and Safety Section 21 Guidance Notes, as they relate to Ontario fire services.

Response Data

The chart below identifies the response times of the fire department including the dispatch time, the time for the firefighters to respond once notified, and the travel time to the call location. The standards are based on 90% of the calls being accomplished in the time frame noted.

2015	NFPA Standard 90th percentile	St. Thomas FD 90th Percentile
Call time to dispatch time (NFPA 1221)	1:04	0:56
First unit dispatched to enroute time (NFPA 1710)	1:20	1:23
First unit enroute to first unit on scene (NFPA 1710)	4:00	4:07

The fire department travel time is a function of various factors including, but not limited to:

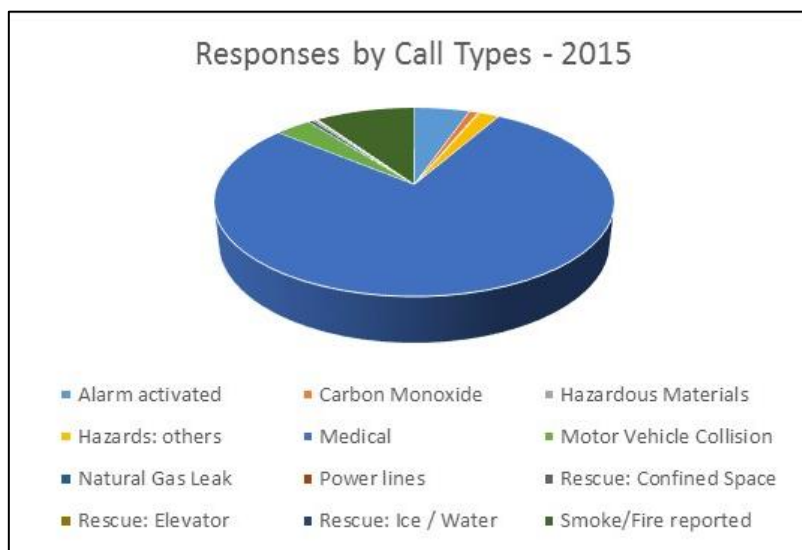
- The distance between the fire department and response location
- The layout of the community
- Impediments such as weather, construction, traffic jams, railway crossings, etc.

These statistics are monitored and reviewed with the Platoon Chiefs quarterly as part of a quality assurance program.

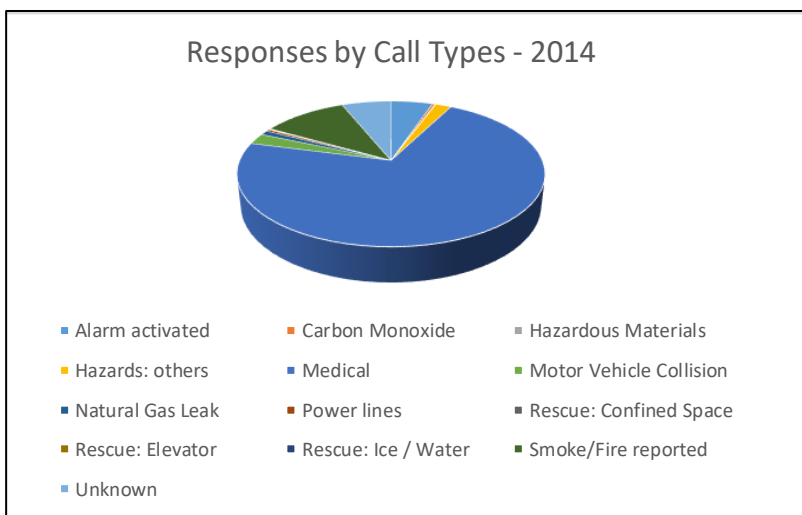
The following set of charts (through the use of the supplied data) help to identify the types of calls that are creating the bulk of response demands.

Fire Department Responses by Call Types in 2014/2015

Responses by Call Types	
2015	
Alarm activated	102
Carbon Monoxide	16
Hazardous Materials	3
Hazards: others	37
Medical	1476
Motor Vehicle Collision	66
Natural Gas Leak	9
Power lines	5
Rescue: Confined Space	1
Rescue: Elevator	1
Rescue: Ice / Water	2
Smoke/Fire reported	183



Responses by Call Types	
2014	
Alarm activated	119
Carbon Monoxide	8
Hazardous Materials	2
Hazards: others	45
Medical	1629
Motor Vehicle Collision	55
Natural Gas Leak	23
Power lines	10
Rescue: Confined Space	2
Rescue: Elevator	3
Rescue: Ice / Water	1
Smoke/Fire reported	243
Unknown	141



Staffing

The 48 firefighters and officers currently assigned to the Suppression Division meets the daily operational needs of the Fire Department with the following exception; the Suppression Division is contractually obligated (under the Collective Agreement) to maintain ten (10) firefighters and officers on duty, 24 hours a day, 365 days a year. Due to vacations and other absences, they operate at minimum staffing 80-90% of the time and often must bring in off-duty firefighters to make up shortages. This results in overtime costs that are likely to exceed \$430,000.00 in 2016.

Maintaining ten (10) firefighters on duty is consistent with Recommendation #4 of the inquest jury

and with recommendations from the Office of the Fire Marshal of Ontario into the 2001 firefighter fatality. It also provides an adequate initial response to safely mitigate expected emergencies. It is, however, predicated on the ability to quickly secure additional resources, when circumstances warrant.

Overtime Costs

Currently, the St. Thomas Fire Department budgets \$318,000 annually in overtime pay to its suppression division firefighters and radio/telephone operators. These costs are incurred primarily to meet the minimum staffing provisions of the Collective Agreement, ensuring a minimum of 10 firefighters and one Radio Telephone Operator (RTO) are on staff at all times.

Each shift is staffed with 13 – 1 platoon chief, 2 captains, 9 firefighters, and 1 RTO. Therefore, up to two firefighting staff are permitted to be off on any one shift including vacation, banked time (accumulated in lieu of over-time), stat holiday accrual, Association paid leave, sick time, injury, bereavement, outside training, etc. Overtime usually occurs when two staff are on a scheduled absence and a third calls in sick. As all firefighters are full-time, the only current option is to call in a firefighter from another platoon to work the shift on overtime.

A secondary cause of overtime is the calling in of off-duty firefighters and RTOs for structural fires or major events where additional firefighters and RTOs are required.

In addition to the expense, overtime pay exacerbates the salary compression issues between the suppression division union staff and the department management.

At the current state of the budget, as of August 31, it is likely to be closer to \$430,000 for 2016 (at end of August, the OT was at \$291,000). These costs are incurred almost exclusively to meet the minimum staffing provisions of the Collective Agreement.

Due to the current compliment of the Suppression Division and the need to maintain ten (10) firefighters on duty at all times, overtime is needed when there are unscheduled absences. These absences occur when staff are absent due to illness or injury, or, in limited cases, when staff are assigned to outside training opportunities.

There are several options to consider to reduce this overtime:

- Reduce the vacation entitlement of the division staff. This is not seen as likely to be achieved considering they have been negotiated through collective bargaining.

- Reduce or eliminate the option of banking time for overtime shifts and paying out each overtime shift when it is worked. This reduces a compounding of the time off – for example, a firefighter works an overtime shift and chooses to bank 18 hours (Supplementary Agreement, section 6), when that time is taken, it increases the potential for additional overtime if someone calls in sick. As this supplemental agreement forms part of the Collective Agreement, it would have to be negotiated.
- Reduce the incidence of absences due to illness. It's noted that the department employs an attendance management program and that the number of average absences per employee is not much higher for the fire department than it is for other municipal departments, however, continuing to vigorously apply this program may achieve some modest improvements and help to ensure the situation does not deteriorate.
- The minimum staffing provisions of the Collective Agreement could be revisited with the purpose of reducing the required number of on-duty firefighters. This is not likely to be readily agreed to by the bargaining unit. Further, reducing this number would be contrary to the jury recommendations in 2002 and the report from the Office of the Fire Marshal in 2001.
- Introduce the use of part-time firefighters who can be called in to work shifts at straight time. While part-time firefighters are not common in career fire services in Ontario, they are regularly used in policing, paramedic services, nursing, and other essential services. The Ontario Fire Marshal's office states that there are 274 part-time firefighters in Ontario, however, there is not a definition of "part-time" and therefore not a clear number of how many would fill similar roles in career fire services. This is an issue that would need to be bargained with the association based on clauses currently in the Collective Agreement with regards to the firefighters being full-time.
- Introduce the use of volunteer firefighters to respond to fire calls. This will be discussed further in the section on volunteer firefighters.
- Increase the complement of firefighters in the Suppression Division to reduce the number of times that overtime would be required. Although adding full-time staff would reduce the occurrences of overtime, it would be at a higher bottom line cost to the community. Adding 1 additional firefighter to each platoon (total of 4 firefighters) would have an additional salary and benefit cost of approximately \$460,000-\$500,000 (estimate using midrange firefighter salary, stat holidays, retention pay, benefits). These costs would have the potential of being offset by reducing overtime costs. If the overtime costs were reduced by \$200,000 the net cost of the additional would be approximately \$300,000.

Volunteer Firefighters

The St. Thomas Fire Department is comprised of full-time firefighters. In light of the increasing costs for career firefighters, there has been a desire to look at the option of volunteer firefighters, either replacing the full-time firefighters or supplementing their response.

With 1,913 emergency calls (2015 stats) per year, it would be impractical and taxing on volunteers, who frequently also have full-time employment, families, and other activities, to be expected to respond to that many emergency calls. In that there is a consistent demand for all types of emergency calls, it is common for a city the size of St. Thomas to have full-time firefighters on site dealing with most of the emergency calls which require a limited manpower (e.g. medical calls, motor vehicle collisions, burn complaints).

There are many aspects of fire protection to consider when exploring the use of volunteer firefighters and whether their employment makes sense for a municipality.

Volunteer firefighters must meet the same minimum qualifications and training requirements as career firefighters. This requires a significant ongoing effort as volunteer turnover is generally high. Volunteer fire services will typically require their firefighters to complete 100+ hours of training annually to gain and maintain their skills. In addition, support and staffing time from a training officer would be required.

Volunteer recruitment is a challenge in many communities across Ontario as they must make a significant weekly time commitment to both training and response. When people work outside the community, have families, and other social commitments, they often do not want to devote extra time to the fire service for the training, etc. Dedicated staff time would be required for the ongoing recruitment of volunteers.

The term “volunteer” is misleading as volunteer firefighters are paid for the time they are attending meetings, training, responses, and other tasks such as fire prevention. This adds a cost to the fire service of salaries which would need to be estimated based on the number of volunteers required.

Volunteers must be equipped with the proper equipment including bunker gear, SCBA masks, availability of radios, etc., as all firefighters are.

