

**Peter Corfield &  
Associates**

PCA  
3806 Sinnicks Avenue  
Niagara Falls, ON L2J 2G7

Phone 905 988 3473  
Email pcorfield@cogeco.ca  
Web www.petecorfield.ca

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# Master Fire Plan

TOWNSHIP OF  
**CAVAN MONAGHAN**

*Have it all. Right here.*



## ***Executive Summary***

An extensive review of the Township of Cavan Monaghan's Fire Department administration and emergency operations has been quite revealing. The overall findings and conclusions are quite positive. We have witnessed the keen interest in maintaining the present volunteer service as being foremost in the minds of most of those involved in this process. A volunteer fire service, in today's world, is a valuable asset indeed.

To begin, the dedication of the Fire Chief, Deputy Fire Chief and senior officers to their Fire Department and the community as a whole is impressive. This is a very credible foundation on which to build towards the future. Concerns are weekday staffing shortages, which have become increasingly common, especially for structure fires, fire station inadequacies, fire apparatus issues, fire prevention changes, fire officer qualifications, and related emergency communication matters. In overall terms, the Township is well served by its fire service and should be quite pleased.

An impetus for undertaking this Master Fire Plan process is the potential development of an area of the Township known as Fraserville. Fraserville has been targeted for development due to its close proximity to the City of Peterborough, influences such as the Green Belt Legislation, extension of Highway 407 to hook-up with Highway 115, and the extension of rail service to the City of Peterborough, to name a few. Getting a sound fix on the development issue took most of the time spent on the review overall.

Another important factor for the need to develop an up to date Master Fire Plan is the Township's fire service, which is somewhat unchanged since the pre-amalgamation days. When the Village of Millbrook, for example, required fire protection, it erected a fire station to be close at hand, adjacent to the downtown core. This was greater than 40 years ago, and times and public expectations were considerably different than today. With these issues as background, we set about reviewing operations and developing some thoughts toward improvement.

The following options and recommendations for consideration toward improving the fire service delivery system of the Township of Cavan Monaghan are offered herewith. The reader should be aware that with a recommendation such as a new fire station to replace the present Station 1 facility or expand Station 2, careful consideration has been made to focus on cost saving for the Township. To this end, the proffered alternative solutions are for large expenditures such as renovation over

new-build, or refurbished fire apparatus over new. In the end, the Township, of course, will decide what's best for its citizens.

Recommendations and findings are in an advised order of priority that should be addressed. Each recommendation is accompanied by a section number, so the reader may easily find more information on the subject matter.

**\*NOTE: unless it is otherwise stated, all opinions, findings, and recommendations are solely those of Peter Corfield & Associates.**

**Item Needing Attention: Weekday Availability of Sufficient Firefighters.** (Part 8)

**Recommendation:** This is a bothersome issue needing attention. This should be resolved within the context of an overall "Recruitment/Retention/Retirement Policy." The main component of this policy would be to provide an adequate flow of personnel to fill vacancies in the fire service. Fundamental to recruitment is retention. Keeping firefighters for longer periods of time would lessen the stress on recruitment. Succession Planning requires knowledge of when vacancies are due to occur, which is enabled by knowing when firefighters will be required to retire.

The development of this policy should involve all levels of the Township's political and administration levels as well as local employers toward the goal of providing sufficient personnel availability during critical weekday hours.

**Timeline:** Immediately

**Item Needing Attention: Fire Stations** (Part 8)

**Recommendations:**

The situations which need addressing with the two present fire stations and their locations are:

- 1) Station 1, which is situated in the former Village of Millbrook, is cramped for space. The property on which it is situated is too small to erect an adequate size building; exiting for emergencies is potentially dangerous.
- 2) Station 2, located near Mount Pleasant, is also undersized and cramped for space. A sufficiently sized addition is needed to accommodate another truck bay, training area with needed shower facilities, and office for the station officer.

- Undertake a “Fire Station Location Study” to determine acceptable sight location for a new Station 1. The new fire station should be of adequate size to serve the community for up to 50 years.
- Within the same study, determine the additional size needed to bring Station 2 to an operationally accepted level.

**Timeline:** 0 to 3 years

Item Needing Attention: **Aerial Ladder Truck** (Part 8)

Recommendation: The Township’s present fleet of fire apparatuses does not include a vehicle which would be readily available for rescue or firefighting in buildings over 2 storeys in height. Acquire an aerial device with a minimum ladder reach of 15 to 17 metres (50 to 55 feet). Unfortunately at this time, neither fire station can accommodate a vehicle such as this.

**Timeline:** 0 to 3 years (based upon the timing of a new fire station to replace Station 1).

Item Needing Attention: **Fraserville Development & Fire Protection.** (Part 8)

Recommendation: The information presented by the Township of Cavan Monaghan indicates that development in this area will be modest and occur over the long term. However, any sizeable development in this area will necessitate greater fire protection services. Recruiting fire fighters from this area and assigning them to either of the present fire stations until one is built in Fraserville will allow for a seamless transfer at the appropriate time. Undertaking recruitment now will allow for long-term development of a professional volunteer force to be established, and a fire station built to serve Fraserville. Land for a new fire station should be acquired as soon as development begins in this area. The Fire Department should closely monitor development and service calls in this area. Service demand and response times will indicate when to begin construction of the new fire station.

It is further advised that the previously recommended Fire Station Location Study include a mandate to determine the site of the future fire station to service this area.

**Timeline for Construction and Operation of this Third Fire Station:** 0 to 10 years (some indicators of timing will be the rate and accumulation of development dollars, along with response times and service demands)

Item Needing Attention: **Emergency Communications System** (Part 4 – Communication System)

Recommendation: Phase II compliance of 6.25 KHz channels is mandated for 2012. Ensure communications system complies with Industry Standards prior to 2012.

**Timeline:** 0 to 2 Years

Item Needing Attention: **Preventive Maintenance (PM) Program for the Communications System.** (Part 4 – Communication System)

Recommendation: Institute a once a year preventive maintenance (PM) program.

**Timeline:** 0 to 1 year

Item Needing Attention: **Safety Barriers for Station 2 Communications Tower** (Part 4 – Communication System)

Recommendation: Tower at station 2 should be fitted with climbing shields to prevent unwarranted access.

**Timeline:** Immediately

Item Needing Attention: **Radio Batteries** (Part 4 – Communication System)

Recommendation: Standardize charging, maintenance, usage and battery replacement profile for all the portable radios.

**Timeline:** 0 to 2 years

Item Needing Attention: **Suggested Operating Guidelines (SOG)** (Part 8 Non-Emergency Operations)

Recommendation: insert a disclaimer at the bottom of each page of any SOG

**Timeline:** 0 to 1 year

Item Needing Attention: **Fire Prevention Program for Commercial & Industrial Buildings** (Part 6-Scope)

Recommendation: Institute a self-inspection program for fire safety and code enforcement in Commercial and Industrial premises to augment present fire prevention activities. This is a very minimal cost item, which maximizes resources.

**Timeline:** 0 to 2 years

Item Needing Attention: **Fire Safety & Education Outreach Program** (Part 8 Fire Suppression Operations)

Recommendation: Most communities have areas where acceptable response times are not possible. Township of Cavan Monaghan is no exception. The implementation of a fire safety and education program designed to visit residences in these areas on a regular basis to ensure a reasonable level of fire safety readiness is a good alternative delivery system. Former volunteer firefighters who have left active firefighting could be a human resource for this program.

**Timeline:** 0 to 2 years.

Item Needing Attention: **Fire Officer Qualifications** (Part 4 Training & Qualifications)

Recommendation: Emergency Scene Management came into the fire service in United States during the 1970's. Today, it is inconceivable that fire officers would not be trained and educated in all aspects of Emergency Scene Management. We strongly recommend that all present and future fire officers be required to complete the necessary courses commensurate with these offices to the satisfaction of the Fire Chief through a Township approved policy.

**Timeline:** 0 to 2 years.

Item Needing Attention: **Recruitment/Retention/Retirement Policy** (Part 4 Recruitment/Retention/Retirement)

Recommendation: Problems with weekday availability of sufficient fire fighters has inspired the recommendation of some possible solutions. However, this issue encompasses, in part, a bigger recruitment/retention/retirement issue. It is in this overall Township approach that three key areas will be addressed. Due to the very delicate issue of retirement, legal guidance is strongly advised in drawing up such a policy.

**Timeline:** 0 to 2 years.

Item Needing Attention: **Fire Apparatus Maintenance and Replacement** (Part 4 - Equipment Maintenance)

Recommendation: The readiness and reliability of major fire apparatuses is paramount in the fire service. The ability to operate as necessary in extreme conditions for long periods is fundamental to a reliable fire apparatus fleet. While the present system is not functioning improperly, it is in the best interests of the Township to institute an equipment and apparatus maintenance program, instep with NFPA Standards 1911 and 1915.

**Timeline:** 0 to 1 years.

# ***Acknowledgements***

Peter Corfield and Associates would like to thank the Citizens of the Township of Cavan Monaghan, its Council, Chief Administrative Officer Hurley, Senior Staff and Support Staff for their assistance and understanding during the review process. We compliment Mr. Ross Kent for volunteering to serve on this important undertaking as well as the other members of the Master Fire Plan Committee. It is our opinion that the makeup of this committee has served the Township extremely well over the course of this process. We also thank Ms. Karen Ellis, the Township's Planner, for her very thoughtful and insightful comments and assistance. Her probing questions and planning expertise were very well received.

It is with special appreciation that we take this moment to thank Fire Chief Nelson Edgerton for his understanding, support, and many helpful suggestions. It is our opinion that Chief Nels serves this community with outstanding distinction and dedication. He is truly an asset not only to the Fire Department but also to the citizens he serves.

We also acknowledge and thank Deputy Chief Bill Balfour for his untiring assistance throughout this process. Deputy Bill, like Chief Nels, serves with true distinction and dedication and is also an asset to the community. These are two truly outstanding Chief Fire Officers whose leadership is an attribute to the fire service they serve so well. We would be remiss without mentioning the Chief's Assistant Fire Clerk Laura Snow whose help has been well received by us. She has always been available and willing to assist and for this we are thankful.

Finally, while we did not meet with each and every firefighter serving this beautifully scenic Township, we were very fortunate to meet and speak with all serving fire officers. They are solid supporters of the Cavan Monaghan Fire Department and dedicated to their municipality. The Township of Cavan Monaghan is very fortunate to have a volunteer fire service such as this to protect the citizens and property of this municipality. The volunteer style of fire service is under pressure due to decreasing numbers of residents willing to sacrifice so much time and energy in serving their communities. Ever increasing legislation and training requirements have strained some municipalities to the breaking point. To have this type of service today is so valuable to any municipality that it is worth the extra effort to ensure its long-term viability.



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***The Township of Cavan Monaghan's Fire Department*****A Master Fire Plan To Meet Present and Future Emergency Needs*****Overview – Municipal Development & Fire Department***

The Township of Cavan Monaghan will experience some development occurring over the next two decades. This will be the result of such recent decisions as the expansion curtailment in the Oak Ridges moraine area to the west; the extension of Highway 407 to Clarington where it will meet with Highway 115, and, the proposed extension of the GO Train to the City of Peterborough. The Township of Cavan Monaghan's location to the west of the City of Peterborough offers good employment opportunities. Its extensive rural area is considered ideal for easing development pressures within the GTA to the west, and the City of Peterborough to the east.

One of the two designated fully serviced urban areas within the Township of Cavan Monaghan is Fraserville. This area is located in the mid-eastern part of Cavan Monaghan, adjacent to the Peterborough Airport. The other fully serviced area at this time is Millbrook. "Rounding out" development in the Mount Pleasant area, we are informed, should see approximately 100 more residential buildings over the next 25 years<sup>1</sup>.

These developments will have an impact on all of the Township's services including the Fire Department. A concern of Fire Department Management is being able to provide acceptable levels of fire protection services to the Fraserville area. Fraserville is more than 10 kilometres away from either Station 1 or Station 2<sup>2</sup>. This distance does not allow for timely responses for fire interdiction. A maximum travel distance of 8 kilometres to an area with a pressurized water system is more in keeping with acceptable industry standards and is recommended.

Along with this important issue are other matters of concern to the Fire Department such as difficulties with recruiting and retaining volunteer fire fighters, especially during weekday hours. Insufficiently sized fire stations, and escalating motor vehicle emergencies due to increased traffic

<sup>1</sup> Source Township of Cavan Monaghan Planning Department

<sup>2</sup> Refer to Maps 4 & 5 Appendix B

volumes along the main arterial Township roads such as the 115 Highway are also matters of concern which require attention.

The basis for this Master Fire Plan process is best explained by an excerpt from the Township's Request for Proposal wherein it's stated:

The Fire Department has had significant growth in its call volume with a three hundred and fifty two percent increase in calls from 1996 to 2007. The fire service has not kept pace with this growth and has not expanded any of its core services in the last several years. Developing a master fire plan will provide Council with a comprehensive plan for fire protection service delivery, which takes into consideration the additional risks and resources that will be required as a result of the continued growth of the community.

- To address these issues, a Master Fire Plan Committee was established consisting of several Department Heads, citizen representation and a representative from the Ontario Fire Marshal's Office (OFM). Eight key areas were identified as being the central focus in the Master Fire Plan process:
  - Governance
  - Emergency Response
  - Fire Prevention (including inspections and investigations) and Public Education
  - Communications
  - Training and Education
  - Equipment and Apparatus
  - Administration (including records management, policies, and Standard Operating Guidelines that impact on identifying and assessing corporate risk along with financial management and budgeting)
  - Facilities and locations, present and future

**Peter Corfield & Associates** was retained to conduct a review of the present fire operations, with a goal of positioning it to provide fire and emergency services protection appropriate to this growth; in effect, prepare a "Master Fire Plan" which will lay out a course for the Township to follow.

## Background and Study Objectives

The Township of Cavan Monaghan is a result of amalgamation of the former municipalities of Cavan, Millbrook and North Monaghan. The present fire stations were built years prior to the present

amalgamated Township, and in areas which best served those former municipalities. Times have changed, and now there are expectations regarding development in areas such as Fraserville, which lies in the eastern portion of the Township near the Peterborough Airport. The study objectives for this report are the present fire service structure, its performance, and the potential growth areas within the Township and their impact on the fire service.

A leading service demand has been emergency medical responses. This particular emergency demand has eclipsed all other emergency calls in many municipalities. The study of Cavan Monaghan's fire service was focused on what more can, or needs to be done, to position it to serve the citizens best over the next decade or two. The key element in any study is financing, "*What is desired*" is always tempered by "*What is financially doable*". Every council has the balancing act of making sure all services they provide are funded properly and carried out according to mandates.

The three study objectives of the fire service for this project are:

- Emergency preparedness and response (fire and emergency protection issues);
- Fire prevention, code enforcement and, fire safety education;
- Administration and overall management (sub to this are issues such as budgeting, recruitment and retention of volunteers, relations with council and municipal administration, succession planning, etc.).

### Scope and Method of Study

This fire review has been undertaken with a goal of determining the present operational and administrative issues, which have made this fire service what it is and what it should and could be. The span of this study was the complete operation of the fire service in context with accepted industry practices and standards.

To facilitate this process, several meetings were held with various Township Department Heads, Master Fire Plan Committee, and fire officers toward the goal of obtaining a multi-faceted viewpoint and perspective from fire and non-fire people.

Several documents (listed) have been provided by the municipality along with information from the Office of the Fire Marshal (OFM) and other sources. Contact with other fire services has also been undertaken with a goal of providing perspective through comparison.



## Township Development

The Township of Cavan Monaghan is well situated for development in this area of the province. The driving factors influencing development are the proposed extension of Highway 407, the extended GO Transit link to service the City of Peterborough and the aforementioned development constraints regarding green belt areas and the Oak Ridges Moraine.

The Township's Planner provided the following information:

There are two designated fully serviced urban areas within the Township of Cavan Monaghan – Millbrook and Fraserville. Growth should be focused in these areas. There are, however, a number of historic hamlets and vacant lots in the rural area. Limited growth in these areas will be permitted.

The former Village of Millbrook is presently the only water/wastewater serviced area of the Township. However, a recent announcement in the Peterborough Examiner (June 6, 2009) stated:

Cavan Monaghan will receive nearly \$20 million to construct water and sewer infrastructure near Fraserville. Haliburton Kawartha Lakes Brock MP Barry Devolin and MPP Rick Johnson made the announcement yesterday morning.

The Federal and Provincial governments will each contribute \$9.8 million, with the Township chipping in the remaining costs. The roughly \$31-million project has faced several delays, including a postponement in 2007 because provincial Places to Grow legislation limited residential growth. The plan would create a water and sewage plant, allowing for expanded commercial and residential development in Cavan Monaghan.

This announcement sets the stage for development to occur in the Fraserville area. Previous announcements regarding Highway 407 and the GO Transit extension to the City of Peterborough have cleared the way for growth which will impact the fire service in a number of ways such as emergency service demand, fire prevention activities, structural change, etc.

A report on future planning matters commissioned by the Township of Cavan Monaghan, from Meridian Planning Consultants Inc., titled, Growth Management Discussion Paper, March, 2009 (Version 1) (Meridian Paper) provides a fairly clear picture of development expectations within the Township.

The Meridian Paper provides some comparable development data regarding Township development as follows in Table I, "Growth Projections," comparing forecasted growth from various agencies:

**Table I, Growth Projections<sup>3</sup>**

Scenario	Projection	Population (2031)	Increase <sup>4</sup>
1	Watson (2006)	24,010	15,150
2	Hemson (2006) Percent Share of county	11,267	2,439
3	Statistics Canada Census Data	10,384	1,556
4	Lapointe (2008)	12,728	3,900
5	Building Permit Data	9,390	562
6	Township of Cavan Monaghan Community Official Plan	14,888	6,060
7	Growth Plan	12,015	3,187

A clarifying statement referenced from the Meridian Paper is as follows:

In summary it is reasonable to assume that a population projection of between 12,015-12,500 is reasonable for the Township of Cavan Monaghan to the year 2031, for an increase of between 3,187 and 3,672 residents.

The Township's Planner stated they would be referencing the Meridian Paper as its main planning document. The foundation of this report is based upon this stated Township position.

