TOWNSHIP OF AUGUSTA
FIRE SERVICE

MASTER
FIREPLAN
2016-2021

DRAFT V9

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1.0 Foreword

Augusta Fire Services has proudly served the community for over sixty years. From humble beginnings, it now provides a sophisticated range and depth of services. The Department consists of committed and skilled firefighters who are dedicated to provide assistance to those who require help in time of greatest need. Whether it is a medical emergency, a fire, or providing public fire prevention education, all members of the Department strive to perform professionally and competently to exceed the public's expectations. There is a pervasive and profound sense of duty to serve shared by all members.

To continue to advance and ensure that the services provided are appropriate, efficient and effective, the Department has undertaken its first Fire Master Plan. This Plan is the result of both an external review and internal analysis of the Department. The Plan benchmarks the performance of the Department against both Ontario Fire Marshall (OFM) and National Fire Protection Association (NFPA) standards. It also reflects a comprehensive internal analysis realized through a comprehensive engagement process to identify the Mission, Vision and Values of the Department and determine cultural, organizational or other issues that may adversely impact efficiency and effectiveness.

The Plan describes the current state of the Department and provides recommendations to improve service delivery. It has been developed for a five year time frame from June 2016 to July 2021.

The Report proposes strategic improvements that will make the operation of the Fire Service more efficient. It addresses the challenges of recruiting and retaining volunteer firefighters. Infrastructure has been critically examined and need for priority remediation identified.

Fire Departments are evolving with growing emphasis on prevention rather than response. Further, the legislative, regulatory and liability environment has changed markedly with far greater emphasis on safety, accountability and risk management. Performance expectations have increased dramatically such that roles and responsibilities continue to change with new responsibilities. The resulting workload will requires a different approach to staffing particularly with respect to leadership.

Advancements to technology will necessitate upgrades to out-of-date systems. Staff training must be more than achieving base level competency; it must be an ongoing process in attaining excellence.

Change is only worthwhile when the benefits exceed the costs and will only be achieved when there is support to implement and sustain the new direction. This Plan has been prepared with the active participation of the Department's Firefighters and Officers. We are confident that the recommendations are supported, can be implemented and will result in continuation of our tradition of service excellence.

Robert Bowman, Chief,
Township of Augusta Fire Service

2.0 Introduction

This Master Fire Plan will provide a framework to guide future policy, organizational, capital and operational planning decisions for the Augusta Fire Department (AFD).

The Ontario Fire Marshall (OFM) has provided a concise summary of the objectives of a Master Plan as follows:

> "*Every fire department should be guided by a master or strategic plan. This Community Master Fire Protection Plan traditionally focused on the identification of fire hazards and planning an appropriate suppression force response. Today, hazard or risk assessment has expanded well beyond the fire problem in the community to include emergency medical incidents, hazardous materials incidents and many other emergency situations. Paradigms are being shifted to emphasize the concept of fire prevention and control systems as communities attempt to effectively reduce losses experienced. This document should include plans for human resources and program financial support as well as the many external influences that impact on the fire service. The information contained within the Community Master Fire Protection Plan should provide a clear and concise overview of the most recently adopted organizational goals and objectives, budgetary commitments, mission statements and assessments of organizational activity. The document should cover a long range planning period of five to ten years.*"[1]

The *Fire Protection and Prevention Act* ("FPPA") makes municipalities responsible for the provision of fire protection services. Section 2(1) of the FPPA requires municipalities to provide: 1) public education with respect to fire safety and fire prevention; and 2) such other fire protection services as it determines may be necessary in accordance with its needs and circumstances.

Traditionally, many have assumed that requirement 2 has been met by the simple creation of the Fire Department. This view, however, is not correct in the absence of a comprehensive hazard and risk assessment and a considered matching of service to needs and circumstances. Further, what may have been an appropriate response may be out of date as a result of development or other changes as well as changing legislative requirements. Thus, the determination of what "may be necessary in accordance with its needs and circumstances" is one of the key objectives of a contemporary Fire Master Plan.

Current challenges faced by AFD are similar to those faced by many rural/urban interface fire departments in Ontario. Increased rigour from statutory and standards requirements related to firefighter health and safety, improved and more advanced suppression technology, increased skills and competencies required, changing work patterns where fewer firefighters are available for workday response, and increased emphasis on prevention and public education are examples of common themes. In addition, the presence of high risk industrial occupancies, high value residential

[1] Personal Communication, Dan Koroscil, Advisor (ret.), Ontario Office of the Fire Marshal

occupancies, extensive wildland areas as well as major rail and highway corridors present unique challenges.

3.0 Methodology

A great plan is more than the production of a report. For the document to truly 'live and breathe', be inspiring, and be successfully implemented the project methodology has incorporated the following objectives:

First, the Plan needs to reflect the collective energy of the team to build enthusiasm for a positive future and reflect both a shared sense of purpose (mission) and desired future (vision). As well, the plan needs to reflect and articulate shared values. Development of Values is critical to promoting a clear understanding of expected behaviours both in and outside the workplace.

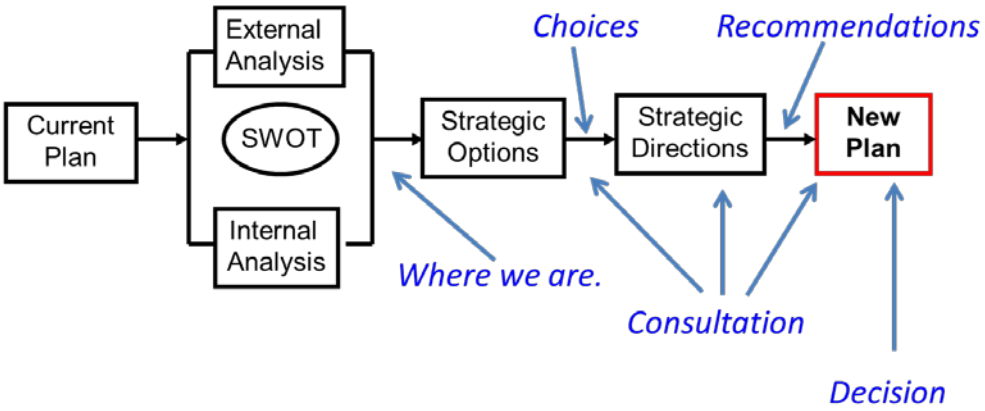
The second key objective in the development of the plan is to create a process that is inclusive, consultative and collaborative. Thus, the process has been designed to involve Firefighters, Council Members, Senior Municipal Leadership as well as Department Officers.

The third objective of the process is to build consensus and 'buy in' so there is enthusiasm, commitment and energy in the implementation of the plan. The process should not only lead to a robust Plan, it should also assist Firefighters, Council and community representation to better understand and support the Department's role and priorities.

The fourth objective is to base the plan on solid, quantitative information to ensure future direction and recommendations are based on objective evidence and recognized 'best practice'.

This Plan addresses traditional strategic planning components including Mission, Vision and Values as well as multi-year strategic directions as outlined in Figure 1.

Figure 1: Fire Master Plan Strategic Planning Framework



The Plan also addresses multi-year capital requirements related to apparatus, station assessment and location as well as tactical objectives for training, suppression, public education, fire prevention, department organization and human resource planning.

The Plan development provides extensive documentation and analysis of data to fully understand the role, challenges and performance of the Department

Hazard Identification and Risk Analysis is a critical component of the study and provides the foundation for the multi-year plan. It is the foundation by which the determination of what may be necessary in accordance with needs and circumstances. The risk analysis includes analysis of response coverage to reflect statistical need in terms of risk, population, demographics and call volume. The plan documents and evaluates emergency response times and deployment.

The existing apparatus replacement plan was reviewed and updated.

An extensive review of the existing fire stations has been conducted including consideration of location options. The review referenced National Fire Protection Association 1720 standards, Underwriters Insurance Dwelling Protection Grade standards, and Ontario Fire Marshal guidelines. Response travel time contours were developed and a comprehensive criteria matrix assessment of station location options was developed.

Recommendations are presented as a summary in Appendix I and in Appendix II in an "Action Plan" table format with clear timelines to facilitate multi-year planning, implementation and budgeting.

A SWOT analysis was performed to identify the current and likely future risks to AFD. This analysis utilized both internal and external focus groups and interviews including firefighters and officers, Councillors, CAO and Township Senior Department Heads.

Five key questions were used to guide the focus groups: *What is working well today? What do you see as the key issues facing the Department? What would you like to see changed? What would you like to stay the same? Any other advice or comments?* The results of the Five Question Interviews are provided in Appendix III.

To identify, consider priorities, and develop consensus regarding the recommendations of the Plan, a planning day occurred with participation from firefighters, officers, Chief, CAO and Councillors.

With the information gathered from the above steps, a draft report was developed and presented to the Steering Committee. A final draft was then prepared incorporating feedback from the Steering Committee. The Final Draft was presented to the Firefighters and Council. Commentary was subsequently incorporated to create the approved version of the Report.

4.0 Statutory, Regulatory and Policy Requirements

Fire Departments in Ontario operate within a statutory and regulatory environment. A key purpose of the Strategic Master Fire Plan is to ensure continued compliance with legal requirements. Further, there are a number of policy statements provided by the Ontario Fire Marshall which, although not legally mandated, are important to acknowledge and implement as part of risk management, due diligence and compliance with 'best practice'.

4.1 *Fire Protection and Prevention Act,* 1997

The relevant legislation for the operation of a Fire Department in Ontario is contained within the Fire Protection and Prevention Act, 1997 (FPPA).

The FPPA recognizes the importance of implementing the *three lines of defence* to achieve an acceptable level of fire safety within communities.

The three lines of defence are:

I. ***Public Education and Prevention****: Educating residents of the community on means for them to fulfill their responsibilities for their own fire safety is a proven method of reducing the incidence of fire. Only by educating residents can fires be prevented and can those affected by fires respond properly to save lives, reduce injury and reduce the impact of fires;*

II. ***Fire Safety Standards and Enforcement:*** *Ensuring that buildings have the required fire protection systems, safety features, including fire safety plans, and that these systems are maintained, so that the severity of fires may be minimized;*

III. ***Emergency Response:*** *Providing well trained and equipped firefighters directed by capable officers to stop the spread of fires once they occur and to assist in protecting the lives and safety of residents. This is the failsafe for those times when fires occur despite prevention efforts.*

The FPPA requires each Municipality in Ontario to establish fire prevention and protection services as follows:

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

Further, Section 8 (1) of the FPPA provides that *"There shall be a Fire Marshal who shall be appointed by the Lieutenant Governor in Council"*. FPPA specifies the duties of the Fire Marshal which include responsibilities to assist in the interpretation of the Act, to develop training and evaluation systems and enforcement of the Act and its regulations.

4.2 *Fire Code*

The Fire Code is a regulation made under the Fire Protection and Prevention Act (FPPA). It provides the minimum legal requirements and measures for the fire safety of persons and buildings, including the elimination or control of fire hazards in and around buildings, the maintenance of life safety systems in buildings, the establishment of a fire safety plan in certain buildings and the installation of smoke alarms and carbon monoxide alarms.

The owner is responsible for complying with the Fire Code. The municipal fire department enforces the Fire Code. The FPPA Part III Section 11(1) specifies that the Fire Chief of every fire department and any member of a fire prevention bureau as part of a fire department can issue Orders to Owners/Occupants to ensure compliance with the Ontario Fire Code.

Fines for violation of the Fire Code can be quite significant. Examples under the Provincial Offenses Act Part I Fines:

- Failure to install smoke alarms - $295.00
- Failure to install carbon monoxide alarms -$295.00
- Failure to make records available to Fire Inspectors - $195.00
- Individual - Fire Code Violation – Maximum $50,000 fine + 1 year in prison
- Corporation - Fire Code Violation – Maximum $100,000 fine + 1 year in prison

4.3 *Public Fire Safety Guidelines*

The Ontario Fire Marshal (OFM) has developed Public Fire Safety Guidelines (PFSG) to assist municipalities in making informed decisions with regard to determining local "*needs and circumstances*" and achieving compliance with the FPPA. The guidelines are intended to be used to assist in the development of a municipal fire risk management program.

Relevant PFSG's to the Strategic Master Fire Plan include:

PFSG 00-00-01 "Framework for Setting Guidelines within a Provincial-Municipal Relationship"

PFSG 00-00-01 provides interpretation and advice regarding the delegation of responsibilities and relationship between the Province and municipalities regarding fire protection, suppression and public safety. The PFSG notes:

> "*Municipalities are compelled to establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention. The Act also states that municipalities are responsible for arranging such other fire protection services as they determine may be necessary according to their own needs*

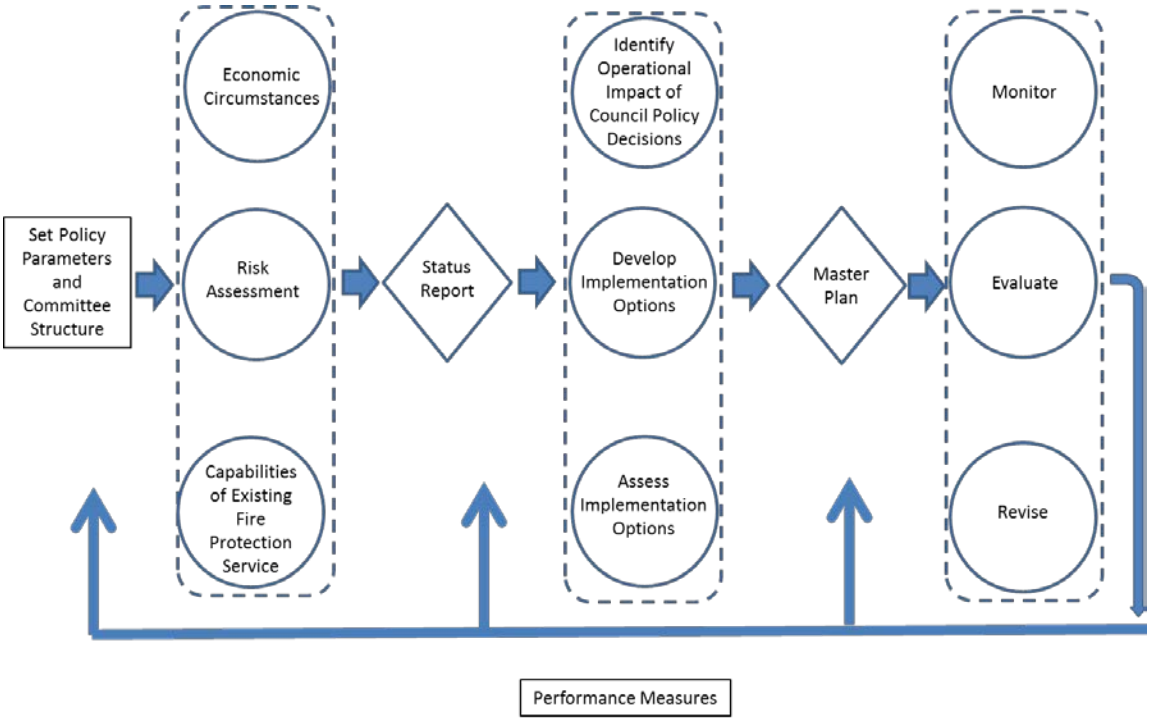
and circumstances. The relationship between the province and municipalities is based on the principle that municipalities are responsible for arranging fire protection services according to their own needs and circumstances". [2]

The PFSG has the following objectives:

- Clarifying municipal responsibility for local fire protection, while protecting the provincial interest in public safety.
- Removing remaining legislative barriers which forestall the restructuring and reorganization of municipal fire services.
- Facilitating a shift in focus which places priority on fire prevention and public education as opposed to fire suppression.
- Providing municipalities with decision-making tools to help them provide services according to their own needs and circumstances.
- Facilitating more active involvement of the private sector and other community groups in fire prevention and public education through the Fire Marshals Public Fire Safety Council.

Figure 2 illustrates the "Optimizing Public Fire Safety" model application of the guidelines.

Figure 2: Optimizing Public Fire Safety



[2] http://www.mcscs.jus.gov.on.ca/english/firemarshal/fireserviceresources/publicfiresafetyguidelines/00-00-01.html

PFSG 04-40-03 "Selection of Appropriate Fire Prevention Programs"

PFSG 04-40-03 and 04-40-12 identify the four minimum requirements to comply with FPPA Section 2. (1) (a) *"establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention*".

The requirements include: 1) Simplified risk assessment, 2) A smoke alarm program, 3) Fire safety education material distributed to residents/occupants; and 4) Inspections upon complaint or when requested to assist with code compliance.

PFSG 04-08-10 "Operational Planning: An Official Guide to Matching Resource Deployment and Risk"

PFSG 04-08-10 provides interpretation as to the requirements under the FPPA Section 2. (1) (b) "*provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances"*.

The key concept in this PFSG is that "*Fire suppression is one aspect of the three lines of defence; the other two lines are Public Education and Prevention and Fire Safety Standards and Enforcement. A municipality needs to evaluate its existing fire suppression capabilities to ensure that it is managing all fire risk levels within the community, responding to and addressing fires that occur, and meeting public and council expectations"*. [3]

PFSG 01-02-01 "Comprehensive Fire Safety Effectiveness Model"

PFSG 01-02-01 was developed to assist municipalities in evaluating their level of fire safety. It identifies eight key components, all of which impact on the fire safety of the community. The components include:

1. **Assessing Risk -** identify potential fire risk scenarios such as older buildings, high rise, commercial and industrial occupancies, vulnerable occupancies, water supply, exposure risks, and the risk which the combination of these factors pose to the occupants.
2. **Fire Prevention Program Effectiveness -** Enforcement of regulations (codes) and standards.
3. **Public Attitude -** Improve public attitudes toward the prevention of fire.
4. **Detection Capabilities -** Notify occupants to escape.
5. **Built-in Suppression Capabilities -** Automatic sprinkler protection.
6. **Intervention Time -** Fire Department intervention time is crucial in determining the consequences of a fire.
7. **Fire Ground Effectiveness -** affects the degree of damage to the environment, property loss, personal injury and death from fire.

[3] http://www.mcscs.jus.gov.on.ca/english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-08-10.html

8. **Impact of Fire - P**roperties whose loss would result in a significant financial burden to the community, significant impact of local employment, significant environment risk, impact of a major fire?

The components are seen as interdependent. Deficiencies in one of the components can be offset by enhancements in another component or components. For example, by developing programs and providing resources to effectively implement the first line of defence, a proactive public education and prevention program, the need for the other lines of defence can be reduced.

The Model acknowledges that Municipalities must manage increasing public expectations as well as budget pressures. It suggests Fire services within Ontario must critically assess their fire protection needs and identify new, innovative ways to provide the most cost effective service. There is more to providing fire protection services than fighting fires.

The Model suggests that every municipality should be guided by a master or strategic plan covering a planning horizon of five to ten years. It promotes shifting from the traditional focus of fire suppression to a more comprehensive risk assessment and use of fire prevention and control systems.

PFSG 01-01-01 "Fire Protection Review Process"

Analysing local circumstances is a core component of the fire master planning process. PFSG 01-01-01 identifies the three main issues that define local circumstances including the guidelines to be utilized including:

- *PFSG 02-03-01 "Economic Circumstances,*
- *PFSG 02-02-03 "Comprehensive Community Fire Risk Assessment*" and
- *PFSG 02-04-01 "Capabilities of Existing Fire Protection Services*.

Detailed analysis of these components are included within this report to provide the background and rational to support the recommendations of this the Plan.

PFSG 04-40D-03 Inspections upon Request or Complaint

This PFSG[4] is designed to assist fire departments in developing procedures to ensure that fire safety inspections are conducted, pursuant to the Fire Code, upon request or complaint. Although building owners are responsible for carrying out the provisions of the Fire Code, *Fire Services have a public safety interest in ensuring that buildings are maintained in accordance with the provisions of the Fire Code to prevent fires, protect occupants as well as firefighters should a fire occur.*

Inspections of properties must be conducted, or arranged for, by the municipality when:

- A complaint is received regarding the fire safety of a property;

[4] http://www.mcscs.jus.gov.on.ca/english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40d-12.html

- A request is made by a property owner or occupant for assistance to comply with the Fire Code where the involvement of the Chief Fire Official is required; and
- The fire department becomes aware of Fire Code violations and/or other fire hazards at a particular property. ***This clause is particularly important as it is increasingly being interpreted as rational for pro-active fire inspections of occupancies where there are known fire hazards.***

The PFSG provides interpretation regarding the following key Regulations that must be enforced by Fire Services in Ontario

Ontario Regulation 365/13 – Mandatory Assessment of Complaints and Requests for Approval – requires that fire safety assessments and inspections, if necessary, be undertaken as directed by the Fire Marshal for:

(1) every building or property for which a fire safety complaint is received; and

(2) every building or property for which a request for assistance to comply with the Fire Code is received and the involvement of the Chief Fire Official is required.

Ontario Regulation 364/13 – Mandatory Inspection – Fire Drill in Vulnerable Occupancy – Requires that fire safety inspections be undertaken, as directed by the Fire Marshal, for every care occupancy, care and treatment occupancy and retirement home for which an annual fire drill is required by Sentence 2.8.3.2.(2.1) of Division B of the Fire Code.

Further, the following directives have been created as part of this Guideline to assist Municipalities in understanding and complying with their responsibilities regarding:

- Fire Marshal Directive 2014-001, Registry of Vulnerable Occupancies
- Fire Marshal Directive 2014-002, Vulnerable Occupancies – Fire Drill Scenarios, Fire Drill Observations, Fire Safety Inspections
- Fire Marshal Directive 2014-003, Inspections of All Buildings

The guideline states that the fire department's fire prevention policy and operational guidelines should contain criteria to determine how quickly and in what manner a complaint/request is addressed as well as appropriate follow-up with enforcement may be required to ensure corrective action has been taken.

The following factors should be considered when developing Fire Department Prevention Guidelines and Policies:

- The type of inspections to be conducted and the buildings to be inspected.
- The methods of inspection appropriate for the circumstance. This will have implications for the amount of time required to inspect, as more comprehensive inspections require more time.
- The classification of buildings being inspected and the skills and knowledge required to inspect them. The more complicated the building, the more skill and knowledge required.
- Technical assistance required to assist with conducting the inspection, e.g. Electrical Safety Authority, Professional Engineer.