For volunteer response, a rule of thumb is that a station should have approximately three times the number of volunteers as required to respond in a timely manner. For example, if you wish to have five firefighters arrive at the station, there should be 15 trained and equipped firefighters on the roster.

This number will vary based on the community and time of day. During weekdays at normal business hours, it is often a challenge for services with volunteers to get an adequate response as most have jobs during the day time. Further, the response of a certain number of volunteers is never guaranteed.

The City should maintain 10 firefighters on duty around the clock to ensure a timely first response.

The City must consider how an adequate number of trained and equipped firefighters can be assembled for major emergencies. Currently, off-duty full-time firefighters are called back to duty and the County Mutual Aid Plan is activated. The experience has been that this provides enough firefighters within an acceptable timeframe. If this not be the case, changes to how full-time firefighters respond and/or how quickly the County Mutual Aid Plan is activated should be considered. Should these fall short, then the implementation of a volunteer cadre would be warranted.

A major barrier that can be anticipated is that the current Collective Agreement would preclude the use of volunteers and therefore the Collective Agreement restrictions would need to be addressed first.

Mutual Aid System

Mutual Aid is a principle that is provided for and authorized under the Fire Protection and Prevention Act. It recognizes that it is not practical for any fire service to provide all the services, equipment and resources to adequately protect its municipality. Participation in Mutual Aid allows municipal fire services to access, at no cost, assistance to deal with emergencies that it would otherwise find overwhelming.

The eight fire services in Elgin County have a long history of cooperation and support. This is reflected in their participation in the County Mutual Aid system. Access to Mutual Aid provides each of these departments with access to the staff and equipment necessary for them to provide adequate protection to their communities.

The Fire Chief meets regularly with the neighbouring fire services in the County building cooperative relationships.

St. Thomas Fire Department has, as part of its Operational Guidelines for dealing with major emergencies, an expectation that the Incident Commander will request assistance through Mutual Aid, as needed.

Automatic Aid Agreements

St. Thomas Fire Department provides protection to parts of Central Elgin under an Automatic Aid Agreement. This agreement is a wise method to provide an acceptable emergency response capability to the affected areas of Central Elgin and is working well.

Typically, there are a very small number of responses (less than five per year) that generates approximately \$3,000.00 per year in revenue.

Incident Command

The initial response to emergencies is somewhat constrained with only ten firefighters being available immediately. Under most circumstances, unless additional firefighters are called for, Incident Command (normally the platoon chief) is mobile and accountability is tracked by that person.

If the emergency requires additional firefighters (callback of off-duty firefighters, mutual aid, or both) then Incident Command is established at a fixed location when additional officers are available to provide supervision and updates from all fire sectors/groups.

The Chief Training Officer responds to major incidents (when on duty) and typically fulfils the role of Incident Safety Officer when on scene.

The Operational Guidelines provide adequate direction as to how incident command is to be established and maintained, and provides a comprehensive framework for emergency operations.

Major Emergencies

In the event of a major emergency, call-back of off-duty firefighters is initiated and Mutual Aid assistance is available from neighbouring departments.

A call-back of off-duty firefighters, which is done through pagers and text messaging, may result in thirty or more additional STFD firefighters responding, if required. It should be noted, however, that there are no contractual obligations for these firefighters to make themselves available or to respond. Consequently, the response numbers should be closely monitored and steps taken to address any future shortcomings in off-duty firefighter response.

With the current paging and texting system to callback off-duty firefighters, there is no way for the

Incident Manager to know how many firefighters are responding to the page or when they will arrive. Means should be investigated to improve the technology in use to allow responding firefighters to notify Communications, and thus the IC, that they are responding.

Mutual Aid is activated when there is a major emergency (when more resources are required than the on-duty firefighters), at the discretion of the Incident Commander. However, this is not typically done until a significant delay after off-duty firefighters are called back and there is a determination that inadequate off-duty staff are available. This has the potential to create a situation where there are not adequate numbers of firefighters and equipment available at an incident in a timely manner. During a major emergency, where the Incident Commander does not have confirmation that there are enough off-duty firefighters responding in a timely manner, Mutual Aid should be activated immediately after the call back of off-duty firefighters to ensure adequate resources are responding.

External Relationships and Partnerships

St. Thomas Fire Department enjoys a working relationship with its emergency service partners. There is a close working relationship with the St. Thomas Police Service that is evident in the way emergency responses are cooperatively managed by these two agencies. Similarly, STFD has a well-functioning and cooperative relationship with the Elgin/St. Thomas Emergency Medical Services. Emergency medical responses constitute the greatest proportion of STFD's calls and there is mutual appreciation and respect for the skills and service that both agencies provide to the residents of the City.

Emergency Medical Responses

The St. Thomas Fire Department responds to potentially life threatening medical emergencies, under agreement with the Elgin/St. Thomas Emergency Medical Service as the firefighters are trained and equipped to provide initial emergency medical assistance. These responses constituted approximately 1,476 calls in 2015; 77% of the total emergency call volume of the Fire Department.

Having fire crews respond provides several benefits:

- ensures that trained emergency responders are on scene in a timely manner, and in particular, ensures a timely response, should EMS be delayed
- provides additional resources at an incident to assist with patient care, patient movement and transport and emergency scene management

The Elgin/St. Thomas Emergency Medical Services are pleased with the assistance they receive and have no concerns with the current arrangement.

Although medical response does constitute a large proportion of the Fire Department's responses, it does not task their capacity nor does it detract from their ability to provide fire response or other emergency services at this time. As the firefighters are already present and available, the actual additional costs to the Department to provide this service are primarily vehicle expenses (additional fuel, maintenance) and medical supplies. The budget for medical / safety supplies is \$3,000. The fire service budget is \$30,000 for vehicle maintenance and \$108,878 for internal fleet charges. Much of the vehicle maintenance budget is required for annual vehicle maintenance, including for firefighting equipment (pump and aerial certifications) regardless if the vehicles respond to medical calls. Therefore, the actual vehicles costs associated with medical first response would be a small portion of the budget.

Recommendation(s)

19. The City should maintain 10 on-duty firefighters on duty around the clock to ensure a timely first response.
20. Means should be investigated and acquired to ensure timely notification of off-duty firefighters of a major emergency and to allow them to notify Communications of their response and estimated time of arrival.
21. During a major emergency where the Incident Commander does not have confirmation that there are enough off-duty firefighters responding in a timely manner, Mutual Aid should be activated immediately after the call back of off-duty firefighters to ensure adequate resources are responding.
22. The Department should consider and enter negotiations with the Association for the addition of part-time firefighters who would be called to replace vacancies in the shift schedule.
23. The Department should consider hiring up to four additional firefighters (1 per platoon) to be assigned to the Suppression Division to provide more flexibility with staffing and to reduce the reliance on overtime.

Associated Costs (all costs are approximate)

- Recommendations 19 has no additional costs associated.

- Recommendation 20: software that utilizes an app on the firefighters' smartphones is available – estimated at \$1,000 - \$1,500 per year which would be offset by no longer requiring the paging service
- Recommendation 21 has no costs associated
- Recommendation 22: Hiring part-time firefighters would require the provision of equipment (\$3,000 each) plus training which would be based on their previous experience and ongoing training requirements.
- Recommendation 23: Hiring four additional firefighters would cost approximately \$125,000 per person, per year (including initial hiring costs and initial equipment) for an annual cost of \$500,000. A portion of these costs would be offset by reduced overtime costs.

Timeline

- Recommendation 19 – to be maintained at current staffing levels as a minimum
- Recommendation 20 – should be implemented by the end of 2017
- Recommendation 21 – immediate
- Recommendation 22 – short term (1-3 years)
- Recommendation 23 – short term (1-3 years)

2.5 Training

Training is managed for the St. Thomas Fire Department by their sole Chief Training Officer (CTO) who constitutes the Training Division. The Chief Training Officer currently occupies office space at Station 2, which adequately suits his needs. However, for the purposes of efficiency, it would be ideal to relocate the CTO to Station 1, given that the classroom is located there. Additionally, as is the current setup, the CTO, located at Station 2, is effectively segregated from the Fire Chief and other senior officers also located at Station 1.

The CTO is tasked primarily with addressing the training needs of the Suppression Division. The senior officers, RTOs and Fire Prevention Division address their own training needs independently. Ideally, the Training Division should oversee the needs and records for all STFD personnel.

The CTO has limited administrative support and, consequently, much effort is needed to maintain adequate training records. Currently, there are records kept of all training sessions conducted by company officers or by the CTO. However, these records are primarily paper copies and, therefore, are not easily analyzed to determine status of training and areas or personnel requiring attention. Complete implementation of the Training Module of the existing CriSys records management system should provide adequate electronic training records.

The Department is in the beginning stages of implementing a shift training instructor (STI) model. It is anticipated that by the end of 2016, there will be adequate STI's in place to train each platoon on Ice/Water Rescue, Vehicle Extrication, and Confined Space Rescue. Further development of this should enable more training to be done effectively and ensure that the wide variety of needed topics are adequately addressed for the Suppression Division.

There is an officer development course in place for STFD. It is expected that all Suppression Division captains and acting captains have their NFPA Fire Officer Level I and Level II and Instructor Level I certifications. They are also encouraged to achieve their Fire Officer Level III and Level IV certifications; however, this is dependent on opportunities at the Ontario Fire College. Most of the officers achieved their Fire Officer I and II certifications in accordance with the "grandfathering" provisions in place by NFPA.

Currently there is limited use of computer technology for training purposes. Having a comprehensive learning management system would facilitate a more thorough officer development program and could also be used to provide enhanced emergency simulation training. Additional computer work stations would be needed to fully optimize such a system.

STFD has quite limited training facilities. There are no established aids for training and practising in the wide variety of skills that the Department must maintain, such as pump operations, confined space, vehicle rescue, rope rescue, forcible entry, driver training etc.

It was noted that the Department does not conduct regular live fire training. In fact, there are no nearby facilities for this type of training and any training would therefore be prohibitively expensive. There is, however, potential for coordinating some live fire training with other County fire departments. Another possibility is to develop other options such as acquired private structures and/or portable flashover units to provide some live fire training.

Recommendation(s)

24. The CriSys records management system's Training Module should be fully implemented.
25. Officer development program should be more formalized and successful completion incorporated into promotion opportunities.
26. The Shift Training Instructor model should be fully developed to support the required training for each platoon and a schedule for the training be set at the beginning of each year, with the Chief Training Officer, setting the schedule and establishing goals, monitoring and analyzing progress towards goals, and delivering the training when possible.
27. Develop more comprehensive training facilities that better affords the opportunity to train and practice all the skills needed for the range of services provided by the department. This should be coordinated, where practicable, with other County fire departments, particularly Central Elgin.
28. Consider developing a computer based learning management training system to enable distance learning, coordinate progress toward established learning outcomes and to enable coordinated simulation training.
29. Provide administrative support to the training officer to ensure all training records are documented electronically (7 to 14 hours a week initially).