The following Population Growth Table (Table ii), extracted from the Meridian Paper, clearly demonstrates the projected population increases in the Township:

**Table ii – Population Projections<sup>5</sup>**

Year	Population of Peterborough County	Population of Cavan-Monaghan	% Share of County Population
2006	58,682	8,828	15.0%
2011	61,465	9,219	15.0%
2015	63,819	9,572	15.0%
2025	70,607	10,591	15.0%
2031 <sup>6</sup>	75,118	11,267	15.0%

<sup>3</sup> Source: Meridian Projections, 2008

<sup>4</sup> Using a base population of 8,828 in 2006

<sup>5</sup> Source: Hemson Development Charges Study, 2006, Meridian Planning Consultants, 2009

The Township anticipates that the housing units associated with the population growth will be allocated as follows:

**Table iii – Population Growth Allocations<sup>7</sup>**

Millbrook	353
Fraserville	680
Reference Plans	62
Hamlets	115
Rural	150

## Township Employment Information

The following information was provided by the Township Planner:

Over the past census period, the labour force for Cavan Monaghan has experienced some minor increases. The labour force increased from 4,495 in 2001 to 4,995 in 2006 for an increase of 500 in five years. Moderate increases to the labour force for Cavan Monaghan are expected over the next several years as the airport in Peterborough expands, the Highway 407 extension nears completion and the Fraserville Secondary Plan begins to develop.

Utilizing a population to employment ratio for the community of Cavan Monaghan, it is possible to project employment growth and employment land needs. Generally communities strive for a population to employment opportunities ratio of 2:1, resulting in employment representing half of the population projected for the community. This reflects a participation rate of 0.5. However, this is not always realistic for smaller centers, and those that have a very high aging population. According to Census Canada, in 2006, the County of Peterborough as a whole has 18.5% of its population aged 65 or over compared to 13.5% for the province.

Given the proximity of Peterborough identified as an urban growth centre, improved servicing capacity for Fraserville, Peterborough airport expansion, 407 completion, and opportunities at Darlington nuclear power station, there is opportunity for employment growth to spill over to the adjacent Townships. A ratio of 4:1 may be more appropriate for Cavan Monaghan with an expectation of 3:1 for the community of Fraserville. The rate also is reflective of a community that has a relatively high proportion of seniors.

The population projected for Cavan Monaghan is 3,672 persons to 2031. Utilizing an employment ratio of 4:1, 918 jobs will be created in the next 25 years for approximately 37 jobs per year. Utilizing an employment ratio of 3:1, 1224 jobs will be created in the next 25 years for approximately 49 jobs per year.”

<sup>6</sup> Projection based on linear growth anticipated for County, with average growth rate of 6.39%

<sup>7</sup> Source: Township of Cavan Monaghan Planning Department

## Conclusion

The modest development projections expressed in the Meridian Paper, which will affect the Fraserville and other hamlet areas, will require fire service attention. That modest development will occur is based on what we now know: water/wastewater upgrades to service Fraserville has been determined; the Highway 407 extension is due to be constructed; and, the GO Transit extension will apparently be made. The table is therefore “set” to accommodate development. While the degree of development expected to occur in the aforementioned areas of the Township of Cavan Monaghan is undetermined but projected to be low, it still means the Fire Service needs to know and be prepared.

**Part  
2*****Fire Control Challenge***

The main fire control challenge for the Township of Cavan Monaghan is providing consistent and acceptable service to a somewhat smaller population base spread over a relatively large land mass. This mostly rural area has long travel distances to widely dispersed residences and businesses for responding fire apparatus to cover.

Fire services are presently being provided from two widely separated fire stations. The service model is based upon a volunteer system which utilizes personnel who are employed full-time elsewhere. This model of using local citizens on an “as needed” basis has its benefits as well as obstacles. The major benefit is cost. This form of fire service is very cost effective. The main obstacle is weekday availability of sufficient firefighters to perform the necessary emergency service demands.

**The Municipal Fire Protection System**

The municipal fire control system employed in the Township of Cavan Monaghan is consistent with other municipalities throughout the province and the country. The system employs a number of disciplines to meet its objectives and obligations to provide protection to the public from fire and other emergencies. These various disciplines include suppression capabilities, rescue, emergency medical, fire prevention and public fire safety education, along with a number of support functions such as training, communications, etc. The Office of the Fire Marshal for Ontario (OFM) sets many key requirements for the standard of operation for every fire service in the province. This is accomplished in various ways, such as legislation (i.e., The Fire Protection and Prevention Act, or FPPA), guidance notes, advisory personnel, standards, etc.

The OFM states: The Ontario Fire Safety and Protection Model identify three lines of defence in providing public fire protection:

- public education and prevention
- fire safety standards and enforcement
- emergency response

The first line of a municipal fire protection system is its fire prevention and public safety activities along with emergency preparedness. Some examples of these activities include fire safety education, building inspection, code enforcement, pre-fire planning and risk evaluation.

The emergency response services are provided by the suppression division, which is called upon to deal with fire emergencies as well as rescue, hazardous materials incidents, vehicle extrication, emergency medical, etc. The largest “cost of operation” is for the fire suppression services with their need to respond quickly to fires including the rapid rescue of occupants, confinement and extinguishment of fire and salvage operations.

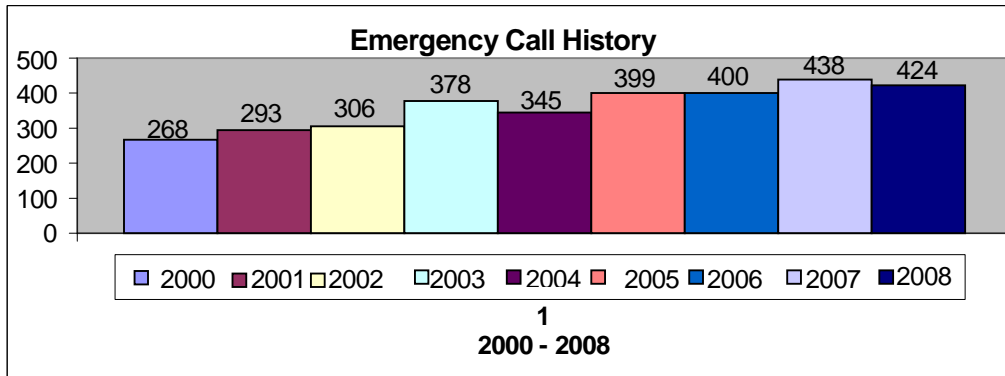
Historically, the fire service has always assisted the public for medical reasons. Involvement in medical issues began when fire fighters were injured at the fire scene, and had to look after themselves. So, they started carrying medical supplies with them and taking first aid training. This progressed into providing medical assistance to those members of the public who became injured at fires and so on. In the 1970's, from the United States came the introduction of paramedics on fire trucks. Fire Departments enhanced their level of medical service with the introduction of cardio pulmonary resuscitation (CPR). This was followed in the late 1980's and early 1990's with the firefighter defibrillation program. Medical calls now account for up to half, or more, of most fire service emergency calls for assistance from the public.

### Emergency Call Experience in Cavan Monaghan

Information provided by the Township of Cavan Monaghan Fire Department is consistent with experiences found in today's fire service across the province. For many years, the pattern of emergency responses across Ontario has been a decrease in structure fires and dramatic increases in other “assistance to the public,” such as rescues and medical calls. Also, the fire service is witnessing a striking increase in motor vehicle accidents requiring fire department expertise such as extrication of injured persons (Township of Cavan Monaghan - historically, 26% of total calls). From a review of emergency calls in The Township of Cavan Monaghan, this same trend can be seen. Specifically, motor vehicle accidents along Highway 115 are the source of most of the vehicular calls in The Township of Cavan Monaghan.

### Historical Trends – Total Emergency Calls

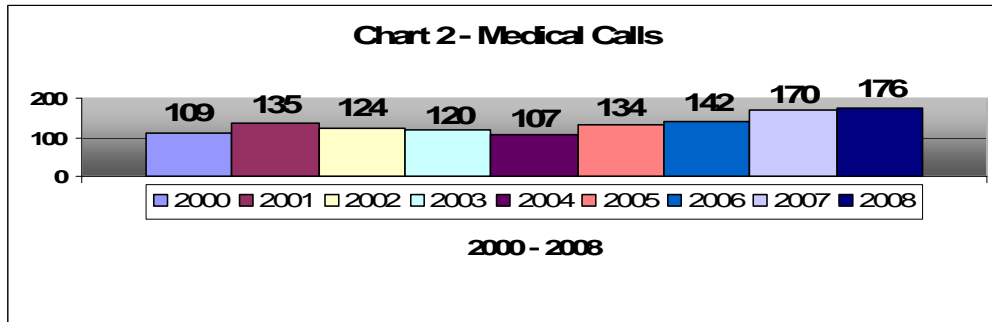
The following Chart 1 (Emergency Call History) illustrates the total emergency calls for the years 2000 to 2007.

**Chart 1 - Emergency Call History**

Aside from the call decreases in the years 2004 (345 calls = -8.73% decrease) and 2008 (424 calls = -3.2% decrease), the emergency call picture in The Township of Cavan Monaghan has witnessed an overall steady increase, which is typical in today's fire service. The public's increasing demand on fire and other emergency services has resulted in greater call volumes. It wasn't many years ago that there was rarely a call for carbon monoxide concerns. Today, these types of "emergencies" are increasingly impacting fire services, and in the Township of Cavan Monaghan, they make up approximately 5% of all calls from the public. Overall, the emergency call "work load" has increased 63% during this eight year period.

#### Historical Trends – Medical Calls

Since the early to mid 1990's, medical calls have been increasing dramatically. Many municipalities adopted a more aggressive response to medical emergencies with the arrival of defibrillators. The City of Niagara Falls, for example, had witnessed a pre-defibrillator annual call experience of approximately 10% of all calls being medical. With the introduction of these devices in 1994, medical calls quickly escalated to being approximately 50% of all calls. Chart 2 (Medical Calls) illustrates the medical call trend for Cavan Monaghan (Years: 2000 to 2008):

**Chart 2 – Medical Calls**

Medical calls represent the greatest percentage of emergency calls to most fire departments. The Township of Cavan Monaghan's experience over the nine reporting years focused on for this report show medical calls represent approximately 41% of their total emergency calls.

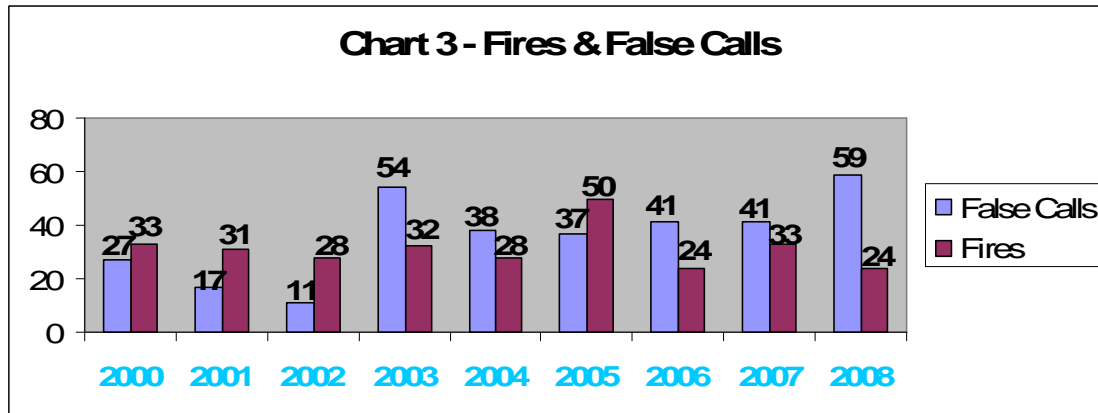
Medical calls originate from CACC (Central Ambulance Communications Center) Lindsay, and are based on a pre-agreed set of criteria for fire department responses. Medical calls to activate participation by the Township of Cavan Monaghan Fire Department are the same for all Peterborough County fire services. The basic response trigger is, if the responding ambulance is going to be delayed by 10 minutes or more, then, the Cavan Monaghan Fire Department is dispatched.

Historical Trends – Fires and False Calls

For the purposes of this review, "false alarms" and "fire calls" have been grouped into the same category, since the fire department never knows if a "fire call" will end up being an actual fire or a "false alarm." Fire fighters must respond as quickly as possible to alarms of fire never knowing what the result will be.

Reports sent to the Ontario Fire Marshal list false alarms as false fire calls. In common language, these calls are referred to as false alarms but in actuality they are caused by a variety of reasons: alarm equipment malfunction, alarm equipment accidental, malicious, human perceived emergency, human accidental and other which can cover an assortment of issues. When combining these two statistics we see that these calls account for 19% of the total calls responded. Actual fire calls have fluctuated between 6% and 13% of total calls. Refer to the following *Chart 3 (Fire & False Calls)* for yearly comparison from 2000 to 2007 reporting years:



**Chart 3 – Fires & False Calls**

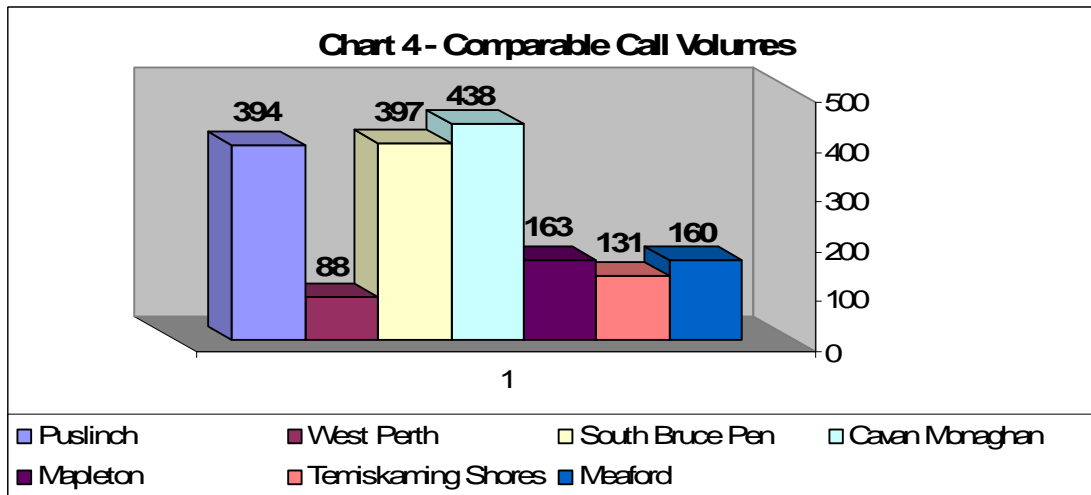
### Vehicle Fires and Motor Vehicle Accidents

These two calls for help from the public account for 26%<sup>8</sup> of all calls responded by the Township of Cavan Monaghan Fire Department. Fire Officials informed us that motor vehicle accidents and fires are significantly higher along Highway 115, which dissects the Township of Cavan Monaghan. As development increases, so too will the traffic loads, and resulting calls for help which will impact the fire service.

The Cavan Monaghan Fire Department has been supplying a wide range of emergency and non-emergency services since its inception. Historically, fire emergencies were the prime reason for calls for help from the public. Emergency medical has, over the past decade plus, been the main reason for emergency responses.

In 2008, an extensive fire service survey was conducted to determine comparable issues. This survey had responses from 21 municipalities spread across Ontario. The population ranged from a low of 740 inhabitants (Spanish Township) to a high of 63,000 (Norfolk County). The land masses ranged from 77 square kilometres in Temiskaming Shores to a high of over 1900 square kilometres in West Nipissing. For the purposes of this report, a range of population between 7000 and 11,000 has been selected. Another criteria for this comparison was each municipality had to have a similar fire service delivery system. This puts The Township of Cavan Monaghan near the medium of the comparable municipalities. The following Chart 4 (Comparable Call Volumes) compares call volumes for the year 2007:

<sup>8</sup> NOTE: a varied assortment of calls called "Other" make up the remaining 14% of all emergency calls.

**Chart 4 – Comparables (Year 2007)**

The Township of Cavan Monaghan had the highest call volume (438) of the seven municipalities listed.

There is a human cost to the emergency calls in the volunteer firefighter system, as the high call numbers mean an ever increasing commitment to duty. This causes stress on personal family relations and full-time work issues. The last reporting year (2008) lists 424 emergency calls which does not include other volunteer requirements such as training, which itself places a heavy load on firefighters. These calls are spread over two fire stations, which is a good indicator that, presently, the call volume is not overly burdensome. For example, in Niagara Falls, one volunteer station alone consistently runs over 400 calls. The volunteer fire service in Grimsby operates predominately out of one fire station. It experienced 750 calls in 2007, of which, it is reported, 30% were medical. The Town of Lincoln experienced approximately 800 calls of which one fire station (Beamsville) accounted for 365. Lincoln had approximately 30% medical, and for 2008, their medical calls increased to approximately 40% of their total. It should be noted both Grimsby and Lincoln's populations are approximately 21,000.

## Conclusions

The preceding pictures of emergency calls over the past eight reporting years do give some in-sight into planning needs for the future. Actual fire calls are seen as relatively low in relation to the other emergency calls. This illustrates that the fire prevention efforts of the Fire Department are paying dividends. Even with relatively fewer numbers of fires, the fact remains that a single fire can be devastating to a community. With major road links crisscrossing the municipality, motor vehicle

accidents will always be a potential growth area for emergency calls for help. As the population ages and the demand for increased health protection rises, the impact on the fire service will be inevitable. Fires will continue to be low in number but not in impact.

The overall history of emergency calls in the Township of Cavan Monaghan does not, in itself, cause concern. The two areas which should be watched are medical and motor vehicle calls. Medical calls are justifiably given the priority they deserve. These are the two main service issues which are driving emergency response numbers and their associated costs.

The only emergency response call which could possibly be reduced is medical. Council could rescind the medical option totally, direct the Fire Chief to make changes to the call-out criteria, or could extend the time delay protocol so the fire department would respond only when the ambulance is “known” to be delayed for a potentially dangerous amount of time. Presently, all fire departments in Peterborough County have the same response criteria. To make changes to any one fire department could cause response problems across the County. To consider any changes whatsoever to service delivery criteria would require the cooperation of the local CACC (Central Ambulance Communications Center), and the rest of the Peterborough County fire services. This is not a simple undertaking.

Overall, are the Township of Cavan Monaghan’s call numbers approaching a breaking point in workload? When considering the greater volunteer system in place in North America, the opinion should be “no.” Many volunteer fire services are not reporting much higher numbers than these. This is not to say that, in a single fire service, call numbers, such as reported, won’t illustrate a problem.

There is another important factor relating to emergency calls that must be watched. The style of fire service employed in The Township of Cavan Monaghan uses “paid on call” firefighters in place of much more expensive full-time firefighters. The Township of Cavan Monaghan’s firefighters, on an hourly basis, earn pay for every call they attend. So, the more calls attended the greater the overall pay they receive. When municipalities attempt to cut back too hard on calls, they affect the income of their firefighters. This can be a cause of resentment and disenchantment in the ranks. The average full-time firefighter, in Ontario today, earns in excess of \$70,000 exclusive of benefits. The Township of Cavan Monaghan’s fire service, when all issues are considered, is an excellent value for the money.

