

**The Region of Windsor and West Hants Municipality**

# **Regional Fire Services Review**



**November, 2019**



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## INTRODUCTION

The following report and recommendations are a result of extensive review and research. This was made possible due to the efforts and guidance of numerous municipal staff, and the fire service personnel and supportive agencies.

Goudreault Associates would like to recognize and thank the following persons for their assistance.

- Mark Phillips, CAO, Region of Windsor and West Hants Municipality
- Martin Laycock, CAO Municipality of West Hants
- Louis Coutinho, former CAO Town of Windsor
- Todd Richard, Acting CAO, Town of Windsor
- The Region’s Fire Chiefs and Deputy Chiefs
- Region’s Firefighters

The information and data requested was extensive and onerous on all, and we greatly appreciated the effort. If it were not for the effort of those all involved the resulting report and recommendations would not have been possible.

The RFP requested a Regional Fire Services Review of the current Fire Services and, based upon those findings, create a plan for a new Regional Fire Services for the New Regional Municipality

The following report is an accumulation of local information measured against current legislation, regulations, recognized standards and guidelines.

The report and its recommendations will achieve the overall objective of a standardized delivery of service for the new Regional Municipality.

## EXECUTIVE SUMMARY

On April 1, 2020 the consolidation of the Town of Windsor and the Municipality of the District of West Hants will occur. Goudreault Associates (GA) was retained to conduct this Fire Services Review; with an intent to propose a plan for a more regionalized approach to fire and rescue services in the new municipality.

There are currently six fire departments providing fire and rescue services in Windsor/West Hants (W/WH). These include the four W/WH departments (Windsor, Hantsport, Brooklyn and Summerville). Hantsport administers a second station in Vaughan (called South West) and Brooklyn manages a second station in Garlands Crossing (called Three Mile Plains).

Two East Hants Regional Municipality departments also provide services in bordering areas of West Hants; the Walton Shore Volunteer Fire Department and the Uniacke and District Volunteer Fire Department.

Hantsport/South West are currently municipal services, while the remainder operate as corporate bodies under the NS Societies Act. The Windsor department has been for quite a few years a quasi-municipal department, with a full-time fire chief (an employee of the Town) up until fairly recently. Several casual employees work in the fire stations with all but one being compensated (directly or indirectly) by the municipalities. Almost all the departments do fund raising.

For the W/WH departments, the municipalities own most of the major fire equipment and fire apparatus and have largely or completely financed new fire stations and annually contribute to station upkeep, and many other expenses. Financial contribution to Walton/Uniacke is proportionally provided also. Collectively the W/WH municipal governments have annually granted in each of the past three years about \$2.75m towards operational and capital costs, representing approximately 13% of the municipalities' annual combined budgets.

Municipal concerns appear to center around a few issues; accountability and transparency for the use of municipal funds, adherence to municipal purchasing and spending practices, unnecessary duplication of resources, fiscal economy, region-wide cooperation to improve effectiveness and

efficiency, response districts, and the inconsistencies arising from the various and different service agreements.

The concept of a regional fire service means the collective efforts of Registered Service Providers working in a collaborative environment for the planning/preparing for responding to fires and other emergencies. All that, done in an efficient and effective manner while collectively pursuing opportunities for improving services, bettering the health and safety of volunteer firefighters, and maintaining a local community volunteer fire services identity.

The concept of regionalization in the fire service has been around for a number of years, but more recently the drive towards higher municipal efficiency, even survival, has accelerated regionalization efforts. The W/WH consolidation is seen by the provincial government as a test case with future consolidations on the horizon. Regionalization can yield some strong end results for those that navigate the process successfully.

With regionalization of services, the main goals are cost efficiencies, elimination of duplication of services, better utilization of resources, better cooperation in service delivery, consistency of equipment and procedures, enhanced firefighter safety and benefits, uniform training and performance standards, and adequate qualifications and staffing levels.

The goal of the fire service should be to safely provide the maximum amount of service to the population served while maintaining operational effectiveness and cost efficiencies and with due regard for the safety and wellbeing of the responders.

This review encompassed three major areas of study;

#### Emergency Response Program

The review goal was to develop a service delivery excellence program for the regional communities.

#### Governance and Organizational Structure

The first objective of this Part was to recommend an appropriate Governance model for the fire service, to ensure that the goals and objectives identified in the project's recommendations are achieved.

The second objective was to recommend an appropriate organizational structure and areas of responsibility within the organization; i.e., Operations (emergency response), Fire Prevention, Training, Health and Safety, and Administration.

The third objective was to determine appropriate service delivery expectations.

#### Administration and Program Implementation

The first objective was to review and identify any deterrents that may impede the overall success of the initiative to move forward with a more Regional fire service and to develop appropriate programs to ensure its success.

The second objective was to determine costs over a ten-year period for the provision of fire/rescue services.

The third objective was to develop an implementation plan that achieved the overall goals identified in the other parts of the Review.

## **METHODOLOGY**

The Review included several approaches to obtaining a picture of the current service. These included;

- stakeholder meetings and interviews,
- the completion by fire chiefs of survey forms/charts,
- the completion of data worksheets,
- reviews of previous reports,
- the study of provincial acts and regulations,
- a review of current municipal and fire department policies, procedures,
- identification of applicable organizational/governance standards,
- identification of applicable standards, guidelines and related best practices.

During the Review, data validity was a concern, and fact checking was a major component of ensuring that conclusions and recommendations were based on correct information. Most of the data used was provided by the client (as required under the terms of the contract) and through the stakeholder process, and solicited through the data queries. It was apparent that not all requested data existed or was available. Conclusions were reached that acknowledged some gaps in understanding.