Associated Costs (all costs are approximate)

- Recommendations 24, 25, 26, and 27 will require considerable staff time from the Chief Training Officer.

- Recommendation 27 – the costs associated will depend on what options are available and selected.
- Recommendation 28 – set-up costs should be budgeted at \$20,000 for hardware and networking and will cost approximately \$10,000 per year thereafter (program fees, software fees and maintenance).
- Recommendation 29 – salary and benefit costs estimated at \$10-20,000 per annum unless the work is assigned to the on-duty communications officers

Timeline

- Recommendations 24, 25, and 26 should be implemented by the end of 2017
- Recommendation 27 discussions with potential partners should start in the short-term (1-3 years) with a goal for implementation in the mid-term (4-6 years).
- Recommendation 28 – short-term (1-3 years)
- Recommendation 29 should be implemented by the end of 2017.

SECTION 3: Physical Resources

- 3.1 Fire Stations
- 3.2 Fire Vehicles
- 3.3 Equipment

SECTION 3: Physical Resources

3.1 Fire Stations

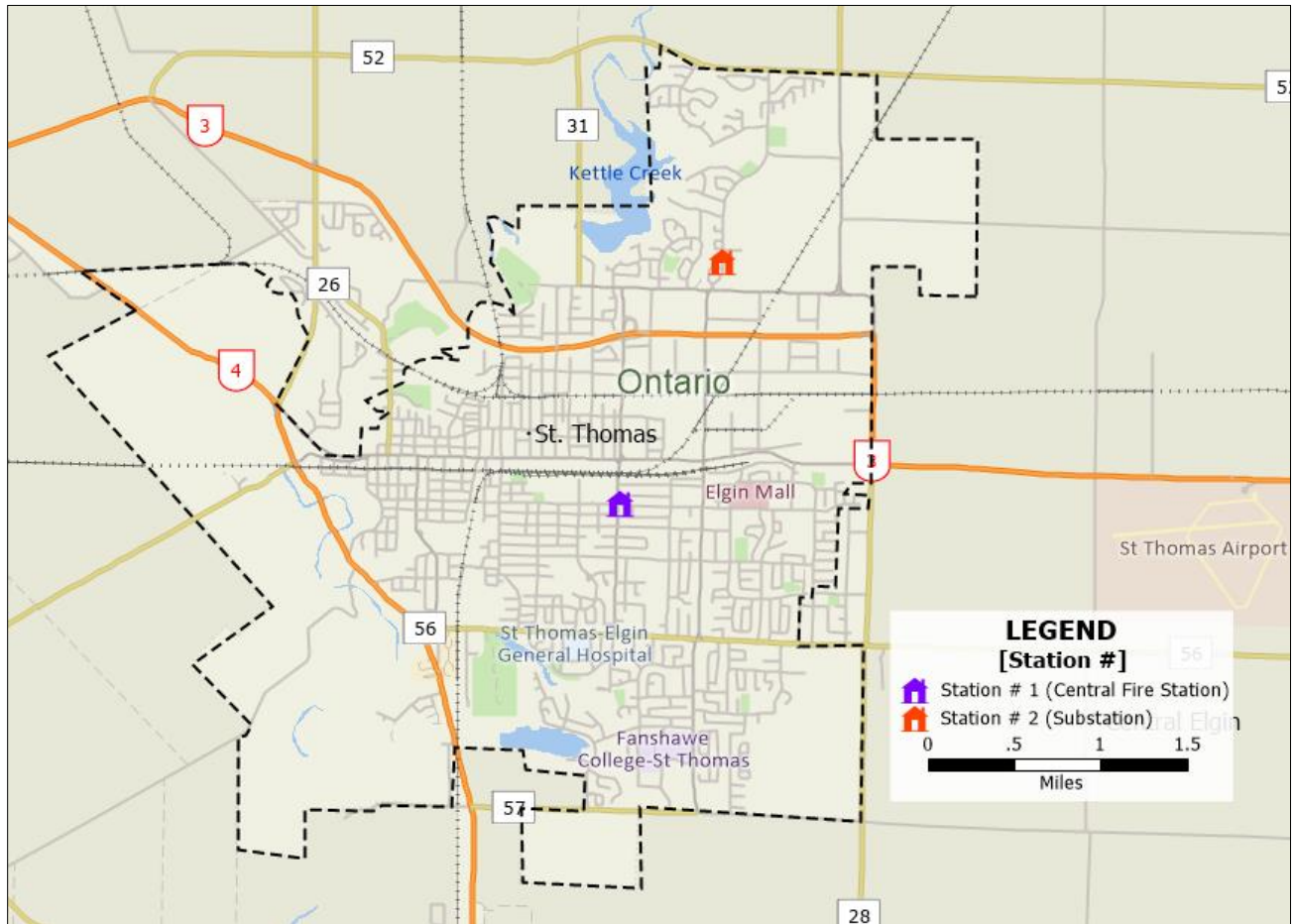
St. Thomas is served by two fire stations. Station 1 houses the Administration, Fire Prevention, Communications Centre, the classroom, and six of the ten on-duty Suppression firefighters, including the Platoon Chief. Station 2 houses the Chief Training Officer and the remaining four on-duty Suppression firefighters.

Fire Station Locations

Fire stations should be situated to offer the most efficient and effective response to the community they serve. The most appropriate fire station locations depend on many factors; the primary one being travel time to anticipated emergencies, giving due consideration to geographical barriers that can affect emergency response such as train tracks and ravines. In addition, a suitable location must provide safe access to the road network, and have adequate space for the department current and anticipated future needs.

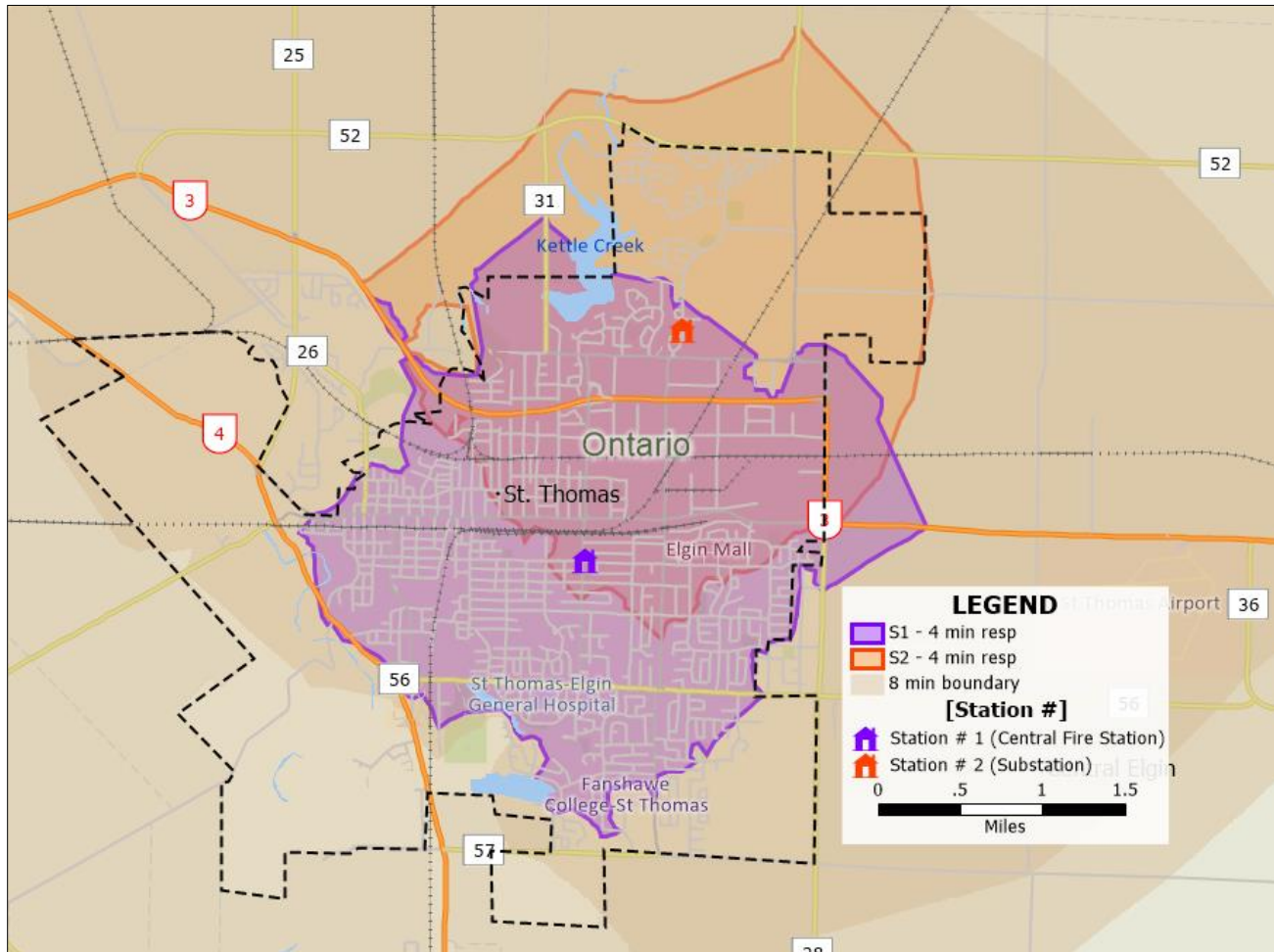
Station 1, located at 305 Wellington Street, was built in 1972, was the sole fire station in the City until the construction of Station 2 located at 235 Burwell Road, in 2006.

St. Thomas Fire Station Locations



The City is currently meeting (just 3 seconds over) the NFPA standards for response with a 90th percentile of 4 minutes and 3 seconds. The NFPA 1710 standard is 4:00 minutes 90% of the time.

Four (4) and Eight (8) Minute Travel Time Map for Each Fire Station



Station 1 was well situated to provide the best coverage for the existing municipal boundaries for one station coverage. Station 2 was added to the northeast part of the City to cover the northern reaches of the city. The close proximity of the two stations creates extensive response overlap.

As of 2015 the fire department response throughout the city appears to be adequate (meeting NFPA response standards), however, as the City continues to grow the response time will need to be monitored to watch for response time increases. This is particularly important in the west and southwest portions of the City which are more distant from the two current stations.