This is not to suggest that calls be allowed to continue exponentially without taking measures to manage them, as limited as that may be. This is mentioned so that alternative costs can be used as comparators to the Township of Cavan Monaghan costs when considering affordability.

# Part 3

## Fire Risk

The Township of Cavan Monaghan is a large, mostly rural community, covering approximately 306 square kilometers, with a main commercial area located in the former Village of Millbrook (which is a fully serviced area). In addition, there are approximately “12 hamlets and clusters”<sup>9</sup> spread throughout the rest of the Township.

In general terms, older sections of a typical municipality are at greater risk to fire and have a greater fire loss potential than do newer areas built post Ontario Building Code era. An in-depth analysis of the City of Niagara Falls was conducted a few years ago using comparison data obtained from the National Fire Academy in Emmitsburg, Maryland. Simply put, the comparator information stated most fires, and specifically the more serious fires, occurred in older sections of municipalities. Buildings erected during the era of the Ontario Building Code are much better designed and constructed than pre-building code times. Today’s residential and commercial buildings are much better constructed against fire severity than ever before.

### Risk Assessment Method

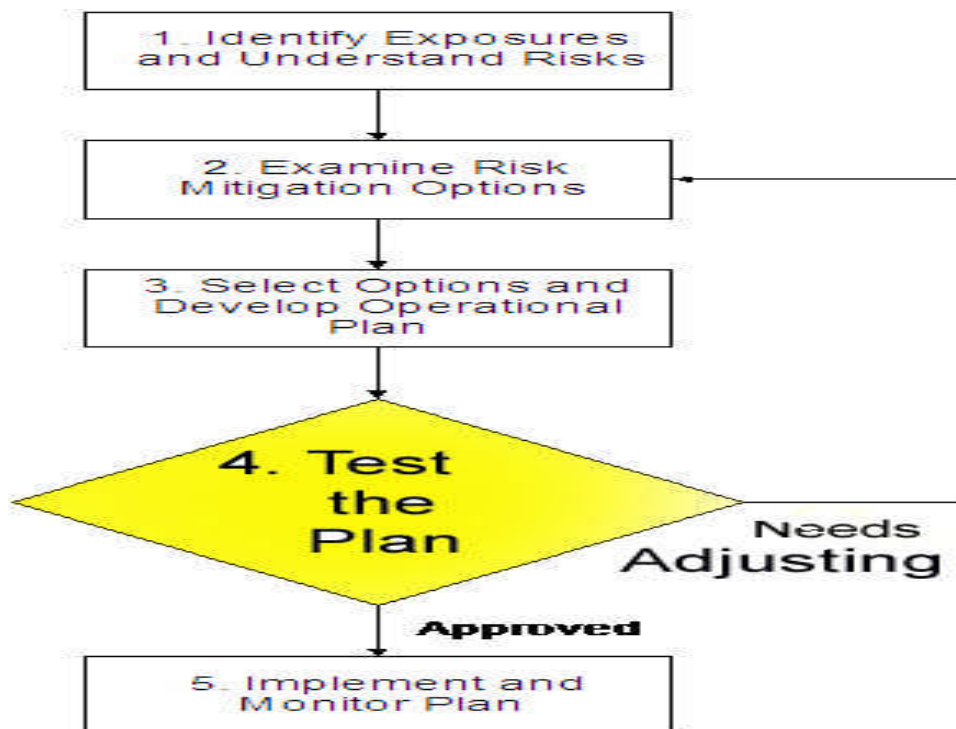
The goal of risk assessment is to reduce risks to an acceptable (or tolerable) level. A zero risk level is not attainable. Risk reduction efforts to achieve acceptable risk must work within the real world constraints of feasibility, practicality and cost. Resources are always limited, and cost is an important factor in obtaining acceptable risk. A practical solution to achieving acceptable risk is a good faith application of the hierarchy of controls within the risk assessment process. This approach, coupled with the “As Low As Reasonably Practical” (ALARP) framework, are useful guides in reducing risks to an acceptable level.

The fundamentals of the risk assessment process are common:

- identify hazards,
- examine risk options,
- develop plan,
- test plan (adjust if necessary) and finally,
- implement and monitor plan.

The following Chart 5 (*Risk Assessment Flow Chart*) illustrates this process:

<sup>9</sup> Watson & Associates Economists Ltd. Report – *Cavan – Millbrook – North Monaghan Growth Analysis Study December 22, 2006* Watson Report

**Chart 5 – Flow Chart**

### Demographic Indicators

The latest population figures indicate over 8800 people live in The Township of Cavan Monaghan; an increase of slightly less than 400 persons since the last census in 2001. This was an approximate gain of 4.4% compared to the provincial average growth of 6.6%. The population density of The Township of Cavan Monaghan is 28.8 persons per square kilometre compared with the provincial average of 13.4. The median age of the population is 42.7 years<sup>10</sup>. Referring to The Township of Cavan Monaghan risk assessment done in accordance with the OFM's "Simplified Risk Assessments – July 27, 2006", the municipality has 3 seniors' residences with a total population of 272 individuals.

### Residential Risks

The Township of Cavan Monaghan is a mostly rural community bordering the neighbouring City of Peterborough. Single detached dwellings make up approximately 94% of all occupied buildings in Cavan Monaghan. The number of dwellings constructed before 1986 is 1940 out of a total number of 3020, by the year 2006. (Source: Statistics Canada)

<sup>10</sup> Source: Statistics Canada

The large land mass, coupled with the widely dispersed residences and commercial areas, present a challenge to the fire service in providing consistent fire response. The historic present locations of the two fire stations were suited to the specific protection areas in which they were located. However, times have changed, amalgamation has occurred, and with the municipality moving toward development throughout the area, these issues will require changes to the fire service.

Statistics Canada reports that single detached dwellings makeup approximately 94% of all dwelling units within the Township. However, there is a new trend in housing in the Township of Cavan Monaghan and that is toward higher density housing such as located on Brookside Street (see picture inset below).



This type of construction presents specialized problems for fire fighters such as “search and rescue” along with fire fighting in general, due to the tight spacing and height of these complexes. Many of the most serious fires occur during the night when residents are sleeping. With the bedrooms located on the top floor, the potential need for ground ladders and motorized aerial devices could be a necessity for rescue of victims, and fire containment and extinguishment.

Senior’s residences have too often been in the news due to serious fires. Recently, the owners of a senior’s residence in Orillia were charged after four residents were killed in a January, 2009 fire. There have been too many of these fires in Ontario’s past. A fire in such a facility will require the rapid response of large numbers of firefighters and equipment. The following picture of the Manor in Millbrook shows a large rambling, multi-level style of building, which could present challenges to responding firefighters.



Commercial Industrial Risks

As stated previously, development in the primary Fraserville area is coming with the recent announcement of government funding for the needed water and sewer infrastructure facilities to service this part of the Township of Cavan Monaghan. Included in the plans for this area are three fundamentals of growth: industrial, commercial, and residential developments.

The present commercial area of Township of Cavan Monaghan is centered in the former Village of Millbrook with its picturesque centuries' old buildings (picture).



This area will always be a key component of the Township and could possibly develop into a significant tourist destination. The "Village of Millbrook Official Plan - September 8, 1986" recognized the significance of a number of buildings in the Millbrook area:



Numerous buildings within the municipality are of architectural design which is of historical significance to the village.

Many of these buildings present demanding challenges to the fire fighters for “search and rescue,” and fire fighting. They were built long before present building and fire codes, which made buildings a much safer place to live and work. A fire in buildings such as these would involve a large involvement of fire resources, including manpower and equipment. Accessing the top floor and roof areas will require ground ladders and motorized aerial devices.

Kawartha Downs Slots and Sysco Foods are large operations, which will require large amounts of resources to combat any fire or rescue situation which might occur. Again, human resources and specialized fire fighting apparatus will be keys to fire mitigation and any search and rescue operations required.

### Farming

The Township of Cavan Monaghan is a large farming community. Large farming operations by season can also pose a significant risk with the storage of fertilizers and chemicals in unknown quantities and locations. The trend in farming and chemicals is to have companies supply and spread the chemical on the land. This has done away with large amounts of pesticide, herbicide and fertilizer storage on-sight at the farm. However, it is still considered a risk due to not knowing who still stores these chemicals and to what amount they might have. This “unknown” makes it difficult for responding firefighters who will have to deal with some potentially lethal situations.

### Transportation Risks

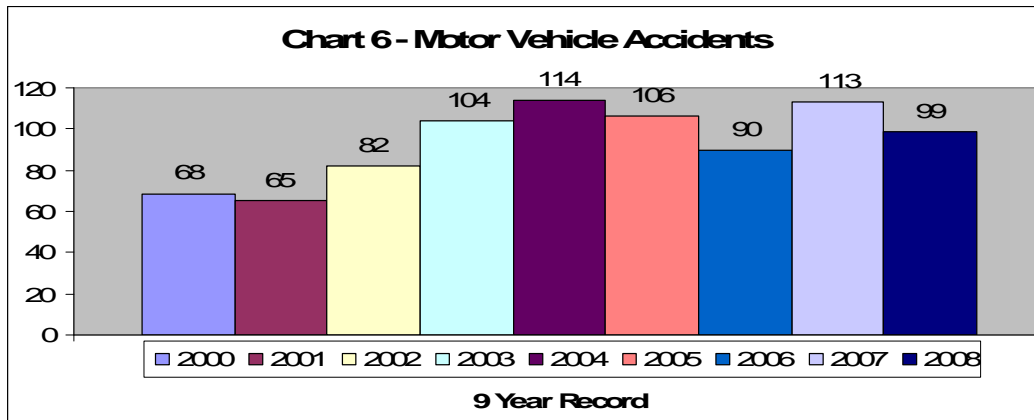
Transportation risks include road, rail and air. The Township of Cavan Monaghan has a reported total inventory of 183 arterial roadways<sup>11</sup>. The road network is mostly rural with long stretches of east/west and north/south arteries. The main roads crisscrossing Township of Cavan Monaghan are Highway 115 (east/west), County Road 10 (north/south), along with County Road 28, which is a large volume artery, as are Highways 7 and 7A. The extension of GO Transit service to the City of Peterborough, and the extension of Highway 407 to meet up with the 115 will bring increased traffic and its accompanying greater transportation risks to the Township of Cavan Monaghan.

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<sup>11</sup> Source: Development Charge Background Study – C.N. Watson and Associates Ltd. April, 2005

Historically, motor vehicle accidents account for approximately 26% of all emergencies calls in the Township of Cavan Monaghan. The following *Chart 6* (Motor Vehicle Accidents) illustrates the call history from 2000 to 2008. The busiest year was 2004 with 114 MV calls. Interestingly, 2008 was the second least busy year since 2002.

**Chart 6 – Vehicle Accidents**



## Conclusions

The OFM has set out what it believes are the eight criteria which every municipality in Ontario should use to form the basis of understanding their fire services capabilities. The document is titled, the “Comprehensive Fire Safety Effectiveness Model,” and the eight criteria are:

- Impact of Fire
- Fire Prevention Program Effectiveness
- Public Attitude
- Fire Risk
- Detection Capabilities
- Built-in Suppression Capabilities
- Intervention Time
- Fire Ground Effectiveness

The Fire Chief and Deputy Chief provided a tour of the municipality. They identified the various areas of risk and provided excellent information on how emergencies have been handled, and just as importantly, how they will be handled. The Fire Department’s senior officers also provided valuable knowledge and understanding of their area of responsibility and the risks involved.

At present, the risks presented in this report lie within the capacity of the Township of Cavan Monaghan Fire Department's abilities, with a possible exception; for fires or rescues beyond ground level, there is no elevating device available quickly at hand to facilitate such a possibility. This issue needs attention.

To conclude, the risks have been identified and the basis for addressing these risks is sound and well thought out. They have also addressed the pertinent issues within each identified risk.

**Part  
4****The Organization**

Fire departments across the world are structured along paramilitary lines of organization. There is an officer corps to lead the organization in administrative and operational situations. The paramilitary design is less rigid and less formal than other military style groups, and this allows for greater interaction between the various levels of authority. Similar to a rubber band, this style of governance does allow for much flexibility, which does have its needed limits.

The head of the Department is the Chief (Fire Chief). Assisting the Chief in the day-to-day operations of the fire service is usually, but not always, a Deputy Chief (sometimes referred to as “Assistant Chief”). In fire services with a Deputy Fire Chief, this person is responsible to the Chief and carries the same authority as the Chief when the Chief is not available. Below this level of authority flow the various divisional leaders with such titles as Platoon Chief, Director, Station Commanders, Battalion Chief, District Chief, Area Chief, etc.

These divisional leaders would in effect be “mini-chiefs” in their own respective area of authority, such as the Division of Fire Prevention, Training, Communications, etc. The number of divisions is usually dependent on the overall size of the organization. A Fire Suppression Division, for example, could be sub-divided into smaller units known as platoons or battalions. Each such sub-division would require some sort of “head” or “leader” who could be called a Platoon Chief or Battalion Chief, etc.

The management structure of the Township of Cavan Monaghan Fire Department follows along these lines. The Township of Cavan Monaghan’s fire service also has one full-time Fire Clerk. The greater fire service industry, especially in Ontario, is constantly facing new challenges and increasing amounts of legislation which impacts the ability to properly administrate. The present Fire Chief wears two hats because he is also the Director of Water/Waste Water. The two fire stations each have their own Captains. These officers are responsible for station specific issues.

## Mission and Objectives

The industry standard overall mission of a fire service is to protect its citizens from the ravages of fire, and rescue of persons in distress. The objectives are to do this in the safest, most efficient and effective manner. Simply stated, fire services throughout the province have increased their original purpose many fold. From simply fighting fires and rescuing victims from fires, they are now called upon to perform a multitude of services. Motor vehicle accidents, emergency medical, hazardous materials, rescue, water/land based rescues, carbon monoxide, flood assistance, and search and rescue readily come to mind.

The Mission Statement for the Township of Cavan Monaghan Fire Department is:

The mission of the Cavan-Millbrook-North Monaghan Fire Department is to take action to protect and/or rescue citizens and/or property from threats of health, the effects of natural or man-made disaster, and in particular the risk that a fire, if started, would seriously endanger the health and safety of any person or the quality of the natural environment for any use that can be made of it.

The stated primary goal of the fire department is:

The primary goal of the Fire Department is to provide fire protection and rescue services through a range of programs designed to protect the lives and property of the inhabitants from the adverse affects of fire, sudden medical emergencies or exposure to dangerous conditions created by man or nature; second to those Municipalities requiring assistance through authorized emergency fire service plan and program (mutual aid) activities; and third, to those Municipalities which are provided fire protection by the Fire Department via authorized agreement.

The list of “*Primary Objectives*” is:

- Identify and review the fire services requirements of the municipality.
- Provide an administrative process consistent with the needs of the Department.
- Ensure that firefighting equipment & operating personnel is available within the Municipality to provide adequate response to a citizen’s call within a reasonable length of time.
- Provide departmental training to an accepted standard, which will ensure the continuous upgrading of all personnel in the latest techniques of fire prevention, fire fighting, and control of emergency situations, and to co-operate with other Municipal departments with respect to management training and other programs.
- Provide a maintenance program to ensure all fire protection apparatus, involving allied equipment, is ready to respond to emergency calls.

- Provide an effective fire prevention program to:
  - a) Ensure, through plan examination and inspection, that required fire protective equipment is installed and maintained within buildings
  - b) Reduce and/or eliminate fire hazards
  - c) Ensure compliance with applicable Municipal, Provincial, and Federal fire prevention legislation, statutes, codes, and regulations in respect to fire safety.
- Develop and maintain an effective public information system and educational program, with particular emphasis on school fire safety programs, and commercial, industrial and institutional staff training.
- Ensure in the event of a major catastrophe in the Municipality, assistance to cope with the situation is available from outside Departments and other agencies.
- Develop and maintain a good working relationship with all Federal, Provincial, and Municipal departments, utilities, and agencies related to the protection of life and property.
- Interact with other Municipal departments respecting the aspects of fire or any given programs.
- Ensure these objectives are not in conflict with any other municipal department.

### Legal Basis and Responsibilities

The Township of Cavan Monaghan Fire Department operates their fire services under *“By-Law #2006-63. Being a By-law to Establish a Fire Department”* and any amendments. According to the by-law, the Fire Chief’s main duties and responsibilities are spelled out with respect to the municipality. The main responsibilities are:

- The Fire Chief is ultimately responsible to Council for proper administration and operation of the Fire Department, including the delivery of fire protection services.
- Each division of the Fire Department is the responsibility of the Fire Chief, and is under the direction of the Fire Chief or a member designated by the Fire Chief. Designated members shall report to the Fire Chief on divisions and activities under their supervision and shall carry out all orders of the Fire Chief.
- The Fire Chief shall implement all approved policies and shall develop such standard operating procedures and guidelines, general orders, and departmental rules as necessary to implement the approved policies and to ensure the appropriate care and protection of all Fire Department personnel and equipment.

- The Fire Chief shall review periodically all policies, orders, rules, and operating procedures of the Fire Department, and may establish an advisory committee consisting of such members of the Fire Department as the Fire Chief may determine from time to time to assist in these duties.
- The Fire Chief shall submit to the CAO and Council for approval, the annual budget estimates for the Fire Department, an annual report, and any other specific information requested by the CAO and/or Council.

The operation of a fire service in Ontario falls under the mandate of “*The Fire Protection and Prevention Act 1997*” (FPPA). Municipalities fall under the Municipal Act, however; the FPPA also states municipal responsibilities regarding fire services.

Simply stated, a municipality must:

- (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.

These municipal responsibilities fall to the person they appoint as Fire Chief. The legal ramifications of failing to provide these services, in the opinion of the Fire Marshal, are:

#### ***Failure to provide services***

- (8) If a municipality fails to adhere to the recommendations made by the Fire Marshal under subsection (7) or to take any other measures that in the opinion of the Fire Marshal will remedy or reduce the threat to public safety, the Minister may recommend to the Lieutenant Governor in Council that a regulation be made under subsection (9). The enforcement of the Ontario Fire Code is a responsibility of the fire service. In applying the Ontario Fire Code, and unless otherwise stated, the Fire Chief is the “chief fire official”.