- The seriousness of the complaint received.
- Records management policies (Inspection history of the building including non-compliance or Inspection Orders issued).

Fire departments are expected to respond to requests to assist owners to comply with fire safety legislation in accordance with Directive 2014-003.

Conducting complaint inspections will assist communities and their fire departments to mitigate liability concerns. A complaint may be received from a number of sources including: the public, fire suppression crews, outside agencies or government ministries. Complaints are often initiated as a result of a dispute. Therefore it is important that the inspector must demonstrate impartiality and remain focused on the fire safety concern that has been raised. Any fire code violations or other fire and/or life safety hazards identified during the inspection must be reported to the property owner or other person having responsibility for the property.

When a fire department becomes aware of a Fire Code violation or other fire and/or life safety hazard at a property, it is necessary to conduct an inspection to confirm the violation or hazard, and take the required steps are taken to ensure the owner corrects the violation or eliminates the hazard.

When an owner is unwilling to comply with the Fire Code or correct a fire and/or life safety hazard voluntarily, the fire official should exercise their enforcement authority provided by the FPPA. ***Failure to do so could expose the municipality to potential liability for failing to exercise due diligence.***

The PFSG strongly encourages Code enforcement inspections of high risk properties. High risk properties identified include:

- Properties where a fire would have a significant impact on the community, (employment, social, environmental impact);
- Assembly occupancies;
- Multi-unit residential occupancies;
- Industrial occupancies;
- Older buildings in downtown core;
- Care and treatment occupancies;
- Care occupancies; and
- Retirement homes.

Once a community's fire risks have been identified, inspection programs which are most likely to address these risks should be implemented. Inspection priority should be based on the degree of risk. The frequency of the inspections will depend on the resources provided by the municipality or as regulated.

The following are other relevant PFSG's. All are available at the Ministry of Community Safety and Correctional Services OFMEM home page http://www.mcscs.jus.gov.on.ca/.

04-38-15	Role of Assistant to the Fire Marshal
04-39-12	Fire Prevention Effectiveness Model
04-40-12 & 03	Selection of Appropriate Fire Prevention Programs
04-40A-12 & 03	Simplified Risk Assessment
04-40B-12 & 03	Smoke Alarm Program
04-40C-12 & 03	Distribution of Public Fire Safety Education Materials
04-40D-12 & 03	Inspections upon Request of Complaint (Fire Code)
04-41A-13	Community Fire Safety Program
04-45-12 & 03	Fire Prevention Policy
04-47-12	Development of Fire Prevention By-laws
04-48-12	Liaison with Building Department
04-49-12	Liaison with Other Government Agencies and Individuals
04-50-12	Fire Safety Inspection Practices
04-52-12 & 03	Fire Investigation Practices
04-60-12	Records Management
04-80-01 & 23	Fees for Services
TG-01-2012	Fire Safety Inspections and Enforcement

5.0 Community Profile, Hazard Identification and Risk Assessment

5.1 Community Profile

Augusta Township, a community of opportunities, is one of the oldest townships in Ontario with roots dating back to the 1700's. It is a township in the United Counties of Leeds and Grenville; located in eastern Ontario, Canada. Augusta is situated along the Saint Lawrence River, and extends back into rural hamlets. The Township is located between the City of Brockville to the west, and the Town of Prescott to the east.

The land area is 315 sq. km.

The hamlets and villages within Augusta were established prior to the 1900s; primarily by the United Empire Loyalists. There are many buildings and homes still standing in the township today that were built by early settlers, many of which are occupied by direct descendants.

Communities include Algonquin, Domville, Maitland, Maynard, North Augusta and Roebuck. A number of large industries are located in Augusta including Ultramar Maitland Terminal, Dyno Nobel, Prax-Air, E.I. du Pont Canada Company, Invista Canada and Evonik Industries. Augusta is also home to many small businesses and agricultural operations. There is a designated Business Park is located on County Road 2 near Highway 401.

The 401 highway, main trans-Canada rail line and trans-Canada pipeline pass through the Township. There are 294 km of County and Township Roads

5.2 Demographic Profile

Table 1, 2 and 3 presents a demographic summary of the Township. In 2011, the population was 7,430. Growth has been modest over the past decade and is expected to remain modest with an increase of about 300 persons by 2021.

There is a modest seasonal population increase of 3.2%. The proportion of elderly is 17.4% significantly higher than the Provincial average of 14.6%. Approximately 6% of the labour force lives and works in the Township.

Table 1: Augusta Township Demographic Profile

	2006	2011	2021*	2031*
Population	7,510	7,430	7,720	7,820
Occupied Households	2,770	2,860	3,060	3,210
Seasonal Dwellings	3.2%	2.1%		
Employment within Augusta	1,240	1,130		
% live & work within Augusta	6%	6%		

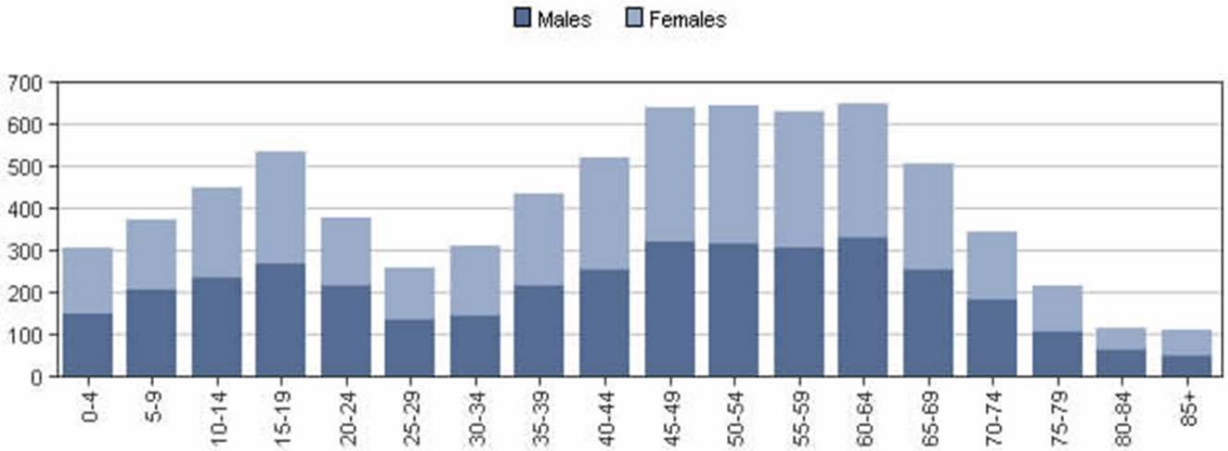
*Forecast
Source: Leeds & Grenville Official Plan Growth & Settlement Analysis 2014

Table 2 Augusta Township Population by Age Groups (2011 Census)

Age	Number	% of Total Population
0 – 14	1130	15.2%
15 – 64	5010	67.4%
65 and over	1290	17.4%
Total	7430	100.0%

Source: : https://www12.statcan.gc.ca/census-recensement/2011/as-sa/fogs-spg/Facts-csd-eng.cfm?LANG=Eng&GK=CSD&GC=3507006

Figure 3: Augusta Township Population by five-year age Age Groups (2011 Census)



Source: Statistics Canada https://www12.statcan.gc.ca/census-recensement/2011/as-sa/fogs-spg/Facts-csd-eng.cfm?LANG=Eng&GK=CSD&GC=3507006

5.3 Occupancy Profile

Table 3 presents the occupancies identified by the Ontario Municipal Property Assessment Corporation (MPAC). The occupancies reflect the predominantly rural nature of the Township with relatively few Assembly, Institutional or Industrial occupancies. There are no high rise buildings in the Township.

Table 3: Augusta Township MPAC Identified Properties

Occupancy	Number
Mobile Home Park	1
Cemetery	6
Exhibition Grounds	1
Museum	1
Library	1
Fire Hall	2
Single-Family Detached	2514
Rooming or Boarding House	1
Mobile Home	9
Multi-Residential, With 7 or More Units	2
Other Residential	86
Place Of Worship	12
School	2
Restaurant	1
Small Office Building, Retail, Medical/Dental	19
Automotive Fuel Station	1
Specialty Automotive Shop	13
Motel	1
Communication Buildings	5
Day Care	1
Clubs, Sports Facilities	7
Community Hall	7
Petro chemical plants, transformer stations, pipeline stations)	27
Gravel Pits	18
Railway Right of Way	1
Farms with Residence and/or Structures	218
Total	**2957**

Source: MPAC Property Code Report August 26, 2015 Note : Total Does not include vacant properties

5.4 Major Hazard Identification

Within the generic classifications there are a number of occupancies worthy of note from a hazard analysis perspective.

5.4.1 Chemical Plants

There are four major Chemical Sites including:

Invista Site: This is the former site a Dupont multi-product chemical manufacturing plant that no consists of several plants including Invista, Chernours and Evonik.

Invista: The Adpic Acid production facility was shut down and mothballed in 2009. The Amines, Power House, and Hydrogen operations continue to operate 24/7.

The following list illustrates the Type and quantities of chemicals produced and stored on site:

Chemical Name	Max Quantity on Site (Tonnes)
3-MP (3-Methylpiperidine)	2079
MGN (Methylglutaronitrile)	2900
Anhydrous Ammonia	95
Aqua Ammonia > 10% <35% solution	136
Caustic Soda,25% SOLUTION	92
Hydrocloric Acid	6
Methyl Alcohol	45
Methylglutaronitrile	5530
Phosphoric Acid (85%)	9
Sodium Hypochlorite (10-15%)	40

There are 98 employees on-site. There is an on-site Industrial Fire Brigade trained following NFPA 600 for interior structural and advanced exterior fire attack as well as hazmat and medical response. Fire Brigade minimum staffing of 6 including the Officer and comprised of members from all 3 companies (INVISTA, Chemours, Evonik). Emergency Command Centre equipped with real-time computer release modeling, headcount tracking and automated alert messaging to nearby residents.

There has not been recent Joint response training with Augusta Fire or joint inspections. Orientation with AFD took place May 11, 2016.

Potential technical rescue requirements include Water, confined space and high angle. Rescue services contracted for planned work involving confined spaces or elevated work.

Specialized PPE/equipment available:

- Respirators and various chemical cartridge filters (multigas, organic vapour, acid gas, ammonia, chlorine,)
- SCBA
- Breathing Air compressor
- 5 and 10 minute escape packs
- Fire retardant and chemical protective clothing
- Hazmat- Class B coverall suit, Class A totally encapsulating suit

Decontamination materials available:

- Savage drums
- Absorbent T-156 Pads
- Absorbent P-300 Pillows
- Absorbent HP-100 rolls
- Absorbent P-212 and T-280 Booms
- Genisorb, Speedi-dri, Soda Ash

Firefighting equipment available:

- Pressurized water hydrant available 24/7 near main parking lot for municipal use
- 800 gal fire foam mobile trailer (Nation Gold AR-AFFF). Available through Leeds& Grenville Mutual aid
- Fire hose, nozzles, fittings
- Vetter lift bag, Vetter leak seal bag

Chemours

Chemours is a **c**hemical manufacturing facility producing fluoroproducts specifically refrigerants and related by-products. It was created in July 2015 as a spin-off from DuPont. There are 37 employees and the plant maintains continuous 7/24 operation. The plant personnel participate in the Invista site Fire Response Team. There is tank storage of chemical raw materials and products. Delivery and shipment is by both truck and rail. No known recent dates for AFD inspection or joint training.

Chemicals on site include:

- **HCFC—l23**: HCFC-123 is hydroflorocarbon refrigerant manufactured in a continuous reaction and sold as a finished product.
- **HCFC-124**: HCFC-124 is a hydrofluorocarbon by-product of the manufacture of HCFC-123.
- **Hydrogen Fluoride**: Hydrogen Fluoride is one of two raw materials used in the manufacture of HCFC-123 and HCFC-124. Up to 120,000 kgs may be stored (Tank & Rail Car)

- **Tetrachloroethylcnc**: Tetrachloroethylene (Perchloroethylene) is a raw material used in the manufacturing process of HCFC-123. Up to 130,000 kgs may be stored (Tank & Rail Car)
- **Sodium Fluoride**: Sodium Fluoride is created in the in the neutralization process.
- **Hydrogen Chloride**: Hydrogen Chloride gas is created in the reactor as a distillate from the crude HCFC-123. HCl product is sent to the HC1 gas is recovered as aqueous Hydrochloric Acid. The final product is sold as 36% HC1. Up to 180,000 kg's Hydrochloric Acid solution may be stored on site (Tank & Rail Car)
- **Formacel Z6**: Formacel Z6 is a foam expansion agent. Up to 30,000 kg's may be stored on site.

Evonik

Produces Hydrogen Peroxide (50% and 70% concentrations). On site, it has 600 metric tonnes (MT) of Hydrogen Peroxide, 450 MT Organic Solution, 18 MT Sulphuric Acid, 6 MT Sodium Hydroxide (Caustic Soda) 2 MT of Aqueous Ammonia. There are 27 employees and the plan operates 24/7. Evonik contributes personnel to the Invista site fire crew. At least one Evonik fire crew-trained employee must be on site at all times. Site personnel are not trained for confined space rescue, high angle rescue or trench rescue. Site Fire crew personnel are trained in the use of Level A Suits for toxic vapours and fumes. No known recent dates for AFD inspection or joint training.

Dyno Nobel:

The site formerly produced urea ammonium nitrate fertilizer and nitric acid. It ceased production in 2010-12. The equipment has been mothballed. The site currently transloads the products once produced here. On-site in storage there is normally 1,000 tonnes of ammonium nitrate solution, 4,000 tonnes of ammonium nitrate prill and 75 tonnes of nitric acid. There are 10 full time staff and the site operates 24/7. No known recent dates for AFD inspection or joint training. Plant staff have expressed interest in doing a joint table top exercise.

Valero (formerly Ultramar) Maitland Terminal

The Terminal is a bulk tank farm receiving and distribution Center. Product delivery is via Trans-Northern Pipeline, rail tank cars & bulk tankers. Distribution is via bulk tankers (Canadian and American). Products are moved internally through pipelines. Storage Capacity: Gasoline – 13,318,000 litres,

Distillate (Diesel) – 17,054,000 litres, Ethanol – 917,000 litres. The Facility has extensive automated detection and suppression apparatus (i.e. foam) in place.

AIRGAS – Maitland Nitrous Oxide Plant

The Maitland Nitrous Oxide Plant manufactures tests and stores Nitrous Oxide. Nitrous Oxide is produced from the decomposition reaction of Ammonium Nitrate.

Structures include a building, which houses the administrative office, laboratory, and cylinder storage and manufacturing process.
Outside above ground storage tanks are used for raw materials and finished product.

The main structure on the property houses process equipment used in the manufacture of Nitrous oxide including a reactor, gas fired boilers, high-pressure compressor, and low temperature refrigeration.

There is one 50 ton and three 24 ton nitrous oxide solution storage tanks. All tanks are fitted with low temperature refrigeration units and are above ground. Nitrous oxide is stored as a refrigerated liquid and quickly vaporizes at atmospheric conditions. Nitrous Oxide vapor can decompose explosively given the right temperature, pressure and ignition source.

There are also two 100-ton ammonium nitrate storage tanks which are steam heated to maintain desired temperature. Ammonium nitrate decomposes in temperatures normally well above 200 °C. However, the presence of impurities (organic and/or inorganic) can reduce the temperature point when heat is being generated. The heat generated as it decomposes will accelerates the rate of decomposition and an explosion will most likely explode.

Other chemicals present on site include:

Chlorodifluoromethane (R-408)	150 lbs
Helium, compressed	1800 ft3
Potassium Permanganate	1400 lbs
Acetylene	60 lbs
Oxygen, compressed	600 ft3
Sodium Hydroxide (caustic soda beads)	3000 lbs
Oxalic Acid	1000 lbs
Nitrogen, compressed	1200 ft3
Phosphoric Acid	

Hazards include Fire, explosion, spills or other material release including toxic gases. Plant personnel are trained and expected to manage minor chemical leaks. They are not expected to fight fires although may use hand extinguishers at the incipient stage. Should a significant event occur,

plant personnel will evacuate and contact local first responders as well as third party emergency responders and spill clean-up contractors.

There are 4 full-time staff employed at the plant. Operations vary from 24-5 when busy and some weeks only work days 8 to 4. There has been no joint response training, joint inspections or orientation with AFD.

5.4.2 Limerick Forest

Within Augusta Township there are eight managed forest properties including Limerick Forest. Limerick Forest is a 5782-hectare community forest owned and managed by the United Counties of Leeds and Grenville. The Township of Augusta has 1,543 hectares of the forest within its boundaries. Conifer plantations (red pine, jack pine, white pine and white spruce), account for approximately one third of the total area of Limerick Forest resulting from reforestation of abandoned farmland. The remainder of Limerick is comprised of wetlands and second growth mixed forest, in roughly equal proportions of one third each.

In addition to hazards associated with wildland fires, the forest is used extensively for recreation including snowmobile, dirt bike and ATV trails, mountain biking, horse back riding, hunting, and hiking. Permanent structures, overnight camping and campfires are not permitted, however, campfires are common.

5.4.3 Long Term Care and other Vulnerable Occupancies

Within the Township, there are no occupancies designated under the Long Term Care Act or Retirement Homes Act.

There are two facilities which offer residential accommodation designed for seniors. Meadowview Manor is an eleven unit, single story residential that has ten 1-bedroom suites and one 2-bedroom suite. It is located in the hamlet of Algonquin. Green Acres Retirement Home has a capacity of 14 beds. Three beds are designated for short stay, respite, and convalescent care. It is a two story frame structure with stairs. It is located proximate to the hamlet of Maynard.

Regulation 150/13 changed the definition of Care Occupancies within the Ontario Fire Code such that Care occupancy means an occupancy in which special care is provided by a facility, directly through its staff or indirectly through another provider, to residents of the facility;

(a) who require special care because of cognitive or physical limitations; and,

(b) who, as a result of those limitations, would be incapable of evacuating the occupancy, if necessary, without the assistance of another person.

Both facilities require that their residents be mobile, independent and able to cope with activities of daily living in an independent living setting. The issue that can potentially arise is that while the facilities do not provide care directly, it is possible that special services are, or may be provided *indirecty* as a result of the cognitive or physical requirements of the residents.

Such limitations may impact the ability of the person to evacuate the occupancy without the assistance of another person. Thus, depending on the physical and/or cognitive limitations of the residents, the facilities may come under the Fire Code requirements as a Vulnerable Occupancy.

5.4.4 Emergency Management Hazard Identification & Risk Assessment

In compliance with the *Emergency Management Act*, the Township has completed an identification of hazards and assessed their associated risks to determine which hazards are most likely to result in an emergency. This has resulted in creation of Hazard Identification and Risk Assessment Sheets (HIRA) which identify the type of hazard, probability of occurrence and relative consequence. Table 4 presents a summary of the HIRA results. The yellow highlight indicates hazards that directly impact Fire Services.

Table 4: Summary of Township HIRA High & Medium Priority.

Hazard	Probability	Consequence	Priority
General Electric Power Failure	3	4	HIGH
Road Transport HAZMAT Incident	3	3	HIGH
Rail Transport HAZMAT Incident	3	3	HIGH
Invista	3	4	HIGH
Nyno Nobel	3	4	HIGH
Ultramar	3	3	HIGH
Severe Weather	2	2	HIGH
Stressed Power Grid	3	2	MEDIUM
Communications Failure	3	2	MEDIUM
Extreme Heat/Humidity	3	2	MEDIUM
Road Transport Mass Casualty	3	3	MEDIUM
Rail Transport High Casualty	2	3	MEDIUM
Ice Storm	2	3	MEDIUM
Forest Fire / Wildfire	2	2	MEDIUM
Chemical Transport CR 15 S & CR 2E	2	3	MEDIUM

5.5 Historic Call Volumes

Analysis of emergency response calls over time provides a useful perspective on the type and frequency of hazards. Table 5 illustrates the type and frequency of annual calls between 2010 and 2015 including the six year average.

Table 5: Augusta Fire Annual Call Volume

	2010	2011	2012	2013	2014	2015	Average
Medical Assist	26	24	29	29	24	31	27.17
Motor Vehicle Accidents	27	32	27	26	30	15	26.17
Structure Fires	14	12	16	17	16	24	16.5
Activated Alarms	19	17	17	15	15	22	17.5
Brush / Grass Fires	8	16	27	10	5	18	14
Gas Leak or Spill	8	5	3	9	3	4	5.33
Power Lines Down	2	5	3	2	2	1	2.5
Carbon Monoxide	5	3	1	3	3	4	3.17
Vehicle Fires	7	11	11	0	0	0	4.83
Assistance to Other Fire Department	5	2	4	5	3	2	3.5
Other	10	12	14	24	20	41	20.17
Total	131	139	152	140	121	162	140.83

Based on the most recent 6 year period, AFD responds to an average of 141 calls per year, with an average of 27 medical calls, 26 motor vehicle accidents and 31 structure/grass/ wildland fires.

As shown in Figure 4, annual calls have remained relatively constant. Fire calls have been increasing which may be reflective of weather variation. (grass & wildland fires).