There was discussion regarding the needs for a third station in the southwest portion of the city as development and therefore service demand increases in the area. Our mapping software indicates that a third station in the area of Sunset Drive and Bush Line would provide an enhanced coverage to

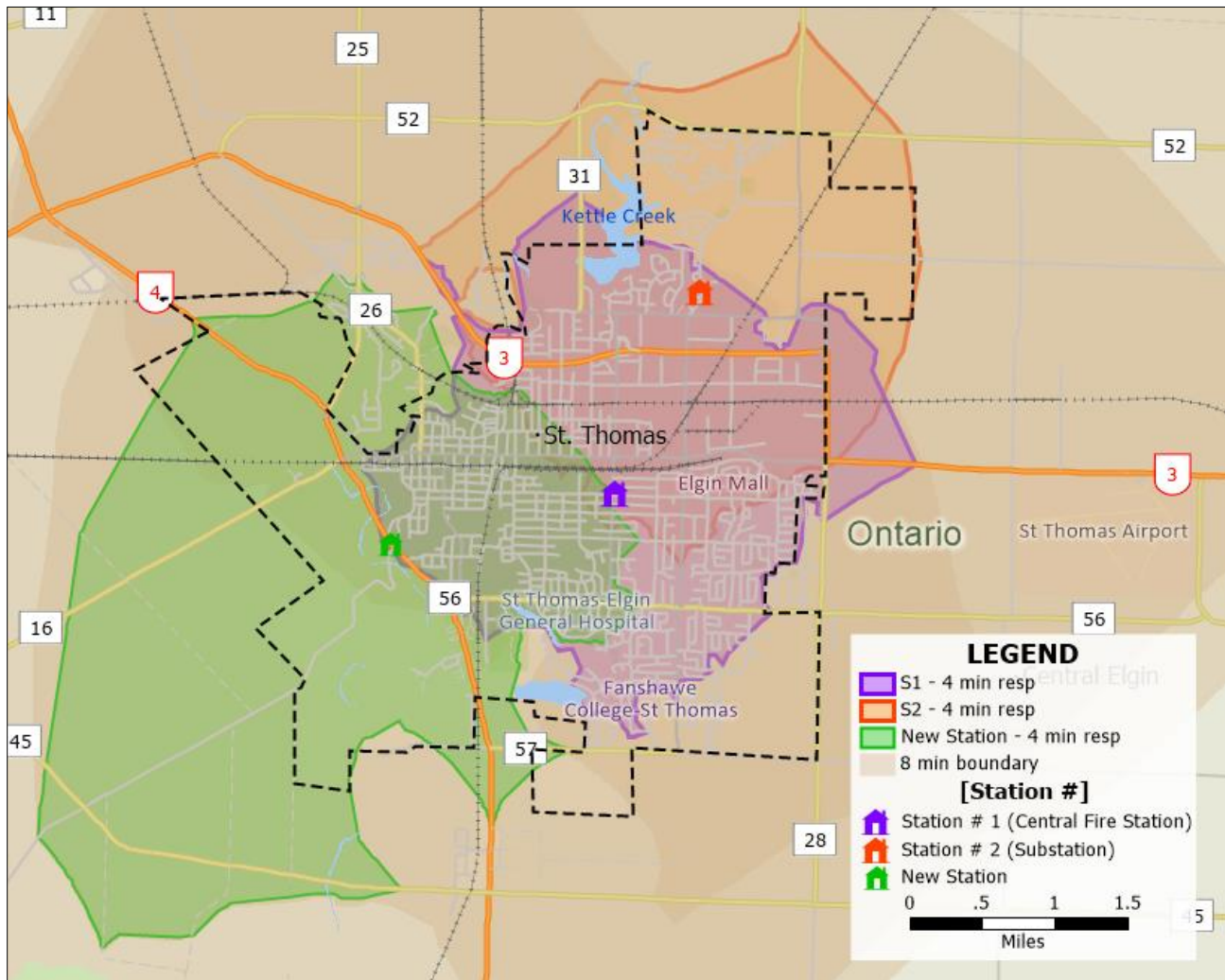
the City in the long-term as City growth continues. This would be a long-term consideration based on the continuous evaluation of City growth, response requirements, and types of risks in this area.

The addition of a third station would also be an opportunity to add a training facility that could include a live fire building, props, and rescue evolutions.

Until the time when a new station is constructed, it would be worthwhile to consider implementing a direct alarm connection for those properties (existing and/or in future development) in areas where the response time exceeds the target travel time. This would reduce notification time and thus, the overall response time.

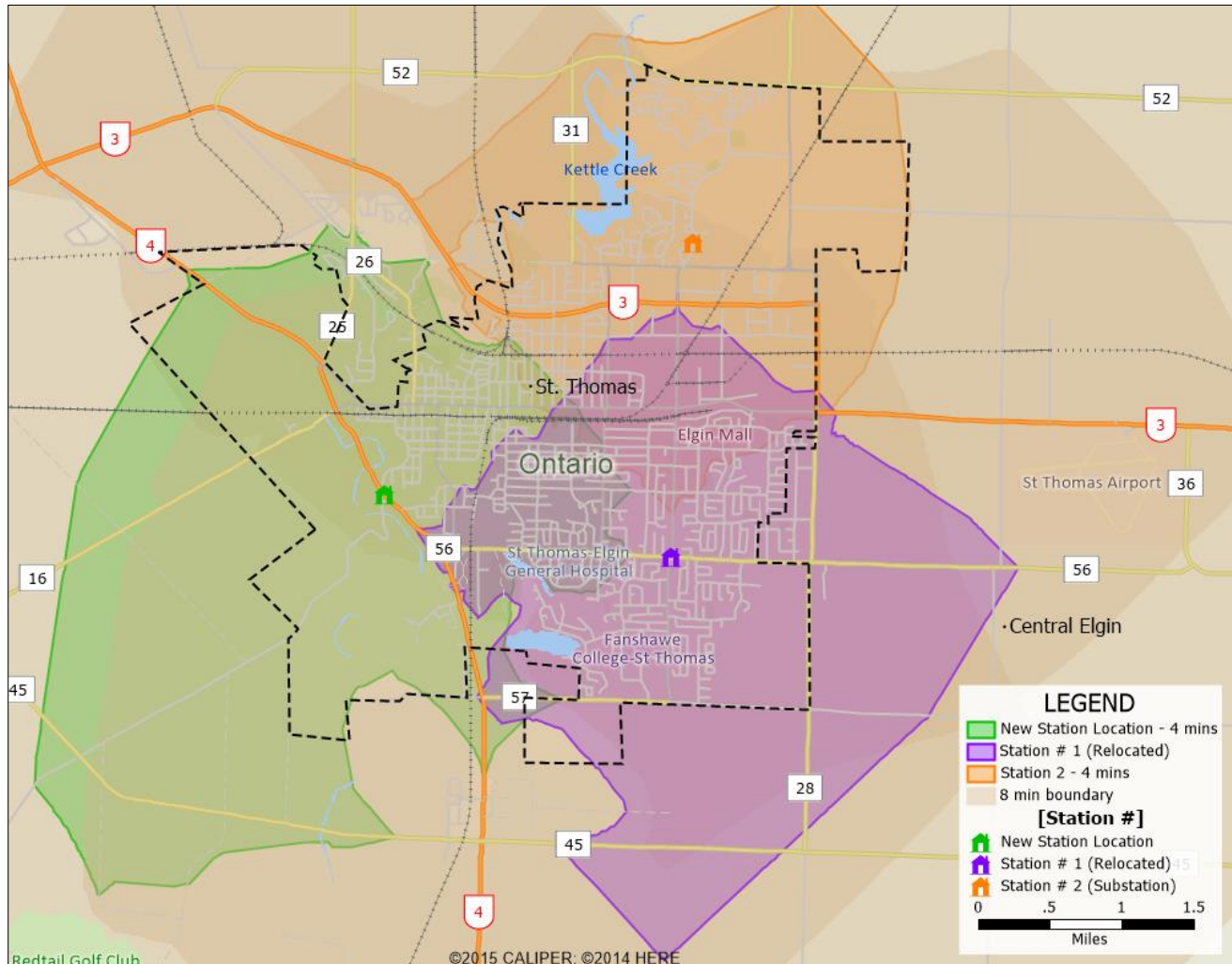
The time it takes for a fire service to intervene in an emergency is comprised of many factors: alarm time, notification time, call handling time, assembly time, travel time and on scene set-up time. Reducing time spent on one factor (notification time) can compensate for another factor (travel time).

St. Thomas Fire Station Locations with potential west station



Station 1 was in a great location to provide coverage to the City from one station. As the City has evolved into a multi-station department, the ideal location for this station would be slightly south of its current location (Elm St. near 1st Ave.) as indicated in the chart below (St. Thomas Fire Station Ideal Locations). However, relocating Station 1, while it would improve response times modestly in some areas of the City, will likely increase response times to other areas that are currently receiving an appropriate response time. When considering options available to relocate this station and the effects on response times that such potential relocation affords, it does not seem fiscally or operationally prudent to consider relocating Station 1 at this time.

Ideal Station Locations

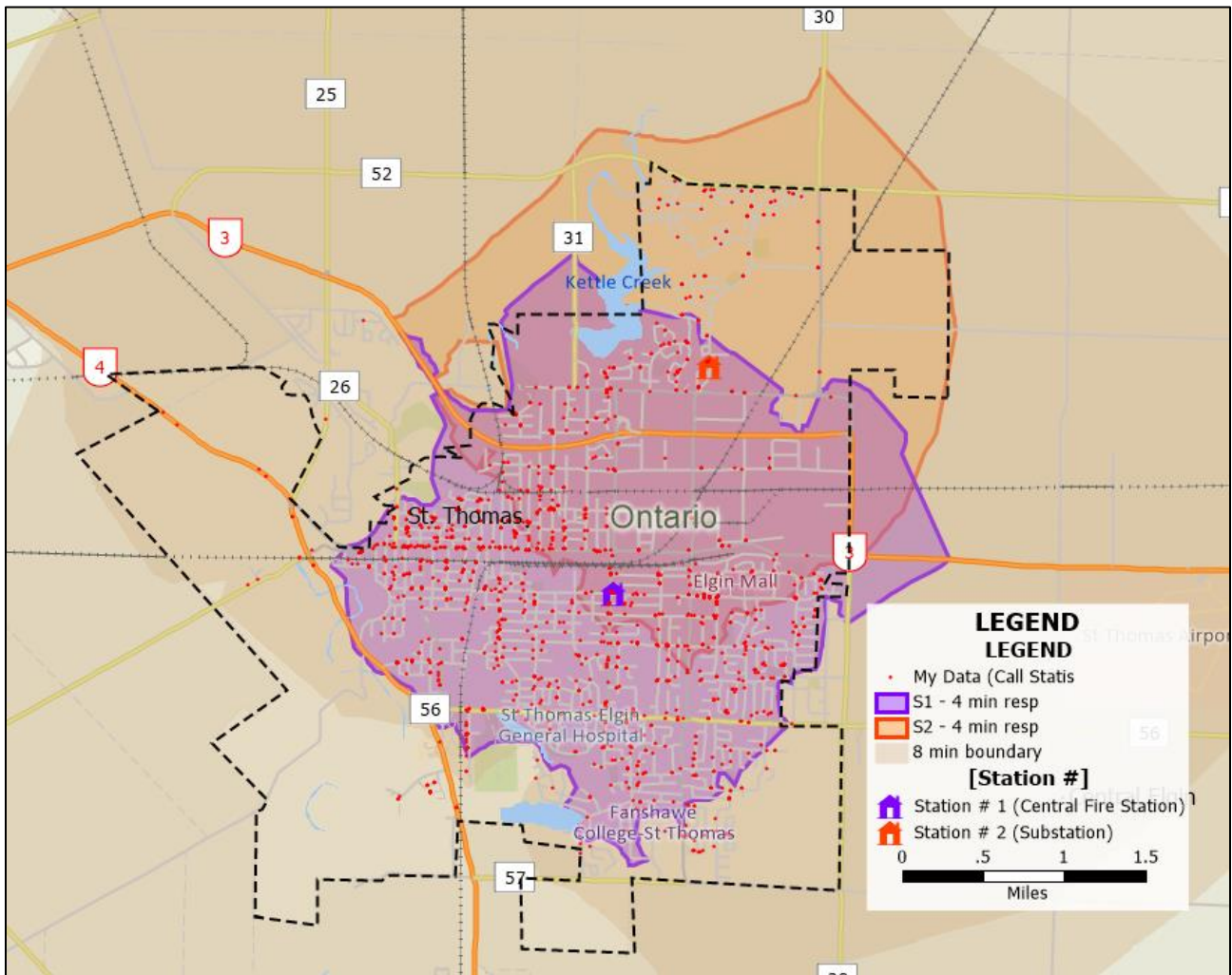


Any assessment of potential future locations for a fire station should take into consideration the following:

- Travel times
- Call volumes and locations of most demand for emergency response
- Vehicles and equipment to be stationed and resulting space needs
- Staff to be assigned and resulting space needs
- Reasonable access to a major street or road
- Appropriate sight lines (no hills, physical obstacles)

- No traffic impediments at any time of day
- Ability to have a second access to the site
- Maintained access (snow clearance, etc.)
- Impact on adjacent properties needs to be considered
- Size of site must accommodate all expected activities of the fire service and allow for future expansion (Parking, training, apparatus maintenance and equipment testing, etc.)
- Proximity to municipal services and required utilities (water, sewer hydro, telephone, gas)
- Costs
- Acquisition of land
- Site preparation
- Building

St. Thomas Fire Responses Plotted for 2015



Fire Station Evaluations

EMT conducted a visual assessment of both St. Thomas Fire Department stations. Based on visits to the stations, the buildings appear to need varying levels of repairs and updating of facilities. Each station will be addressed individually.

Station 1 – Central Fire Station



Station 1 was built in 1972 and is becoming fatigued and in need of renovations in some areas. The building does not meet current accessibility standards for public buildings. Also, due to expansion and changes in the department, there is a need to consider adding facilities.

The administrative offices provided for the Fire Chief, Deputy Fire Chief, Administrative Assistant, Fire Prevention Division and the Platoon Chief are adequate to their needs. However, the area lacks a meeting room that can be used for meetings amongst staff or meetings with outside persons attending the fire station for business purposes. Also, there is inadequate secure storage for documentation and supplies in this area. The Deputy Fire Chief's office has become the de facto storage room for these items.

A further consideration for alteration to the administrative offices is the relocation of the office of the Chief Training Officer from Station 2. The Chief Training Officer is currently segregated from the rest of the senior staff personnel as well as the classroom and would benefit from the relocation of his office to Station 1.

The apparatus bay is adequate to the Station's needs. Equipment storage and maintenance space is also adequate.

The training facilities do not fully meet the Department's needs. The classroom is adequate, but minimally provided with training aids, such as computers. As previously noted in Section 2, the training facilities for the St. Thomas Fire Department should be improved considerably.

The crew quarters at Station 1 need renovation, specifically, the kitchen, dorm and day room. Hard wearing materials (such as stainless steel counters) should be used to ensure longevity and ease of maintenance.

Alarm notification is different at both stations. Station 1 is notified by activating a hardwired alarm bell and a voice announcement over the public address system. The alarm bell is a jarring method for notifying emergency responders. An alarm tone over the speaker system would be a preferred method. Also, the same system should be employed at both stations for consistency.

The station is provided with a generator that supplies all electrical and electronic equipment with backup power. The generator was installed in 1999 and is in good condition and routinely maintained by an outside contractor.



Station 2 – Captain Dennis Redman Substation



Station 2 is relatively new (2006), well constructed with hard wearing materials (e.g. concrete block walls), and is in good condition. The apparatus bay is well designed and in good condition. There is appropriate space for maintaining and storing equipment. The crew quarters are adequate for the assigned staff, are well designed and in good condition. The station is provided with a generator that supplies all electronic equipment with backup power. The generator was installed at the time of construction (2006) and is in good condition and routinely maintained by an outside contractor.

Consequently, there was no identified need for any alterations or renovations to Station 2, apart from reviewing the alarm notification system, as noted above. Additionally, it was noted that the asphalt pavement at the front of the station has become compacted, sunken and is showing signs of crumbling; this needs repair.

Recommendation(s)

30. Research and implement a system whereby smoke/fire alarm systems in residential and commercial properties in target areas (where response times are otherwise longer than desirable) are directly connected to the St. Thomas Fire Department Communications Centre to reduce notification time and, therefore, keep total response time within an acceptable timeframe.
31. The administration offices at Station 1 should be altered and expanded as necessary to meet accessibility standards, provide a meeting room, secure storage room, and an office for the Chief Training Officer.
32. The crew quarters at Station 1, including the kitchen, dorm and day room, should be renovated making use of hard wearing materials to ensure longevity and ease of maintenance.
33. Alarm notifications for both stations should be standardized using tones and voice announcements.
34. The asphalt at Station 2 should be repaired.
35. Evaluate city owned property or acquiring property that would be appropriate for a fire station in the west end of the city. Some fire departments (e.g. City of Barrie) are leasing space in commercial / industrial plazas to reduce the initial capital costs.
36. Monitor the city growth, call demand, response times and risks in target areas (where response times are otherwise longer than desirable) in the evaluation of the need for a station in the west side of the City.
37. Consideration should be given to the construction of a training facility that can include live fire, rescue simulations, and props at the new fire station.

Associated Costs (all costs are approximate)

- Recommendation 30 - Costs to implement will depend on what options are identified that enable the direct alarm connections. Most costs may be recouped through user fees.
- Recommendation 31 - Alterations for Station 1 administrative offices including (accessible washrooms and doorways, meeting room, office, storage room etc.) would be in the range of approximately \$200-250,000

- (250 ft² meeting room, 150 ft² office, 120 ft² storage room, 100 ft² accessible washroom plus attached entrance and common areas impacted (50%) – total 930 ft² x \$250/ft²).
- Recommendation 32 - Renovations to the crew quarters of Station 1 should cost approximately \$200-\$250,000 depending on materials and extent of renovations decided upon (no structural renovations involved).
 - (1000 ft² plus attached common areas impacted (50%) - total 1500 ft² x \$150/ft²)
- Recommendation 33 - Cost to implement will depend on what options are identified (likely less than \$8,000).
- Recommendation 34 - quotes to be obtained
- Recommendation 35 - Cost of land for a new station will depend on whether the city currently has any suitable property, has land set aside by a developer, or decides to lease or purchase the property.
- Recommendation 36 - The construction cost considerations for a new station
 - If a fire station is relocated then an approximate building cost of \$250 - \$300 per square foot should be expected – for example if a one-bay 7,000 sq. ft. building is constructed, the cost would be approximately \$1,750,000 - \$2,100,000 with a build timeline of approximately one year. The noted cost would be for the building expenses only. It does not include specific amenities that may be identified by STFD. This estimate is totally dependent on materials used in the construction of the fire station.
 - An additional fire truck and related equipment for the station is estimated at \$700,000.
 - A new station cannot be considered without calculating the staffing costs for the station. To fully staff would require 20 career firefighters to ensure a consistent staffing of 4 firefighters 24/7. With current salary and benefit costs, the annual expenditures would be approximately \$2 million.

It should be noted that the costs associated with implementing a new fire station could be implemented in partial increments. For example, STFD could use one of its present fire trucks for this station and moving two firefighters from each platoon from Station 1 to reduce the total number of new firefighters required. Another option may be for the spreading of staff to have a minimum of 3 firefighters per station 24/7 at Station 2 and 3, with 4 firefighters at station 1 meeting the current staffing of 10 firefighters per platoon.

- Recommendation 37 - A basic firefighting training facility may range from \$250,000 to \$900,000 depending on the design, materials (concrete building or modified shipping containers), equipment, and props included.

Timeline

- It is suggested that recommendations 30, 31, 32, 33, 34 are short term (1-3 years).
- Recommendations 35, 36 and 37 are long-term (7-10 years) although the needs should be continually assessed.

3.2 Fire Department Vehicles

St. Thomas Fire Department is provided with a fleet of vehicles that enables it to meet the demands for services placed upon it.

Neither the Fire Chief nor the Deputy Fire Chief have an assigned vehicle. This results in the potential for their use of personal vehicles for department business. Although the two senior officers share on call duties, they do not have a vehicle available to them to respond that is appropriately equipped with communications, emergency lights and siren. Further, there are only three vehicles available for the support divisions (Training, Prevention and Administration) for five staff. This had led to situations where there was not an appropriate vehicle available, when needed by staff.

Consideration should be given to providing at least one emergency response vehicle equipped with two-way radio, emergency lights and siren that can be used by the on-call senior officer. This would also increase the pool of available light vehicles for the support divisions.

Consideration should be given to providing the Fire Prevention Division with vehicles capable of towing their public education equipment when their vehicles are due for replacement. In addition, all three of the Department's light vehicles are approaching ten years old (one is 2007, one 2008 and one 2009) and consideration to the replacement of these vehicles should be being planned now.

The department is equipped with seven heavy fire vehicles:

1. Pump 1 (2600 litre tank, 8000 lpm pump) – 2004
2. Pump 6 (2700 litre tank, 8000 lpm pump) – 2007
3. Ladder 5 (75' aerial ladder) – 2001
4. Ladder 9 (100' ladder) – 2011
5. Tanker 8 (6800 litre tank, 5000 lpm pump) – 2015
6. Rescue 7 (rescue/command vehicle) – 1991
7. Rescue 10 (light rescue unit) - 2002

The Department has proposed replacing the two rescue units with one, heavy rescue unit capable of carrying all rescue equipment. This proposal improves the efficiency of the Department’s services and is timely, considering the ages of these two vehicles.

Aging fire vehicles are a concern as equipment can become less reliable over time, incurring increased maintenance costs, and becoming increasingly incompatible with current standards and operational requirements.

Fire Underwriters Survey – Vehicle Replacement Recommendations

In the chart below, the recommendations for vehicle replacement for the City of St. Thomas fall under the highlighted column for Medium Sized Cities or Communities. This allows for up to a 20-year replacement cycle.