#### **Fire Protection Agreements**

Typical of many fire services, Township of Cavan Monaghan has agreements with its neighbours regarding fire protection. The following lists these agreements and the main purpose of each:

### **AUTOMATIC AID**

- i. The Townships of Otonabee South Monaghan (OSM) and Cavan Monaghan have entered into an “automatic aid agreement” whereby the Township of Cavan Monaghan Fire Department will respond to an area of OSM for all fire calls only as stated in the agreement as follows:

this agreement applies to “Fire Related” responses only including automatic alarms within the specified service area found in Schedule “B” of this agreement.

For this service, The Township of Cavan Monaghan receives a payment of \$450.00 for the initial response of one pumper and one tanker for each occurrence.

- ii. Another “*automatic aid agreement*” between the Townships of Otonabee South Monaghan and Cavan Monaghan agrees similarly whereby OSM provides fire protection services to an area of Township of Cavan Monaghan, which they otherwise would not be able to do without considerable expenditure and reorganization. The remuneration is the same as in the other automatic aid agreement.
- iii. The Township of Cavan Monaghan and the City of Peterborough have an “automatic aid agreement” whereby the City provides certain fire protection services to the Township for a set fee. This fee is similar to the fees charged in the other agreements.
- iv. The City of Kawartha Lakes provides the following services to the north/west area of the Township of Cavan Monaghan which includes Skiview Heights under an “automatic aid agreement”:
- Fire suppression
  - Hazardous Materials incidents
  - Medical assistance
  - Extrication services, Motor Vehicle Collisions

Kawartha Lakes’ fee for this service is a standby fee of \$1,000.00 and a call out fee of \$1,200.00 per hour.

These agreements spell out in detail the areas to be covered, liability and indemnification coverage, and certain protocols. This is a sound practice for handling beneficial agreements with a neighbouring municipality.



Automatic aid agreements are excellent tools for any municipality to use when there are areas within their boundaries which are difficult to access using their own resources. However, they can be accessed by a neighbouring community at a cost which is considerably less than the cost the home department would have to pay.

### **MUTUAL AID**

The Township of Cavan Monaghan, as part of the County of Peterborough, has agreed to cooperate with its neighbours should an emergency occur. Formally known as the “*Mutual Aid Agreement*,” this agreement is now known as the “*Peterborough County Mutual Aid Plan*”. All nine Peterborough County fire services participate in this emergency plan, whereby each will assist their neighbour should a request be made through the Peterborough County Fire Coordinator.

Outside of these agreements is the situation with the Peterborough Airport which lies within the Township of Cavan Monaghan boundaries. The City of Peterborough is responsible for providing fire protection services to this facility. It is summed up as follows:

“3. The parties acknowledge that the City has and will continue to provide, adequate fire protection including suppression, inspection, prevention and training, for the airport. Annual fire inspection reports will be provided to the Township. The City agrees to fully indemnify and save harmless the Township in respect of any such matters.”

## **Fire Department Management**

The Fire Chief handles the normal management matters affecting the Fire Department. The Administrative offices are located at Station 1, in Millbrook. The Fire Chief is responsible for,

“..the proper administration and operation of the Department..”

One of the main functions of the Fire Chief is to prepare the budget and exercise budgetary control. The Fire Chief is the Municipal Council’s representative in the day to day management of the fire service. The fire service operates on a “chain of command” structure. Therefore, it is imperative that communications flow along these lines. If a firefighter needs to have something communicated, he goes to the immediate officer in the chain, and so on up to the Chief. If council needs to send a message to the fire service, it is their responsibility to talk to the immediate officer of the fire service. Their immediate officer is the Chief. Circumventing the lines of authority most often spawns problems within the organization, and is ill advised.

The FPPA states:

Section 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 Township of Cavan Monaghan's Fire Chief wears many hats in the performance of his duties from the day to day management of the offices of the Fire Department to being overall Incident Commander at major emergencies. Reporting directly to the Fire Chief is the Deputy Fire Chief. The Deputy Chief handles the daily managerial functions of the fire department as well as taking command at emergencies. Both the Chief and the Deputy have completed the required "Certified Emergency Management Coordinators" certification program for the Township of Cavan Monaghan as well as the Company Officer Program.

### Training and Qualifications

The training of firefighters is an on-going operation because of the many disciplines required of firefighters, Occupational Health and Safety regulations and the desire to do a good job. Training takes place twice a month on the second and fourth Mondays. All of the firefighters are enrolled in the Ontario Fire College's Curriculum and 15 members have successfully completed it. Two of the five station officers have had Incident Management Scene training. This is an integral component of emergency scene management and is recommended to be a requirement for all officers and for those aspiring to become officers.

The OFM certifies Ontario training officers to the Company Officer Program. The Fire Protection and Prevention Act, 1997 (FPPA), clauses 9 (2) (d) provides authority to the OFM for training and evaluation of firefighters. This is not a mandatory program for firefighters.

Other courses and achievements of note for this department are:

- 4 members have completed the basic Fire Prevention and Inspection Course
- 13 members have completed the Trainer Facilitator Course
- 6 members have completed the "MNR Wild land Fire S104 Course"

Except for some of the new hires, in the past year, all have been trained in the OFM Awareness Level Hazmat and Terrorism courses.

### Recruits

New recruits to the Fire Department are governed by the establishing and regulating by-law “2006-63”. The by-law is extensive and detailed, and provides the new recruit with a clear understanding of his/her role until accepted on a permanent basis. For example, all recruits must “...complete 2 (two) full years of probation before becoming a full status Firefighter.” Upon approval of the Fire Chief, each recruit will be required to attend and successfully complete the required training at the Norwood Training Center. Upon completion they have achieved Component One of the OFM Curriculum.

Each recruit is provided with a helmet that has a “blue dot” affixed to it to identify them as a rookie. (Picture below)



Recruits are paid at a percentage of a full firefighter. In the first year, their compensation is 75% of the full rate and the second year they are paid 80%.

### Training & Qualifications Conclusion

Overall, from the information provided to us, the training and qualification levels set by the Township of Cavan Monaghan Fire Service are well thought out and consistent with accepted practices. The recruit program is well designed and provides an excellent base for new hires to begin their career with this fire service. To have so many who have completed the OFM curriculum and the many others who are in the process is also very encouraging. The importance of such training can be witnessed at any emergency scene.

Compulsory, (*i.e.*, acceptable to the Fire Chief) training in the Incident Command System, as well as the Company Officer Program is recommended for all officers and aspiring officers.

## Recruitment – Retention – Retirement

This is the most critical of issues in any fire service. Without personnel, there is no fire service. A fully paid system simply places an ad and does the proper screening and testing and then placement of recruits. There are many differences between the volunteer (or paid on call) systems and the fully paid one. For example, volunteers have to live in a close proximity while full-timers do not. Volunteers can refuse to participate in emergencies while, in most cases, full-timers cannot. For a volunteer, this is not their main source of income while for fulltime it is. The greatest overall difference is cost. Both versions of the volunteer system are far less costly than is the fulltime system. Municipalities that have volunteers must work very hard to maintain them.

### Recruitment

There is, in North America, an on-going struggle to recruit and retain volunteer firefighters. Times have changed, and many are less inclined to get involved in such a demanding community endeavour. Previously, all a Chief had to do was spread the word he needed a couple of recruits and he would be inundated with applicants. Today, the whole municipality must get behind a recruitment drive to fill vacancies. Recruiting and retaining volunteer firefighters is an on-going struggle. This job is never completed and should be addressed in a concerted way by the municipality. An overall policy to deal with recruiting new fire fighters, incorporating ideas such as the manner by which they are reimbursed, benefits they receive, and finally, how they are to retire is highly recommended.

An excellent starting point would be to utilize the Ontario Fire Marshal's "Volunteer Fire Service Personnel Recruitment and Retention" guideline. Some excerpts from this guideline provide focus for the municipality in addressing this situation and are as follows:

#### The Benefits

A coordinated, organized program demonstrates:

- How seriously the leadership takes the services provided and the individuals who provide that service,
- Sound risk management principles,
- Proactive vs. reactive leadership within the department, and
- Leadership's commitment to recognize volunteers, families and employers who support volunteerism.

#### It identifies:

- Shortfalls and availability of volunteers in the community and,

- The number, type and quality of volunteers required to meet current or future needs.

It allows planning for:

- Recruitment and selection,
- Retention and succession, and
- Training and development of volunteers.

#### Responsibility for Recruitment

Recruiting and retaining volunteers does take effort. Creating a committee within the municipality and assigning specific tasks can create opportunities for others besides the leadership to contribute to the growth of the fire service and allows for a more concentrated effort.

The OFM provides the following *Chart 7* “Volunteer/Recruitment/Retention” to illustrate the key factors in such a policy:

#### **Chart 7 – Recruitment Flow Chart**



The document which supports this guideline is titled, “The Volunteer Recruitment and Retention Resource Book” and should be obtained when formulating this policy.

An idea worth investigating is junior cadet training – focusing on exposing fire fighting at the junior high school level. Teenagers would be allowed to join a cadet auxiliary group and take part in all non-emergency functions. Some departments provide students with a “drop in center” at regular intervals during the winter. These centers show relevant movies, provide familiarization tours of the fire station, and show how various pieces of equipment are used. This early exposure has proven to be quite worthwhile in piquing interest in younger citizens.

In past years, many fire departments would only allow people to be members if they lived within a certain distance from the fire station or the person had to live within the town’s boundaries.

The Township of Cavan Monaghan's Establishing and Regulating Bylaw states:

All Cadet/Recruit applicants must reside in the Township of Cavan Monaghan or a neighbouring municipality, and be in local proximity to a Fire Hall.

Some fire services have begun to look farther afield for their recruits, recognizing that while a person may not live close enough to be a first responder, they can still provide a valuable service, such as relief at long running emergencies, helping with clean-up after an emergency, assisting with non-emergency functions like hall maintenance, clerical duties, and training, to name a few.

In our meeting with the station officers, there was a strong desire expressed to be more involved in the recruitment process. This is a positive situation, from those people, who are closest to the fire fighters. There can be problems with having too many officers involved in the process. If allowed, they must obey the rules as set out by the Township. As participants, it would be their duty to follow these guidelines as well as be totally objective in the selection process. If someone selected fails to measure up, then they, as participants in the process, must share the responsibility.

In a fire system, such as The Township of Cavan Monaghan's, the whole community benefits not only from having a fire service, but also, the lower taxes they pay for it. Employers do not normally like their personnel to drop work and run off for any reason, however, should the employee be a member of the fire service, they should be more amenable. Especially so if the municipality shows them the cost savings this service provides vis-a-vis the alternative full-time system.

A good recruitment system involves the whole community in a volunteer type service. Obviously, the Fire Chief must demonstrate the need to recruit. Once this is done, then the administration, Township Council, officers and fire fighters must all work together to go to the community and seek replacements.

The Township of Cavan Monaghan should also look internally, in its own workforce, to recruit people to volunteer for the fire service. The expectation here is that these workers would be allowed to leave for certain emergency calls. This would show leadership to the business community.

### Retention

As critical as recruitment is, so too is retention. Many factors drive people to leave the fire service: personal, age, work load, ill feelings, etc. The issues that keep firefighters contented are also long and varied. Such issues as pride in community, duty to serve, social aspects, excitement of a risk

taking and more can form the basis for long career. Other, more tangible issues as good equipment and excellent facilities where fire fighters can demonstrate their pride in the organization can have a big impact on recruitment and length of service. Benefits and wages have played a positive role in retaining personnel.

### Retirement

\*The policy may include a clearly defined component to deal with retirement. Any “Recruitment, Retention, Retirement” policy being considered for the fire department, should be consistent with the municipality’s “Hiring Policy” and Human Rights requirements. Recent changes to the provincial retirement policies have caused some uncertainty within the fire service. However, a recent ruling by the Human Rights Commission may provide some illumination on this matter. The following is excerpted from this case:

\*\*Espey v. London (City)  
8 Dec 2008  
HUMAN RIGHTS - Age Discrimination  
Ontario Human Rights Tribunal

The Ontario Human Rights Tribunal has upheld a provision in a Collective Agreement which requires mandatory retirement at age 60 for firefighters. Adjudicator David A. Wright found that while the provision was prima facie discriminatory, it could be reasonably justified as a bona fide qualification for the following reasons:

- 1) medical evidence established a probable connection between firefighting and heart disease, and advancing age "contributes significantly to the risk of a cardiac event in firefighters";
- 2) there is a lack of individualized testing methods that would "allow a better risk assessment of on-the-job events for firefighters more accurately than age, given their occupation-related risks of heart disease"; and,
- 3) the fact that the parties negotiated the mandatory retirement provision out of concern for the health and safety of the employees was an important and relevant factor.

The complainant had agreed that if the provision in the Collective Agreement was upheld, the complaint must be dismissed. The Adjudicator left open the possibility, however, that an individual could request an exception to the mandatory retirement age where his/her cardiac event risk was low and thus, accommodation might be required. Several earlier cases have upheld the mandatory retirement age of 60 for firefighters as being bona fide occupational requirements ("BFOR"). However, the adjudicator noted that since those cases were decided, various changes had taken place in the "legal landscape". Specifically, the definition of "age" in the Ontario Human Rights Code was revised in 2006 to remove the upper limit of 65, thus effectively ending statutory mandatory retirement at age 65.

In addition, the process of establishing a BFOR was revised by the Supreme Court of Canada in Meiorin. Under the Meiorin test, the party wanting to uphold a standard such as mandatory retirement at age 60 must show: 1) the standard was adopted for a purpose rationally connected to the performance of the job; 2) the standard was

adopted in an honest and good faith belief it was necessary to the fulfillment of the legitimate work-related purpose; and 3) the standard is reasonably necessary to the accomplishment of the legitimate work-related purpose. It must be demonstrated it is impossible to accommodate the employee without imposing undue hardship.

The adjudicator found that the first two requirements of the Meiorin test were readily established. The third requirement was more difficult. In addition to the findings noted above, the adjudicator accepted medical evidence that "death from coronary heart disease is multiple times more likely while performing emergency firefighting duties than while performing non-emergency duties". Also, in cases of firefighters of an advanced age, there would be increased concerns of safety not only to the firefighter but also to the public and to his or her colleagues should a cardiac event occur when responding to an emergency.

#### **NOTE:**

\* This ruling is provided for informational, not legal, purposes only.

\*\* It seems reasonable that this and other like rulings would only apply to those firefighters who are actively engaged in "hands on" firefighting.

**It is recommended that legal advice be sought before implementing any retirement policy for the Fire Department.**

#### **Water Supply**

The Township's present water supply system (for purposes herein) is broken down into two components – hydrant areas (*pressurized system*) and non-hydrant areas. The Township of Cavan Monaghan is a large, mostly rural area with the exception of the Millbrook area. This part of the Township of Cavan Monaghan is on a pressurized water system and is equipped with fire hydrants.

The recent announcement that infrastructure dollars are being made available to build a new water/wastewater system to service the development target area of Fraserville will greatly enhance fire fighting capabilities. While we have not been made privy to any specific details regarding the actual layout of the proposed water supply link to Fraserville, we have been informed that fire hydrants will be placed along its length. This could have an impact on fire responses to areas served by a pressurized water supply system and should be addressed accordingly. The non-hydrant areas of this large municipality must rely primarily on the fire service's pumper and tanker trucks for water to fight fires.



## Communications System

Since January, 2006, the City of Peterborough has provided dispatching services to the Township of Cavan Monaghan Fire Department. The Chief and Deputy both expressed satisfaction with the service provided to date. The following are findings regarding the fire communication systems being used by the Township of Cavan Monaghan Fire Department.

A technical assessment of the VHF radio system was undertaken as part of this process. The system consists of a repeater, base, mobile and portable radios, and alpha numeric pagers. At no time was any component of the communication systems taken out of service for assessment.

### The Radio System

#### **The Repeater**

The radio system operates in the 150 MHz band, a common band for most rural fire departments in Canada. At the heart of the system is a repeater located at the Municipal Offices building. A DMX-68 tower has been more recently erected to support the repeater antenna system. The tower is well installed and adequately grounded. There are no climbing shields on the tower. However, since the tower is enclosed by a fence, shields are not a requirement.

This choice of locations for the repeater is secure, offers higher ground, which is free of trees and power line towers, which are both a source of radio wave impairments. The repeater itself is a late model Motorola product, well installed, has Polyphaser lightning protection devices in place and is equipped with a short term UPS (uninterruptible power supply). The UPS is tied to the building's long term fail-over backup system. This provides for a high availability repeater system for the fire service.

#### **Base Radios**

Each of the two fire halls are equipped with base radios (fixed mobiles) that operate through the repeater and powered by AC to DC power supplies. There is an outside base station antenna installed at both locations. The tower at Station 2 is not fitted with climbing shields.

#### **Mobile Radios**

The fire trucks are all fitted with mobile radios that appear to be well installed and adequately accessible to the operators. They range in age from new to approximately 10 years old.

### **Portable Radios**

There are a number of portable radios in use by the department. The portables sit in their respective chargers at various stations in the fire halls. Several different models range in age from relatively new to approximately 10 years old. All appear to be in good physical and working condition.

We found that the rechargeable batteries used in the various portables are of three different chemistries: Nickel Cadmium, Nickel Metal Hydride and Lithium Ion.

### Communication System Conclusion

In discussions with the Chief and Deputy Chief, both expressed satisfaction with the dispatch and communication systems as a whole. They are also satisfied with the service contractor (TAS) that does the supply and services for the systems.

This inspires the following notes, suggestions and recommendations:

- The radio channels in use by the department are not operating in compliance with the Industry Canada (IC) Phase I rules of 12.5 KHz channels. This was mandated by IC in 2004. Albeit, IC has not yet been heavy handed with the rural fire departments as a whole about moving into Phase I compliance, they could at any time. Phase II compliance of 6.25 KHz channels is mandated for 2012. In discussions with the technical people at TAS, they reported that most but not all of the radios used by the department can be reprogrammed to meet Phase I compliance. Some of the older mobiles and portables cannot and would have to be replaced should the department be required by IC to move into compliance.
- A once a year preventive maintenance (PM) program would ensure the radio system and all its components operate to specification and not subject to gradual degradation. We were informed that there is no PM program currently in place and only remedial service is performed.
- The tower at station 2 should be fitted with climbing shields as it is not fence enclosed like the tower at the Municipal Offices building. The absence of the shields is a liability to the town; i.e. trespassing person climbs the tower and gets injured or killed. The Township would be liable.
- Common battery chemistry for the portables could be adopted so there is a standard charging, maintenance, usage and battery replacement profile for all the portables. The characteristics of the three different chemistries are as follows:
- NiCAD Pro's - Good capacity, good cold weather performance, lower cost.