Figure 4: Annual Augusta Fire Calls by Year

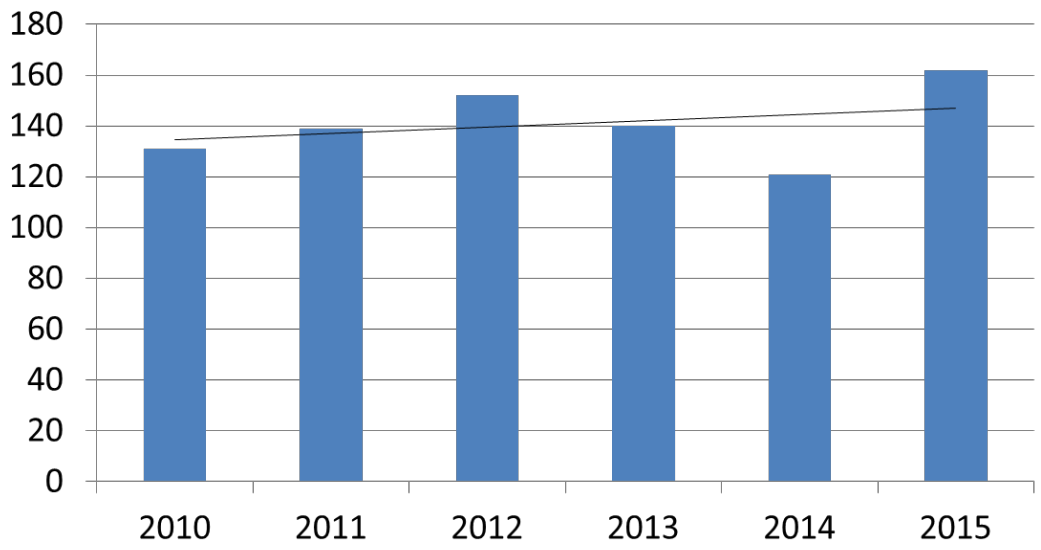


Figure 5 illustrates the annual number of structure fires.

Figure 5: Annual Number of Structure Fires.

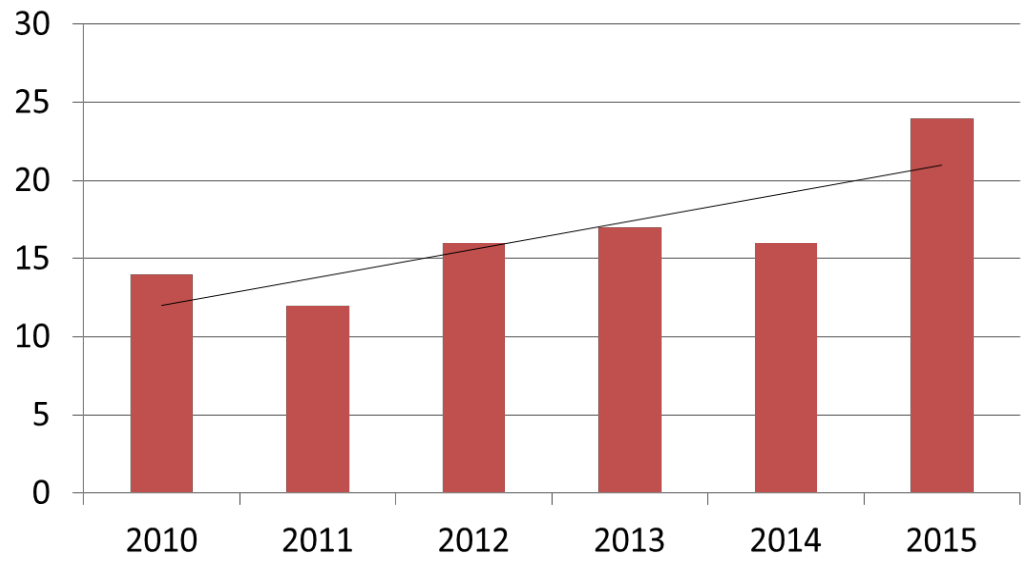


Figure 6: Annual Number of Calls for Brush/Grass Fires.

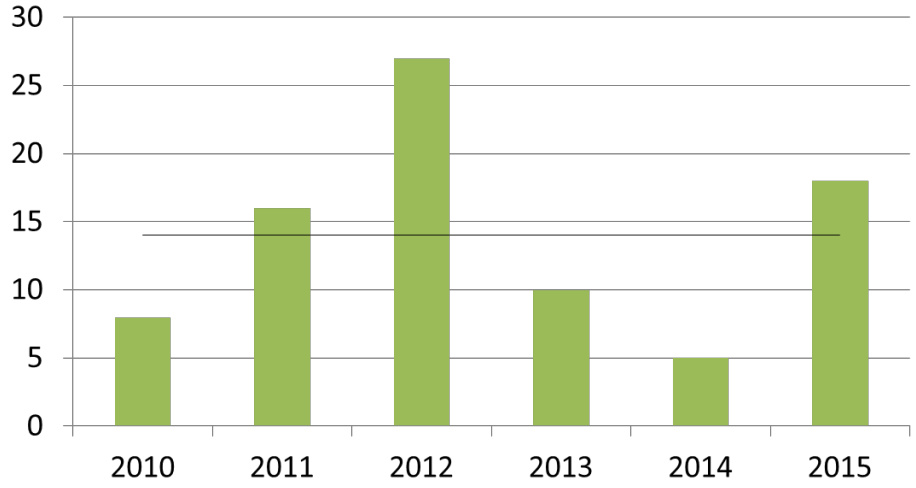


Figure 7: Annual Number of Medical Calls

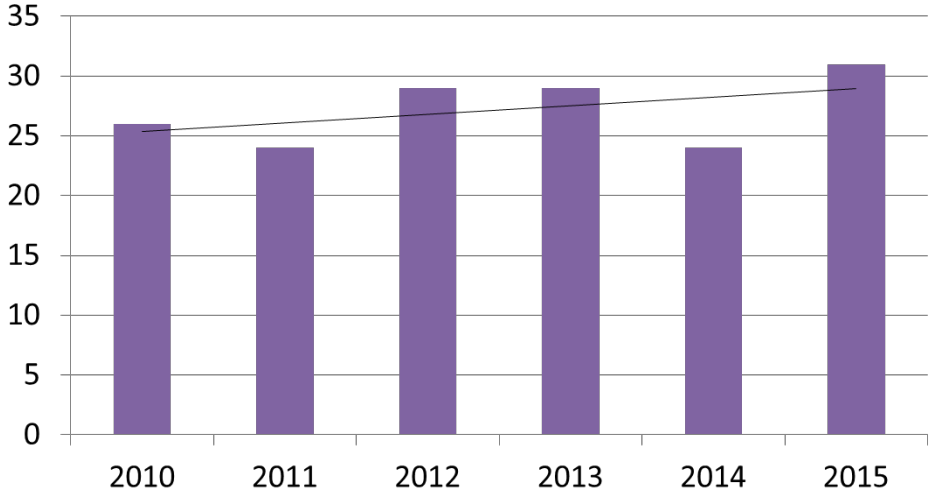
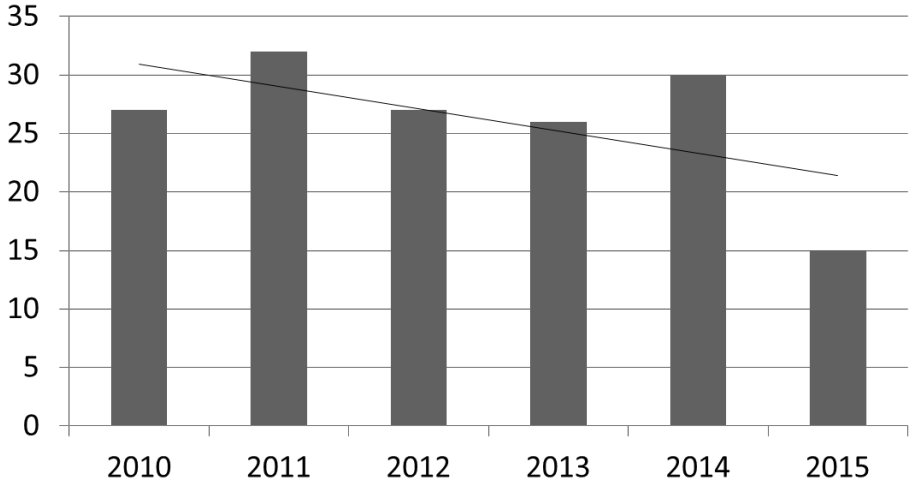


Figure 8: Annual Number of Motor Vehicle Collisions



5.6 Hazard Analysis and Risk Assessment

The emergency response profile illustrated in Figures 4 through 8 is somewhat different from other rural fire departments in that typically structure fires are decreasing and medical calls tend to form a large proportion of the call volumes. Structure Fires in Augusta appear to be increasing and medical call volume is not disproportionally the major call volume.

Motor vehicle accidents are higher as a proportion likely due to the presence of the 401 highway. Grass/wildland fires as well as 'lines down' vary significantly by year depending on weather.

Over the past five years, AFD has not required advanced technical rescue services such as trench, confined space, hazmat, water, ice, or high angle. Prescott and Brockville provide ice and water rescue as well as aerial apparatus support. Other advanced technical rescue resources are available from larger municipal departments including Kingston and Ottawa.

The presence of the St. Lawrence Seaway, Highway 401, major rail lines with high volume passenger and freight, as well as weather related events create the potential for multi-casualty events as well as major environmental issues. Planning and training for multi-casualty and major environmental events should be incorporated in the annual training curriculum.

The documentation of building occupancies identified a number of high-risk concerns including major chemical plants and a potential vulnerable person occupancies. Pre-plans as well as specific inspection and other fire-prevention strategies should be developed for these occupancies. Specific recommendations will be provided later in the report under "Strategic Directions".

5.7 All Hazards Approach

Section 5.6 illustrates that Augusta Fire Services has a much broader mandate than fighting fires. With better public awareness, fire prevention strategies, improved construction and implementation of technology such as smoke detectors, structure fires have been decreasing over time. Fire Departments have evolved from primarily fighting fires to becoming increasingly competent in managing a wide range of responses including emergency medical services and incidents requiring highly skilled technical rescue.

At the same time, except perhaps in the Nation's largest cities, Fire Departments cannot be all things to all people. The rigour and associated training as well as equipment requirements to assure scene safety, avoid potential civil and/ or statutory liability and financial limitations have caused Fire Departments to critically examine the breadth and depth of services they provide.

The challenge that presents as a result is the paradox of, on one hand, restricting capability to those services that can be afforded and delivered safely yet, on the other hand, still providing the services that the public requires.

The strategy that has emerged to meet this challenge is an integrated emergency management system known as "All-Hazards".

In Canada, the federal, provincial and territorial governments have jointly published *"An Emergency Management Framework for Canada"*[5] which establishes a common approach for collaborative emergency management.

As a core principle, the Framework supports a comprehensive approach to emergency management which is proactive, integrates risk-based measures and is all-hazards. The Framework defines the all-hazards approach as the method by which vulnerabilities exposed by both natural and human-induced hazards and disasters are addressed.

The *Emergency Framework for Canada* articulates the expectation that all emergency management partners in Canada will work in collaboration to keep Canadians safe. The Framework acknowledges that in an emergency, the first response is almost always by the local authorities as that is where incidents occur. When required resources exceed the capacity of local responders at the municipal level to cope in an emergency or disaster, nearby municipalities should be prepared to assist. If further assistance is required, the Province will respond. The federal government is prepared to respond to requests for assistance by a provincial or territorial government. For major disasters, the international community will also respond.

The key steps to implementing an "All Hazards Approach" are:

1) understand the potential emergencies that could arise in the community that would require a response that exceeds local capability,
2) develop competencies to manage the initial response,
3) identify the resources that may be required for a major event, and,
4) develop the protocols and agreements to access services that may be required for a major event.

[5] (http://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/mrgnc-mngmnt-frmwrk/index-eng.aspx#a02)

6.0 Mission, Vision and Values

A compelling theme in the academic analysis of great organizations is that there is a shared common understanding regarding the organization's purpose, where it wants to be and values that drive service excellence. This common understanding is fundamental to a positive, constructive organizational culture where performance thrives. Clear articulation of a compelling, inspirational Mission, Vision and Values that genuinely reflects the aspirations and beliefs of the organization is fundamental to this goal.

MISSION (*What we do*)

To professionally provide protection and assistance to residents and visitors of Augusta Township from the effects of fires, medical emergencies and dangerous conditions. We achieve this through public education and prevention as well as emergency response.

VISION (*What we aspire to do.*)

We strive to deliver innovative All Hazard emergency response, public education and prevention services in an effective, efficient manner with utmost pride, professionalism and respect.

VALUES

Our Values provide the guiding principles as to how we work together to deliver our mission and achieve our vision. Our Values include:

***Excellence**: We are committed to continuous improvement, learning and innovation*

***Teamwork:** We understand the importance of cooperation and working together, valuing the contribution of each other and recognize the value of diversity.*

***Respect:** We are respectful of each other and those we serve.*

***Safety:** In all we do, our first priority is the safety of the Public, our community and ourselves.*

7.0 Strategic Directions:

The following Strategic Directions have been developed to provide a framework to guide the further acheivemnt of the Department's Vision over the next 5 years.

1) ***Safe Community – Commitment to deliver effective Public Education, Fire Prevention, Fire Suppression and Rescue Services***
2) ***To Develop an Organizational Culture that Supports Service Excellence.***
3) ***Accountability***
4) ***Supporting Innovation***
5) ***Strategic Management***
6) ***Collaborative Relationships***

7.1 Strategic Direction #1

Safe Community – Commitment to deliver effective Public Education, Fire Prevention, Fire Suppression and Rescue Services

Section 2 of the Ontario Fire Prevention and Protection Act provides that:

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

This section of the Act refers to what is known as the three lines of defence required to keep communities safe:

I. Public Education and Prevention*:*

Educating residents of the community on means for them to fulfill their responsibilities for their own fire safety is a proven method of reducing the incidence of fire. Only by educating residents can fires be prevented and can those affected by fires respond properly to save lives, reduce injury and reduce the impact of fires;

II. Fire Safety Standards and Enforcement:

Ensuring that buildings have the required fire protection systems, safety features, including fire safety plans, and that these systems are maintained, so that the severity of fires may be minimized;

III. Emergency Response:

Providing well trained and equipped firefighters directed by capable officers to stop the spread of fires once they occur and to assist in protecting the lives and safety of residents. This is the failsafe for those times when fires occur despite prevention efforts.

This strategic Direction "Safe Communities" recognizes the primary imperative of achieving optimal implementation of the three lines of defense. In the following section, current status of the program elements will be discussed and opportunities for further development will be noted.

7.1.1 Fire Prevention and Public Education

Current Status

Fire Prevention, Inspection and Public Education are led by the Chief, Chief Fire Prevention Officer (CFPO) and Fire Prevention Officer (FPO). All are volunteer. The Chief is the only qualified member of the Department to do inspections currently. The CFPO and FPO are new in their roles and training is in progress.

Inspections are currently carried out on a complaint or by request basis. There were 5 inspections in total in 2015. Inspections of all assembly occupancies are to be completed on a yearly basis, however, due to time constraints of a volunteer staff, this objective is not always possible.

The Department is not involved formally involved in construction or planning reviews. For some construction projects, the Chief will review the layout of the buildings and building use.

Public fire safety messages and awareness campaigns through social media are provided at recurring intervals including, Christmas Season, Spring Clean-up and Fire Prevention Week. Fire prevention information, pamphlets and fire safety literature available to the public through the fire stations, the Township Office, other locations in the community, the media and/or circulation during approved Fire Services activities.

Specific Public Fire Education and Safety Programs include:

- Yearly visit to Maynard Public School to teach fire safety with 'Sparky' and do a Fire Drill.
- Township Office and Green Acres Home Yearly Fire Drill
- During Fire Prevention Week attend Brockville Walmart for 4-5 hours one night to hand out Fire Prevention Material and answer questions.
- Fire Prevention set up at Antique Wheels in Motion, 'Food for All' Food Bank Drive, Business Fair, Pancake Breakfast, Halloween Night at Stations, Seniors CPHC meeting annually.
- Through the Prescott Journal, St, Lawrence EMC, Facebook (almost 2,000 followers), Twitter and our website we spread Fire Prevention Messages throughout the year
- Labour Day Parade, Remembrance Day participation

- **Smoke Alarm Program:** Augusta Fire Services provides a Smoke Alarm Program that promotes the installation and maintenance of working smoke alarms in dwelling units. The smoke alarm program includes home escape planning. Firefighters will test smoke alarms when they respond to dwelling units and will ensure that the dwelling unit is provided with a working smoke alarm prior to their departure. Further, information regarding the installation and maintenance of smoke alarms and the preparation and practicing of a home escape plan will be distributed to the public.
- **Carbon Monoxide Detectors:** Regulation 194/15 to amend the Fire Code came into effect October 15, 2014 to require carbon monoxide alarms near all sleeping areas in residential homes and in the service rooms, and adjacent sleeping areas in multi-residential units. Carbon Monoxide Detectors are checked along with smoke detectors as noted above.

Future Direction: Risk-Based Awareness Program, Pre-Planning and Familiarization, and Vulnerable Occupancy Inspection

Fire departments are required to enforce the new regulation during home inspections for smoke detectors. Penalties for non-compliance are the same as those for failing to have a smoke detector. Inspectors can issue tickets or lay charges that could result in fines of up to $50,000 for individuals and $100,000 for companies. Although it is possible to issue fines, the emphasis is on public awareness and education.

Various methods are being introduced by Fire Departments across the Province to implement home inspections. For example, The City of Ottawa has a “Wake Up” program which was implemented for smoke detectors. During weeklong blitzes in the spring and fall, fire inspectors visit homes and ask occupants to voluntarily admit them to see if they have smoke and carbon monoxide detectors as required by law. About 15,000 homes per year are inspected.

Distribution of Fire Safety Information: Includes distribution of fire safety educational material to the public at community events and other opportunities. Fire Safety pamphlets and/or other education materials, public service announcements utilizing the available media and through instructions to the public on fire safety matters at various group functions and public events are examples of public education and awareness activities undertaken.

Fire Safety Education for Children: This is a specific program to provide and/or support a variety of fire safety education programs for children in the community. It includes the *Learn Not to Burn Program*.

The *Learn Not to Burn* initiative is based on the Canadian edition of the National Fire Protection Association's popular children's educational series. The program has been released by the Canadian Council of Fire Marshals and Fire Commissioners and is in use in many Canadian Fire Departments. The program encourages teachers, preschool educators and parents from Ontario to use the free access to the made-for-Canada edition of the *Learn Not to Burn* curriculum. Teachers can download free *Learn Not to Burn* lessons at www.safeathome.ca/lntb, and parents can support the effort at home by using the online family fire safety activities.

A current initiative that should be adopted by the Department is the "*Hear the Beep Where You Sleep: Every Bedroom Needs a Working Smoke Alarm*" program which reinforces the importance of being able to hear smoke alarms at night when families are sleeping.

The website and classroom lessons target children aged three to eight to learn how to recognize the smoke alarm beep, what to do when it sounds, the fundamentals of a home fire escape plan, and how to tell between things that are hot and cold.

Fire Safety Education for Seniors: This initiative provides public fire safety education programs such as the Older & Wiser Program in the community to address the fire safety concerns facing seniors. Continuing to focus on this age group and implementing the fire and falls prevention program such as "*Remembering When*" will be an important priority for future development. This can be done in partnership with community agencies that provide support services to seniors. The focus of the program is on group presentations and home visits including fire and falls safety presentations and assisting with home visit inspections and smoke and carbon monoxide alarm installations.

Fire Station Tours: Providing the opportunity for tours of the fire station is an excellent opportunity to promote fire safety education.

Vulnerable Occupancies: As of January 1, 2014, Ontario Regulation 150/13 amended the Ontario Fire Code to enhance the fire safety of occupants in care occupancies, hospital/care and treatment occupancies, and retirement homes. The new requirements include an annual mandatory fire drill to ensure all duties under the approved safety plan are carried out and a mandatory Inspection Checklist to ensure fire protection systems are up to date.

There are no Group 'B' occupancies in the Township which require the annual inspection noted above. Although not required by law, expansion of the annual inspection program to multi-residential facilities or Group Homes which may be housing vulnerable individuals would be prudent. Further, as noted in the Hazards Identification section, resident needs may change such that the Vulnerable Occupancies requirements may apply.

Fire Inspection: OFM-TG-01-2012 "Fire Safety Inspections and Enforcement" provides an overview of Inspection and Enforcement authority under the Fire Protection and Prevention Act (FPPA) and the Provincial Offences Act (POA). Currently, fire inspections are done on a complaint or by request basis. Staff will also follow-up on fire hazards that are reported by the public and other officials. This practice should continue.

This request/complaint based approach, however, should be augmented with risk based, proactive inspections to reduce the risk of potential hazardous conditions. Proactive fire inspection can significantly reduce property and harm due to fire.

Due to the number of buildings and structures in the Township and limited resources, it is not possible to conduct proactive inspections of all buildings. Thus, inspections need to be priority ranked based on risk. Table 6 illustrates the occupancies that could be prioritized to support this risk-based approach. The suggested frequency of inspections is noted for each occupancy type.

Table 6: Annual Target Objective for Proactive Inspection

Occupancy	**Total Number of Occupancies**	**Ave. Hours for Inspection** (including travel time)	**Total Hours** (Annualized**)**	**Re-Inspection**
Assembly Occupancies	21	4	84	Annual
Rooming Houses / Group Homes/ Residences >7 Units	3	5	15	Annual
Motels	1	4	4	Annual
Industrial Occupancies	8	20	160	Annual
Farm Occupancies	218	4	175	Every 5 years
Commercial	33	4	66	Every 2 years
Total Hours Required per year			504	

In addition to the inspections noted in Table 6, opportunities to do joint inspections such as Hydro sub-stations, solar farms and pipelines should be actively pursued.

Note: There can be great resistance to cooperation on the part of property owners if there is a threat of fines or other punitive measures associated with fire inspections. Whether or not there is authority under law in a specific circumstance to undertake inspections and enforcement, compliance and good will is greatly facilitated with an approach which is based on education and "I'm here to help".

Recommendation #1: ***That annual inspections be undertaken as required by Ont. Reg 150/13 and a summary report be provided to Council quarterly.***

Recommendation #2: ***The request/complaint based Inspection Process be augmented with pro-active, risk-based 'education' visits with annual targets established and quarterly reports provided to Council.***

Risk-Based Awareness Program (Pre-Planning): As part of a pro-active inspection initiative, a Risk-Based Awareness Program will enhance knowledge of high-risk residential, industrial, institutional and commercial buildings and ensure there are no obstacles preventing a timely and effective fire response. Information regarding access, nature of the occupancy, potential hazards, entrances and exits as well as potential water supply can be difficult to obtain during an emergency incident.