Apparatus Age	Major Cities ³	Medium Sized Cities ⁴ or Communities Where Risk is Significant	Small Communities ⁵ and Rural Centres
0 – 15 Years	First Line	First Line	First Line
16 – 20 Years	Reserve	Second Line	First Line
20 – 25 Years ¹	No Credit in Grading	No Credit in Grading or Reserve ²	No Credit in Grading or Reserve ²
26 – 29 Years ¹	No Credit in Grading	No Credit in Grading Or Reserve ²	No Credit in Grading Or Reserve ²
30 Years ¹	No Credit in Grading	No Credit in Grading	No Credit in Grading

1. All listed fire apparatus 20 years of age and older are required to be service tested by a recognized testing agency on an annual basis to be eligible for grading recognition (NFPA 1071)
2. Exceptions to age status may be considered in small to medium sized communities and rural centre conditionally, when apparatus condition is acceptable and apparatus successfully passes required testing
3. Major cities are defined as an incorporated or unincorporated community that has:
 - a. a populated area (or multiple areas) with a density of at least 400 people per square kilometre; AND
 - b. a total population of 100,000 or greater.
4. Medium Communities are defined as an incorporated or unincorporated community that has:
 - a. a populated area (or multiple areas) with a density of at least 200 people per square kilometre; AND
 - b. a total population of 1,000 or greater.
5. Small Communities are defined as an incorporated or unincorporated community that has:
 - a. no populated areas with densities that exceed 200 people per square kilometre; AND
 - b. does not have a total population in excess of 1,000.

The Fire Underwriters Survey, an insurance industry advisory agency, recommends that front line

fire vehicles be less than 15 years old, that vehicles in 2nd line use are less than 20 years old, and vehicles in reserve are no older than 25 years.

Another standard that supports a regular replacement schedule of fire vehicles is the National Fire Protection Association Standard 1911, Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus. This standard recommends that all front run vehicles are replaced on a 15 to 20-year cycle, depending on the community size.

All STFD vehicles are within 15 years except for Rescue 7, which at 25 years is at the limit of its recommended life cycle.

Replacement of fire vehicles should be planned for, based on an expected life span. These vehicles are expensive and the financial capability to replace them when their age dictates it should be assured.

The vehicles are well maintained and serviced regularly.

Mobile Data Terminals

St. Thomas Fire Department has begun a pilot project to use a form of mobile data terminal (MDT) on one of their front run trucks (Rescue 10). This has proven to be useful to provide information relative to an emergency response, to provide data relative to the property where the emergency is occurring, and to assist in accessing other related data. The current system, however, does not update while the vehicle is mobile as it does not have adequate data connection capability.

Further development of this initiative should be considered. Adding mobile data updating capability to the existing MDT would be a first step. The second step would be to provide an MDT for Pump 6 and then Ladder 9. The use and utility of these MDTs should be monitored and analyzed and, if found to be of significant benefit, (as is expected based on other fire departments' use of similar systems) expanded to Pump 1 and Ladder 5.

Recommendation(s)

38. Rescue 7 and Rescue 10 should be replaced with a suitable heavy rescue unit that can carry all the necessary rescue equipment and provide a suitable command vehicle capability.
39. Firefighting apparatus should be replaced at their 20th year. E.g. Ladder 5 should be replaced by 2021, Pump 1 should be replaced by 2024, and Pump 6 should be replaced by 2027.
40. Mobile data terminals should be further developed and implemented on front run vehicles, including making the existing MDT on Rescue 10 mobile data capable and adding MDTs for Pump 6 and Ladder 9.

Associated Costs (all costs are approximate)

- Recommendation 38 – approximately \$650,000.
- Recommendation 39 – Future forecasting and capital reserves should be established for all new apparatus. Ladder trucks may cost \$1,000,000 and pumpers \$700,000 in 2016 dollars.
- Recommendation 40 – implementation for the three front line vehicles is estimated at \$40-55,000.

Timeline

- Recommendation 38 should be implemented immediately so that an order can be placed. Note: it can take 12 months from the time of order until the vehicle is delivered and becomes operational.
- Recommendations 39 – apparatus should be ordered at least 12 months prior to the needed delivery date.
- Recommendation 40 – should be implemented by the end of 2017.

3.3 Equipment

St. Thomas Fire Department is provided with a range of equipment that allows it to provide the needed emergency services. All this equipment is well maintained and routinely serviced with appropriate records maintained. However, records are kept in log books only. A comprehensive electronic inventory control system should be in place that includes all major equipment.

Self-Contained Breathing Apparatus

Self-Contained Breathing Apparatus (SCBA) are provided in sufficient numbers and with sufficient spare cylinders to enable sustained firefighting and overhaul operations. The SCBA packs and cylinders are reasonably new, having been replaced between 2010 and 2012, noting that the cylinders have a life cycle of 15 years. The refill capability for SCBA cylinders is provided by the refill system at Station 1.

Personal Protective Equipment

Personal Protective Equipment (PPE) is provided for each employee of the department appropriate to their assigned tasks. Each Suppression Division firefighter is provided with two sets of bunker gear, both of which are within 10 years of purchase. This is consistent with industry best practices.

Vehicle Rescue Equipment

Vehicle rescue heavy hydraulic equipment is provided. There are two sets, one on Pump 6 that was purchased in 2005 and one on Rescue 10 that is 20 years old and is scheduled for replacement in 2017. These two sets provide the needed equipment for the Department's level of service.

Confined Space Rescue Equipment

Confined space rescue equipment, including fall arrest, winch, and tripod are adequate to the Department's needs. It was noted that this equipment should be compared with those in use by the City of St. Thomas Environmental Services to ensure standardization.

Two-Way Radios

Two-way radios are provided in sufficient numbers for both mobile units for vehicles and portable units. The radios were replaced in 2014 and digital capability was activated in 2015. It was noted by Suppression firefighters that radio reception, particularly with portables, is poor in some areas. This should be monitored and analyzed, the scope of the problem defined, and problem areas identified. Depending on the result of this analysis, the department should consider implementing radio repeaters, either portable or vehicle based, to enhance the signal strength.

Ladders and Hose

Ladders are provided for each vehicle in accordance with NFPA standards. Ladders are tested annually.

Hose loads – 65 mm and 38 mm – are in accordance with NFPA standards for all vehicles, including 2nd line trucks. The Department tries to maintain a standardized hose load (as much as is practicable with the diverse vehicles).

Recommendation(s)

41. Confined space rescue equipment in use by STFD should be compared with that in use by St. Thomas Environmental Services and standardized, as needed.
42. Radio communication audibility and transmission strength should be monitored and analyzed and problems identified. If warranted, radio repeaters should be purchased and implemented to improve radio communications.

Associated Costs (All costs are approximate)

- Costs associated with Recommendation 41 will depend on the outcome of the comparison.
- Recommendation 42 the assessment can be initiated at no cost. Budgets for resolving radio issues will require identifying the specific shortfall and the solutions required with the radio service company.

Timeline

- These recommendations should be implemented by the end of 2017.

SECTION 4:
Final Summary of Recommendations
and Estimated Costs

SECTION 4: Conclusion

During the review conducted by Emergency Management and Training Inc., it was noted that the firefighters are truly dedicated to the community they serve. It was further noted that the Council, City Manager, and Fire Chief are sincerely committed to ensuring the safety of the community and the firefighters of St. Thomas. Based on the present staffing, equipment and fire stations locations, St. Thomas Fire Department is endeavoring to offer the most efficient and effective service possible.

As illustrated in the recommendations throughout this report, there are a total of 42 recommendations that have been put forward by Emergency Management & Training Inc. However, no matter what decisions are made in relation to firefighter staffing, the present compliment of career firefighter staffing should be retained and increased if possible, as this would help to ensure a more fulsome response to incidents until more full-time personnel can be brought on board.

The key recommendations noted in this report are more related to all aspects of the Fire Department, which include, staffing, the state of the fire stations and their ability to meet the future growth of the community, along with options to enhance the utilization of the Communications Division supporting the Fire Prevention and Training divisions.

All costs and associated timelines are approximate estimates that can be implemented through prioritization between the Fire Chief, City Manager, and Council.

Finally, a fire service review should be considered as a “living document” and the fire Chief should conduct annual reviews of the recommendations and their progress, and if needed, bring forward updates to Council as required.

Final Summary of Recommendations, Solutions and Estimated Costs

The following chart provides further overview of the recommendations found throughout this report along with any estimated costs that can be incurred in the associated areas.

Recommendations for St. Thomas Fire Department			
Rec #	Recommended Solution	Estimated Costs	Suggested Timeline
1.	St. Thomas Fire Department should identify life cycles for all major cost equipment, such as vehicles, rescue equipment, building facilities, personal protective equipment and other higher cost items. Based on these life cycles, capital forecasts should be created that identify dates and anticipated costs for replacement.	No associated costs	2017
2.	A centralized and electronic inventory control process should be established to track all significant equipment.	No associated costs	2017
3.	The City of St. Thomas should encourage the Ontario Association of Fire Chiefs or the Association of Municipalities of Ontario to undertake a comprehensive review of the impacts of 24-hour shifts including the different impacts on large and small career fire departments.	No associated costs	2017
4.	If the Suppression Division converts to a 24-hour shift, management must take the necessary actions to ensure that attendance is closely monitored to ensure that it improves, operational readiness and effectiveness are not compromised, training is conducted thoroughly and regularly, station and equipment maintenance and cleaning are maintained and that task assignments are completed on time.	No associated costs	Based on the outcome of the 24-hour shift proposal
5.	The Simplified Risk Assessment should be updated.	No additional monetary costs are projected. Considerable staff time involved	2017
6.	Annual business planning cycle should be more specific in identifying goals and expected outcomes for property inspections (such as more clearly defining the inspection frequencies) and public education activities and reviewed at least quarterly to assess progress, re-assign resources and/or revise goals as necessary.	No additional monetary costs. Considerable staff time involved	2017
7.	The expectations for fire department actions and responsibilities regarding Ontario Building Code compliance should be clearly articulated and the Fire Prevention Divisions should re-establish a coordinated approach with the Buildings	No additional monetary costs are projected. There would be considerable staff	2017