- NiCAD Con's – Develop memory and must be regularly conditioned.
- NiMH Pro's – Better capacity, don't develop memory, quick charge
- NiMH Con's – Don't operate well when subjected to temps below 10 F
- LiON Pro's – Best Capacity, lightweight, quick to charge, no memory
- LiON Con's – More expensive, loose capacity below 0 F
- LiON batteries are the latest to be used in portable personal devices such as PDA's and cell phones, primarily for their lightweight and big capacity. Most portable radio manufactures are offering them now as well. The chargers for the different chemistries vary and the manufacturer should be consulted to ensure the correct charger is used for the chemistry of choice.

### The Paging System

The paging system consists of Alpha Numeric pagers that operate on a wide local network. Like the radio system, both the Chief and the Deputy Chief are satisfied with it. It can be activated from geo-redundant locations and serves the department well. We have no notes or suggestions for this component of the fire communication system. We recommend its continued use.

### **Equipment Maintenance**

Proper maintenance and repair of major fire apparatus and portable equipment is a must in the fire service as equipment needs to be ready at all times for emergency usage. The Township of Cavan Monaghan reports their major fire apparatus are given an annual safety inspection. The two repair companies used are Liftlock City Freight Liner and Neal's Farm Repair.

During a Master Fire Plan Committee meeting (July 16, 2009), the question about proper certification for mechanics working on fire apparatus was discussed. The following National Fire Protection Associations (NFPA) standards should be referenced for ensuring proper vehicle maintenance and replacement/retirement:

NFPA 1500 "*Standard on Fire Department Occupational Safety and Health Program*" the following components they advise should form the basis of any vehicle maintenance program. They are:

- Must have an established program for checking and inspecting fire apparatus
- Must have a program for reporting deficiencies and problems found during the inspection of the apparatus
- Must have a responsible person to manage and oversee the program

- Must establish a list of “out of service” criteria for the apparatus
- Must establish a schedule for preventative maintenance
- Must have qualified persons conducting preventative maintenance and repairs
- Must have a system to maintain maintenance and repair records for the life of the apparatus.

NFPA 1911 “Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus”

NFPA 1915 “*Standard for Fire Apparatus Preventative Maintenance Program*”

Personal protective equipment (PPE) is essential for structural firefighting. Also called “bunker gear”, this protective clothing consists of pants and jacket. The rest of the PPE is helmets, gloves, and boots. The bunker pants and jacket are sent to Fire Service Management. The equipment is inspected and tested every year. When it is sent for cleaning, it is returned with a written report stating whether it passed or failed, and if any were repairs made to it. This is a fairly common means of cleaning and repairing personal protective equipment and a service which is used by many fire departments in Ontario. The suits that fail are removed from service. The files are kept at Station 1.

The Fire Department has been purchasing 6 to 9 new suits per year. For 2010, 9 suits will be purchased. Old bunker pants and coats are put into reserve to temporarily replace suits that are out of service. The department is looking at keeping a minimum of 75% of bunker gear in reserve. Acceptable “*personal protective clothing*” is an Occupational Health and Safety issue which municipalities must comply.

## Conclusion

This section of this report focused on the overall organization, its legal basis, training and recruit issues, communications matters, aid agreements (mutual & automatic), and key maintenance issues. This Fire Department is well managed and ensures most operations are in good maintenance. Recruitment and retention are extremely important issues and must be focused upon.

It is recommended that the NFPA standards “NFPA 1911 Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus” and “NFPA 1915 Standard for Fire Apparatus Preventative Maintenance Program” form the basis for any formal policy regarding vehicle maintenance and replacement.

# Part 5

# Finance

The overall finances of a community determine the various services that can be provided to the citizens. Many communities today are facing some hard realities, and finding the services they offer may have to be cut back or re-aligned. The Township of Cavan Monaghan has one of the most affordable styles of fire service. It is considerably more affordable than a service which utilizes full-time firefighters. An overview of the financial aspects of this Fire Department was taken.

## Financial Considerations

The financial considerations affecting the Township of Cavan Monaghan's budget are the same across the province. Extending services to growth areas and replacing aged infrastructure present difficult challenges and pressure the tax base. Hard and soft services, citizen demands and expectations, growth, council direction, provincial cost impacts, and such outside pressures as the cost of products needed to operate the community (i.e., fuel, insurances, daily operating supplies, office materials, etc.). Last year's unparalleled increases in the cost of fuel affected such heavy users as fire and roads departments the most.

The main considerations facing a fire service are the public's demands. Call volumes are not controllable to any degree and they affect the bottom line of the operating budget. We have seen how medical and motor vehicle collisions are the two main drivers in call volume.

## Existing Conditions

The fire budget consists of these components: operational, reserves, and capital. The operational budget deals with forecasted annual costs such as wages, fuel, routine building, and fire apparatus and equipment maintenance, etc. The largest cost item contained in the operating budget pertains to wages. The Township's firefighters are reimbursed on an "on-call basis". This means every time they are required to perform a fire department authorized event (emergency or non-emergency); they are paid a fixed base hourly rate for their attendance.

The Township of Cavan Monaghan's 2009 Wage Schedule *Table iv* (2008 is in parenthesis) is:

**Table iv – Wage Schedule**

Activity/Position	Full Rate 3+ Years	2 – 3 Years	1 – 2 Years	0 – 1 Year
<b>Ground Hours</b>				
Firefighter	19.17 (18.78)	17.41 (17.05)	15.62 (15.30)	14.73 (14.43)
Captain	22.07 (21.62)			
<b>Training Hours</b>				
Firefighter	16.96 (16.61)	15.48 (15.16)	13.98 (13.69)	13.26 (12.99)
Captain	21.48 (21.04)			
Work Hours	14.11 (13.82)	14.11 (13.82)	14.11 (13.82)	14.11 (13.82)

The 2008 to 2009 represents a 2.1% increase which is generally in keeping with cost of living comparables. The wages are generally in keeping when compared with some other communities with similar “paid on call” systems. Wages in other similar sized municipalities for 2008 showed a range up to \$28.64. Compared to fulltime firefighters, these costs are quite reasonable.

The training costs are driven by the wide variety of disciplines required of today’s firefighters. Firefighters must be properly trained to do the required tasks effectively and efficiently and most importantly, safely. The Occupational Health and Safety Act require this. Training sessions and any other non-emergency function can be controlled somewhat. Training is continuous, and is a constant cost item. One of the training manuals used in Ontario to educate firefighters is called, the “*Essentials of Fire Fighting Fourth Edition*”. It contains approximately 19 main topics for firefighters to be educated in emergency work. Each of these 19 main topics lists numerous required sub-areas. Some examples are, Fire Behaviour, Building Construction, Rescue and Extrication, Forcible Entry, etc.

The following excerpt from Township of Cavan Monaghan’s Hiring Policy #2.0 states:

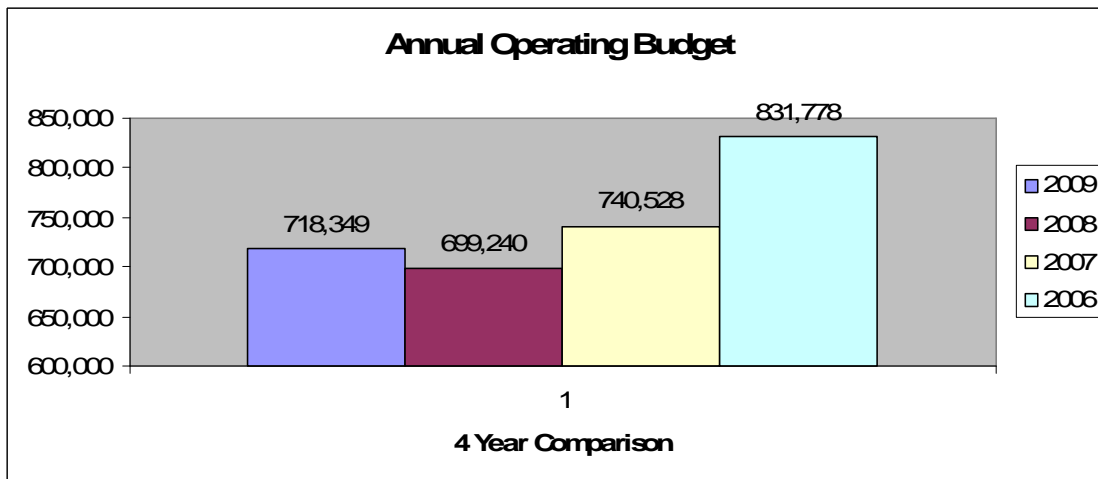
Firefighter(s) are required to attend a minimum of 75% of the regularly scheduled training sessions. If 75% attendance is not achievable, the Firefighter shall inform the Deputy Chief of the reasons he/she cannot attend. The Deputy Chief will meet with the Fire Chief to discuss what action should be taken. All members missing training meetings are responsible to ensure that training is up to date within 120 days of training taking place.”

The capital budget is for larger expenditures spread over several years for such items as vehicle replacement, building renovations/additions, etc. Funds to finance these expenditures come from Reserves Shares by the Municipality Department.

Operating Budget

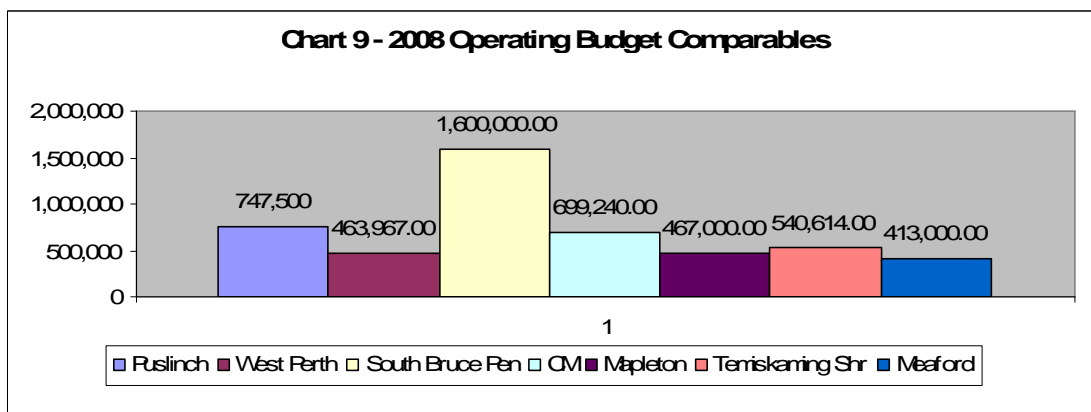
For the purposes of this fire plan, the operating budgets for the years 2006 to 2009 were reviewed. The following Chart 8 (Annual Operating Budget) illustrates the overall expenditures:

**Chart 8 – Operating Budget**



The 2009 Operating Budget is 14% less than the 2006 Operating Budget<sup>12</sup>. We did a random sampling to compare Cavan Monaghan’s Operating Budget with those of other similar size municipalities. The following *Chart 9* (2008 Operating Budget Comparables) is for general comparison purposes only as we recognize the many variables that exist amongst different fire services.

**Chart 9 – Budget Comparables**



<sup>12</sup> Source: Township of Cavan Monaghan Finance Department

The Township of Cavan Monaghan Fire Department's operating budget appears to be generally comparable with these assorted fire services. The fire department's operating budget represents approximately 11% of the overall Township's operating budget<sup>13</sup>.

### Reserves

Reserves are monies set aside over a period of years for the replacement of items which have a defining life cycle. Life cycle costs are incurred over the life span of an asset. The budgeting method used to budget for these costs is called the "sinking fund method". This method means money, on an annual basis, will be set aside and invested to cover these costs.

Fire trucks (fleet) fall into this category and have historically been replaced on a fifteen and five year basis. This means, a truck is in full service (front line) for fifteen years and then put into reserve for another five years only to be used when a "front line" truck is out of service. This is a general rule of thumb used industry wide. Many rural departments, due to their lower call volumes, will use the truck in front line service for the whole twenty years and some even beyond.

Fire stations also have a "life cycle" which, according to industry standards, is approximately 50 years. Many diverse items in the fire service also have life cycles. For example, bunker gear (fire protective clothing), air bottles for self contained breathing apparatus (SCBA), certain rescue equipment, etc., all carry large costs for replacement. A large fire including hazardous materials could render protective fire gear unusable and would have to be replaced. The fire department must be ready for such contingencies.

The capital expenditures for the Township of Cavan Monaghan demonstrate monies have been set aside to cover many of these costs. The following information "Cost Calculator" Table iv is from the Watson & Associates Report:

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<sup>13</sup> Source: Township of Cavan Monaghan Finance Department



**Table v – Cost Calculator**

<b>Asset</b>	<b>Average Useful Life (Years)</b>	<b>Factor</b>
Fire Vehicles	15	0.05783
Fire Equipment	8	0.11651

Watson & Associates Report explanation: “The factors were utilized to calculate the annual replacement cost of the capital projects (annual contribution = factor X capital asset cost) and are based on an annual growth rate of 2% (net of inflation) over the average life of the asset.”

### Development Charges and Revenue

The Township of Cavan Monaghan Fire Department receives Development Charges to off-set capital costs, which will incur because of development within the Township. The following information is excerpted from the Watson & Associates Report:

The current two fire stations provide a total of 6,120- square feet of building area. The maximum DC-eligible amount of \$199,442 is based on a recovery amount of \$70.35/capita over a 20 year forecast period.

The total DC amount based on the existing 9 fire vehicles is approximately \$463,900, based on a per capita amount of \$163.63. The fire department has identified the need for 3 more fire trucks (\*pumper, tanker, and rapid response vehicle) over this 20 year forecasted period. The total projected cost for these vehicles is \$665,000 of which \$458,500 is attributable to growth over this same period.

Small equipment and gear to equip new firefighters has been set at \$432.62 per capita which equates to a DC eligible amount of \$1,226,500. The Township has also identified the need for 15 additional firefighters over this period with a cost estimate to equip them of \$120,000.

All of these totals have been included in the DC.

The biggest revenue generator of funds is calls to the highway. The Fire Department collects directly from the insurance companies. This amounted to \$62,930 for the year 2008.

### **Organizational Structure and Staffing**

The present organizational structure of the Fire Department falls under Policy #3.0 in accordance with By-Law # 2006-63, Section 5. The Fire Chief is a shared-time position (also in charge of water/wastewater). The Fire Department has a full-time Deputy Chief and a Fire Clerk. The rest of the department’s staff is composed of approximately 45 volunteer firefighters (paid on call).

The Fire Department's line of authority, in accordance with this policy is:

3.02 *Departmental Rank Structure*

*Level 1 Fire Chief*

*Level 2 Deputy Fire Chief*

*Level 3 Station Commander (Reserved Position)*

*Level 4 Captain/Senior Firefighter*

*Level 5 Chief Training Officer (responsibility - Deputy Fire Chief)*

*Level 6 Fire Prevention Officer/Public Educator (Chief & Deputy share these duties)*

*Level 7 Firefighter*

*Level 8 Recruit*

*Level 9 Co-Op Student*

### Experience in Other Ontario Municipalities

The overall makeup and administration of the Township of Cavan Monaghan Fire Department is quite similar to the standard industry model. While mostly the same, each fire service has its own difference. The main reason for having similarities of design (form and function), stem from the OFM's mandate to ensure stable fire protection across the municipalities of Ontario. In fact, most, if not all, fire services in North America are organized along these lines. The overarching component of each fire service is fire suppression followed by fire prevention. In total Fire Department budget dollars, fire suppression consumes the lion's share of tax dollars. In the Township of Cavan Monaghan, it's not possible to determine fully how many dollars are spent on fire prevention activities. These costs fall mainly under administrative costs.

Explanations for the differences in fire service makeup and organization can usually be found in the size of the community as a whole. The larger the municipality, the larger the fire service, etc. As previously mentioned, the Township of Cavan Monaghan fire service falls in the mid-cost range of types of fire services (i.e., full-time – part-time or paid on call – point system based volunteer).

A survey which was conducted of various fire services across the province was referenced for this report. The primary consideration was to target municipalities with part-time firefighters and volunteer firefighters (points based payment). This resulted in an overall number of 22 responses. The main criteria (and for the purposes of this report) was to focus on municipalities with the mentioned

firefighters. The populations ranged from a low of less than 1,000 (Spanish Township) to a high of 63,000 (Norfolk County).

This survey was then narrowed to a population variance from a low of 7,000 (Puslinch), to a population high of 12,900 (Temiskaming Shores), to get a better comparative perspective. The Township of Cavan Monaghan fits slightly below the average population for this group with its population of over 8,800. The physical size of each municipality ranged from a low of 201 square kilometres (Puslinch) to the largest at 534 square kilometres (Mapleton). The average coverage area across this comparator list is 355 square kilometres slightly above Cavan Monaghan's land area of approximately 306.

Remuneration varied across this group of municipalities. Temiskaming Shores' firefighters are paid on a "points system" while the rest are paid an hourly rate for each hour worked. This group's hourly emergency rate varied from \$19.17/hour (Township of Cavan Monaghan) to \$28.64 (South Bruce Peninsula). The average operating budget for this group for 2008 was approximately \$704,000, with the Township of Cavan Monaghan slightly under this average at \$699,240. The average number of emergency calls for this group was 253 with Cavan Monaghan leading the list with its 438 calls (2008).

## Conclusions

This section of the report focused on finances, structure, and operational matters of the fire service. It is always difficult for non-fire managers to wonder about the expense of having an emergency service. What can be done to reduce costs? Other areas of municipal management can illustrate their operations by showing a new sewer system, a newly resurfaced road or a new park. The fire service can show a new fire truck or fire station and most often shown is a burned down building. What can't be shown well are the many lives touched by the quick professional actions of the firefighters. The Cavan Monaghan Fire Department's annual operating budget has been reasonably stable for the reporting years viewed. This is commendable in light of escalating costs and rapidly increasing emergency calls.

In attempting to bring in comparison numbers, and illustrate what is happening across the fire spectrum, one must keep in mind the dissimilarities between communities. An aging population will put greater demands on emergency medical services than will a younger demographic. Older

buildings will be the cause of more frequent and serious fires. Industrial sites used to be, at one time, the leading fire risk but these areas are not nearly as prevalent as once were so that risk has diminished. High density, low rental housing will itself present difficult obstacles.

Recent changes to health and safety regulations governing how SCBA air bottles are refilled will most certainly increase costs in this just one area of operational budgets. An ever growing issue which affects all municipal budgets is the unfunded WSIB cost for firefighter related injury and death due to occupational disease. Municipalities should be concerned about this issue.