Pre-planning provides an opportunity for Department personnel (including Firefighters) to work with building owners and/or management to gather information prior to an emergency. It provides an opportunity to get familiar with the layout of buildings and property, including the type of life safety systems, location of shutoffs, controls, response points, and any hazardous materials.

Recommendation #3: ***The Inspection/Education Process be integrated with Pre-Plan development and Training to facilitate emergency response.***

Township E&R By-Law and Departmental Policy: Section 19 of the Township's Establishing and Regulating By-Law states that *"The Chief may take all proper measures for the prevention, control and extinguishment of fires and the protection of life and property and shall exercise all powers mandated by the Fire Protection and Prevention Act, and the Chief shall be empowered to authorize:*

a) the pulling down or demolishing of any building or structure to prevent the spread of fire;

b) all necessary actions which may include boarding up or barricading of buildings or property to guard against fire or other danger, risk or accident, when unable to contact the property owner;

c) recovery of expenses incurred by such necessary actions for the corporation in the manner provided through the Municipal Act and the Fire Protection and Prevention Act;

To compliant with the FPPA requirement that *"Every municipality shall, (a) establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention, it is recommended that the Township* Establishing and Regulating By-Law *be revised to require the Chief to develop effective fire prevention, inspection and public education programs.:*

Recommendation #4: It is recommended that the Township Establishing and Regulating By-Law be revised to require the Chief to develop and provide an effective fire prevention program that will:

a) Ensure, through plan examination and inspection, that required fire protective equipment is installed and maintained within buildings,

b) ***Reduce or eliminate fire hazards,***

c) ***Ensure compliance with applicable Municipal, Provincial and Federal Fire Prevention Legislation, Statutes, Codes in respect to fire safety, and***

d) ***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.***

The Department currently does not have a Fire Prevention, Inspection and Public Education Policy

Recommendation #5: ***It is recommended that the Department develop a Fire Prevention, Inspection and Public Education Policy which requires that:***

- ***The Chief Fire Official and/or Fire Prevention Personnel will conduct inspections of the properties specified in Table 6 at the frequencies indicated.***
- ***Fire Services Personnel will conduct a home inspection program for residential dwelling units for installation and maintenance of smoke alarms and carbon monoxide detectors.***
- ***Fire Prevention Personnel examine plans and specifications of new buildings for compliance with applicable fire regulations.***
- ***Fire Services Personnel and/or other volunteers in the community will provide fire safety lectures and/or demonstrations for various public sectors such as industries, community groups, service clubs, business groups, day care facilities and schools, upon request and where resources are available.***

Coordination and Collaboration with the Building Department: A close, collaborative working relationship with the Building Department can significantly improve the effectiveness of fire prevention and education. Written policy and procedures can help define the respective roles of building and fire officials and provide a protocol regarding the review and approval of building permits, plans and proposed developments. Kingston Fire has an excellent policy document in this regard that has been shared. This document can serve as a reference document to begin the conversation regarding a policy and procedure appropriate for Augusta Fire.

Recommendation #6: ***That a Policy and Procedure be developed regarding the respective roles of the Fire and Buildings Department with respect to Building Permit and Planning Application Approvals as well as Building Inspections.***

General Public Education Initiatives: Prevention and education programs will continue to be targeted to areas of greatest risk identified through enhanced inspection and ongoing review of call volumes.

Recommendation #7: ***Specific Plans for Public Education and Awareness including Smoke and CO Alarms, in-school programs and seniors programs be developed annually and activity reports be provided quarterly to Council.***

7.1.2 Current and Future Station Location

Current Stations

The Department has two stations:

Station 1 – Maitland

- Built in 1957, additions in 1960, 1968 & 1986
- 19 Firefighters & Officers
- 2 single bays, 1 double bay
- 131 calls in 2015
- CAFS Pumper, 2nd Pumper, Tanker, Rescue Truck, Van

Station 2 – North Augusta

- Built in 1973, Renovated with addition in 2009
- 20 Firefighters & Officers
- 5 bays
- 31 calls in 2015
- CAFS Pumper, Tanker, Rescue, Pickup Truck,Wildland Trailer with UTV,

Figure 9 illustrates the location of the stations.

Figure 9: Location of Augusta Township Fire Stations

Station Building Assessment

Station 1 Description

Station 1 is located within the hamlet of Maitland, south of the 401 and CN railway tracks, immediately north of the St Lawrence River. It has four bays, offices and a meeting room. The original building was built in 1957 with three subsequent additions. The first addition in 1960 was an eastward extension of the existing garage. The second addition added two bays to the north side in 1968. A third addition to add a classroom and kitchen was added in 1986.

The building condition is poor with numerous cracks and building shifting due to the foundations being built on frost susceptible material. The bay widths, lengths and height are undersized for contemporary fire apparatus and the tight clearances present a safety hazard to staff and put the building and vehicles at risk for damage. The roof condition is poor with continual repairs required to maintain integrity. The building electrical and mechanical systems are dated, inadequate and do not meet post disaster recovery standards.

There is no known evidence of soil contamination on the site. The Firehall is the first and only known occupancy on the site.

Due to the poor condition of the foundation and structural components of the building, continued attempts to repair, modify or expand the current building would not be cost effective and would be an exceedingly poor investment. The Station needs to be replaced with a new facility designed to contemporary standards with an expected life expectancy of 50 + years.

Recommendation #8: ***Due to safety hazards and age related building deficiencies, it is recommended that planning commence immediately for the replacement of Station 1.***

Station 2 Description

Station 2 is located in the hamlet of North Augusta approximately 19 kms from Station 1. It was built in 1973 with 3 bays, meeting room, washrooms and an office. In 2009, an addition was constructed to add 2 additional bays to the east, renovations including enlarging the kitchen, meeting room and washrooms.

Although the building does not meet post-disaster criteria, it is reasonably well constructed, is functional and does not require any immediate significant investments at this time.

Fire Station Location Analysis

A core objective of the fire master plan is to address fire station location. Often fire stations arose in rural areas as a result of concerned citizens responding to a tragic fire loss in the community or as a result of proactive advocacy. The historic development may or may not make sense in terms of current response requirements or standards. This section will review current standards and comment on current location in the context of the standards, current hazards and response experience.

The two primary references for response time guidelines are the National Fire Protection Association (NFPA) 1710 and 1720 standards and the Ontario Fire Marshal (OFM) guidelines. These references are summarized as follows:

The OFM Fire Ground Staffing Guideline requires the arrival of 10 firefighting personnel (with appropriate apparatus) in 10 minutes total response time for 90 percent of incidents;

NFPA 1710 applies to full-time fire services and is not applicable in this circumstance. NFPA 1720 is applicable to volunteer firefighter departments. NFPA defines a Volunteer Fire Department as one having volunteer emergency service personnel comprising 85 percent or greater of its department membership. NFPA 1720 provides response times based on population density as follows:

- Urban Zones with greater than 1000 people/sq. mi. call for 15 staff with a response time of 9 minutes, 90 percent of the time;
- Suburban Zones with 500 to 1000 people/sq. mi. call for 10 staff with a response time of 10 minutes, 80 percent of the time;
- Rural Zones with less than 500 people/sq. mi. call for 6 staff with a response time of 14 minutes, 80 percent of the time; and,
- Remote Zones with a travel distance greater than or equal to 8 mi. call for 4 staff 90 percent of the time. Upon assembling the necessary resources at the emergency scene, the fire department should have the capability to safely commence an initial attack within 2 minutes 90 percent of the time.

While the NFPA standards generally [6] have no legal status in Canada, they are based on the collective experience of professional fire-fighters and technical research. These standards are considered to be the most comprehensive technically and are widely accepted in jurisdictions across the continent. Thus, NFPA guidelines have been relied upon as the *de facto* standard in Canada.

The implication is that if there is litigation, NFPA standards may be used to identify the baseline against which to measure. An expert witness testifying in a lawsuit against a volunteer department for negligence resulting in the loss of life or property may cite NFPA 1720 as the standard for organization and operations for a volunteer department. Although other experts can argue that they represent a standard not necessarily reflecting standard practices, it is more difficult to make that argument.

The NFPA Response standard is appropriate to the Township of Augusta is the third noted above which calls for *6 staff with a response time of 14 minutes, 80 percent of the time.*

To consider the theoretical distance stations need to be located within the township to achieve the applicable NFPA 1720 standard of 6 staff with a response time of 14 minutes, 80 percent of the time the following assumptions are used:

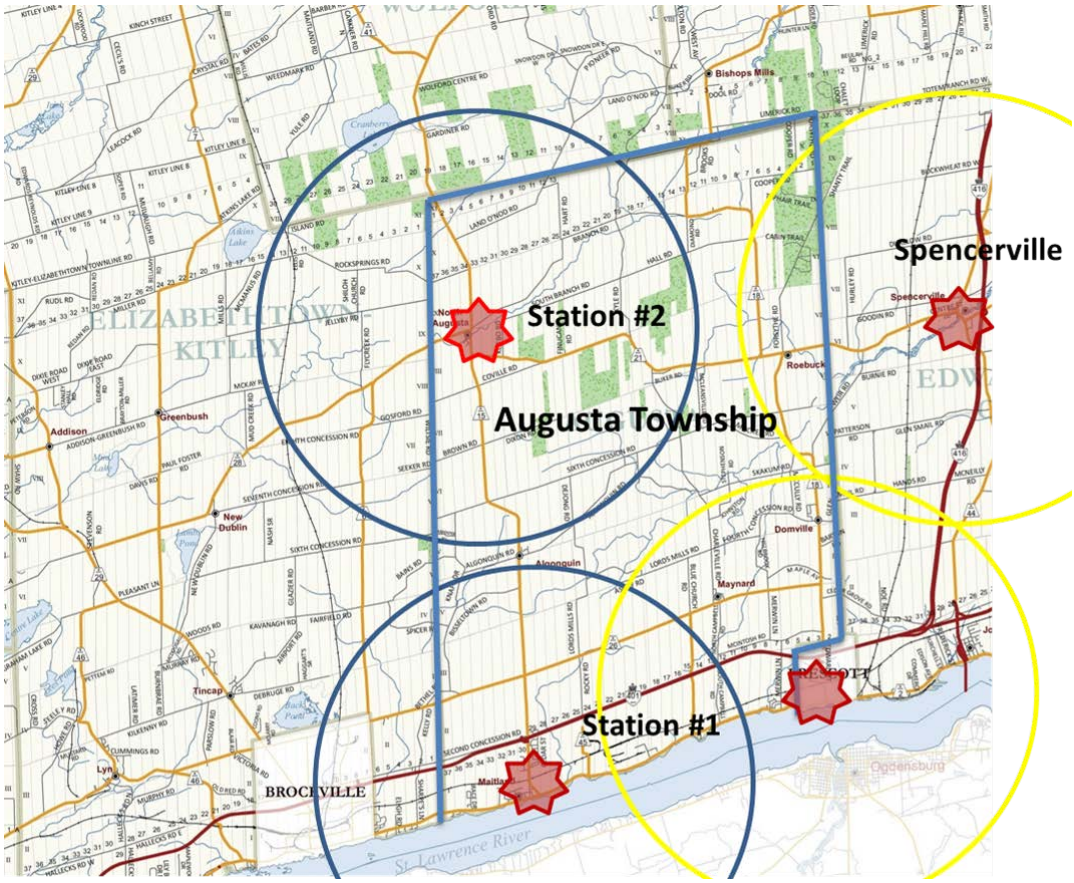
[6] There are some specific NFPA requirements specified by Statute.

- As specified by NFPA 1720, response times are measured starting when the call is dispatched to when crews have established the resources for initial attack.
- 4 minutes to arrive at station and leave with a minimum crew of 4 in a pumper and two in a tanker.
- 8 minutes to travel to the scene at an average speed of 65 km per hour
- 2 minutes to set up initial attack.

Utilizing the above assumptions, coverage within the Township should be based on coverage to ensure populated areas are within 8 kms of a station.

Figure 10 illustrates the distances between stations at the 8 km distance. The location of nearby Fire Stations is also illustrated.

Figure 10: Distances between Stations - 8 km distance.



The other factor that should be considered in the location of stations is impact on home insurance. The cost of insurance may vary greatly from one property to the next, based on the community's fire insurance grade.

The system of determining fire insurance rates in personal lines insurance is the Dwelling Protection Grade (DPG) system. The system uses a scale of one to five, in which one represents the maximum possible credit for fire protection programs and five represents an unrecognized level of protection or no protection at all.

Augusta Fire meets the requirements for a 3B rating. Further, Augusta Fire maintains Superior Water Shuttle Accreditation which enables additional insurance discount consideration. To achieve this accreditation, fire departments must demonstrate the ability to deliver a flow rate of not less than 950 LPM for personal lines and 1900 LPM for commercial lines within 5 minutes of arriving at a test site.

To be eligible for the benefit, the protected property must be located **within 8 km of a fire station and 5 km of an approved water supply** (Commercial Lines - 5 km of a fire station and 2.5 km of an approved water supply). The water-delivery system must be available and accessible 24 hours per day/365 days per year.

The current location of the Fire Stations does not enable all residents of the Township to be eligible for the superior water shuttle discount due to the distance to the station exceeding 8 kms.

The use of 8 km 'as the crow flies' range does not reflect actual driving distance. Nonetheless, it is a reasonable approach in considering station locations in a rural context. Optimal station location is often a compromise between a number of factors including:

- Location in populated areas to enable local firefighters to respond to the station promptly.
- Historic presence of a firehall.
- Location proximate to major hazards such as the 401 highway.

An important consideration in evaluating station response time is actual performance.

In 2015, AFD responded to 162 Calls. Excluding calls cancelled on-route or incident not found, the average response time for the first arriving apparatus or Firefighter was 12:26 minutes. Eighty percent were within 16 minutes. Sixty-one percent were within 14 minutes

It is evident that AFD is achieving 61% of calls within 14 minutes vs the standard of 80% within 14 minutes. The standard also requires an assembled crew of 6. The data is not available to track the number of staff on scene within the benchmark.

Achievement of the benchmark standard of a crew of 6 within 14 minutes 80% of the time will require strategies to enable Firefighters to respond more quickly to the station and from the station to the scene. An additional station will enable a faster response to the station of firefighters who live in the vicinity of the new station. Further, hiring of additional firefighters particularly firefighters who can respond during the day will increase the probability of achieving the NFPA 1720 benchmark.

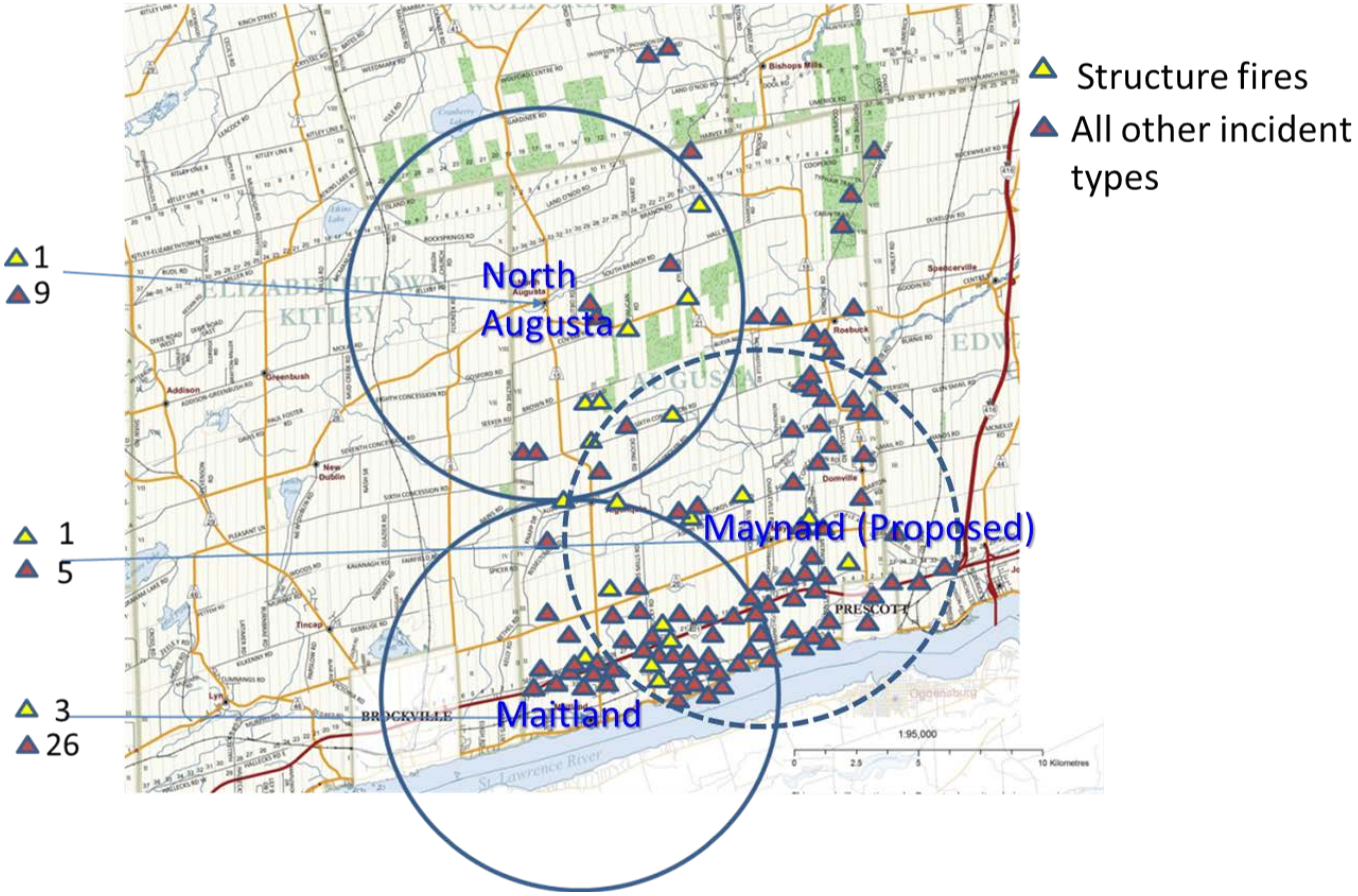
Recommendation #9: ***That an additional station be built to improve response times and enable more Township residents to be eligible for Insurance discounts.***

It is important to note that Recommendation #9 is made on the assumption that the Truck and Firefighter complement as well as capital cost for the new stations remain the same order of magnitude whether a larger replacement station is built in Maitland or a smaller station is built in Maitland with a third sub-station.

Proposed Sub-Station Location - Location of Calls

The historic location of calls can be a useful predictor of future call volumes and facilitates the impact analysis of response time based on current and proposed station location. Figure 11 illustrates the location of 2015 calls for AFD.

Figure 11 : Location of Annual AFD Calls, 2015



Approximately 60 (37 %) of the 161 calls in 2015 would have benefitted from a faster response time from the station to the incident if a third station was located in Maynard.

Proposed Sub-Station Location - Location of Firefighters

Historically, volunteer firefighters responded directly to the scene and the firefighters closest to the Hall took a truck with the equipment. This situation was appropriate at a time when the majority of

firefighters lived on farms, the response was largely for defensive structure fire operations and equipment and tactics were simple " put the wet stuff on the hot stuff"

Today's world is vastly different where organized teams under a formal command structure with and accountability system in place is considered essential before commencing suppression or rescue activities. Further, there is increasing awareness of potential hazards of storing potentially contaminated bunker gear in personal vehicles. Contemporary Fire Departments are moving towards storage of Bunker Gear in on racks in designated areas of the station. Many people who reside in rural Ontario live in or close to villages and hamlets such that there is an increased probability if firefighters being able to respond directly to the station.

NFPA 1720 *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments* requires for rural areas such as Augusta Township, 6 Firefighters assembled within 14 minutes 80% of the time. Section 4.3.4 states "Upon assembling the necessary resources at the emer-gency scene, the fire department shall have the capability to safely commence an initial attack within 2 minutes 90 percent of the time." Section 4.3.5 of the standard states "Personnel responding to fires and other emergencies shall be organized into company units or response teams and shall have required apparatus and equipment."

The Ontario Fire Marshall Fire Ground Effectiveness Sub-Model [7] states:

- "To provide effective, efficient and safe fire protection services, the delivery system chosen must ensure a virtually simultaneous arrival of a minimum of four fire fighters".
- "The OFM recommends, where practical, a minimum of four persons be dispatched on the initial apparatus".
- "A total complement of no less than ten fire fighters, including supervisor(s), and, if possible, a minimum of two vehicles one of which is a triple combination pumper, must assemble at the fire ground".
- "It may be preferable to dispatch fewer vehicles with more fire fighters rather than the vice versa".

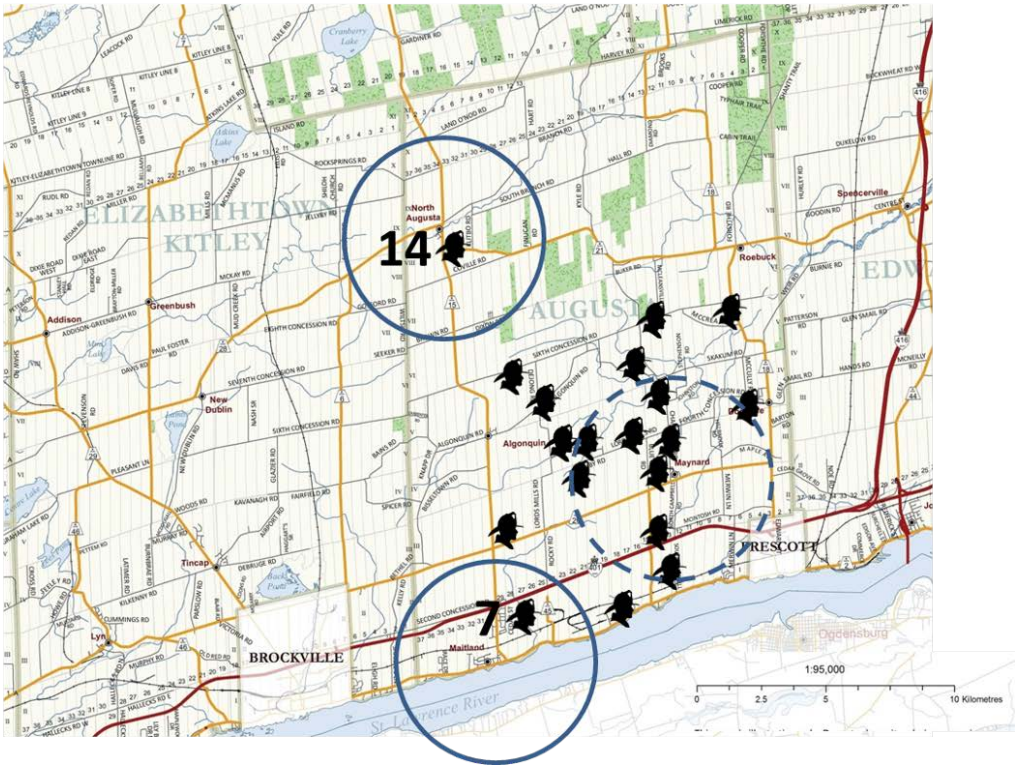
Locating Fire Stations proximate to where firefighters live can be of significant benefit in achieving contemporary standards and guidelines designed to improve emergency operations and enhance firefighter safety.