	Department for properties that are of concern to the City.	time involved, however	
8.	Expansion of the use of an integrated records management system (such as CriSys) should be undertaken to make the most effective use of collected information, including enabling better data access between Fire Prevention, Dispatch and Suppression.	No additional monetary costs. Considerable staff time involved	2017
9.	Succession planning should be addressed to ensure trained personnel that are familiar with the community and the fire department are ready to take over when the existing personnel retire.	No additional monetary costs. Considerable staff time involved	2017
10.	Conduct a work load study (as outlined above) to determine whether an additional fire prevention inspector is warranted.	Salary and benefit costs estimated at \$130,000 per annum	2017
11.	Assign Administrative Support time (estimating 21-28 hours a week) to the Fire Prevention Division.	Salary and benefit costs estimated at \$30-40,000 per annum, unless the work is assigned to the on-duty communications officers	2017
12.	<p>It is recommended that greater utilization of the on-duty firefighters be incorporated into an annual Fire Prevention Program. To accomplish this, all Captains should be trained and certified to at least:</p> <ul style="list-style-type: none"> • NFPA 1031 – Fire Inspector I, and • NFPA 1035 – Fire and Life Safety Educator I <p>By having all Captains trained to the above noted levels, STFD will have a greater number of resources to draw upon in its public fire safety education and inspection programs.</p>	Costs for this recommendation are minimal as the training and certification of the firefighters to the noted levels can be done in-house or online	2017
13.	The RTOs should be separated from the Suppression Division into its own Communications Division.	No associated costs	2017
14.	It is recommended that a full cost analysis needs to be completed in relation to the training required to have all RTOs and firefighters fulfilling the role of an RTO meet the NFPA 1061 Standard.	No associated costs	2017
15.	Discussions should be initiated with other county and wider area fire services to determine the potential for acquiring dispatch service contracts.	Considerable management staff time	2017
16.	Administrative tasks should be assigned to the RTOs to increase their utility and offset potential administrative	Will require management staff	2017

	support costs. This should begin with providing administrative support to the Training and Fire Prevention divisions.	time to set up, but could offset administrative support costs recommended elsewhere in the report by up to \$80,000	
17.	Discussions should be initiated with the Association to remove the four current RTO positions from the bargaining unit and have the dispatch service provided by the St. Thomas Police Service. Should this be achieved, discussions with the St. Thomas Police Service should be initiated to ensure that all factors affecting the transfer of communications and dispatch to the police service are comprehensively addressed.	Savings of approximately \$260,000	2017
18.	Depending on the outcome of Recommendation 17, if STFD maintains their RTOs, additional part-time RTOs should be recruited to ensure that absences (including ones such as the current long-term absence) are filled by qualified staff. Two part-time RTOs would be appropriate, initially. This will require discussion and agreement with the Association.	will incur training costs approximately \$30,000, but ongoing salaries will be offset by overtime savings	2017
19.	The City should maintain 10 on-duty firefighters on duty around the clock to ensure a timely first response.	No associated costs	No change
20.	Means should be investigated and acquired to ensure timely notification of off-duty firefighters of a major emergency and to allow them to notify Communications of their response and estimated time of arrival.	\$1,000 - \$1,500 per year for the app, which would be offset by no longer requiring the paging service	2017
21.	During a major emergency where the Incident Commander does not have confirmation that there are enough off-duty firefighters responding in a timely manner, Mutual Aid should be activated immediately after the call back of off-duty firefighters to ensure adequate resources are responding.	No associated costs	Immediate
22.	The Department should consider and enter negotiations with the Association for the addition of part-time firefighters who would be called to replace vacancies in the shift schedule.	Equipment (\$3,000/firefighter) plus training, based on previous experience and ongoing training requirements	Short-term (1-3 years)
23.	The Department should consider hiring up to four additional firefighters (1 per platoon) to be assigned to the Suppression Division to provide more flexibility with staffing and to reduce the reliance on overtime.	Approximately \$500,000; a portion of these costs would be	Short-term (1-3 years)

		offset by reduced overtime costs.	
24.	The CriSys records management system's Training Module should be fully implemented.	Considerable staff time from the Chief Training Officer	2017
25.	Officer development program should be more formalized and successful completion incorporated into promotion opportunities.	Considerable staff time from the Chief Training Officer	2017
26.	The Shift Training Instructor model should be fully developed to support the required training for each platoon and a schedule for the training be set at the beginning of each year, with the Chief Training Officer, setting the schedule and establishing goals, monitoring and analyzing progress towards goals, and delivering the training when possible.	Considerable staff time from the Chief Training Officer	2017
27.	Develop more comprehensive training facilities that better affords the opportunity to train and practice all the skills needed for the range of services provided by the department. This should be coordinated, where practicable, with other County fire departments, particularly Central Elgin.	Considerable staff time from the Chief Training Officer; the costs associated will depend on what options are available and selected.	Discussions should start in the short-term (1-3 years) implementation in the mid-term (4-6 years)
28.	Consider developing a computer based learning management training system to enable distance learning, coordinate progress toward established learning outcomes and to enable coordinated simulation training.	\$20,000 for hardware and networking and approximately \$10,000 per year thereafter (program fees, software fees and maintenance)	Short-term (1-3 years)
29.	Provide administrative support to the training officer to ensure all training records are documented electronically (7 to 14 hours a week initially).	salary and benefit costs estimated at \$10-20,000 per annum unless the work is assigned to the on-duty communications officers	2017
30.	Research and implement a system whereby smoke/fire alarm systems in residential and commercial properties in target areas (where response times are otherwise longer than desirable) are directly connected to the St. Thomas Fire Department Communications Centre to reduce notification time and, therefore, keep total response time within an	Costs to implement will depend on what options are identified that enable the direct	Short-term (1-3 years)

	acceptable timeframe.	alarm connections. Most costs may be recouped through user fees	
31.	The administration offices at Station 1 should be altered and expanded as necessary to meet accessibility standards, provide a meeting room, secure storage room, and an office for the Chief Training Officer.	Approximately \$200-250,000	Short-term (1-3 years)
32.	The crew quarters at Station 1, including the kitchen, dorm and day room, should be renovated making use of hard wearing materials to ensure longevity and ease of maintenance.	Approximately \$200-\$250,000 depending on materials and extent of renovations decided upon	Short-term (1-3 years)
33.	Alarm notifications for both stations should be standardized using tones and voice announcements.	Cost to implement will depend on what options are identified (likely less than \$8,000)	Short-term (1-3 years)
34.	The asphalt at Station 2 should be repaired.	Quotes to be obtained	Short-term (1-3 years)
35.	Evaluate city owned property or acquiring property that would be appropriate for a fire station in the west end of the City.	Cost of land for a new station will depend on whether the city currently has any suitable property, has land set aside by a developer, or decides to lease or purchase the property	Long-term (7-10 years)
36.	Monitor the city growth, call demand, response times and risks in target areas (where response times are otherwise longer than desirable) in the evaluation of the need for a station in the west side of the City.	Approximately \$1,750,000 - \$2,100,000+ (see recommendation)	Long-term (7-10 years)
37.	Consideration should be given to the construction of a training facility that can include live fire, rescue simulations, and props at the new fire station.	\$250,000 - \$900,000 depending on the design, materials, equipment, and props included	Long-term (7-10 years)
38.	Rescue 7 and Rescue 10 should be replaced with a suitable heavy rescue unit that can carry all the necessary rescue equipment and provide a suitable command vehicle	Approximately \$650,000	Immediately

	capability.		
39.	Firefighting apparatus should be replaced at their 20th year. E.g. Ladder 5 should be replaced by 2021, Pump 1 should be replaced by 2024, and Pump 6 should be replaced by 2027	Future forecasting and capital reserves should be established for all new apparatus. Ladder trucks - \$1,000,000 and pumpers \$700,000 in 2016 dollars	Apparatus should be ordered at least 12 months prior to the needed delivery date
40.	Mobile data terminals should be further developed and implemented on front run vehicles, including making the existing MDT on Rescue 10 mobile data capable and adding MDTs for Pump 6 and Ladder 9.	Approximately \$40-55,000	2017
41.	Confined space rescue equipment in use by STFD should be compared with that in use by St. Thomas Environmental Services and standardized, as needed.	Will depend on the outcome of the comparison	2017
42.	Radio communication audibility and transmission strength should be monitored and analyzed and problems identified. If warranted, radio repeaters should be purchased and implemented to improve radio communications.	Initiated at no cost; budgets for resolving radio issues will require identifying the specific shortfall and the solutions required with the radio service company.	2017

Appendix “A”

Definitions and References

Appendix A: Definitions and References

Automatic Aid Agreements – Fire Prevention and Protection Act, 1997 (FPPA 1997)

4. For the purposes of this Act, an automatic aid agreement means any agreement under which,
- a) a municipality agrees to ensure the provision of an initial response to fires, rescues and emergencies that may occur in a part of another municipality where a fire department in the municipality is capable of responding more quickly than any fire department situated in the other municipality; or
 - b) a municipality agrees to ensure the provision of a supplemental response to fires, rescues and emergencies that may occur in a part of another municipality where a fire department situated in the municipality is capable of providing the quickest supplemental response to fires, rescues and emergencies occurring in the part of the other municipality. 1997, c. 4, s. 1 (4).
 - *Automatic aid is generally considered in other jurisdictions as a program designed to provide and/or receive assistance from the closest available resource, irrespective of municipal boundaries, on a day-to-day basis.*

National Fire Protection Association (NFPA) Documents:

- NFPA 1201 - Standard for Providing Fire and Emergency Services to the Public
- NFPA 1500 – Standard on Fire Department Occupational Safety and Health Program, 2013 editions
- NFPA 1720 – Standard for the Organization and Deployment of Fire Suppression Operations, Medical Operations, and Special Operations to the Public by Career Departments
- NFPA 1720 – Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments.

Municipal responsibilities (FPPA 1997)

2. (1) Every municipality shall,
- a) establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention; and
 - b) provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances.

Fire Chief Responsibilities (FPPA 1997)

6. (3) A fire chief is the person who is ultimately responsible to the council of a municipality that appointed him or her for the delivery of fire protection services.

Mutual Aid

- a) Mutual aid plans allow a participating fire department to request assistance from a neighbouring fire department authorized to participate in a plan approved by the Fire Marshal.
- b) Mutual aid is not immediately available for areas that receive fire protection under an agreement. The municipality purchasing fire protection is responsible for arranging an acceptable response for back-up fire protection services. In those cases, where the emergency requirements exceed those available through the purchase agreement and the backup service provider, the mutual aid plan can be activated for the agreement area.

Public Fire Safety Guidelines:


- PFSG 04-40A-12, Fire Prevention and Public Safety Education; Simplified Risk Assessment March 2001
- PFSG 04-08-13 on Fire Station Location, September 2004

Volunteer Firefighter (FPPA 1997)

- Means a firefighter who provides fire protection services either voluntarily or for a nominal consideration, honorarium, training or activity allowance. (“pompier volontaire”) 1997, c. 4, s. 1 (1); 2001, c. 25, s. 475 (1).”