# Part 6

# Fire Prevention

## Fire Prevention and Fire Safety Education

Fire prevention and fire safety education are, without doubt, the best fronts in the battle against fires and fire casualties. There are innumerable fire prevention and educational programs available to teach the public on fire safety. The OFM's Fire Safety Council has been active for many years spearheading better fire safety information avenues to the public. The National Fire Protection Association (NFPA) is a world leader in fire prevention tools for the fire service and the public.

The OFM "Fire Prevention Effectiveness Model" (*Chart 10*) illustrates the recommended approach to fire prevention in a municipality.

### **Chart 10 – Effectiveness Model**



## Scope

The scope of fire prevention travels from education to fire and building codes (which includes inspections) to code violation prosecution. The FPPA sets out the minimum criteria for meeting community wide fire prevention set of programs. Smoke alarm initiatives, fire safety educational programs, and complaint and request investigations are expected to form the basics of a fire prevention program. The OFM assesses fire prevention activities within each municipality through a survey process. The following is excerpted from such a survey:

The Municipal Fire Protection Information Survey (MFPIIS) is intended to measure a municipality's status with respect to the compliance with clause 2 (1)(a) of the Fire Protection and Prevention Act, 1997 (FPPA) –

Every municipality shall establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention.

The Office of the Fire Marshal (OFM) has determined the minimum criteria that must be provided by a municipality in order to be determined to comply with the FPPA:

- a smoke alarm program with home escape planning
- a simplified risk assessment
- distribution of fire safety education materials
- perform inspections upon request or complaint from the public.

The OFM's report, SUMMARY REPORT of Survey Findings and Identified Needs, 2006-10-19, found the Township of Cavan Monaghan was in compliance. The Township of Cavan Monaghan has recently updated its Fire Prevention Policy Number: FP002<sup>14</sup>. A review of this policy is quite favourable. This policy has been approved by municipal council. The main intent and purpose of this policy is stated as follows:

It is the policy of the Township of Cavan Millbrook North Monaghan Fire Department to conduct fire prevention inspections of properties and occupancies upon request or complaint. In addition at the frequency indicated, on Schedule "A" \*attached, and at other such times as deemed appropriate and/or necessary by the Fire Chief and/or the Municipal Council.

The present fire prevention inspection policy does not provide for routine inspections of

<sup>14</sup> Refer to Appendix A for Schedule "A" attachment.

commercial/business operations. Through experience, it can be suggested these kinds of operations are somewhat prone to fire code deficiencies due to the nature of the business itself, or to lack of fire safety knowledge or indifference. It is therefore recommend the policy be upgraded to allow for more “routine” inspections of these types of operations.

This recommendation is particularly important for the Millbrook commercial area due to the historic nature of this region. As well as the type of building construction (balloon style), these buildings do not have the modern materials and construction techniques which can greatly reduce fire’s impact.

#### Alternative Fire Prevention Program

Another delivery system included in past fire prevention operations, which has been very cost effective, is a program is known as “Self Inspection”. In simple terms, each business would be required to inspect its premises on an annual schedule as approved by the fire department. The business would be provided with a simplified inspection form and basic instructions to follow. This information would be returned to the fire department for analysis and recording. The fire department would then randomly select a control group of such businesses for follow-up by the fire department. The purpose is to ensure the owner/operators are following the guidelines as set out by the fire department. This program is mostly a clerical function, with the exception of the actual inspection, and can be a most effective fire prevention program.

Part  
7

## Other Emergency Services

Clearly, most fire services respond to all types of emergencies other than fires. The scope of these non-fire emergency responses includes such threats to life and property as, motor vehicle accidents (victim extrication), rescue (water based, shore based, high angle, confined space, etc.), medical, hazardous materials incidents, etc. These services are essential to a municipality for the protection of its citizens. No other public sector emergency service responds to such a diverse and complicated variety of public needs.

### Medical Emergencies

Earlier, in this report, we covered most aspects of medical emergency responses. A great many fire services are involved in providing this service. The fire services involved do so under a set of criteria, which, for Township of Cavan Monaghan, has been stated previously. Some fire services do not participate at all in emergency medical calls except in extreme situations, such as when there is no ambulance available for a specific time. For example, the Town of Niagara-on-the-Lake has had, for many years, a 10 minute delay criteria for the ambulance before fire is dispatched.

There are several models from which to choose. For example: no medical response, minimal level of response with first aid and cardio pulmonary resuscitation (CPR) capabilities, delayed response based upon ambulance availability, or full response including defibrillator service. As one would expect, with each increased level of response comes greater costs. The “no medical response” is the least costly while the “defibrillator response with no time delay” is the costliest.

### Hazardous Materials Incidents

This is a service which can run from rudimentary (awareness level), all the way to mitigating and removing/disposing toxic materials. The Township of Cavan Monaghan Fire Department operates at the “awareness level.” Few fire services get involved in hazardous materials incidents beyond the awareness level. They do this for reasons such as the extraordinary amount of training required, and the costly equipment needed vs. the low number of incidents. The spate of “white powder” incidents in the United States just after 9/11 worried municipalities to the point where specialized haz-mat



teams were set up. In the Niagara Region, a group of firefighters, police and EMS personnel were specially trained and equipped to respond to hazardous materials incidents.

The City of Vaughan has, for many years, trained its firefighters to the “operations” level, and supplied their services to neighbouring communities. In past years, some municipalities have partnered with the private sector to deal with haz-mat emergencies. Two examples of municipalities teaming with private industry to assist in dealing with hazardous materials incidents are Niagara Falls and the Town of Lincoln. Each instituted programs wherein firefighters were trained to the “awareness level,” with some trained to the “operational level.” Once a hazardous material was identified, the contracted company would be called to mitigate and remove the product.

This approach can save municipalities the high cost of training and equipment needed to do the job properly. The cost of cleaning up after a haz-mat incident is then billed to the carrier so the cleanup company can recoup their costs as well as the fire service.

### Technical Rescue Services

The Township of Cavan Monaghan’s Fire Department also provides the following technical rescue services:

- auto extrication (rescue of persons trapped in vehicles),
- land based water rescue,
- land based ice rescue
- confined space rescue.

Each of these services comes with the following costs for equipment, training, and the resulting responses to the emergency. These types of emergencies are also heavily governed by provincial regulations. Specific training, instructions (operating procedures), and equipment in proper working condition are musts for ensuring adherence to these regulations.

### Conclusions

A review of these services concludes that The Township of Cavan Monaghan is providing these services in a manner consistent with industry accepted practices, procedures and training.

# Part 8

## Suppression Operations

The existing fire suppression resources operate out of two fire stations. With noted exceptions, these fire stations are located in reasonable proximity to their service area. The Township of Cavan Monaghan's large land mass, with its mix of urban and rural areas, means there are pockets where speedy response to remote emergencies means longer times. This is a simple statement of fact. No one citizen should expect nor receive the exact same service as every other citizen. This is neither operationally nor affordably possible. However, fire services can do much to minimize deficiencies, such as outreach fire safety programs to rural areas. This section will provide some insight into The Township of Cavan Monaghan's resources and capabilities.

### Fire Apparatus

The Fire Suppression Division operates out of two fire stations in areas which were originally well located, to provide speedy emergency responses to their former municipalities. Each fire station has an assortment of fire trucks and emergency equipment. The following Table vi lists the present fire trucks, their location and more importantly, their replacement year, along with other information.

**Table vi – Vehicle Information<sup>15</sup>**

Vehicle	Station	ID#	Make/Model	Year	Purchase Price \$	Replacement Year
Unit 7 – Rapid Response	2	7-00	Ford F-550	2000	125,000	2020
Unit 3 – Rapid Response	1/2	3-09	Ford XLT	2009	39,000	2014
Unit 6 – Grass Fire Unit	1	6-89	GMC	1989	20,000	2012
Unit 8 – Service Truck	1/2	8-03	Ford F-150 XLT	2004	43,000	2014
Pumper 1	1	P1-96	Freightliner	1996	250,000	2016
Pumper 2	2	P2-09	Kenworth	2009	231,000	2029
Tanker 5	1	T5-00	GMC	2000	170,000	2020
Tanker 4	2	T4-94	International	1994	130,000	2009
Rescue Van	1	9-03	GMC	2003	134,000	2026

This mix of fire apparatuses (pumpers/tankers/rescue/support vehicles) appears to serve the community fairly well. One particular type of fire apparatus missing from this fire service is called an “aerial ladder” or a “quint” (see Picture inset below).

<sup>15</sup> Refer to Appendix D for Vehicle Photos

A quint, or quintuple combination pumper, is a fire service apparatus that serves the dual purpose of an engine and a ladder truck.

To the layperson, “aerial ladder” may be a more recognizable term, and NFPA defines such a vehicle as:

A vehicle equipped with an aerial ladder, elevating platform, aerial ladder platform, or water tower that is designed and equipped to support fire fighting and rescue operations by positioning personnel, handling materials, providing continuous egress, or discharging water at positions elevated from the ground.

The importance and versatility of a quint style fire truck cannot be overstated. Many fire services have seen several advantages in structural firefighting using these trucks as opposed to just pumper style trucks. NFPA defines a pumper style fire truck as:

Pumper. Fire apparatus with a permanently mounted fire pump, water tank, and hose body, the primary purpose of which is to combat structural and associated fires.



Some of the advantageous capabilities of this type of fire truck include a greater reach of application for fire suppressants; increased victim rescue capabilities from fires or areas requiring ground ladders, and added protection for firefighters. A former fire chief for the City of Mississauga began a program in the mid 1990's to upgrade their fire apparatus from triple combination pumpers to quint style trucks. These trucks have more versatility and effectiveness than that of a simple pumper (triple combination) style truck, and they require fewer firefighters to access high buildings than are needed using ground ladders.

Previously in this report, a concern regarding the fire department's ability to access the taller older buildings in Millbrook, the newer townhouse style residences in the Baxter Creek development and, the senior residences such as the Manor in Millbrook was noted. Large operations such as Sysco or

Kawartha Downs would present similar strategic challenges. An aerial device such as discussed herein would add considerable flexibility to the fire fleet.

Fire officials informed us the closest aerial device is located in the City of Peterborough, (this fire station is located at 210 Sherbrooke Street), with a calculated travel distance from this station to the Millbrook center as being approximately 23 kilometres. The time to assemble the Peterborough firefighters, and travel time to the fire scene could take upwards of half an hour or more depending on weather and road conditions. This response time is too long for timely fire interdiction, or the rescue of victims, without the potential losses which may occur.

Consideration should be given to the purchase of a quint in the range of a 15 to 23 metre (50 foot to 75 foot) ladder—preferably a quint style truck 15 to 17 metre (50 to 55 foot ladder) on a single axle design, for the Township of Cavan Monaghan. This is a more affordable model which would allow this vehicle to be used the same as any pumper, but with the additional capabilities of an aerial device as mentioned.

New, these fire trucks range in price up to approximately \$600,000 depending on design layout and supporting equipment. However, some fire services have seen the benefit of purchasing refurbished aerial trucks. Niagara Falls purchased just such a truck from a fire service located in Pennsylvania for approximately \$190,000 U.S. When minor upgrades were completed the final tally was approximately \$225,000. This alternative method of purchasing large capital expenditure items, if successful, could actually result in some savings.

**Recommendation:** a quint would be an ideal addition to the Cavan Monaghan fire fleet due to its flexibility and wider range of capability than a pumper. A successful hunt to find a used quint could result in similar dollars being expended as has been planned. This truck should be stationed at Station 1 where the multi-storied buildings are.

**Recommendation:** The Township of Cavan Monaghan has established an orderly replacement of fire trucks which is consistent with accepted industry standards. NFPA 1901: Standard for Automotive Fire Apparatus and NFPA 1911: Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus is recommended to be referenced, to ensure industry standards for the purchase and replacement of these important fire apparatus is being met. It is further recommended that the municipality continue with their replacement schedule as laid out in Table vi.

## Fire Stations

A fire station is the fire emergency operations center for a given fire district or specific area of a municipality. Each fire station typically houses fire apparatuses and emergency equipment needed for the various fires and other emergency calls in its response area. The Township of Cavan Monaghan has two such fire stations: Station 1 (Millbrook), and Station 2 (Mount Pleasant Rd.). These fire stations are located approximately 14 kilometres apart<sup>16</sup>.

### Station 1 – 52 King Street East – (Former Village of Millbrook)



Fire Department Headquarters is located at Station 1, and is near the intersection of King Street East and County Road 10. This is the largest commercial area of The Township of Cavan Monaghan, and is the former Village of Millbrook. This building is a two storey design, and was built in 1965. The ground floor houses 4 trucks (pumper, rescue, tanker, bush truck) in very cramped quarters. There is very little room for the firefighters to maneuver to don their fire gear or for any other activity.

<sup>16</sup> Refer to Map 1 Appendix B

The second floor houses the offices of the Fire Chief, Deputy Chief, and Assistant to the Chief. There is also a small open space used for meetings and training sessions. A single washroom serves both men and women. There is a single enclosed stairway servicing this second floor. There is no other acceptable exit facility serving this floor area. Due to size restrictions, training and meetings have to be held away from this building, or attendance kept to a minimum.

Furthermore, there is no rear access to this building for fire trucks. Rear access to a fire station has proven to be safer because fire trucks do not have to back into the station from a busy roadway. The narrow opening access to King Street is of concern when fire apparatus are leaving the station, and responding volunteers are incoming to the station. Enlarging this building is not possible on the land it occupies. Property to the west would have to be obtained in order to accommodate the facilities required for a modern fire station. Baxter Creek on the east side may also present some potential problems regarding environmental issues. Also, the area where the station is located is in a flood plain, which is not recommended.

The main response routes from this station are: east and west - King St (County Road 21); north and south - County Road 10<sup>17</sup>. This map illustrates various mileage markers of coverage, for this station, ranging from 1 to 10 kilometres.

A key consideration for locating a fire station in a volunteer system is to ensure it is close to where firefighters live. Volunteer firefighters must be in close proximity to their fire station or their “assembly times” may be unacceptably high. Continuation of a site close to Millbrook should ensure a continuous flow of personnel to the fire service in this area.

Assembly time is that component of the fire time continuum (overall response time) which defines the amount of time it takes for firefighters to respond to the fire station to get the needed emergency equipment to respond to the address.

An important consideration for selecting the site for this new station would be for the continued excellent response times to the Millbrook commercial area, Baxter Creek development, and Millbrook Manor. The chosen site should allow for easy access to the north/south; east/west arterial road networks. The OFM Public Fire Safety Guideline, “**PFSG 04-87-13 - Fire Station Location**” states;

<sup>17</sup> Refer to Map 2 Appendix B for various mileage markers

Fire stations should be situated to achieve the most effective and safe emergency responses.

This new fire station should be constructed of sufficient size to accommodate the necessary administration offices, training room, support rooms and truck bays. It should also include its own emergency electrical generation unit<sup>18</sup>.

The Township of Cavan Monaghan should inquire if the County might be seeking accommodation for an ambulance unit to service this area. If so, then the new facility could be a “dual purpose” building housing both fire and EMS. Costs could be shared according to the percentage of building area used by each service.

**Recommendation** – the Township should undertake a “Fire Station Location Study” to determine a new location for this important station. The study should also provide information regarding building design.

### Station 2 – 1047 Mount Pleasant Road



This station is located close to the northern boundary of The Township of Cavan Monaghan, just east of County Road 10. It is situated in a somewhat remote area of the Township. The largest population concentration in this area is found in the Mount Pleasant area nearby. This area is targeted for “rounding out” in-fill development over the next 25 years. The building is a single floor, metal clad construction, and houses three fire trucks (pumper, rescue, and tanker). It was built approximately 35 years ago<sup>19</sup>.

<sup>18</sup> See Appendix C – Sample Station Design

<sup>19</sup> Refer to Map 2 Appendix B

This station, as well, does not provide adequate space for the necessary support functions needed of a modern fire station. There is no dedicated meeting/training room for firefighter needs, nor any shower facilities. Shower facilities are important for those times when firefighters encounter foul conditions that could potentially soil their personal vehicles and homes after the emergency. During inclement weather, when in-door training is required, fire trucks must be moved outside, or in-door accommodation found elsewhere. The Station Officers' office is extremely undersized, and there is no area for firefighter social activities, which are a staple of continued strong support from their respective communities.

The question of whether to replace this station and build elsewhere, or enlarge it, became an interesting process. The first consideration was relocating this station somewhere to the south along County Road 10. However, this meant moving away from the firefighters' homes. As well, the information regarding the Mount Pleasant area being one of the areas of development (rounding out), argued to maintain the station at its present location. Add to this the cost savings of enlarging this building, as opposed to erecting a new one, tilted toward this as being a reasonable outcome for this station.

There are some challenges to enlarging this station. The grounds along the east side of this building are not suitable for erecting an addition due to the built up nature of the soil. An addition could be built on the west side or on the south side. There is some land along the west side, which could be utilized to increase the size of the building to a more accommodating level. The need for space is very evident, and should Council agree to enlarge the station, the addition should include a truck bay, washroom/shower facilities, office space, etc. The actual size determination could be part of the recommended Station 1 "Fire Station Location Study" previously mentioned herein.

While Station 2 is not optimally located in relation to The Township of Cavan Monaghan as a whole, it can continue to service this area for some years to come, so long as the upgrades as recommended are carried out.

### Station 3 (Future) Fraserville

Relative to conversations regarding the future development of this area, an in-depth discussion regarding specific and overall development of The Township of Cavan Monaghan including Fraserville was undertaken at the July 16, 2009 Master Fire Plan Committee Meeting. To summarize



this issue, according to the Meridian Paper and the Township Planner, development is not expected to be overly large nor imminent. There is consensus that development will occur eventually.

In any event, the Township of Cavan Monaghan should begin preparation for development. This can be undertaken in stages with land procurement foremost. In keeping with the previous recommendation to undertake a “Fire Station Location Study”, selecting a future site for a fire station to service this area as part of that project should also be included.

Most likely, a single, double length truck bay with accommodations suitable for administration, storage, proper washroom and shower facilities, utility area, and maintenance area would suffice<sup>20</sup>. The building should be constructed to accommodate future expansion if needed (usual method is to have removable walls along the truck bay). This is a recognized practice, when building fire stations in areas where future development is not realized for many years into the future. (See Appendix C - Sample Station Design) As with the recommendation regarding Station 1, it is advised to consult with EMS or other agencies to determine their needs in this area. A possible joint building would save tax dollars.