Figure 12 illustrates the current location for firefighter residences in the Township.

Figure 12 : Firefighter Residences in the Township of Augusta

7 http://www.mcscs.jus.gov.on.ca/english/FireMarshal/FireServiceResources/ComprehensiveFireSafetyEffectivenessModel/FireGroundEffectivenessSub-Model/AssemblingFireAttackTeams/assemble_fire_attack_teams.html Assembling Fire Attack Teams

3 km



The NFPA bench mark of an assembled crew of 6 within 14 minutes and the desired practice of having firefighters arrive on responding apparatus can be achieved with residence to station time of 3 minutes, 1 minute to load the truck and 10 minutes to arrive on-scene. To achieve 3 minutes from residence to station in 3 minutes or less, it is assumed a firefighter needs to reside within 3 km of the station. As shown by Figure , currently, 14 firefighters live within 3 km of Station 2 (North Augusta), and 7 within 3 km of Maitland. If a third station were built in Maynard, another 8 – 10 firefighters would now be within 3 km of a station.

Identification and Analysis of Options for Station Location

Utilizing land already in Township ownership as a primary criteria for identification of potential station locations, six potential sites were identified for consideration as future stations. The potential site options identified included:

- Current Stations (Maitland & North Augusta)
- Single Station near Works Garage
- Current Station Locations + 3rd Station in Domville
- Current Station Locations + 3rd Station in Maynard
- Current Station 2 Location + Move Station 1 to Maynard
- Current Station 2 Location + Move Station 1 to Industrial Park

Table 6 presents the results of a weighted scoring to consider the relative merits of the options from the perspective of firefighter response time to the station, proximity of calls/response time from the station proximity/response time to major hazards.

The evaluation results presented in Table 6 indicate the preferred Option to be retaining Stations 1 & 2 in their current location and adding a third station in the Domville/Maynard area.

Although the Domville site option scored higher than the Maynard site, this is largely due to the closer proximity of Domville to the Limerick Forest in the weighting criteria. In considering the relative attributes of the Maynard Site versus the Domville option, the Steering Committee was of the view that the Maynard site should be recommended as the preferred site for the third station for the following reasons:

- The Maynard site is closer to the populated areas in the south east quadrant of the Township.
- There is a larger site available on lands proximate to the existing Township offices.
- Immediate adjacency to the Township Offices creates opportunity for potential shared administrative and facility services

Recommendation #10: ***That the additional station be located in Maynard on Township owned lands proximate to the Town Hall and that the replacement Station 1 Hall be located at the current Maitland site.***

Table 6: Identification and Evaluation of Initial Six Options: Current Location, Single Station, Options for Relocation of Station 1 options and Third Station Options

	Current Station 1+2 Locations		Single Station near Works Garage		Current Stations 1+2 Location + 3rd Station in Domville		Current Stations 1+2 Location + 3rd Station in Maynard		Current Station 2 Location + Move Station 1 to Maynard		Current Station 2 Location + Move Station 1 to Industrial Park		Max Score
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	
FFr's 3km	23	54.8	5	11.9	24	57.1	30	71.4	21	50.0	21	50.0	100
FFr's 8km	30	71.4	30	71.4	42	100.0	39	92.9	37	88.1	38	90.5	100
SECTION TOTAL	**126**		**83**		**157**		**164**		**138**		**140**		200
	63.10%		**41.67%**		**78.57%**		**82.14%**		**69.05%**		**70.24%**		
Fire Calls 3km 2014	48	19.7	7	2.9	58	23.8	74	30.3	38	15.6	36	14.8	50
Fire Calls 8km 2014	91	37.3	69	28.3	122	50.0	122	50.0	94	38.5	87	35.7	50
Fire Calls 3km 2015	70	21.7	11	3.4	81	25.2	97	30.1	40	12.4	47	14.6	50
Fire Calls 8km 2015	102	31.7	68	21.1	156	48.4	149	46.3	105	32.6	101	31.4	50
Fire Calls within 8km 2014 + 2015 as % (Info Only)	68%		48%		98%		96%		70%		66%		
Civic addresses within 8 km	1946	59.8	1601	49.2	3097	95.2	3063	94.2	2198	67.6	2460	75.6	100
Civic addresses NOT within 8km as a % (Info Only)	40%		51%		5%		6%		32%		24%		
Potential Total $$ Saved/Year Insurance (Info Only)	$233,520		$192,120		$371,640		$367,560		$263,760		$295,200		
Augusta Land Area Within 8km	184	29.2	178	28.3	271	43.0	261	41.4	232	36.8	210	33.3	50
Augusta Land NOT Area Within 8km(Info Only)	42%		43%		14%		17%		26%		33%		
SECTION TOTAL	**199**		**133**		**286**		**292**		**204**		**205**		350
	56.97%		**38.04%**		**81.60%**		**83.52%**		**58.15%**		**58.67%**		
HAZARD First Truck to Invista(1400 Cty Rd 2)	10.00	40	21.00	-70	10.00	40	10.00	40	15.00	-10	8.00	60	10
HAZARD First Truck to Limerick Forest(8403 Forsyth)	21.00	-70	22.00	-80	17.00	-30	21.00	-70	21.00	-70	21.00	-70	10
HAZARD First Truck to Pellett Plant(200 Development)	18.00	-40	23.00	-90	10.00	40	12.00	20	12.00	20	17.00	-30	10
HAZARD First Truck to Ultramar(31 Church)	7.00	70	16.00	-20	7.00	70	7.00	70	15.00	-10	12.00	20	10
HAZARD First Truck to MM705 401	9.00	50	14.00	0	9.00	50	9.00	50	14.00	0	13.00	10	10
HAZARD First Truck to MM716 401	20.00	-60	21.00	-70	10.00	40	11.00	30	11.00	30	16.00	-20	10
HAZARD First Truck to CN Rail Maitland Road	7.00	70	16.00	-20	7.00	70	7.00	70	15.00	-10	11.00	30	10
HAZARD First Truck to CN Rail Blue Church Road	13.00	10	23.00	-90	13.00	10	13.00	10	12.00	20	8.00	60	10
HAZARD First Truck to CN Rail South Campbell Road	14.00	0	24.00	-100	14.00	0	14.00	0	15.00	-10	9.00	50	10
HAZARD First Truck to CN Rail Merwin Lane	17.00	-30	26.00	-120	14.00	0	14.00	0	14.00	0	11.00	30	10
SECTION TOTAL	**40**		**-660**		**290**		**220**		**-40**		**140**		
First Truck to Maitland (St1-19 Church)	7.00	35	17.00	-15	7.00	35	7.00	35	16.00	-10	12.00	10	5
First Truck to Algonquin (4794 CR 15)Old Store)	13.00	5	9.00	25	13.00	5	13.00	5	13.00	5	11.00	15	5
First Truck to North Augusta (St2-8112 Mill)	7.00	35	16.00	-10	7.00	35	7.00	35	7.00	35	7.00	35	5
First Truck to Roebuck(7174 CR 18(Goldsmith))	17.00	-15	18.00	-20	11.00	15	16.00	-10	16.00	-10	17.00	-15	5
First Truck to Riverview Heights(1671Hwy 2(Dive))	15.00	-5	24.00	-50	15.00	-5	15.00	-5	15.00	-5	9.00	25	5
First Truck to Domville(4401 CR 18(Sauve PH))	19.00	-25	20.00	-30	7.00	35	10.00	20	10.00	20	18.00	-20	5
First Truck to Maynard(3560 CR 26(Office))	17.00	-15	18.00	-20	10.00	20	7.00	35	7.00	35	13.00	5	5
First Truck to Works Garage(5328 Algonquin)	16.00	-10	7.00	35	16.00	-10	16.00	-10	18.00	-20	16.00	-10	5
Section Total	**5**		**-85**		**130**		**105**		**50**		**45**		
Grand Total	**371**		**-529**		**863**		**782**		**352**		**531**		

10 points +/- for every minute over or below 14 minutes travel time - 14 minutes = 0

5 points +/- for every minute over or below 14 minutes travel time - 14 minutes = 0

Turn out times		
	2014	5:52
	2015	6:22

7.1.4 Current and Proposed Station Staffing

The Department has a complement of 31 volunteers, a volunteer Chief, volunteer Deputy, volunteer Chief Fire Prevention Officer, volunteer Chief Fire prevention officer, 7 Captains, and a part-time administrative assistant.

The interviews revealed satisfaction with the current number of firefighters and a sense of cohesion and high morale as a result of a closely knit team.

The challenge that is revealed in the response time data is achieving benchmark response times particularly during work days. Many people who live in Augusta work in Brockville or Prescott including Firefighters who must leave work to attend calls if they are able. The other issue that is present is that there are fewer firefighters working shifts due to downsizing of the industrial plants in Augusta. This reality makes it virtually impossible to achieve the desired NFPA 1720 standard of 6 assembled firefighters within 14 minutes 80% of the time during work days.

Although not a complete solution, recruiting additional volunteer firefighters with a preference for those who can be available during the work week will increase the probability of achieving the standard. Further, the recommendation for an additional station will increase the need for additional firefighters.

Achievement of this increase can result in the following station complement:

Station 1	- 15 Firefighters, 3 Captains
Station 2	- 15 Firefighters, 3 Captains
Station 3 (Proposed)	- 12 Firefighters, 2 Captains

Recommendation # 11: An additional 12 firefighters be recruited with an explicit preference for candidates able to be available workdays.

7.1.5 Current and Proposed Services.

As authorized by Council By-Law, the services offered by the Department include: *fire protection services includes fire suppression, fire prevention, fire safety education, communication, training of persons involved in the provision of fire protection, rescue, tiered medical response, emergency services and the delivery of those services*. These services are delivered to the level of training of the personnel responding and the equipment and resources available at the time of the incident.

The Department routinely responds to a variety of emergency responses within the general parameters of the By-Law including:

From a risk management perspective, it is important that the Establishing and Regulating By-Law specifically identify the services the Department is authorized to provide. Ideally, the By-law should also identify which services will be provided through mutual aid or other agreement.

Technical rescue services such as Hazardous Materials, High Angle, Confined Space, Silo Rescue, Heavy Urban Search & Rescue, Water, Ice or Trench Rescue are required infrequently (occurrence of incidents less than once every 5 years). Local or Provincial agreements should be in place with Kingston or Ottawa to provide these services as required.

Recommendation #12*: That the current range of services provided by Augusta Fire be specified in the Establishing and Regulating By-Law.*

- Structure, vehicle, hydro pole, grass and wildland fires
- Hydro lines and trees down
- Medical Assists including Defibrillation
- Propane, Carbon Monoxide, and Natural Gas leaks.
- Auto, ATV, Snowmobile and Farm Extrication and Rescue.

7.1.6 Water Supply

The Department has access to a limited number of lakes and streams for firefighting purposes and has the required equipment, training and personnel to set up an effective water shuttle. The Department is accredited by the Fire Underwriters Survey for the delivery of Superior Tanker Shuttle services. The most recent accreditation took place in October 2012.

Access to pressure or dry hydrants or other means of gaining rapid and safe access to water source in winter condition is a key factor in ensuring safe and effective fire suppression and rescue operations. Although it is possible to access natural water sources in the winter by cutting through the ice, this is not ideal as it is time-consuming, exposes firefighters to the risk of operating on ice, ant may be difficult to access by trucks due to snow conditions.

A dry hydrant is a non-pressurized pipe permanently installed in existing lakes, ponds, or streams that provides a supply of water, by means of suction, to a tanker truck. The same function is obtained by a constructed well connected by a pipe to a natural body of water or a hydrant connected to a large storage tank.

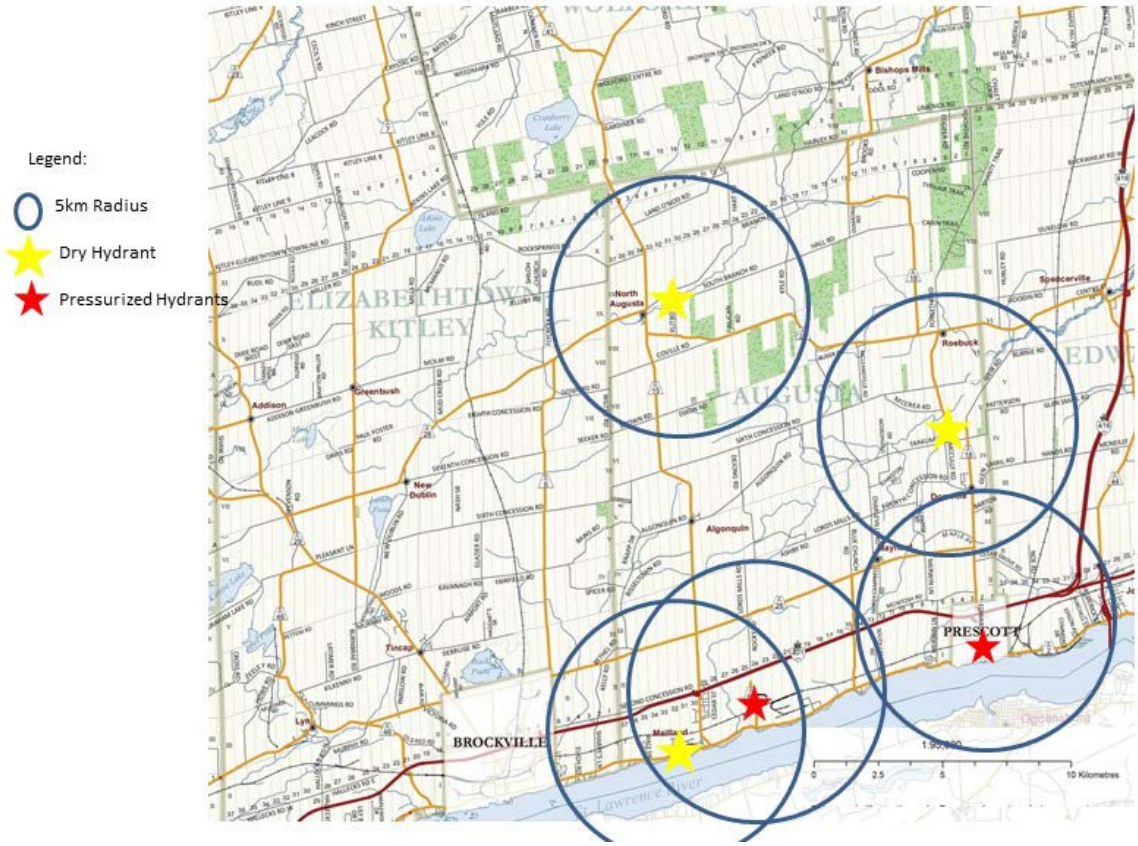
Pressurized Hydrants are available in Prescott, Brockville and the Invista site

The key standard for Water Source construction, location and other parameters is the National Fire Protection Association Standard 1142 “Standard on Water Supplies for Suburban and Rural Fire Fighting” and the Underwriters Insurance Rating system. NFPA 1142 does not provide specific commentary on distance to dry hydrants leaving the determination to the “Authority having Jurisdiction”.

As previously discussed, to achieve benefit from the Superior Water Shuttle Accreditation insurance discount protected properties (personal lines) must be located within 8 km of a fire station and **5 km of an approved water supply** (Commercial Lines - 5 km of a fire station and 2.5 km of an approved water supply). The water-delivery system must be available and accessible 24 hours per day/365 days per year.

Figure 9: illustrates the location of year-round water access points with the 5 km radius noted.

Figure 9: Location of Year Round Water Source Access Points with 5 km Radius Area



It is proposed that a multi-year plan be adopted to add additional dry hydrants in the central west and north east area of the Township. Typically, installation of dry hydrants is not complex and can often be incorporated into routine road/bridge maintenance or upgrade projects. It is acknowledged that lack of natural water sources may present a challenge in the proposed areas of the Township.

Recommendation #13: ***That a multi-year plan be developed to add two additional dry hydrants to ensure all areas of the Township have year-round access to dry or pressurised hydrants or equivalent within 5 kms.***

Recommendation #14: ***NFPA 1120 "Standard on Water Supplies for Suburban and Rural Fire Fighting" be used to guide any future commercial, industrial or multi-occupant residential development.***

7.1.7 Dispatch and Radio Communication

The Department participates in the Leeds Grenville County Fire Dispatch and Radio system. Dispatch services for the County including Augusta FD are provided by Brockville Fire.

Paging is on a dedicated digital system providing alphanumeric information regarding calls on the pager. There are no paging tones or voice messages.

The radio system is digital and also supports analog so mutual aid communication is enabled.

There are some 'dead zones' in the Township where radio communication has been an issue. Mobile repeaters may offer a solution and exploratory studies underway should continue.

All Officers are assigned portable radios. Apparatus are provided with mobile radios and sufficient radios for crew. At a minimum, there should be sufficient portable radios to ensure each Firefighter team in the 'Hot Zone' has a radio. Ideally, all Firefighters operating in an interior search and rescue or fire attack should have a radio in case a Firefighter becomes trapped or separated. There are sufficient radios to achieve this objective.

Recommendation # 15: ***On an ongoing basis, the annual budget include the purchase of 1 portable radios to 'evergreen' the current number as well as build an inventory to ensure adequate numbers are available during major events.***

7.1.8 Vehicles and Equipment

A detailed inventory list of Apparatus is provided in Appendix IV. The Department has a reasonably modern fleet of equipment sufficient to provide the services authorized by By-Law. There is a multi-year Truck replacement plan in place.

The Department is following contemporary practice by replacing the two-person pumpers with five or six person crew pumpers. This practice is supported by evidence and OFM direction that it is preferable to take an extra minute or two to leave the station with a crew and coordinate operations during transit rather than have firefighters potentially arrive independently on-scene faster, but not have the ability to carry out a safe and effective response.

The concept of utilizing crew cab first response pumpers and having firefighters respond directly to the station where practical facilitates achievement of NFPA 1720 4.3.5 **"***Personnel responding to fires and other emergencies shall be organized into company units or response teams and shall have required apparatus and equipment"*.

The Department is also following contemporary practice in replacing single axle, 6,000 litre tankers with dual axle, 10,000 litre Tankers. This provides a significant amount of water during the initial stages of a fire and facilitates a high capacity water shuttle when required for sustained operations.

It is prudent to maintain a spare pumper and tanker to maintain full station capability when trucks are not in service for maintenance or other reasons. Unless specifically requested by Command, spare trucks should not routinely respond to calls to avoid scene congestion.

The use of trailers for specialized functions such as wildland firefighting is a cost effective method of providing specialized resources.

7.1.9 Medical Training and Response

The 'five-question' interviews revealed considerable frustration regarding medical calls. There is frustration that the dispatch system creates delays in Fire Department notification such that Fire arrives on the scene at the same time or after EMS is on scene

The issue of dispatch delays is a regional issue and is not limited to Township or County. The issue appears to arise from the way 911 calls are managed in areas of the Province which do not have an integrated 911 service such as Toronto. In Eastern Ontario, 911 calls are received by a call centre which transfers the call to the appropriate emergency service. For a medical issue, the call is transferred to the Central Ambulance Coordination Centre (CACC) located in Kingston. CACC will dispatch an ambulance and notify fire dispatch if required.

As CACC will dispatch the ambulance first, and may have other priorities, notification to the appropriate fire dispatch is often delayed. It is apparent that the delays in the dispatch can often be in the range of 5 to 10 minutes. With response time to the station in the range of 3 to 5 minutes and travel time to the scene of 5 to 10 minutes, Firefighters often arrive on the scene 13 to 25 minutes after EMS has been dispatched.

If the local availability of Firefighters to provide emergency responder services to be advantageous, this dispatch delay needs to be addressed.

Recommendation #16: ***That Augusta Fire in collaboration with other South-Eastern Fire Departments initiate discussions with the South-East CACC to explore the perceived dispatch delay issue and explore possible solutions to improve fire response times.***

The current protocol is to dispatch two stations to respond to medical calls. Further study should be undertaken to audit the number of emergency first responders present in the first-on-scene apparatus to determine if a single station response would be appropriate.

Recommendation #17: ***Further study be undertaken to audit the number of emergency first responders present in the first-on-scene apparatus to determine if a single station response would be appropriate.***

The Medical SOG should be reviewed to determine the appropriateness of Firefighters responding directly to the call and if a minimum and maximum number of responders should be identified.

7.2 Strategic Direction #2 – To Develop an Organizational Culture that Supports Service Excellence.

7.2.1 Organizational Structure

The way organizations are structured can have a profound impact on culture and organizational effectiveness as well as ability to realize the organizations mission, vision and values.