Appendix "B"
Inquest Recommendations
December 4, 2002

Appendix B: Inquest Recommendations

 <p>Corporation of the City of St. Thomas</p>	Report No. FD09-02
	File No.
Directed to: Mayor P. Ostojic and Members of Committee of the Whole (Protective Services & Transportation)	Date December 4, 2002
Department: Fire Services	Attachment
Prepared By: Roy Lyons, Fire Chief	
Subject: Inquest Recommendations	
<p>Recommendation:</p> <p>That report FD09-02 on Inquest Recommendations be accepted and filed as information.</p> <p>Origin:</p> <p>The inquest held in St. Thomas concerning the deaths of Captain Dennis Redman and Kathleen Patrick was held at the Psychiatric Hospital. It commenced October 15, 2002 and the jury issued the following recommendations on November 15, 2002.</p> <p>Report:</p> <p>Following each recommendation is our response to that recommendation:</p> <p>1) Operational Guidelines must be adhered to for public and firefighter safety. More specifically, the following operational guidelines need to be emphasized.</p> <ul style="list-style-type: none"> • The incident tactical commander must set up a command post and direct operations from that position ✓ • A complete size up of all sides of the fire site building needs to be initiated • When entering a fire scene, all fire fighters must wear helmets correctly fastened at all times • All fire fighters entering the fire scene must wear their SCBAs • Elevators at the fire scene must be locked down and used only in fire-fighter mode by firefighters only • The stairwell must be used in multi-residential unit buildings of less than six floors • Follow the two-floor below the fire floor guideline for any elevator use • The elevator key and the master key must be in the incident tactical commander's possession • Dispatch information needs to be communicated accurately and regularly to firefighters en route <p>Response – The guidelines incorporated by the Fire Department use the incident command system, accountability, safety, and Section 21 guidelines by the Ontario Fire College. Staff is trained to follow all the guidelines, there is also ongoing training to refresh and reinforce staff on the importance of adhering to all safety protocols. Guidelines are reviewed and updated on an ongoing basis with input from all staff.</p> <p>2) Hold a mandatory operational review of the response to all major incidents in order to ensure compliance with, or explain variances from, the standard operational procedures and/or guidelines. Any variances and/or deviations from the operational guidelines shall be shown on the employee's performance appraisal report.</p> <p>Response – Post incident fire analysis is presently being done on a prescribed form, by the involved shift after each major incident.</p>	

- 3) Officers and firefighters should be reminded on an on-going basis that all protective gear must be worn/deployed according to the standard operational procedures and/or guidelines.

Response – All staff continue to train on the wearing and use of all protective equipment.

- 4) Should continue to make diligent efforts to attain the 10 in 10 standard, and the hiring of 8 additional firefighters be completed by July 1, 2003. As well, in recognition of the evidence heard with respect to the N.F.P.A. 17-10 standard, consideration should be given to whether the 10-10 standard requires upgrading.

Response – This recommendation deals with us continuing to make diligent efforts to attain the ten (10) in ten (10) standard and the hiring of the last eight (8) to be completed by July 1, 2003. Council has a unanimous resolution in place to hire four (4) in January of 2003 and four (4) in January of 2004.

- 5) To maximize the use of available resources, there is a need to work in close conjunction with Volunteer Fire Services in Elgin County. The St. Thomas Fire Department should familiarize itself with the skills, capabilities and likely response times of volunteer firefighters to promote quicker and more effective response to major fire incidents.

Response – The St. Thomas Fire Department has a Mutual Aid Agreement with our neighbouring departments and we have utilized them on several occasions in the last year. We have management as well as joint meetings and we can dispatch them within a minute of a call.

- 6) Develop joint training programs with volunteer fire resources in Elgin County to ensure shared knowledge of capabilities, personnel and equipment.

Response – All departments in our County are being trained on the same curriculum from the Ontario Fire College. All departments in the County have been trained to utilize the same Incident Command structure as well as other joint training sessions to ensure uniformity and standardization across the County.

- 7) The St. Thomas Fire Department needs to utilize the services of the automatic mutual aid agreements with its neighbours.

Response – St. Thomas has had a Mutual Aid Agreement with our neighbouring departments since 1956 and our Incident Commanders utilize them when needed.

- 8) Should work to ensure and show leadership in developing a formalized tiered response with police and ambulance to major incidents of this nature.

Response – We have drafted an operating guideline and will meet with Chief Lynch and the Ambulance service in January of 2003.

- 9) Establish and/or review operational guidelines to ensure that appropriate training, staffing and equipment are provided so that firefighters are able to deal effectively with fires and rescue situations in all types of existing buildings.

Response – We will continually review our operational guidelines and establish new guidelines as they become necessary. Safety is always the first priority in any operational guideline.

- 10) Review and upgrade the training of the St. Thomas Fire Department communications dispatch system so that all dispatchers are trained and receive Fire Dispatcher Training Certificates to ensure quick and efficient communication of relevant emergency information.

Response – Training for our Radio/Telephone Operator (RTO) is an ongoing fact. The two newest RTO's have a certificate from Mohawk College and the other two (2) have over nine (9) years experience between them. We encourage and schedule extra training as courses become available. The job specification for this position has been changed to reflect a communications certificate as a preferred requirement.

FD09-02

- 11) To maintain a sufficient number of fully charged radios and sufficient replacement air cylinders, conduct a complete inventory review of all equipment holdings and correct the deficiencies.

Response – This recommendation addresses sufficient air cylinders, and radios. Air cylinders were never identified as a concern at the inquest. Our inventory is continually updated and new equipment has been requested to cover the recent hirings. We also have an ongoing maintenance program for our radios and self-contained breathing apparatus.

The St. Thomas Fire Department will diligently endeavour to follow the recommendations that have been directed to us by the Coroner's Jury as well as requests for assistance from the Elgin St. Thomas Housing Authority concerning recommendations pertaining to them.

Respectfully,



Roy W. Lyons
Fire Chief

Reviewed By: Treasury Env Services Planning City Clerk Comm Services Other

Appendix "C"
Fire Protection Services Review Notice
February 12, 2001

Appendix C: Fire Protection Services Review Notice

File Reference/Référence: #

Ministry of the
Solicitor General

Ministère du
Solliciteur général



Office of the Fire Marshal

Bureau du commissaire
des Incendies

2284 Nursery Road
Midhurst, Ontario
L0L 1X0
Telephone: 705-725-7271
Facsimile: 705-725-8465

2284, chemin Nursery
Midhurst (Ontario)
L0L 1X0
Téléphone: 705-725-7271
Télécopieur: 705-725-8455

February 12, 2001

Mayor Peter Ostojic
City of St. Thomas
P. O. Box 520
545 Talbot Street
St. Thomas, Ontario
N5P 3V7

Dear Mayor Ostojic:

As the result of monitoring activities, the Office of the Fire Marshal (OFM) has initiated a review of fire protection services for the City of St. Thomas. The power to conduct this review is found in the Fire Protection and Prevention Act.

9. (1) The Fire Marshal has the power,
- (a) to monitor, review and advise municipalities respecting the provision of fire protection services and to make recommendations to municipal councils for improving the efficiency and effectiveness of those services.

The Fire Protection and Prevention Act also sets out the following municipal responsibilities for fire protection services:

2. (1) Every municipality shall,
- (a) establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention; and
 - (b) provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances.

Based on our analysis of information gathered to date, the City of St. Thomas is not providing fire protection services appropriate to its needs and circumstances. A review of fire department records reveals that the St. Thomas Fire Department emergency response delivery system consistently fails to assemble a fire attack team of ten firefighters within ten minutes from the receipt of notification of the emergency in accordance with the OFM Public Fire Safety Guideline called *Staffing – Single Family Dwellings*.

The OFM is concerned that a serious threat to public safety may exist for the residents of the City of St. Thomas should there not be immediate improvements to the fire protection delivery system in the community. It is the responsibility of the municipal council to ensure the provision of these services.

The OFM is making the following recommendations based on our observations to date:

- As an interim measure, the OFM urges the municipality put the necessary mechanisms in place to assemble a fire attack team of ten firefighters in ten minutes at the scene of reported structure fires.
 - This staffing recommendation only addresses one particular situation i.e. the ability of the fire department to either conduct rescue or carry out firefighting operations in a single family dwelling with an available hydrant water supply.
 - Other types of risk occupancies in your municipality may require differing responses based on the potential risk in the community. The ability of the emergency response systems to provide for the safety of vulnerable occupants in other premises such as hospitals and nursing homes should be carefully considered.
- Therefore it is further recommended that the municipality develop a long-term action plan that identifies comprehensive policies for the emergency response delivery system and establishes an appropriate method(s) of delivering these services that meets the long-term needs of the community.
- The City of St. Thomas should develop program additions and/or modifications with an implementation plan that includes the following:
 - the timeframe for implementation;
 - a recommended monitoring process;
 - any support role to the City of St. Thomas by the OFM; and,
 - issues best addressed through the collective bargaining process.

There are several options that could be implemented to address this concern.

- An improved call-back system that provides for more timely notification and turn-out of off-duty firefighters. Obvious improvements would include the provision of pagers to off-duty firefighters.
- Developing procedures that identify particular high-risk situations that would cause an immediate activation of the call-back system, e.g. a reported house fire with smoke and/or flames visible.
- The hiring of additional staff
- The creation of a composite fire department
- Making use of automatic aid on a day-to-day basis from neighbouring departments
- Making use of mutual aid during extraordinary emergencies from neighbouring departments
- Any other local solutions your representatives might develop to address this issue

It is our obligation to notify you of these public safety concerns. However, it is understood that there are collective bargaining issues associated with these options. It is beyond the ability of

Mayor Ostojic:
February 12, 2001
Page 3

the OFM to interfere with this process. Any negotiations and changes to the collective agreement are the responsibility of the municipality.

The OFM strongly urges that the interim recommendation for providing ten firefighters at the scene of structural fire emergencies within ten minutes from the receipt of call be implemented within 30 days. The OFM also urges that the long-term plan be developed within 90 days.

The fire chief plays an important part in remedying this situation. The Fire Protection and Prevention Act sets out the following responsibilities of the fire chief to council.

6 (3) A fire chief is the person who is ultimately responsible to the council of a municipality that appointed him or her for the delivery of fire protection services.

The Act also sets out the following directions to Assistants to the Fire Marshal (Fire Chiefs)

11. (2) The Assistants to the Fire Marshal shall report to the Fire Marshal all fires and other matters related to fire protection services as may be specified by the Fire Marshal.

Accordingly it is recommended that council work with the fire chief to develop appropriate remedies to address public safety and that the fire chief report on those remedies to the Fire Marshal.

This aspect of the OFM activities with your municipality has been limited to addressing this immediate concern. A suggested process for an internal review of other aspects of the fire protection delivery system is contained in the Public Fire Safety Guidelines. The municipality is encouraged to complete a comprehensive review of all its activities to ensure compliance with the Fire Protection and Prevention Act.

The OFM endeavors to work with municipalities to arrive at local solutions to local problems without formal intervention. We believe there are local solutions to this problem that can be implemented in a timely manner.

I am requesting a meeting with you and/or your representatives to discuss the fire protection needs of your municipality. At this meeting we will also determine how we can assist you in identifying and alleviating gaps that might exist. I will contact your office in the near future to establish a date for the meeting.

Yours sincerely



Barry McKinnon, Manager
Fire Protection Services

Copy: Fire Chief R. Lyons, St. Thomas Fire Department
D. Crawford, Deputy Fire Marshal