Plans should also be drawn up to recruit firefighters from this area. As development of residential housing takes hold, the Township of Cavan Monaghan should ensure the residents of this area are fully knowledgeable regarding the needs of the fire service. Recruitment campaigns should begin well before the shovels go in the ground for the new station. These future Station 3 volunteers could be introduced to the department through temporary placement in the present two stations. Once call volumes to this area reached a point where service is being compromised, then the building could be erected.

This station should be equipped with a minimum of a pumper truck and rapid response vehicle; each capable of carrying a minimum of 4 firefighters.

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<sup>20</sup> See Appendix C – Sample Station Design

### Fire Stations – Conclusion

According to the “Watson & Associates Report,” the present two fire stations have a total square footage of 570 square metres (6120 square feet). By today’s standards, these buildings are undersized considering volunteer fire stations with 2 full truck bays, staff areas for training and recreational use, offices for the management and control needs, plus maintenance and service areas, usually require a minimum building size of approximately 465 square metres (5,000 square feet) or more in size.

Fire stations are an integral component to the fire service delivery system. Without fire stations, the service could not function. Essential as the emergency operation needs of a fire station in a volunteer fire service system such as The Township Cavan Monaghan’s, so is the social aspect. Recruiting and retaining people to be volunteer firefighters is a daily issue. Fire stations, with the added configuration to provide volunteers with a social aspect, help to recruit firefighters. These two fire stations were built in a different time to serve different municipal needs. Times have moved on, and with amalgamation, this world has changed.

Station 1 is close to the center of Millbrook, but its service area is quite southerly within the municipal boundaries to fully realize its potential coverage area<sup>21</sup>. As stated previously, the former village is of significant heritage and importance to the whole Township of Cavan Monaghan community, and should be preserved and protected. The land this station sits on is not suitable for expansion.

Station 2 is another hold over from the past, and the area it was originally intended to cover. It sits quite close to the northern extremity of the Township, and does not realize the full potential coverage area it should have<sup>22</sup>. However, development in the northern quadrant of this Township is relatively close at hand. The building is undersized and requires a sizable addition for it to accommodate adequately, the needs of the fire department and its volunteers.

As with Station 1, Station 2’s present location may not provide the overall coverage range it could if relocated to a more southerly area. However, the present location does serve the northern areas larger population base fairly well. A modest investment to enlarge this building means it can continue to provide excellent service for many years to come.

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<sup>21</sup> Refer to Appendix B – Map 2

<sup>22</sup> Refer to Appendix B – Map 2

Fraserville is a targeted area for new development to occur in the Township of Cavan Monaghan. Planning should begin to provide better fire protection services to this area. A “Fire Station Location Study” would be in the best interests of the municipality.

The Township should look into provincial and/or federal funding to offset construction costs. Provided are some examples of how other municipalities accessed these dollars to upgrade their fire service infrastructure:

#### Town of Lincoln<sup>23</sup>

The grant was obtained through the Ontario Infrastructure Projects Corporation (aka Infrastructure Ontario). The funding for this capital project was part of the Municipal Infrastructure Investment Initiative (MIII). Their website gives the information regarding program guidelines, requirements, etc.

<http://www.infrastructureontario.ca/en/miii/index.asp>

Full funding for the new fire station was obtained in the amount of \$2,510,000. The application process is done on-line, and must include a description of the project, the economic benefits to the community/region/province, environmental or sustainability benefits to the community/region/province, the health and safety benefits, the social or community benefits, and how the project will help implement a Council adopted plan (e.g. the municipality's Official Plan, etc).

#### Halton Hills<sup>24</sup>

On March 28, 2008, the Honourable David Caplan, Minister of Public Infrastructure Renewal announced that The Corporation of the Township of Halton Hills had been awarded a one time grant of \$1,900,000 from the Municipal Infrastructure Investment Initiative Program (MIII), to be used for the reconstruction of the Maple Avenue Fire Station.

The MIII Grant covers approximately 50% of the construction cost of the Maple Avenue fire station and will have a positive financial impact on the Town.

#### City of London

The City of London took a different approach to the building of a fire station. Their Station 13 more resembles that of a single family residence than a standard fire station (Picture inset). This design may allow that municipality to recognize a greater return for the building should the day come when it might be sold. This is an idea worth researching prior to final design approval.

<sup>23</sup> Source: Lincoln Fire Service Administration

<sup>24</sup> Source: Georgetown.com website



## Operations

Previously, in this section of the report, we have discussed fire apparatus and the need for an aerial device to protect the multi-storey buildings in the Millbrook area, as well as the fire stations and their inadequacies (building size and locations). This next part of the report will look at the operations side (non-emergency and emergency).

### Non-Emergency Operations

The overall assessment of the management, operations, and the commitment to providing an excellent service to the citizens of the Township of Cavan Monaghan is very positive. Management and officers are very committed to providing excellent service to this community.

A review of the Fire Department's SOGs (Standard Operating Guidelines) revealed the commitment to fire fighter safety, and conformity to industry standards. There can be seemingly no end to the myriad of subjects to be covered. One suggestion regarding SOGs is to exercise care so that an SOG does not read like a training manual.

Herewith, a recommendation: each SOG carries with it the potential of liability should something go awry at an emergency. While the SOGs represent what management believes is the proper course of action to a known situation, circumstances may differ from the norm. Situations like these require officers to step outside the specific guideline in accordance with their training and experience. The following statement is recommended to be inserted at the bottom of each page of an SOG:

This SOG is not expected to substitute for the good judgment and experience of an officer under unusual circumstances.

### Emergency Operations

This report has previously provided information regarding the various "components" of fire emergency operations. From overall statistical information to individual emergency response data,

the statistics have shown general increases in call volumes. Vehicle accidents and medical calls lead the way in these escalating numbers. Increasing call volumes for any fire department should be a concern as the cost associated with them also rises.

Meetings with the Chief and Deputy, and the meeting with the station officers did not reveal any specific issue with individual emergency calls; with the exception of fire calls during the week days and on-scene staffing levels. The “Achilles heal” of all volunteer fire services is, when the alarm sounds, no-one really knows how many firefighters will respond in a timely fashion to deal with the emergency. All emergencies require firefighters to respond to the station, take the appropriate fire truck to the emergency and work to mitigate the situation. This is especially so of structural fire calls, as these emergencies generally require the largest number of firefighters to arrest the situation. The OFM set out a guideline for all fire departments to follow many years ago when responding to structural fires in areas serviced by a pressurized water system (fire hydrant equipped). Simply put, this guideline requires a minimum of 10 firefighters in 10 minutes of receipt of the call, 90% of the time. The following OFM diagram (Fireground Staffing Options) illustrates the various tasks associated with this “10 in 10” guideline.



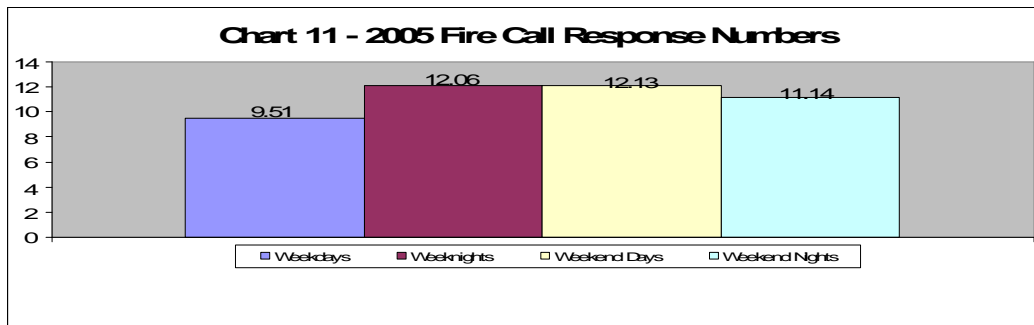
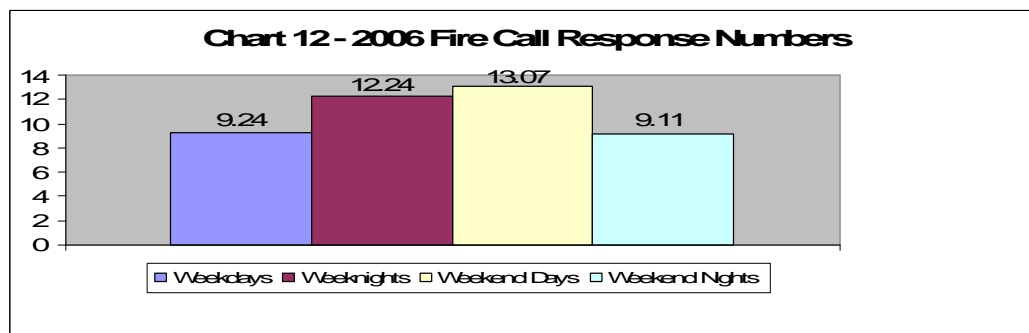
### Fireground Staffing Options

The Township of Cavan Monaghan’s “SOG 1012” on this subject details the response required to carry out an internal firefighting operation or conduct a rescue (Table vii Fire Ground Staffing).

**Table vii- Fire Ground Staffing**

<b>Fire Attack or Rescue</b>	Internal	2
<b>Backup Team</b>	Internal	2
<b>Rapid Intervention Team</b>	External	2
<b>Pump Operator</b>	External	1
<b>Incident Commander</b>	External	1
<b>Ventilation / Ladder Team</b>	External	2
<b>Water Supply Tanker</b>	External	2
<b>Total</b>		<b>12</b>

We reviewed two recent years of data (2005 – 2006) regarding firefighter responses. The following graphs demonstrate the turnout problem for weekday hours. The graphs (Chart 11 & 12) show that during weekday hours, the ability to achieve the OFM recommended 10/10 is difficult to achieve.

**Chart 11 – Number Responding Personnel 2005****Chart 12 – Number Responding Personnel 2006**

The Chief and Deputy both expressed their concerns regarding the low turnout during weekday hours. This is a problem with a volunteer fire service. It is also a reason why municipalities move from a volunteer service to a fulltime one. Prior to making this type of dramatic change, a decision to focus more attention and resources on recruitment is our recommendation.

Throughout this process, a number of possible solutions have been floated. Ideas such as:

- Scheduling sufficient numbers of available firefighters (platooning) to respond to fire calls. They could be paid a minimum amount just to be available or scheduled to work in the fire station for a set number of hours per week day.
- increasing the overall complement of firefighters,
- a policy where Township employees are encouraged to be firefighters and allowed time from work to respond to certain calls.
- Working with local employers to seek their cooperation to allow their employees to respond to certain calls.

Some of these suggestions might require procedural changes so that some absences from work can be controlled. This would help to keep employers on-side in supporting their fire service.

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## Recommendations

This report concluded with findings and recommendations. Overall, the Township of Cavan Monaghan's Fire Department is quite positive. Strong leadership from the Chief, Deputy and Senior Officers, along with their commitment to the community's well being and safety, form a strong foundation. Strong support was evident from other senior staffers who are members of the Master Fire Plan Committee. There are challenges ahead, which might change the community as a whole, but these can easily be addressed so long as the Township commits to doing so. The rest of this section details the recommendations stemming from a review of The Township of Cavan Monaghan's Fire Department. Each recommendation is listed in order of priority, with a recommended time line for action.

### Recommendation – Weekday Availability of Sufficient Firefighters

This is a serious issue and one that needs immediate addressing. The Township is advised to review their present recruitment policy and make the necessary procedural changes, which will result in adequate numbers of volunteers for firefighting. The following list of actions should alleviate this serious problem:

- Advertise the advantages of becoming a volunteer firefighter with The Township of Cavan Monaghan in all available media, and on fire station signs.
- Involve all levels of the Municipal Government in assisting with recruiting.
- That The Township begin to recruit fire fighters from its own workforce, and allow these fire fighters absence from work to respond to serious emergencies. This will set a community wide employer example for other employers to follow.
- Meet with other Township employer groups to recruit their ongoing assistance. Underscore the tax savings directly to them to show this endeavour is in their best interests.
- Investigate the feasibility of recruiting high school students in a pre-active-service cadet program.
- Set up a volunteer platoon system where the present firefighters would be assigned, on a rotational basis, weekday standby duty. An inducement would be paying each fire fighter a minimum standby wage if there are no emergencies to attend during this time.

**Timeline:** Immediately



### Recommendation – Fire Stations

Station 1 is undersized, does not meet present day code standards and is located in a flood plain. It cannot be expanded sufficiently to meet the needs of the fire service without entailing heavy costs and problems. The new station should be constructed of ample size to accommodate present and future needs of the fire service.

A Fire Station Location Study is recommended.

**Timeline:** 0 to 3 years

Station 2 has similar problems to that of Station 1. It is considerably undersized and does not provide the support areas a fire station should have such as adequate office space, training area, washroom/shower facilities, social activities, etc. Relocation to a more southerly site may be more advantageous to the Township. However, the present location does provide adequate fire protection to the more populated northern area. And there is the cost factor of land purchase and possible servicing.

It is recommended that an addition, sufficiently sized to accommodate a truck bay, washroom/shower facilities, office space and meeting area be constructed. This project could be included in the Fire Station Location Study as recommended.

**Timeline:** 0 to 3 years

### Recommendation – Aerial Ladder Truck

In this report, concerns about not having an aerial ladder truck readily available to service the Millbrook area with its multi-storey buildings and other challenges have been noted. The addition of such a fire truck to the fleet will expand fire fighting capabilities considerably. This aerial truck should be placed at Station 1 because this area has most of the buildings where its capabilities would most likely be required.

**Timeline:** due to the lack of appropriate space within the present fire stations, this recommendation follows the recommendation regarding Station 1. The same recommended timeline applies – 0 to 3 years.

### Recommendation – Fraserville Development & Fire Protection

Uncertainty regarding development occurring in this area shades the next recommendation. However, plans are proceeding toward development, but to what degree remains an unknown. The construction of this third fire station would be dependent on service demands and response times. This project could be included in the Fire Station Location Study as recommended.

It would also be beneficial to begin recruitment in this area as soon as feasible. The new firefighters could “learn the ropes,” and be fully trained to staff the new station when it is constructed. They would work out of Station 1 or Station 2 until the new station is built.

**Timeline:** 0 to 10 years – this should allow sufficient time to understand fully the extent of development and the demands on fire service in this area. Land should be procured at first opportunity for a future station. Development dollars will accumulate to pay for this expansion.

### Recommendation – Emergency Communications System

Phase II compliance of 6.25 KHz channels is mandated for 2012. Ensure communications system complies with Industry Standards prior to 2012.

**Timeline:** 0 to 2 Years

### Recommendation - Preventive Maintenance (PM) Program for the Communications System.

**Timeline:** 0 to 1 year

### Recommendation - Safety Barriers for Station 2 Communications Tower

Tower at station 2 should be fitted with climbing shields to prevent unwarranted access.

**Timeline:** Immediately

### Recommendation - Portable Battery Maintenance

Standardize charging, maintenance, usage and battery replacement profile for all the portable radios.

**Timeline:** 0 to 2 years

### Recommendation – Suggested Operating Guidelines (SOG)

Insert a disclaimer at the bottom of each page of all SOGs

**Timeline:** 0 to 1 year

### Recommendation – Fire Prevention Program – Self Inspection Program

Institute a self inspection program for fire safety and code enforcement in Commercial and Industrial premises to augment present fire prevention activities. This is a very minimal cost item which maximizes resources.

Further recommended are more frequent routine inspections of these buildings, as they represent a very important element in the Township.

**Timeline:** 0 to 2 years

### Recommendation – Fire Safety & Education Outreach Program

Most communities have areas where acceptable response times are not possible. The Township of Cavan Monaghan is no exception. The implementation of a fire safety and education program designed to visit residences in these areas on a regular basis to ensure a reasonable level of fire safety readiness is a good alternative delivery system. Former volunteer firefighters who have left active firefighting could be a human resource for this program.

**Timeline:** 0 to 2 years.

### Recommendation – Fire Officer Qualifications

That The Township of Cavan Monaghan Council direct the Fire Chief to implement a mandatory requirement that all present and future fire officers be required to complete, to the Chief's satisfaction, the appropriate educational courses such as the OFM's Company Officer Program. The

Incident Command System is fundamental to the proper and efficient resolve of emergencies and the most important safety of fire fighters.

**Timeline:** 0 to 1 year for requirement implementation.

#### Recommendation – Recruitment – Retention – Retirement Policy

The municipality needs an overall policy to deal with how potential fire fighters are recruited, what incentives would be needed to maintain their services for extended years, and how the senior fire fighters should be “retired” from active service. We acknowledge this to be a highly sensitive matter but feel that a well thought out, compassionate policy would prove to be highly beneficial to both the individual and the Township.

**Timeline:** 0 to 2 years for implementation.

#### Recommendation – Fire Apparatus Maintenance & Replacement Policy

Fire trucks (apparatus) are expensive purchases and require a high degree of maintenance to ensure their readiness and expected long service life. NFPA Standards NFPA 1901: Standard for Automotive Fire Apparatus and NFPA 1915: Standard for Fire Apparatus Preventative Maintenance Program be referenced for just such a Township policy.

Council should continue with its present Fire Apparatus Replacement Schedule as set out until a new comprehensive policy can be set out and approved.

**Timeline:** 0 to 2 years for requirement implementation.

# Appendix A

## Schedule "A"

TYPE OF OCCUPANCY	Quantity	FREQUENCY
<b>ASSEMBLY</b>		
	<b>20</b>	
Schools	5	Annually
Nursery/day care facilities	1	Annually prior to licensing
Licensed premises	4	Annually
Unlicensed premises	5	Annually
Churches	5	Annually
<b>COMMERCIAL &amp; BUSINESS</b>		
	<b>166</b>	
Restaurants		Upon Complaint and/or Request Only
Mercantile		Upon Complaint and/or Request Only
Business/personal services		Upon Complaint and/or Request Only
Resorts		Upon Complaint and/or Request Only
Hotels/motels		Upon Complaint and/or Request Only
<b>INDUSTRIAL</b>		
	<b>20</b>	
Factories or complexes	2	Upon Complaint and/or Request Only
Other Industrial		Upon Complaint and/or Request Only
<b>RESIDENTIAL</b>		
	<b>Approx. 2853</b>	
Apartments up to 8 units	3	Upon Complaint and/or Request Only
Single family duplexes	?	Upon Complaint and/or Request Only
Home inspection program		Voluntary
Boarding/lodging /Group Homes	5	Annually prior to licensing

\* Where the Fire Department receives a **complaint or request** for an inspection on **ANY** premise or building in the Municipality, the inspection shall be conducted as soon as is practicable under the authority of the Fire Protection and Prevention Act regardless of the frequency established in this Fire Prevention Policy.