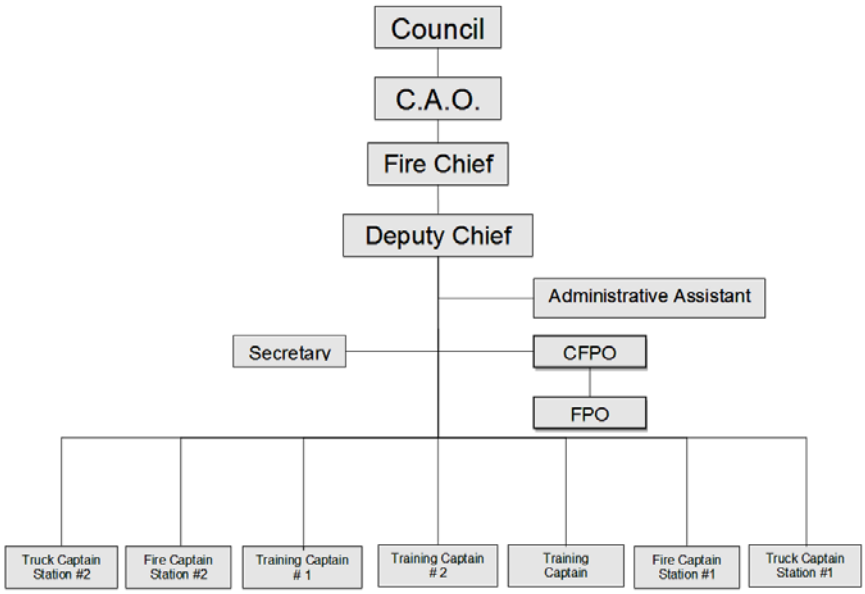
Organizations that are highly centralized tend to be less innovative, slow to respond to environmental changes and can lead to poor morale. Decentralized organizations allow greater flexibility, respond quicker and more effectively to change and can improve participation and teamwork. To be effective, however, decentralized organizations require a strong sense of common purpose, policy framework and values to be the 'glue' that creates synergy and facilitate alignment.

The 2016 staff compliment of AFD is:

- Fire Chief (1) - volunteer
- Deputy Chief (1) - volunteer
- Chief Fire Prevention Officer (1) - volunteer
- Fire Prevention Officer (1) - volunteer
- Administrative Assistant - Full Time, shared with Works Department.
- Captains (7) - Volunteer
- Firefighters (31) - Volunteer

The current organization chart is presented in Figure 10:

Figure 10: Augusta Fire Department Organization Chart



Future Organization

In considering options for the future, there are a number of objectives that should be realized as follows:

- To promote an organizational culture that develops effective leadership now and for the future;
- Supports the three lines of defense – Prevention, public education and suppression/emergency response.
- Supports clear accountability.
- Enhances the power of the team.
- Facilitates continuous quality and improvement initiatives.
- Ensures the contributions of each member are respected and valued.
- Supports the synthesis of a variety of perspectives and processes for the successful completion of tasks.
- Builds on individual and group strengths to create an environment that reinforces dedication to delivering professional and customer-oriented services
- Supports positive environment that supports retention and recruitment and pride in being a Firefighter

It is evident from the risk assessment profile of the Township, 'five – question' interviews, in-depth discussion with the incumbent Chief, analysis of the position description expectations and responsibilities as well as survey information from peer Departments, that the volunteer, part-time status of the Chief's position is no longer tenable, appropriate or sustainable.

The Chief's position needs to be full time.

It is important to note that this recommendation was made in a 'Study of Fire Services in the United Counties of Leeds & Grenville' in 1997. This study completed by the Commercial and Residential Risk Services Insurers' Advisory Organization Inc. recommended for the Township of Augusta that: *"In view of the new legislative requirements, to ensure proper administration of the Fire Department and to carry out a Fire Inspection Program, immediate consideration should be given to employing a full-time Township Fire Chief."*

A Full-Time Fire Chief will be able to:

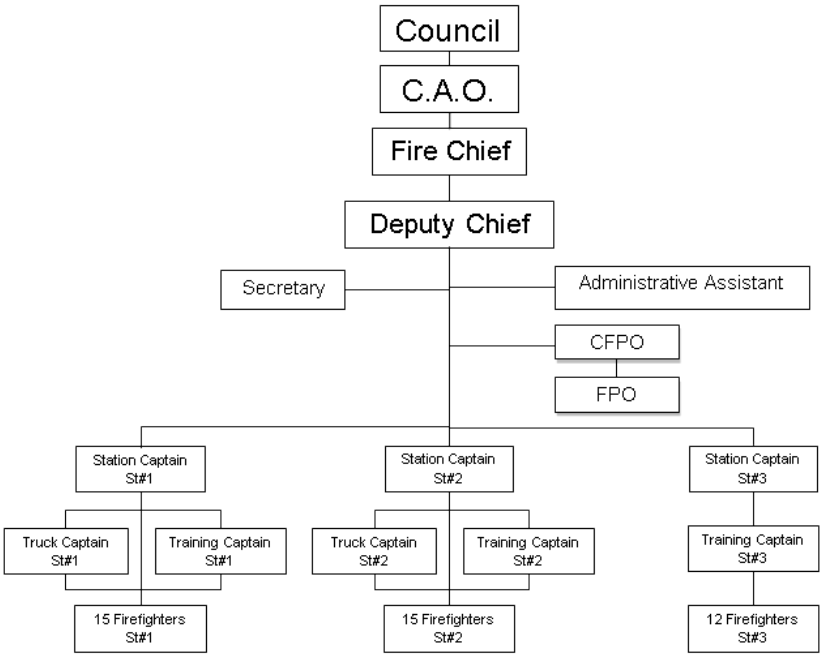
- Participate in township departmental and Council meetings
- Fulfill legislative responsibilities as 'Assistant to the Fire Marshall' in performing fire inspections as well as enforcement
- Participate in joint inspections and emergency preparedness activities with the major, high risk industrial occupancies in the Township including the chemical plants, Velaro (Ultramar) Terminal, CN/VIA rail

- Fulfill the responsibilities of Chief Training Officer including coordinating and developing lesson plans and curriculum to ensure a state-of-the-art training program, liaising with peers at other Departments such as Kingston and Ottawa to jointly develop programs, work collaboratively with the Fire Education leadership at St. Lawrence College and the Lyndhurst Training Centre.
- Participate in conferences and other professional development activities.
- Collaborate with local Police and Emergency Medical Services on a regular basis to continuously improve coordinated response.
- Provide Council with comprehensive monitoring reports
- Ensure complete, comprehensive and timely documentation and record keeping.
- Manage Human Resource Policy development and implementation
- Manage Firefighter and officer Retention, Recruitment, professional development and evaluation.
- Lead the transition to NFPA qualification achievement and certification
- Continually evaluate and revise operating procedure guidelines.
- Implement and further develop the Fire Master Plan

Recommendation #18: ***That the Township of Augusta approve the recruitment and appropriate compensation for a full-time Fire Chief.***

Figure #11 presents the proposed organization structure. A sample position description is provided in Appendix V.

Figure # 11 Proposed Organizational Structure.



7.3 Strategic Direction #3: Accountability

Great organizations understand their purpose (mission) and desired future (vision). They understand that achieving their vision is dependent on having a clear strategy to move forward from the present to a desired future state. And they understand that they are accountable for their actions and deliverables in achieving the strategy.

The concept of accountability is particularly relevant in the public sector where funding is predominantly provided by the taxpayer. Excellence in the public sector can be defined as the concept of delivering the best possible service within the resources allocated and providing evidence that this objective is being accomplished.

Many organizations have adopted the "Balanced Scorecard"[8] as a tool to translate long-term strategy in to day-to-day management through the mechanism of measurement. The Balanced Scorecard translates vision and strategy into a tool that effectively communicates strategic intent and motivates and tracks performance against tactical objectives.

Typically, organizations report on financial and activity indicators. The paradigm shift created by the Balanced Scorecard was to look at the entire organization generally described as four dimensions:

- *Financial Perspective* – How do we look to our funders?
- *Customer Perspective* – How do our customers see us?
- *Internal Business Perspective* – What must we excel at?
- *Innovation and Learning Perspective* – How do we continue to improve and create value?

Within each dimension, reporting addresses relevant objectives, measurements, targets and initiatives that flow from the Strategic Directions.

Currently, Augusta Fire provides a monthly report to Council that documents the number of calls by major type. It is recommended that a more comprehensive report be designed with quarterly rather than monthly reporting. Reporting quarterly will provide a better perspective of trends and will balance the workload associated with a more detailed report produced less frequently.

Suggested measures include:

Financial:	- Quarterly actuals vs budget and forecast - Capital expenditures actual vs budget and forecast
Customer Performance:	- Types and frequency of Calls - Response times for 80% of Calls with 6 Firefighters on scene - Public Education events vs target

[8] Kaplan, R.S. and Norton, D.P, the Balanced Scorecard, Measures that Drive Performance. Harvard Business Review, 1995.

	- Fire Inspections vs target - % of structure fires with fire investigation completed - Pre plans completed vs target
Internal Processes	- % Calls with Accountability System in place - % Structure Fires with RIT Team established - Calls with debrief - Number of Building Permits/Plans reviewed - Department Recruitment and Attrition - Number of Exit Interviews completed
Growth & Development:	- YTD Training Hours actual vs target - Number of Firefighters/Officers achieving certification - Number of SOG's and Policies Reviewed/Developed

Recommendation #19: ***That the Augusta Fire Department develop and implement quarterly reporting based on the Balanced Scorecard accountability framework.***

It is important to note that measuring performance is a sizable task. It requires ongoing effort to develop and update annual objectives, develop the performance metrics, record activities and create and maintain reports.

The 'Firehouse' automated system utilized by the Department will continue to be of great value in the collection, recording, and analysis of data. Significant support, however, from the leadership team as well as financial and staff resources, will be required to develop comprehensive quarterly reporting from the 'Firehouse' data.

In addition to reporting performance metrics, the Quarterly reporting will also allow Council to be apprised by the Chief on changes in legislative obligations, training requirements, best practices, and incidents of concern or other pertinent matters.

Through comprehensive and structured reporting, Council will be sufficiently informed so as to satisfy itself that the fire protection services being provided to the community are adequate and effective, and that the Fire Department is meeting standards.

7.4 Strategic Direction #4: Supporting Innovation

7.4.1 The Learning Organization

Over time, many organizations lose their capacity to learn, change and adapt as structures and processes are established. When problems arise, the solutions are often short-term based on previous practice, and problems continue to re-emerge.

Expectations, methods of service delivery and technology, however, are constantly evolving. Organizations need to develop knowledge about new technologies and processes, understand what is happening in the outside environment and facilitate creative solutions using the knowledge and skills of all within the organization. This requires co-operation, communication, and a culture of trust. It requires a fundamental attitude change that effort and energy must be dedicated to a constant review of how one does work and always asks the question; *Is there a better way*?

This concept has been reflected in the concept of a **learning organization**[9] which can be defined as one which facilitates the learning of its members and continuously transforms itself to best serve the customer. This process of supporting transformation is synonymous with supporting innovation.

Augusta Fire has in place many of the core attributes of a Learning Organization. There is a serious commitment to learning. Comprehensive Standard Operating Guidelines (SOG's) do exist and there are many examples of 'best practice' that have been adopted by the Department

To support innovation and assist in the continued development as a Learning Organization, the following recommendations are proposed:

Recommendation # 20: ***That the review and updating of Standard Operating Guidelines (SOG's) continue with a specific target performance metric regarding number to be developed, reviewed and updated be identified as part of the Departments annual objectives and be monitored in the quarterly report.***

The above recommendations are designed to recognize the relationship between Best Practice, SOG's, Training, and Performance. This relationship can be thought of as a interdependent linkage where Best Practice and ongoing evaluation informs SOG's, SOG's are the foundation for Training, and realizing excellence in efficient and effective performance in managing an emergency situation is dependent upon superb training

[9] Senge, P. M. (1990) *The Fifth Discipline. The art and practice of the learning organization*, London: Random House.

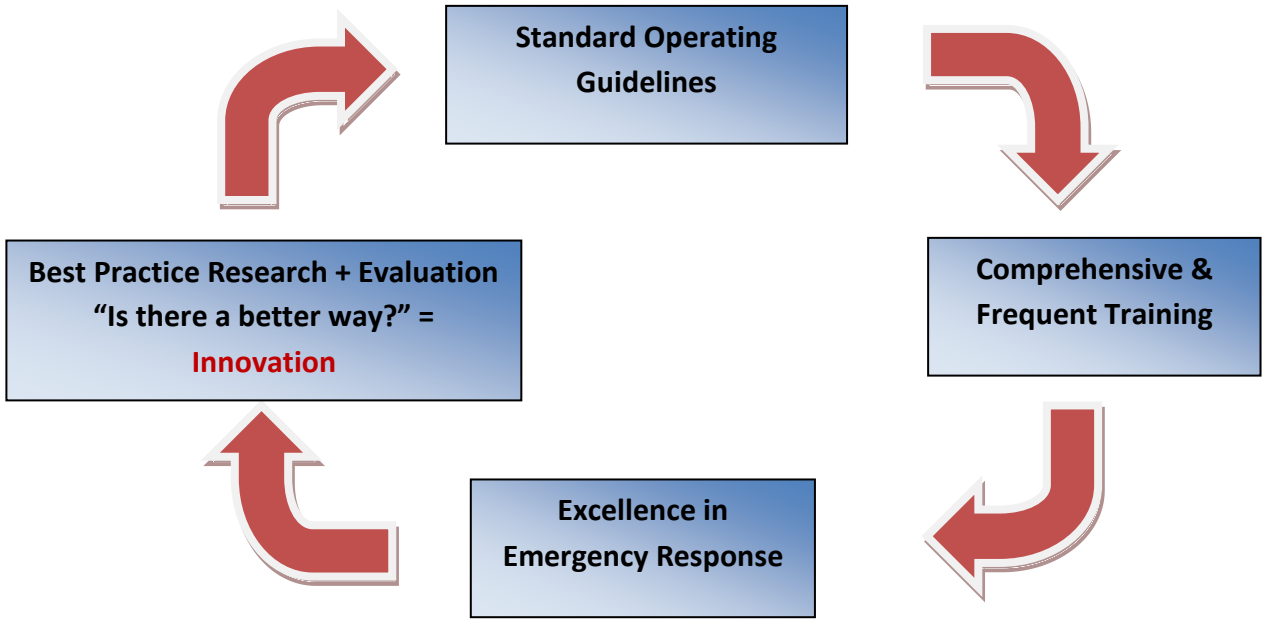


Figure 13: Relationship between Inquiry, Operating Guidelines, Training and Operational Excellence

7.4.2 Training Delivery

Each station has an identified Officer who generally takes responsibility for training in each station, Subject matter experts or teams should be identified to deliver common training to each station to ensure a consistent interpretation of the SOG's and Training Plans thus facilitating station interoperability. The subject matter experts can most likely be found within the Department. In some cases, it may be appropriate to contract with another Department or individual to provide the required expertise.

Recommendation #21: ***Subject matter experts/teams be identified and supported to assist in the review and development of SOG's, Lesson Plans, and to deliver common training to each station to ensure a consistent interpretation of the SOG's and Training Plans, thus facilitating station interoperability.***

Implementation of the recommendation to create a Full-Time Chief will provide the equivalent of a Chief Training Officer to coordinate SOG and lesson plan development and delivery.

7.4.3 Transition to NFPA Standards and Certification

A key challenge for the Fire Service in Ontario is the transition from training standards, program development and delivery led by the Ontario Fire College and Office of the Fire Marshall to a program based on NFPA standards and certification.

NFPA 1001 provides the Standard for Firefighter Professional Qualifications. This Standard identifies the criteria for Firefighter Qualification at the Entrance, Firefighter I and Firefighter II levels.

NFPA Standard 1670, Standard on Operations and Training for Technical Search and Rescue Incidents describes three levels of competency for technical rescue:

- *Awareness Level* This level represents the minimum capability of organizations that provide response to technical search and rescue incidents.
- *Operations Level* This level represents the capability of organizations to respond to technical search and rescue incidents and to identify hazards, use equipment, and apply limited techniques specified in this standard to support and participate in technical search and rescue incidents.
- *Technician Level* This level represents the capability of organizations to respond to technical search and rescue incidents and to identify hazards, use equipment, and apply advanced techniques specified in this standard necessary to coordinate, perform, and supervise technical search and rescue incidents.

NFPA 1021 provides the Standard for Fire Officer Professional Qualifications.

Although the NFPA standards are reasonably clear, the level of support that the Province will provide in implementing the new standards and facilitating training and certification is unknown. It appears that support in this regard will be minimal at best.

Thus, the challenge will be to develop and implement a new curriculum based on NFPA standards rather than OFM. This challenge will likely need to be addressed with little support from the Province. On the other hand, there are extensive training resource materials available based on NFPA standards are available.

All Ontario Fire Departments have this challenge. The larger Departments have the staff and other resources to adapt existing training protocols to meet the NFPA standards. Smaller Departments may find the task daunting.

Not having training programs in place that are based on recognized standards and not providing documentation that recognized competencies are achieved leaves Fire Departments in a precarious position from a risk management and safety perspective. The general duty clause in the Ontario Occupational Health and Safety Act section 25(2)(h) provides *"that an employer shall take every precaution reasonable in the circumstances for the protection of a worker"*. The definition of "*reasonable precaution*" is often based on generally accepted standards, which can now be assumed to be the NFPA standards.

The opportunity that presents is to facilitate collaborative efforts whereby resources are pooled and amongst geographically proximate Departments to enable a revised curriculum, lesson plans and training to be implemented.

This strategy can be particularly beneficial in training new recruits where the resources necessary to implement a comprehensive recruit program following can be significant. New recruit programs typically are based International Fire Service Training Association '**Essentials of Fire Fighting'** and can involve with 70 hrs of in-class, practical lessons and scenarios as well as 70 plus hours of at-home learning required to enable NFPA 1001 Firefighter I certification

Recommendation #22: Augusta Fire should seek opportunities to develop regional training initiatives including a common recruit program.

The County of Leeds and Grenville is fortunate to have a comprehensive training facility located in Lyndhurst. Augusta Fire has been a major client of this resource and should continue to encourage

its firefighters and officers to take advantage of the courses and training opportunities that are provided.

7.4.4 Medical Training

NFPA 1001 requires that Firefighters have as a standard of entry, minimum emergency medical skills including infection control, CPR, bleeding control and shock management. This standard is required for all new recruits (Policy 0012).

In Ontario, Fire Departments generally require additional first responder certification including bleeding control, positive pressure ventilation with a bag valve mask, oral airway, nasal airway, supplemental oxygen administration, suctioning, CPR, use of an automated external defibrillator (AED), manual stabilization of fractures, and assisting in the administration of basic medications such as epinephrine auto-injectors, oral glucose, and inhalers. They are also trained in packaging, moving and transporting patients. This level of training is supported by Augusta Fire more than 60% of the Firefighters have this certification.

Recommendation #23: ***That Augusta Fire continues to encourage and support Emergency First Responder or equivalent certification for all Firefighters and require Emergency First Responder or equivalent certification for advancement to Firefighter II and Officer positions.***

As Volunteer Fire Department stations typically respond to less than 200 calls and, in many cases, less than 100, it is a challenge to maintain competency regarding medical response unless dedicated time is made available to train and run scenarios. This is particularly challenging with only two nights of training per month that need to cover structural firefighting, auto extrication and other requirements.

Not all Firefighters will be able or willing to devote an extra night a month to additional training, however, it is likely a number will wish to further develop their medical and other competencies. Thus, to enhance medical and other firefighter competencies for those firefighters who wish to advance and maintain competency as NFPA Firefighter II, it is recommended that an additional monthly training session be implemented.

Recommendation #24: ***An optional third monthly training night be added to enhance medical and other firefighter competencies for those firefighters who wish to advance and maintain a higher level of competency.***

7.4.5 Enhanced Training for Mass Casualty Events

With a main VIA Rail Line and the 401 highway, the risk for mass casualty events in Augusta is significantly greater than most rural departments. As Fire is often the first responder to a mass casualty event and, in a rural area, is able to provide the most resources for the initial response, Fire Services have a key role to play in the immediate management of such events.

Recommendation #25 : ***That a SOG and Training Program be developed and implemented for on-scene initial management of mass casualty events such as school bus rollovers, tornadoes, long term care facility fires, multi-vehicle accidents and train derailments.***

7.4.6 Implementing All Hazards - Awareness Level Training

A central tenant of the All Hazards Concepts is that Fire Departments must be able to respond to all potential emergencies. This does not mean the Department has to have the capability of managing all potential emergencies.

The Enabling & Regulating (E&R) By-Law will provide the authority to respond and manage emergencies such as structure, vehicle and wildland fires, auto extrication and medical calls. The Department will be expected to be supplied with appropriate equipment and trained personnel to competently and safely manage these incidents.

Emergencies requiring specialized equipment and training such as trench, high-angle, confined space, or haz mat including chemical, biological, radiation, or nuclear response will require services of regional or provincial resources.

As noted previously, NFPA Standard 1670, *Standard on Operations and Training for Technical Search and Rescue Incidents* describes three levels of competency for technical rescue including *Awareness Level.* This level represents the minimum capability of organizations that provide response to technical search and rescue incidents.

Recommendation #26: ***Senior Firefighters and all Officers be encouraged and supported to take Technical Awareness Level Training to facilitate safe and effective initial response to emergency situations requiring resources not authorized by the E&R By-Law.***

By their nature, Firefighters will do whatever is required to save lives and property even if they are not specifically trained and equipped to respond safely or authorized. Thus, it is critical to have written and well understood protocols for obtaining resources to respond promptly to emergencies not authorized in addition to awareness level training that prescribes what can and should be done to assist the specialty teams.

Recommendation #27: ***That written protocols be developed regarding access to specialized technical rescue teams.***

7.5 Strategic Direction #5 – Strategic Management

This Strategic Direction will address a number of management issues related to the effective and efficient operations of the Department that were identified in the '5-question interviews.

7.5.1 Building a Culture of Safety

Firefighting, other emergency response, training as well as routine hall maintenance, truck and equipment checks present extraordinary hazards. Constant vigilance and adherence to best practice safety procedures are essential to achieving the objective of "Everyone goes home safe".

The duty under the Ontario Occupational Health and Safety Act to ensure that everything reasonable under the circumstances is done to protect the safety of the worker has been expanded by a Criminal Code amendment to include "any other person". Section 217.1 of the Criminal Code reads: "*Every one who undertakes, or has the authority, to direct how another person does work or performs a task is under a legal duty to take reasonable steps to prevent bodily harm to that person, or any other person, arising from that work or task.*"

Occupational Health & Safety Committee

The Township has a Joint Occupational Health and Safety Committee (JOHSC) and there is a Sub-Committee for the Fire Department. The Fire Department has 8 members on the Sub-Committee, one from management and one 'worker' representative from each station. The Sub-Committee is active and meets four times per year.

The Fire Department has one management and one worker formally trained members on the Fire Department JOHSC sub-committee. Additional members should have the opportunity for training.

The designated Township Safety Officer should be invited to attend Fire JOHC meetings as well as actively serve as a resource to the Department.

The Sub-Committee should develop a schedule for routine station inspections as well as participate in the development to specific safety related training.

Recommendation #28: ***The Fire Department Joint Occupational Health & Safety Committee meet at least every 3 months, and the frequency of meetings, number of workers trained, and number of station inspections be reported to Council on a quarterly basis.***

Accountability

A fundamental safety requirement for the fire service is an accountability system that identifies personnel, where they are located and what their task is. Should a firefighter become disabled or lost, the accountability system is essential to securing a prompt and effective rescue (Guidance Note 5-1, NFPA 1500, 1561). Augusta Fire is considering upgrading their accountability system to a 'Passport' and 'Case Commander' system. This is a positive development and will improve the effectiveness of the present system as well as encourage implementation of accountability at every call.

Recommendation # 29: ***The implementation of Accountability System be supported as a means to insure accountability is in place for every call. A concurrent audit should be initiated to report quarterly on whether Accountability was set up during major incidents.***

Recommendation # 30: ***Current work to consider an updated accountability system should continue.***

Safety Officer

NFPA 1521 and Guidance Note 2-4 provide information regarding the importance of establishing a safety officer at major incidents to assist Command with managing scene safety. There does not appear to be a SOG that addresses the role and deployment criteria for a Safety Officer.

Recommendation #31: ***That a SOG and related training be developed for the role and deployment of a Safety Officer based on Guidance Note 2-4 and NFPA 1521. A concurrent audit process should be developed to provide quarterly reports on the deployment of a Safety Officer at major incidents.***

Incorporating Safety in Formal Training Lesson Plans

Safety has to be a fundamental part of all training. Formal Lesson/Training Plans need to be in place that include specific safety procedures including incorporating a safety officer. Training/Lesson Plans need to be approved by the Chief. Contracted out training also requires formal lesson plans approved by the Chief.

Recommendation #32: ***Formal Lesson/Training Plans, approved by the Chief, need to be in place that include specific safety procedures including incorporating a safety officer.***

Specific Issues for further Investigation

There are a number of Occupational Health and Safety Issues which require further investigation and monitoring to determine the need for change in procedures or policy. These issues include:

- Fall restraint requirements i.e. loading hose on top of pumpers/tankers,
- CO removal in Halls – Is ventilation and automatic detection in Halls adequate? Should direct exhaust systems be considered?
- Decontamination at scene and Post-fire bunker gear management – There is developing evidence of contamination through bunker gear and need for decontamination. Need for on-site decontamination, post-incident showers, bunker gear cleaning procedures and other protection strategies are evolving and need to be monitored.

Recommendation #33: ***Health and Safety Issues, policies and practices be continually monitored and reviewed including attendance at Ontario Association of Fire Chiefs annual Health & Safety Conference.***

7.5.2 Officer Appointments

Elections are held for officer positions on an annual basis. All active members are eligible to vote, to be nominated for and, if successful, to fill one of these positions.
The process to be used in the elections and the criteria for the various positions are outlined in an Augusta Fire Operating Guideline. The OG requires that members must have attended 65% of all training events in order to be eligible for nomination to any office, and must have five years of experience to be eligible for the positions of Chief, Deputy or Captain.

The positions of Chief and Deputy are then formalized by way of appointments made by Council. Council does not assess the individuals' suitability for the appointments, determine performance expectations or conduct performance reviews.

During the "5 Question Interviews" concern was expressed regarding this process. Concerns included 'was it legal', 'is it a popularity contest'

A legal opinion[10] was sought to address:

- whether this practice complies with various legal obligations of the Township,
- whether it could result in the Township assuming risks and the possibility of liability, and
- To make recommendations that could be considered along with any other suggestions that may arise from the current review of the Fire Master Plan.

The opinion letter referenced both statutory obligations and liability risks as follows:

Fire Protection and Prevention Act

Section 2(1) of the Fire Protection and Prevention Act ("FPPA") requires municipalities to provide: (1) public education with respect to fire safety and fire prevention; and (2) such other fire protection services as it determines may be necessary in accordance with its needs and circumstances.

Where a municipality has a fire department, s. 6(1) of the FPPA requires Council to appoint a Fire Chief. The Chief, then, under s. 2(3), becomes the person who is ultimately responsible to Council for the delivery of fire protection services.

Council is responsible for determining services to be provided, and for setting standards and levels of service, according to the needs and circumstances of the municipality. The Chief is then responsible to Council.
Implicit in these statutory obligations is:

- Municipalities maintain oversight of their fire protection services.
- Municipalities must exercise their due diligence in appointing an appropriate Chief and in ensuring that he/she has the knowledge, expertise and support required to fulfill his/her obligations.

[10] A legal opinion regarding the matter of Fire Department elections was prepared for Council by Cunningham Swan

- Goals for, and expectations of, the Chief should be set and monitored.
- Municipalities should receive updates and information from the Chief to satisfy themselves that the fire protection services being provided to the community are adequate and effective.
- The Chief's decisions should be reviewed to ensure that they are bona fide, reasonable given resources and accord with the Township's needs and circumstances.

In order to properly discharge the obligations placed upon him/her by Council, the Chief needs to be able to ensure that he/she has properly-trained officers to whom to delegate specific responsibilities.

To ensure that he/she has properly-trained officers, it follows that eligibility to assume specialized positions in the service, such as Deputy, Fire Captain and Fire Prevention Officer, should be contingent on receiving the required training and demonstrating proficiency in the core competencies.

Civil Liability

The other matter to be considered is risk associated with claims of negligence. The most significant source of civil liability for municipalities in connection with fire departments is as a result of allegations of negligence.

FPPA generally protects fire chiefs, firefighters and other fire department personnel from personal liability for negligence as long as their alleged neglect or default has occurred in the "good faith" execution of their powers or duties. (Section 74(1)). The municipality is not, however, relieved of liability (Section 74. (2) and, are therefore, vicariously responsible for the losses suffered by an injured party as a result of negligent acts or omissions on the part of the fire department.

As there are a number of judicial decisions involving municipal liability for losses arising from a fire, it is therefore essential that municipalities make best efforts to ensure that their fire departments are managed and operated appropriately.

Employment Law

Volunteer firefighters are "firefighters" under the FPPA. This then makes them "employees" for the purpose of the Employment Standards Act ("ESA"). ESA explicitly excludes "firefighters" under the FPPA from certain provisions, such as the limits on hours of work, the minimum rest periods, the minimum amount of time off between shifts.

A court would view the current election system as giving elected members tenure in office for the duration of their elected term. The Chief, or Council, is therefore unable to remove an officer until the elected year has been completed. The Operating Guideline does not allow for the Chief or Council to play any role in the next election.
The by-law appointing the Chief is for an indefinite term. Council cannot simply appoint someone else as Chief if a new person were elected by the members, without addressing the current Chief's entitlements. The election system ties Council's and the Chief's hands in terms of making changes.

Human Rights Code

Discrimination in hiring, promotions, etc. on the basis of any of the protected grounds (race, colour, disability, age, gender, etc.) is prohibited.

An election system is inherently vulnerable to allegations of discrimination, due to the fact that the resulting appointments may not be merit-based and the process may essentially be a "popularity contest".

Occupational Health and Safety Act

As the 'employer', the Township can be charged under the OHSA for breaches of its obligations to ensure the safety of its workers. Duties required by the Employer under OHSA include: instructing, informing and supervising workers to protect their health and safety; appointing competent persons as supervisors; taking every precaution reasonable in the circumstances for the protection of a worker; establishing a joint health and safety committee; preparing policies with respect to workplace violence and workplace harassment and reviewing them at least once a year, etc.

With respect to supervision, the OHSA defines a "competent person" as an individual who is qualified, through knowledge, training and experience, to organize the work and its performance, and requires that employers appoint a competent person as a supervisor.

The Township must ensure that supervisors are in place and that they are competent. Merely appointing an individual who had been elected would not fulfill this obligation.

While most OHSA charges are levied against organizations, it is possible to be personally charged as well.

Criminal charges are also a possibility under bill C-45 which established new legal duties for workplace health and safety and imposed serious penalties for violations that result in injuries or death.

Recommendation # 34: *The Township replace the election system with a process whereby Council identifies the skills and abilities necessary in a Chief and, after satisfying itself that an individual has been identified who possesses those qualities, appoints that individual.*

Recommendation # 35: *The by-law appointing the Chief should be accompanied by an employment contract.*

Recommendation # 36: *The Chief's performance should then be overseen and reviewed on a regular basis, with consequences being imposed in the event that the Chief does not perform as expected.*

Recommendation # 37: *The Chief, in turn, should have the authority to hire a Deputy and appoint officers.*

Recommendation # 38: *Hiring and promotions should be on the basis of skills and abilities and should be accompanied by contracts. Best practice Human Resource policies should be in place for Hiring and Promotions including requirement for Position Descriptions, Position Postings, Structured interview questions, oral & exams where appropriate, and panel interviews.*

Recommendation # 39: *Certain key positions should be filled only where the Chief is satisfied that the member has the requisite training.*

Recommendation # 40: *The Chief should oversee the performance of Officers and Firefighters,(Performance Appraisals) with consequences being imposed for failing to meet expectations.*

Recommendation # 41: *The Township should also consider having the Fire Department share some, or all, of the human resources policies of the municipality.*

7.5.3 Retention and Recruitment

Retention and recruitment of volunteers is becoming increasing difficult. This is not simply a local issue; it is national and international in scope. The expectation is that the volunteer firefighter will have the same level of training and competencies as a career Firefighter. Further, the breadth and depth of training and response capability has grown significantly.

Society has changed as well. Fewer people in rural areas live and work in the same community. Thus day time response can be a serious issue. Work and family pressures make it a challenge to undertake the intense training required as well as to respond to calls.

Volunteer Fire Departments have, in the past, been able to be relatively passive regarding recruitment and retention. There were always eager candidates anxious to join and many stayed on the department for 30+ years.

Today, it's becoming increasingly difficult to recruit and retain. Further, recruitment and retention of firefighters who are casual in attending training and calls is not as serious as recruitment and retention of firefighters who will develop advanced skills, have sufficient ability and commitment to respond to many calls, participate in fire inspection, pre-planning and public education and become tomorrow's officers.

One of the prominent retention and recruitment methods is to be a 'magnet organization'. That is all policies, procedures, activities, and decisions be examined through the lens of asking the question *"will this assist us in recruiting and retaining staff"?*

More specifically, questions can be asked such as:

- Do we have training programs that are informative, well presented, engaging and relevant? Lecture style PowerPoint presentations generally are not as helpful as a participative conversation. Hands-on doing is generally preferable to classroom teaching.
- Do we have fun when training or is there a culture of fear & intimidation where people are afraid to show initiative or ask questions?
- Do we use public education events at village fairs and other such events to provide information on being a volunteer firefighter?
- Do we actively provide training and promotional opportunities to firefighters who wish to advance?
- Do we have a compensation system that is fair and appropriate?
- Do we provide other incentives and rewards to acknowledge the contribution of firefighters?
- Is there a clear and supported plan for advancement?
- Do we consistently engage in a formal exit interview with firefighters who are leaving to identify opportunities for improvement?

The 'five-question' interviews revealed that many of the questions noted above are being addressed. In particular, the regular 'town hall' dinner meetings with the Chief, provision of hats and other fire department clothing, and annual 'awards' night were cited as very positive morale building strategies that aid retention and recruitment.

The interviews also revealed that there were some opportunities to gain recruits through more active community engagement.

Recommendation #42: ***That a formal Retention and Recruitment Strategy be developed using community and Firefighter focus groups to identify issues and propose recommendations.***

One key issue that should be addressed is compensation. In the past, being a volunteer was just that, there was no compensation. Training was minimal and calls were infrequent. Today's volunteer is expected to attend:

- Approximately 72 hours of scheduled Firefighter Training Sessions per year, Minimum 44 hours per year.
- 16 hours required to cover CPR & First Aid Course every 2 years.
- Additional hours are required for driver training and specialty courses such as Company Officer, Pump Operations and NFPA courses.

This commitment is in addition to actual calls.

In reality, the commitment required is more accurately described as a part-time job than volunteer.

The current compensation system is based on points which essentially translate into 1 point equals one paid hour. Points are awarded based on responses to calls, participation in training, attendance at specialized training courses, etc. Points may also be deducted, for example, for failing to attend a sufficient number of evening training events. Members receive payment for their portion, based on points, of the overall amount set aside in the budget for remuneration. Amounts earned are then paid yearly, and are again treated as employment income. Annual payments are typically in the $1,000 to $2,000 range. The Township also provides certain insured benefits to its firefighters under a group plan (loss of life, disability, etc.).

The Department budgets for a certain compensation amount. If the points exceed budget, the value of each point is diminished. This allows the Township to have an upset control on the budget but can reduce firefighter compensation per point if the budget is exceeded.

In the interest of improving retention and recruitment it is suggested that the concept of 'honorarium' and 'points' be reviewed to determine if a more attractive method of compensation should be considered.

Recommendation #43: ***That the point system be reviewed to identify alternative compensation methods to support Firefighter retention and recruitment.***

7.5.4 Succession Planning and Retirement Policy

A formal succession plan should be developed to plan for development of Firefighters to replace officers as they retire. This plan should identify likely retirements over the next 5 years on an on-going basis and include a specific education and graduated responsibility map for individuals who wish to pursue advancement.

Clear path career advancement is an important incentive to maintain morale, engagement and retention. It is also very important in volunteer fire departments where an officer may not always be present at a call. Developing leadership capability and competency with senior firefighters enables calls to be well managed when officers are not present or are limited in numbers.

Retirement is a difficult issue often as senior firefighters and officers are committed and may not wish to end their involvement at a certain age. Further, it is difficult to generalize and force retirement at a certain age. On the other hand, there can be situations where there is risk associated with a member's health, physical fitness or willingness to actively learn and implement new procedures.

From a risk management perspective, there is merit in considering a by-law requirement that all firefighters over the age of 60 require an annual medical assessment to state that they are able to perform the tasks expected of a firefighter.

Another tactic is to have annual conversations with senior firefighters and officers to discuss retirement and develop a mutually agreeable, documented plan.

Recommendation # 44: ***That a formal Succession plan and Retirement Policy be developed.***

7.5.5 Records and Documentation

The Department uses "Firehouse" Software package for document management and statistical analysis. There are comprehensive reports filled out for each call and the information is entered into Firehouse. Last 4 years data is in Firehouse. Paper copies are kept in a binder at Station 1 Personnel Files are kept in kept in paper copy at Station 1. Only basic information collected- Name, D.O.B, SIN, address, phone number.

Training Records for Each firefighter are kept in a folder at Station 1 folder with all the certificates/courses they have completed. Last 4 years of training records maintained in '*Firehouse'*. Each training session has a folder with the signed attendance sheet in it which is kept at Station 1.

Documentation exists regarding capital equipment, however, compliance with the Township's Capital Inventory Policy is unknown. Further investigation is required to determine how to develop a capital inventory process and documentation that is consistent with Township policy.

Fire Inspections reports are kept in paper copy at Station 1. Each inspection is filed by address. Each Vehicle has a folder with all documents in it, manuals, oil changes, safety's, etc. paper copy is kept at Station 1. Although there are routine inspections carried out on an annual basis, a formal

preventative maintenance program should be developed based on the manufacturer's recommendations.

Recommendation #45: ***A formal preventative maintenance program should be developed and documented for apparatus and other major equipment based on the manufacturer's recommendations.***

Points are tracked in 'Firehouse' based on training and emergency response records.
The documentation and filing process is supported by the Department Administrative Assistant.

'Firehouse' is a very comprehensive information management tool. Excellent work has been done to utilize this capability and efforts should continue to automate as many records as possible. It is useful to maintain paper records as well for ease of access to originals and as a backup.

There would be benefit in having documentation regarding the location and system associated with both electronic and paper filing. This would facilitate identifying what records are being kept and where they are located and the retention period. This is particularly important as records and documents are often electronic and are kept in multiple data bases and locations.

From a business continuity perspective, this analysis is critical to understanding where there are risks and if there are appropriate back-up and alternative sites available should normal access be disrupted.

Recommendation #46: ***That office procedures, processes, record location and access methods be documented and reviewed to ensure that complete records are being maintained, are readily accessible and the Firehouse program is being used to it's potential.***

Recommendation #47: ***That office procedures, processes, record location and access methods be reviewed to determine if adequate back-up and alternative measures are in place to maintain business continuity should normal access or procedures be disrupted.***

IPads have the potential to improve fire inspection and pre-plans. Data can be collected on-site and uploaded in real-time eliminating delays and simplifying the documentation process. IPads can also be used by Senior Officers as a communication, information sharing, and Command resource tool.

Recommendation # 48: ***That electronic tools such as iPads as well as existing or enhanced capability of 'Firehouse' be explored to better keep track of performance measures and field documentation including fire inspections.***

7.5.6 Policies and Standard Operating Guidelines

The Department has a comprehensive array of Polices and Standard Operating Guidelines. With a volunteer complement of officers and firefighters, it is a challenge to ensure regular review, updates and additions.

As technology and practice is constantly evolving and new hazards present, it is critical to devote significant effort to the ongoing review of existing SOG's and development of new.

All SOG's should specifically refer to and reference Sec. 21 Guidance Notes.

Recommendation #49: ***A target number of SOG's to be reviewed annually be established as well as an annual target for new SOG development.***

Recommendation #50: ***SOG's be developed for Electrical Emergencies (wires down, solar, transformer/pole fires, sub-station fires), Propane and Natural Gas Emergencies, Multi-Casualty Events, B.L.E.V.E., Safety Officer and Train Derailments.***

Recommendation # 51: ***The SCBA related SOG's should be consolidated into a Respiratory Program as required by Sec. 21 Guidance Note # 4-9, CSA Z94.4 and NFPA 1981.***

7.5.7 Electronic Communication and Access to Documents

Effective communication including full access to documents such as Policies, Reports, SOG's, Notices and Training lesson Plans vital to keeping all Firefighters informed and engaged. Social media such as Facebook and Twitter can be useful for rapid communication. To facilitate access to documents, email, and scheduling software, it is recommended that Microsoft Office be adopted as the standard, and to ensure all Firefighters and Officers have access to a laptop and required software, an affordable employee purchase plan be developed.

Recommendation #52: ***That standard office automation software be used to facilitate communication and documentation access and that an employee purchase plan for basic laptops/tablets be initiated to ensure all firefighters and officers have access to calendar, email and other electronic communication modalities.***

7.6 Strategic Direction #6 – Collaborative Relationships

No man is an island, entire of itself[11]

Few endeavors are more reliant on the assistance of others than emergency response. Effective relationships with responders within ones community as well as neighbouring communities are essential to serving the public interest in the most efficient and effective way.

Although the principle applies to even the largest and most sophisticated Fire Service, it is particularly true with Volunteer Services where coverage of large geographic areas and limited human and technical resources are present. The challenge is particularly compounded by the public expectation that the same level of emergency response service will be available whether you live in the city or country.

This Strategic Direction will review the formal and informal relationships that exist with neighbouring Fire Departments and other emergency response partners.

7.6.1 Mutual Aid Agreements.

Augusta Fire is an active participant in the Leeds and Grenville County Municipal Aid Agreement. This formal agreement is based on the OFM template and provides for a Mutual Aid Coordinator, identifies the key resources each participating Department has and outlines the protocol for activation. The purpose of the agreement is to facilitate the rapid deployment of resources from one municipality to another should they be required.

The Mutual Aid Agreement includes the Townships of Athens, Augusta, Edwardsburgh/Cardinal, Elizabethtown-Kitley, Front of Yonge, Township of Leeds and the Thousand Islands, North Grenville, Rideau Lakes, Village of Merrickville-Wolford, Village of Westport, City of Brockville and towns of Gananoque and Prescott.

Specific technical rescue services that should have protocols for access include High Angle, Trench, Confined Space, Heavy Extrication, Haz Mat, and Swift Water.

Recommendation #53: ***That the County mutual aid agreement be reviewed to determine what technical rescue services can be provided and protocols for access.***

There are protocols for accessing Provincial Resources such as Chemical, Biological, Radiological, Nuclear Explosive (CBRNE) and Heavy Urban Search and Rescue (HUSAR), and Ministry of Environment Resources as well as resources for a major disaster. Clear Policies and Procedures should be present to access Provincial Technical Rescue Teams and Ministry of Natural Resources.

Recommendation #54: ***Clear Policies and Procedures be developed to access Provincial or other municipal Technical Rescue Teams (CBRNE, HUSAR) and other resources.***

[11] John Donne ***Devotions upon emergent occasions and seuerall steps in my sicknes - Meditation XVII***, 1624

To facilitate mutual aid operations where multiple Departments may be involved in an incident, some regions in the Province have adopted a coordinated apparatus identification system. In York Region for example, trucks are identified by a number for the Municipality, a second number for the station and a third number for the type of truck. A pumper is 1 or 2, a Telesquirt is 3, a tanker is 4 or 5, 6 is an Aerial, 7 is an Aerial Platform, 8 is a Hazmat, 9 is a Rescue and 0 is a Utility. Thus, a Pumper from Station 8 in King Township (which is designated as 3), would be 381. The Kingston area Departments recently adopted a similar designation except the trucks are prefaced by an initial i.e. P911, which, for example, is the pumper from Napanee (9), Station 1 (1), first run truck (1).