\* In the continued interest of Public Fire Safety the Municipal Council may approve, upon submission of the Fire Chief, inspection programs that target specific property types and/or classification in accordance with the identified needs and circumstances of the Municipality.

# Appendix B

Appendix B contains the following maps of Cavan Monaghan

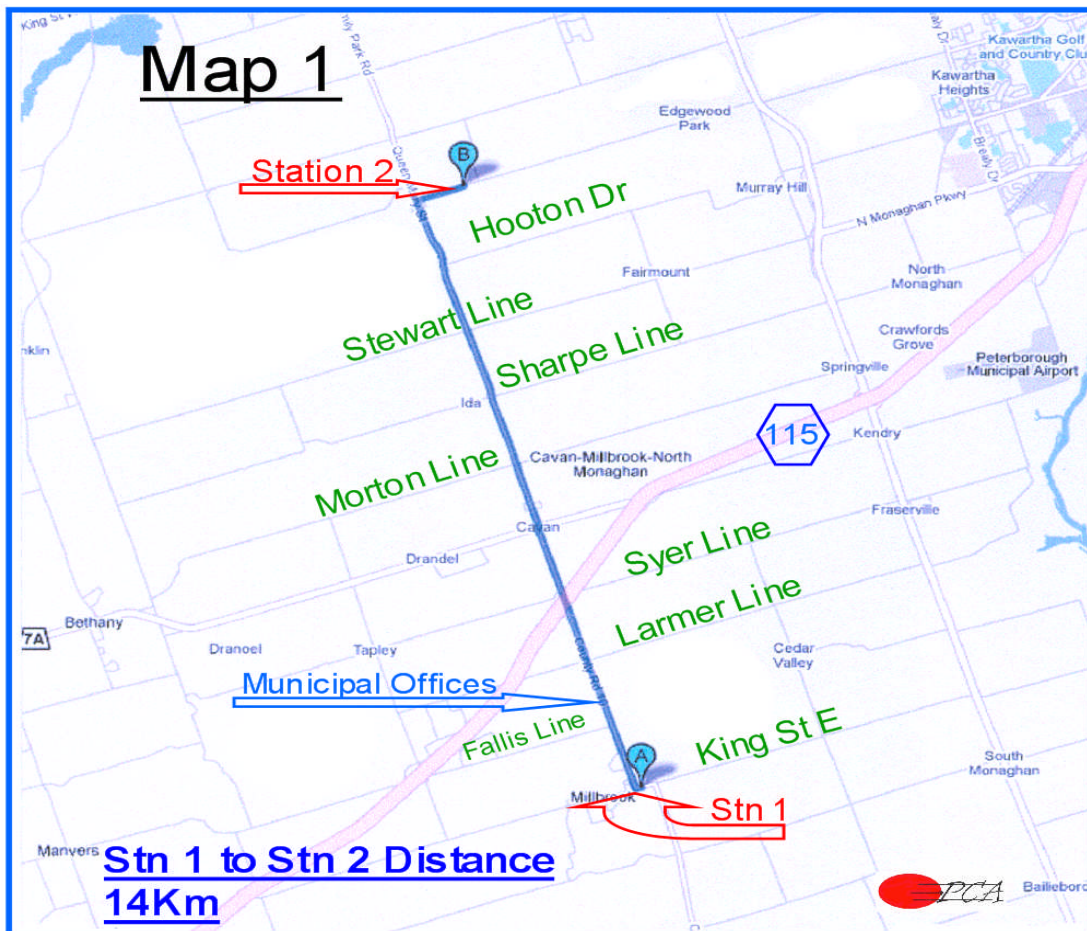
Map 1 – Station 1 to Station 2 Distance (Approximately 14 Kilometres)

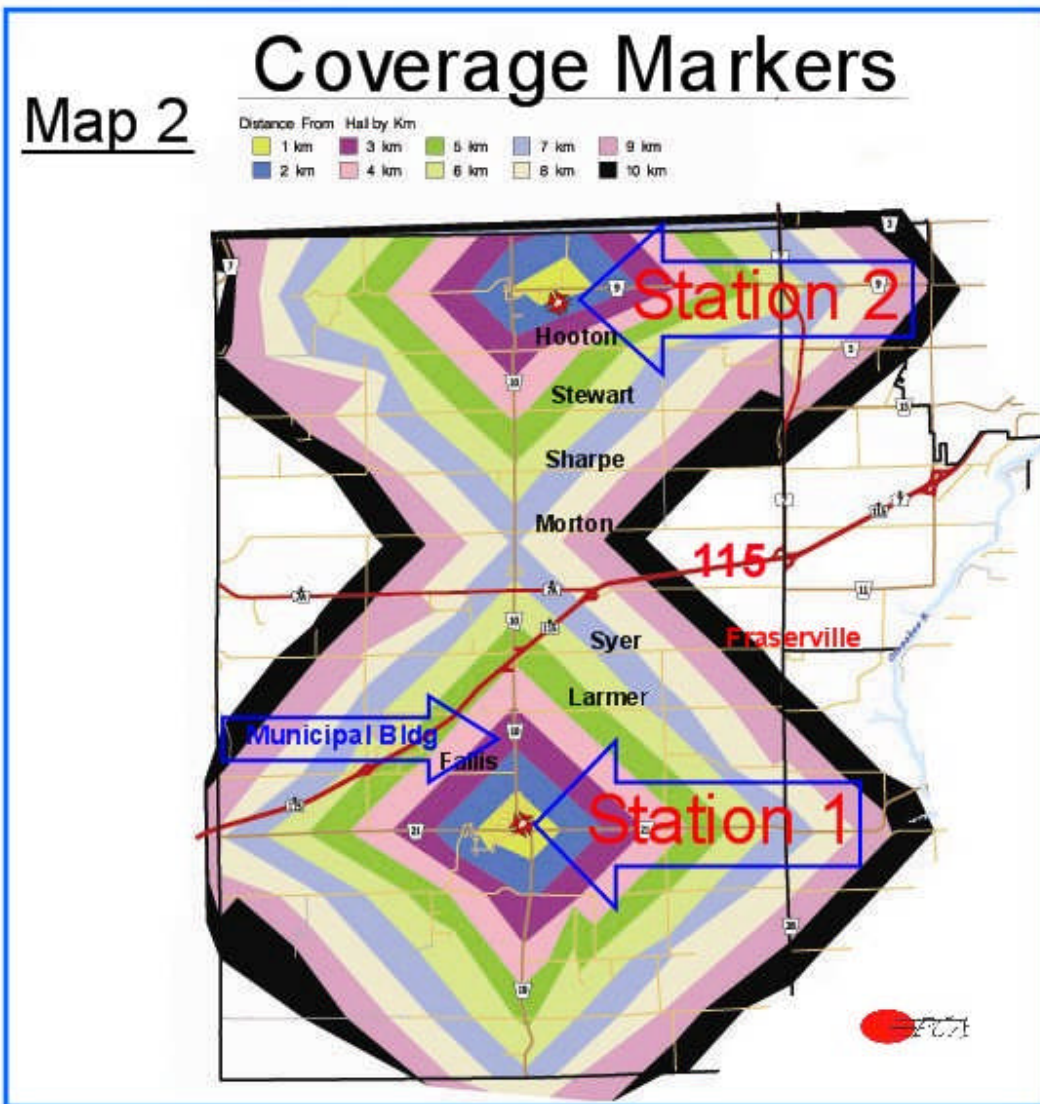
Map 2 – Coverage Markers

Map 3 - Township of Cavan Monaghan Mileage Markers

Map 4 – Distance Station 1 to Fraserville (Approximately 10.4 Kilometres)

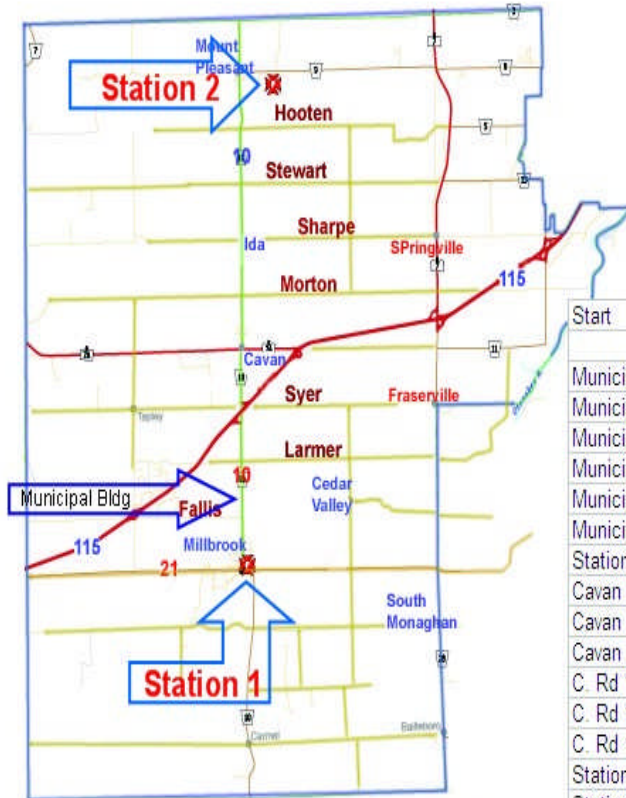
Map 5 – Distance Station 2 to Fraserville (Approximately 17.6 Kilometres)





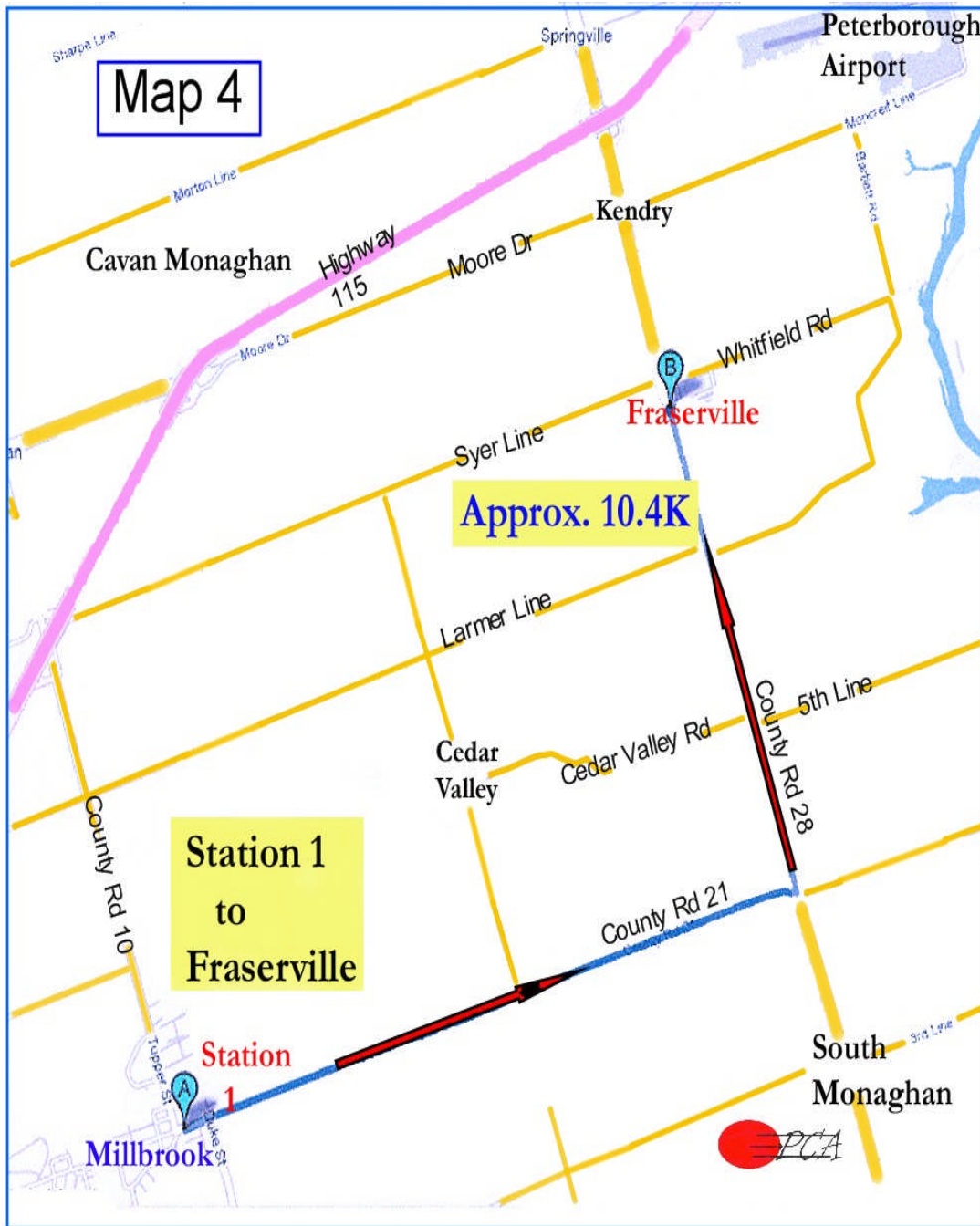
**Map 3** Cavan Monaghan Township

**Mileage Markers**



Start	End	Km
Municipal Bldg	Stn 1	1.7 K
Municipal Bldg	Stn 2	12 Km
Municipal Bldg	Fraserville	12.4 Km
Municipal Bldg	Fraserville	8.7 Km
Municipal Bldg	Fraserville	9 Km
Municipal Bldg	Cavan	4 Km
Station 2	Cavan	8 Km
Cavan	Fraserville	9.6 Km
Cavan	Fraserville	8.1 Km
Cavan	Fraserville	8.8 Km
C. Rd 10 Larmer Line	Station 1	2.9 Km
C. Rd 10 Larmer Line	Station 2	11 Km
C. Rd 10 Larmer Line	Fraserville	7.5 Km
Station 2	Fraserville	17.6 Km
Station 1	Fraserville	10.4 Km
Station 1	Fraserville	10.4 Km

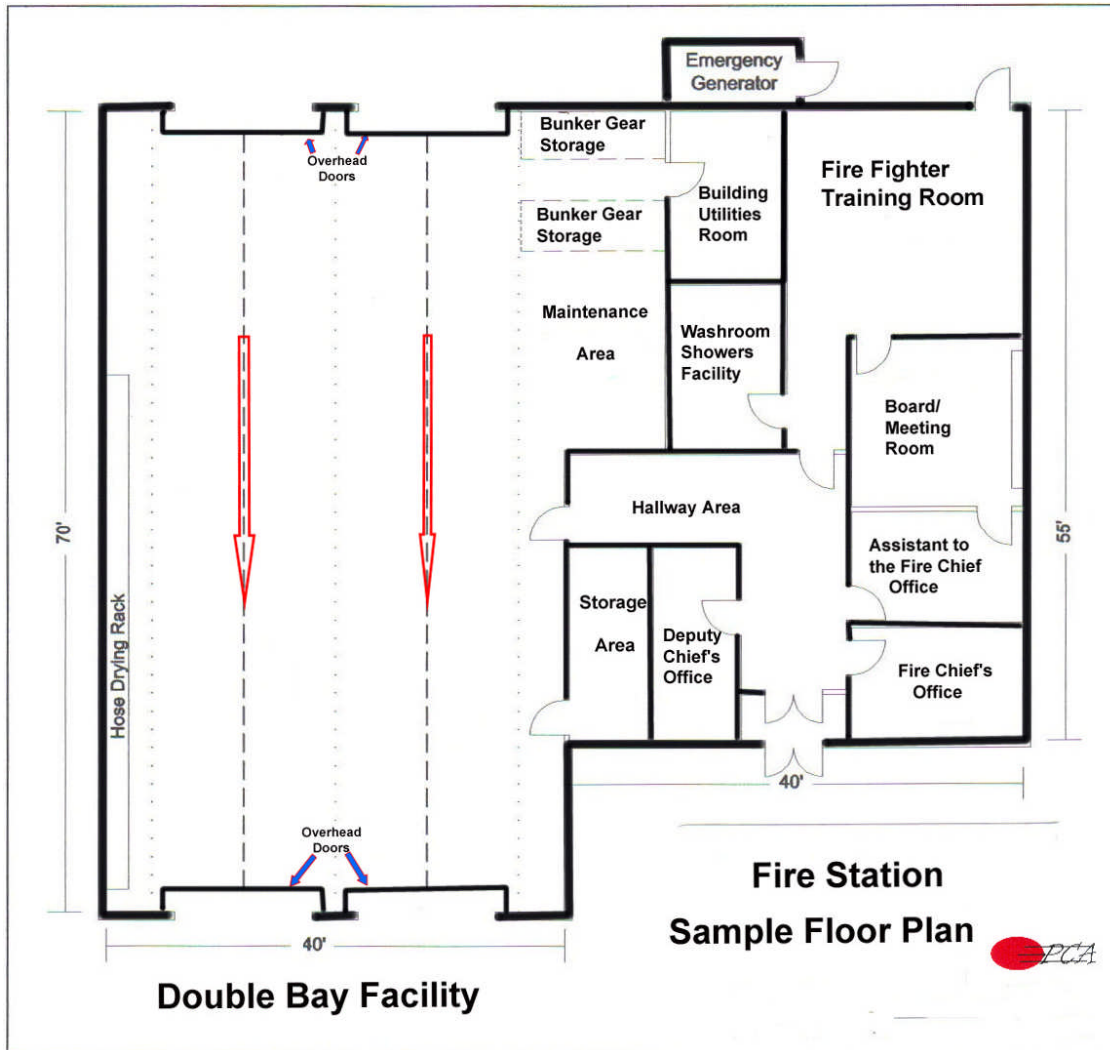






# Appendix C

## Sample Station Design



# Appendix D

## Township of Cavan Monaghan Fire Vehicles



Unit 7-00 Rapid Response



Unit 3-09 Rapid Response  
(Fire Chief)



Unit 6-89 Grass Fire Unit



Unit 8-03 Service Truck  
(Deputy Chief)



Pumper 1-96



Pumper 2-09



Tanker 5-00



Tanker 4-94



Rescue Van 9-03

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- Automatic Aid Agreement - City of Kawartha Lakes
- Peterborough County Fire Emergency Plan
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- Office of the Fire Marshal "The Volunteer Recruitment and Retention Resource Book"
- Espey v. London (City) 8 Dec 2008
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- NFPA 1911 Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus
- NFPA 1915 Standard for Fire Apparatus Preventative Maintenance Program
- Essentials of Fire Fighting Fourth Edition*
- Office of the Fire Marshal SUMMARY REPORT OF SURVEY FINDINGS AND IDENTIFIED NEEDS, 2006-10-19
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