The advantage of this approach is that apparatus from multiple departments deployed are easily identifiable to both Dispatch and Incident Command.

Recommendation #55: ***In collaboration with Mutual Aid partners, Augusta Fire explore opportunities to improve mutual aid interoperability including a common truck identification system. Should a common system not be feasible, Augusta Fire should consider a coherent truck identification system that could be adapted to a common system in the future.***

7.6.2 Automatic Aid and Purchased Fire Service

In contrast with mutual aid agreements where other township services are requested, automatic aid agreements provide for automatic dispatch of a neighbouring fire department to provide fire and other emergency services to an agreed upon geographic area.

Augusta has Automatic Aid Agreements (purchased service agreement) with the Town of Prescott for the geographic area of Augusta proximate to Prescott.

7.6.3 Relationship with Neighbouring Municipalities.

In addition to Mutual and Automatic Aid, there are many other mutually beneficial relationships that can be developed with neighbouring municipalities. Examples include;

- Shared Training: This can include common recruit training, sharing of instructors, and collaborating in the development and implementation of lesson plans.
- Shared administrative: shared administrative support, expertise in ‘Firehouse’ are examples.
- Shared positions: Highly skilled positions such as fire inspectors with specialty expertise.
- Shared station: There may be specific opportunities to share station.
- Shared training area: Training facilities can be expensive and are ideally located in areas where burning and other activities are not disruptive to the surrounding community. Opportunities to share the use and cost of such facilities may be mutually beneficial.

Recommendation # 56: ***That opportunities to continue and further develop shared personnel and other mutually beneficial arrangements be explored.***

9 Appendices

Appendix I: List of Recommendations:

1: *That annual inspections be undertaken as required by Ont. Reg 150/13 and a summary report be provided to Council quarterly.*

2: *The request/complaint based Inspection Process be augmented with pro-active, risk-based 'education' visits with annual targets established and quarterly reports provided to Council.*

3: *The Inspection/Education Process be integrated with Pre-Plan development and Training to facilitate emergency response.*

4: It is recommended that the Township Establishing and Regulating By-Law be revised to require the Chief to develop and provide an effective fire prevention program that will:

a *Ensure, through plan examination and inspection, that required fire protective equipment is installed and maintained within buildings,*

b *Reduce or eliminate fire hazards,*

c *Ensure compliance with applicable Municipal, Provincial and Federal Fire Prevention Legislation, Statutes, Codes in respect to fire safety, and*

d *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.*

5: *It is recommended that the Department develop a Fire Prevention, Inspection and Public Education Policy which requires that:*

- *The Chief Fire Official and/or Fire Prevention Personnel will conduct inspections of the properties specified in Table 6 at the frequencies indicated.*
- *Fire Services Personnel will conduct a home inspection program for residential dwelling units for installation and maintenance of smoke alarms and carbon monoxide detectors.*
- *Fire Prevention Personnel examine plans and specifications of new buildings for compliance with applicable fire regulations.*
- *Fire Services Personnel and/or other volunteers in the community will provide fire safety lectures and/or demonstrations for various public sectors such as industries, community groups, service clubs, business groups, day care facilities and schools, upon request and where resources are available.*

6: *That a Policy and Procedure be developed regarding the respective roles of the Fire and Buildings Department with respect to Building Permit and Planning Application Approvals as well as Building Inspections.*

7: *Specific Plans for Public Education and Awareness including Smoke and CO Alarms, in-school programs and seniors programs be developed annually and activity reports be provided quarterly to Council.*

8: *Due to safety hazards and age related building deficiencies, it is recommended that planning commence immediately for the replacement of Station 1.*

9: *That an additional station be built to improve response times and enable more Township residents to be eligible for Insurance discounts.*

10: *That the additional station be located in Maynard on Township owned lands proximate to the Town Hall.*

11: An additional 12 firefighters be recruited with an explicit preference for candidates able to be available workdays.

12*: That the current range of services provided by Augusta Fire be specified in the Establishing and Regulating By-Law.*

13: *That a multi-year plan be developed to add one dry hydrant every two years to ensure all areas of the Township have year-round access to dry or pressurised hydrants or equivalent within 5 kms.*

14: *NFPA 1120 "Standard on Water Supplies for Suburban and Rural Fire Fighting" be used to guide any future commercial, industrial or multi-occupant residential development.*

15: *On an ongoing basis, the annual budget include the purchase of 1 portable radios to 'evergreen' the current number as well as build an inventory to ensure adequate numbers are available during major events.*

16: *That Augusta Fire in collaboration with other South-Eastern Fire Departments initiate discussions with the South-East CACC to explore the perceived dispatch delay issue and explore possible solutions to improve fire response times.*

17: *Further study be undertaken to audit the number of emergency first responders present in the first-on-scene apparatus to determine if a single station response would be appropriate.*

18: *That the Township of Augusta approve the recruitment and appropriate compensation for a full-time Fire Chief.*

19: *That the Augusta Fire Department develop and implement quarterly reporting based on the Balanced Scorecard accountability framework.*

20: *That the review and updating of Standard Operating Guidelines (SOG's) continue with a specific target performance metric regarding number to be developed, reviewed and updated be identified as part of the Departments annual objectives and be monitored in the quarterly report.*

21: *Subject matter experts/teams be identified and supported to assist in the review and development of SOG's, Lesson Plans, and to deliver common training to each station to ensure a consistent interpretation of the SOG's and Training Plans, thus facilitating station interoperability.*

22: Augusta Fire should seek opportunities to develop regional training initiatives including a common recruit program.

23: *That Augusta Fire continues to encourage and support Emergency First Responder or equivalent certification for all Firefighters and require Emergency First Responder or equivalent certification for advancement to Firefighter II and Officer positions.*

24: *An optional third monthly training night be added to enhance medical and other firefighter competencies for those firefighters who wish to advance and maintain competency as NFPA Firefighter II.*

25 : *That a SOG and Training Program be developed and implemented for on-scene initial management of mass casualty events such as school bus rollovers, tornadoes, long term care facility fires, multi-vehicle accidents and train derailments.*

26: *Senior Firefighters and all Officers be encouraged and supported to take Technical Awareness Level Training to facilitate safe and effective initial response to emergency situations requiring resources not authorized by the E&R By-Law.*

27: *That written protocols be developed regarding access to specialized technical rescue teams.*

28: *The Fire Department Joint Occupational Health & Safety Committee meet at least every 3 months, and the frequency of meetings, number of workers trained, and number of station inspections be reported to Council on a quarterly basis.*

29: *The implementation of Accountability System be supported as a means to insure accountability is in place for every call. A concurrent audit should be initiated to report quarterly on whether Accountability was set up during major incidents.*

30: *Current work to consider an updated accountability system should continue.*

31: *That a SOG and related training be developed for the role and deployment of a Safety Officer based on Guidance Note 2-4 and NFPA 1521. A concurrent audit process should be developed to provide quarterly reports on the deployment of a Safety Officer at major incidents.*

32: *Formal Lesson/Training Plans, approved by the Chief, need to be in place that include specific safety procedures including incorporating a safety officer.*

33: *Health and Safety Issues, policies and practices be continually monitored and reviewed including attendance at Ontario Association of Fire Chiefs annual Health & Safety Conference.*

34: *The Township replace the election system with a process whereby Council identifies the skills and abilities necessary in a Chief and, after satisfying itself that an individual has been identified who possesses those qualities, appoints that individual.*

35: *The by-law appointing the Chief should be accompanied by an employment contract.*

36: *The Chief's performance should then be overseen and reviewed on a regular basis, with consequences being imposed in the event that the Chief does not perform as expected.*

37: *The Chief, in turn, should have the authority to hire a Deputy and appoint officers.*

38: *Hiring and promotions should be on the basis of skills and abilities and should be accompanied by contracts. Best practice Human Resource policies should be in place for Hiring and Promotions including requirement for Position Descriptions, Position Postings, Structured interview questions, oral & exams where appropriate, and panel interviews.*

39: *Certain key positions should be filled only where the Chief is satisfied that the member has the requisite training.*

40: *The Chief should oversee the performance of Officers and Firefighters,(Performance Appraisals) with consequences being imposed for failing to meet expectations.*

41: *The Township should also consider having the Fire Department share some, or all, of the human resources policies of the municipality.*

42: *That a formal Retention and Recruitment Strategy be developed using community and Firefighter focus groups to identify issues and propose recommendations.*

43: *That the point system be reviewed to identify alternative compensation methods to support Firefighter retention and recruitment.*

44: *That a formal Succession plan and Retirement Policy be developed.*

45: *A formal preventative maintenance program should be developed and documented for apparatus and other major equipment based on the manufacturer's recommendations.*

46: *That office procedures, processes, record location and access methods be documented and reviewed to ensure that complete records are being maintained, are readily accessible and the Firehouse program is being used to its potential.*

47: *That office procedures, processes, record location and access methods be reviewed to determine if adequate back-up and alternative measures are in place to maintain business continuity should normal access or procedures be disrupted.*

48: *That electronic tools such as iPads as well as existing or enhanced capability of 'Firehouse' be explored to better keep track of performance measures and field documentation including fire inspections.*

49: *A target number of SOG's to be reviewed annually be established as well as an annual target for new SOG development.*

50: *SOG's be developed for Electrical Emergencies (wires down, solar, transformer/pole fires, sub-station fires), Propane and Natural Gas Emergencies, Multi-Casualty Events, B.L.E.V.E., Safety Officer and Train Derailments.*

51: *The SCBA related SOG's should be consolidated into a Respiratory Program as required by Sec. 21 Guidance Note # 4-9, CSA Z94.4 and NFPA 1981.*

52: *That standard office automation software be used to facilitate communication and documentation access and that an employee purchase plan for basic laptops/tablets be initiated to ensure all firefighters and officers have access to calendar, email and other electronic communication modalities.*

53: *That the County mutual aid agreement be reviewed to determine what technical rescue services can be provided and protocols for access.*

54: *Clear Policies and Procedures be developed to access Provincial or other municipal Technical Rescue Teams (CBRNE, HUSAR) and other resources.*

55: *In collaboration with Mutual Aid partners, Augusta Fire explore opportunities to improve mutual aid interoperability including a common truck identification system. Should a common system not be feasible, Augusta Fire should consider a coherent truck identification system that could be adapted to a common system in the future.*

58: *That opportunities to continue and further develop shared personnel and other mutually beneficial opportunities be explored.*

Appendix II Task Tracking Plan

Recommendation		Tactical Plan Developed	Target Completion Date	Responsibility
1				
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Recommendation		Tactical Plan Developed	Target Completion Date	Responsibility
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Appendix III: 5 Question Interview Comments:

* Indicates multiple answers

What is working well?

- Well run organization
- Motivated officers, Great Leadership ***
- Want to be the best
- Good team work, work well together *****
- Issues with two stations- getting better
- Feel like one department
- Most want to do training
- Comprehensive Operating Guidelines
- Working well today ***
- Dedicated volunteers
- Excellent Training - Enthusiasm is contagious ***
- Super administrative support
- Support from Council. Department has all the good stuff, good equipment ******
- Cost efficient
- Service as good or better than others
- Stations seem to be well located
- Good relationship with Council
- Well equipped
- Burn Permits are working well
- Good communication ***
- Firefighters highly respected
- Department performs well, no complaints
- Firefighters strongly involved in the community (business fairs, pancake supper)
- Good Cooperation *
- Real source of Pride – Need to Reward
- Chain of Command
- It's a Family!
- $50,000 annually from Nevada.
- Good Recruit Program **
- Beneficial to have members go directly to seen.
- Training together (Stn 1 & 2)
- Council allowing Department autonomy
- Reserves for Hall & Trucks *
- Funds for training
- Good Documentation
- Excellent training – topics & quality
- Commitment to outside training
- Leadership
- Community Support – involvement with events
- Active in Public Education
- Organization –Deputy, CFPO, FPO, Captains
- Committees for Fire Prevention, Training, Social, Equipment & apparatus, Pre-plan & SOG's, Occ. Health & Safety
- Stable number of members, low turnover
- Feeling of one Department
- Good collaboration with other Departments
- Good mutual aid support

- People want to join
- Social media "tweets"
- Fire prevention/public education
- Automatic aid with Prescott
- No Complaints
- Lots of Respect
- Good Relationship with Chief
- Good Relationships with Municipal staff
- Do a Great Job – No Complaints
- Good mix of old of senior and younger FF
- Really Proud of our Fire Department
- Don't lack for anything, equipment is first class

Key Issues

- Need to replace Stn. 1 ********
- Need involvement from all; same FF doing all the work.
- Everyone keen to respond to fires; alarms, CO, Medical, not so much.
- Balance work life, family, training
- Election of Chief & Officers - seen as 'right' by older generation of the Department create a culture of appeasement "if I piss people off, I won't get voted in" ***
- Do not have resources to do proactive inspections, pre-plans, smoke/CO alarm.
- Little interface with Building Departments
- Need to develop Position Descriptions, Performance Evaluation
- Need attention to Accountability
- Changes in Legislation – Keeping up i.e. Sec. 21 Guidance Notes
- Turnover of FF
- Not as attractive as a 'social club', huge commitment required.
- How do you make it attractive…get the right people
- Ministry of Labour Requirements
- Pressure to move to paid employees
- Need more time for Chief to do pro-active fire inspections, attend Council, full time****
- Relationship with Council has been "hands off", Needs to change – Due Diligence
- Population growth near Prescott
- New Station Location**
- Shift to Prevention & Public Education*
- Where are we going with Medical? Chasing EMS? **
- Joint station with Prescott? *
- Digital text only pagers – miss info from old pager audio *
- Consistent implementation of Accountability
- Should train together with Prescott
- More & more difficult to get DZ. Need training ****
- Point System **
- Policy issue re; social media – announcement if incidents
- Space at Stn. 2
- Inadequate training, not having equipment set up, ready to go
- Need dedicated training ground
- Reserves charged to operating budget
- New station –need something that will provide pride.
- Opportunities for more training
- Implementation of IMS on 401
- Criteria/response protocol for CO and Medical Calls
- Voice of Volunteer Firefighters needs to be heard at the Provincial level.

- Costs – culture of restraint
- Major Hazards – Rail, Chemical Plants, How will the Dept. respond?
- Training related to agriculture – farm extrication, silos
- Tax base has eroded – diminished industry
- Limerick Forest – protocol with MNR, County, 178 Homesteads
- P.T.S.D
- A third station?
- Availability of staff on days *
- Streamline Association & General Meetings

What would you like to see Changed?

- Come together as a Department
- No huge, pressing issues
- Need debriefs, address inter personal issues
- Need Station 1 rebuilt *****
- Get rid of elections – popularity contest
- Need performance metrics
- Notify Building Dept. of House fires automatically.
- Look for efficiency opportunities i.e. joint fleet maintain ace.
- Encourage diversity in new recruits
- Point System
- Exit Interviews
- Need signs re: green light awareness
- Sponsor physical fitness, healthy lifestyle – incorporate in new fire hall
- Drivers should respond to hall, wait to fill trucks.
- Look at contract with Driving Schools to facilitate DZ
- Need debriefs after calls.
- Full-Time Chief **
- Need training Area
- Standardize equipment
- Need more truck check training, more time/people to do properly. Need to make sure all FF involved, learn all trucks.
- Keep training focussed “on message”
- Send out material be email.
- Response to Medical Calls

What would you like to see stay the same?

- Number of officers
- Good equipment
- How Training works, High Quality, Hands on training ***
- Chief, Deputy, Officers
- How IMS works
- Two stations
- CFPO & FPO
- Good delegation
- Competent Chief
- Continue working relationship with Buildings & Planning regarding inspections and planning reviews
- High level of Confidence
- Make sure the firefighters can continue their input and be involved in their future.
- Feeling of Trust, sense of belonging.

- Respond directly to scene
- Current Balance/ flexibility – Training/Family *
- Support from other FF
- Communication *
- Mutual Respect
- Feeling like one Department
- Support for NFPA certification (FF1 FF2)
- Budget for Training.
- Importance of retention/recruitment
- Support of Lyndhurst Training Centre – Great value for money, Learners bring back info to Dept., opportunity for networking
- Support & Respect from Council
- Pride in equipment
- Keep Stn. 1 in current location.
- Minimum of 2 stations
- Good Morale
- Adequate Reserves
- Buy top line equipment
- Access to training, Access to Lyndhurst "if you want it, take it" **
- Continue to work with Public Works – Joint Training
- Allowing Senior FF to stay on.
- Culture of Safety
- Chief – really valuable asset, part of the community

Appendix IV: Apparatus Plan

Station	Unit	Description	Year	Disposition	
1	Pumper 5	GMC Topkick	1995	Replace in 2016 (currently being built by Arnprior with delivery in Summer 2016)	
1	Tanker 8	GMC Topkick	2002	Replace in 2022	
1	Rescue 9	Rescue-Seats 5	2007	Replace in 2027	
1	Van 3	Chevrolet	2000	Replace in 2017	
1	Pump 11 water supply	GMC Topkick	1993	Dispose in 2019 (currently only used for water supply and back up pumper)	
1-Currenty stored at Invista	Pump 1-Parade Truck	Pierreville	1957	Parade Truck	
2	Pumper 2	Arnprior-Seats 5	2014	Replace in 2029	

2	Tanker 7	GMC Topkick	2000	Replace in 2020	
2	Rescue 6	Rescue-Seats 5	2010	Replace in 2030	
2	Truck 4	Chevrolet	2008	Replace in 2023	
2	Trailer	Hallmark	2013	Replace in 2038	
2	UTV	Polaris- 5 Seater	2015	Replace in 2035	

Appendix V: SAMPLE FIRE CHIEF POSITION DESCRIPTION

*This position description presents a descriptive list of the range of duties performed by employees in the class and is **not** intended to reflect all duties performed.*

SUMMARY DESCRIPTION

Responsible for directing the overall operation of the Fire Department in accordance with provincial/federal legislation, Council policies and within approved budget guidelines. Prepares and monitors operating and capital budgets and provides options for Council to consider. Provides advice and guidance to Council and Committees on the development of plans, priorities and policies for the Fire Department. Responsible for compliance with the Emergency Management Act and the Fire Protection and Prevention Act

The following duties are typical for this classification and may be required to perform additional or different duties from those set forth below to address business needs and changing business practices.

- Annual budget preparation.
- Fully completes fire response records and prepares reports as required.
- Enforces departmental rules and regulations, and recommends disciplinary action when necessary.
- Participates actively as a member the Senior Management Team
- Develops policies, procedures and program standards and makes appropriate recommendations to Council.
- Responsible for recruitment, selection, orientation, performance management and development of all Fire Department employees and personnel.
- Provides ongoing performance feedback and coaching and develops/guides long-term career development plan to department members
- Responsible for implementation of the Master Fire Plan for the Municipality.
- Conducts annual performance evaluations for all direct reports.
- Provides a forum where employees can work co-operatively with other team members.
- Ensures healthy and safe physical environment for staff.
- Ensures compliance with the Occupational Health and Safety Act. Thorough understanding of supervisor roles and responsibilities under the Occupational Health and Safety Act.
- Ensures that all relevant employment and workplace legislated standards are met and Fire Department SOP’s are developed and implemented.
- Responsible for the long range planning objectives and policy development of the Fire Department.
- Attends Council meetings, training etc. after hours as necessary.
- Plans, develops and prioritizes capital programs for the Fire Department.
- Anticipates and identifies long range issues that may have a negative impact on the Fire Department. Develops and implements strategies to avoid or mitigate impact.
- Anticipates and identifies opportunities for the municipality and develops strategies and plans to maximize the benefit from these opportunities.
- Ensures that corporate wide issues are brought forward to the management team for appropriate discussion and decision-making.

- Oversees the development of annual goals and objectives for the Fire Department.
- Conducts fire prevention inspections and ensures code compliance as necessary.
- Sets priorities and ensures that work plans to achieve Department goals are established and implemented.
- Analyzes past data and establishes annual capital and operating budget based on trends and future needs.
- Provides services within approved budgets.
- Prepares tenders and negotiates and administers contracts for goods, services and capital projects in accordance with the Procurement Policy.
- Negotiates on behalf of the Township for services such as communication/dispatching and fire protection agreements for consideration by Council.
- Responsible for the purchase of goods and services as per the Procurement Policy.
- Reviews and analyzes monthly financial statements and statistical reports.
- Monitors and reports Budget variances to Chief Administrative Officer on a regular basis.
- Develops and administers the overall operation of the fire department including; firefighting (as outlined in the E&R By-law including emergency medical response), fire prevention, Fire scene investigations, hazardous materials incidents, auto extrication incidents, rescue, life and property saving functions with which the department may be involved, and maintenance of facilities.
- Oversees and supervises All Fire Stations and supervises overall administration of the Fire Department.
- Oversee the maintenance, repair and replacement of all vehicles and equipment.
- Other duties as assigned

QUALIFICATIONS

The following generally describes the knowledge and ability required to enter the job and/or be learned within a short period of time in order to successfully perform the assigned duties.

- Minimum 5 years' experience as a senior officer within a Municipal Fire Department.
- Certified as a Community Emergency Management Coordinator or willingness to pursue this designation.
- Demonstrated management and performance management skills, including the ability to effectively lead a team.
- Ability to function well under pressure, and to respond to frequently changing demands
- Strong interpersonal communication and public relations skills.
- Demonstrated knowledge of modern firefighting and fire prevention methods, rescue and first aid procedures, rules and equipment.
- Possess knowledge and skill in safe operation and maintenance of all types of fire and emergency vehicles, equipment and safety and protective devices.
- Demonstrated knowledge of firefighting, fire prevention, public education and emergency management.

- Proven oral and written communication skills with various levels of staff, Council, and public.
- Demonstrated budgeting and financial management skills.
- Demonstrated ability to work collaboratively.
- Excellent knowledge of Fire Protection and Prevention Act, Emergency management Act, Fire Code, Building Code Act, Provincial Offences Act and other applicable Provincial & Municipal Law.
- Demonstrated knowledge of fire department equipment and apparatus requirements to meet community needs and circumstances.
- Computer literacy skills in various office applications.