A general finding from the Review of the current fire services is that there are substantial silos between the six fire departments that provide fire emergency response in W/WH. There is no standardization of major or minor equipment purchases, including personal protective equipment, fire apparatus, tools, or supplies. Standards and service levels are not the same, the organizational structures differ, policies and procedures are substantially different. Each fire department, even the municipal ones, operates at arm's length and substantially independently from each other and from the municipal governments. For many, the only interaction occurs at budget time.

Some efforts have been made between fire departments over the past couple of years to improve cooperation in the areas of training and emergency responses. The training effort has been virtually unsuccessful, although there is a past history of cooperation being achieved in this area.

Emergency response issues currently exist where the fire districts are not established with the concept of a region-wide closest appropriate resource allocation to an incident. The current district map was redrawn in late October 2015 after the Windsor fire department withdrew fire protection services for proximate areas of West Hants, a contract that had been in place for approximately 65 years. More mutual-aid is now being utilized between the W/WH fire departments (than was immediately after the Windsor issue) as the fire chiefs have recognized the need.

There is currently substantial variability in benefits and honourariums for the volunteer firefighters. Although W/WH municipalities provide funding to the societies for this purpose, there is no mandate that minimum or uniform levels of insurance, WCB, EAP, or stipend be paid. There is no apparent effort this way either. This fact is well known amongst the volunteer

firefighters as a whole, and has precipitated distortions of fact, exacerbating for some feelings of unfairness around the issue.

GA has identified three organizational options; the status quo, a regional municipal service, and the recommended hybrid regional service.

**GA recommends** the hybrid model because it is the best compromise in providing regional coordination and efficiencies yet maintains the local volunteer character of the fire department.

**GA recommends** providing centralized administration support, management and leadership. A full-time Director of Public Safety Services – Regional Fire Chief, and a full time Assistant Fire Chief with primary responsibilities for fire prevention are recommended. A part-time Divisional Chief is also recommended to take responsibility for developing and coordinating of firefighter qualifications and training.

**GA recommends** a District Fire Chief management committee as a key recommendation, to bring together all the local fire district management personnel; so that plans and decisions on common issues of concern and service delivery can be made.

**GA recommends** better accountability and standardization of policies, procedures, major equipment, training and qualification standards, and levels of service. Accompanying this is revised response districts that minimize travel times to all portions of W/WH. To help ensure maximum efficiency and effectiveness of resource utilization, recommendation are made to develop response scenarios where all resources are available to respond as needed and are not bounded by fire department district silos.

**GA recommends** the benchmark annual operating budget as a starting point going forward.

**GA recommends** the proposed 20-year capitalization plan, primarily for fire apparatus replacements, using a standardized approach to specification and group purchasing.

**GA recommends** that all purchasing of significant-cost items be coordinated.

**GA recommends** minimum standards for training and qualifications of firefighters; in order to achieve a consistent service level throughout the new municipality that meets public

expectations. Also recommended is a benefits package for the volunteer firefighters that recognizes the long term physical and mental health risks that fire/rescue first-responders are exposed to. Recommendations include a fair and uniform honourarium system.

**GA recommends** that all fire prevention activities, including fire-inspection, fire-investigation, and fire-safety education be brought inhouse. These are mandated services and require coordination, proper execution, and prioritizing in order to meet legislative mandates. For this purpose,

**GA recommends** that the current 1.5 FTE fire-inspectors in Planning and Development be reassigned to the regional fire service.

**GA recommends** that four on-call fire-investigators be trained and equipped to investigate all fires and to gather necessary information on origin, cause and circumstances, and to liaise with the office of the Fire Marshal and RCMP in securing evidence as necessary.

**GA recommends** that better coordination and support of local fire department efforts in fire-safety education be provided, including the possible involvement of non-firefighting personnel from the community in this activity.

There are many more detailed recommendations in the accompanying report. Collectively, implementation of all recommendations will likely take several years. The outcome should be a much more robust fire service that provides improved fire and rescue services, that meets municipal mandates for accountability and transparency, that meets legislative service mandates, that provides better protections for volunteer firefighters, and that maintains that essential local flavour of the volunteer fire department.

Costs for most recommendations are included in the benchmark budget estimates.

## DEFINITIONS

Aerial Device – Ladder	A mobile truck with a mounted hydraulically operated ladder
Aerial Device – Platform	A mobile truck with a mounted hydraulically operated boom or ladder with an enclosed bucket platform device.
ALI	Automatic Location Identification is part of the E-911 technology which is provided by telephone service providers to determine the location of the caller. If the caller is using a landline it will provide the street address. If the call is by cellular technology, it will provide the location of the closest cellular tower.
ANI	Automatic Number Identification is part of the E-911 technology which is provided by telephone service providers to which determines the telephone number of the caller, landline or cellular.
APCO	Association of Public Safety Communication Officials.
Automatic Aid	Is apparatus from another department that always responds by written SOP on first alarm structure fires.
Fire Apparatus	As per NFPA1901 Standard for Automotive Fire Apparatus 2016 - A vehicle designed to be used under emergency conditions to transport personnel and equipment or to support the suppression of fires or mitigation of other hazardous situations.
First Due Assignment	The number of and types of fire apparatus required to respond on the initial alarm of fire.
Front Line Apparatus	Fire vehicles those are ready to respond to any emergency either as First Due assignment or subsequent assignments. Opposite of Reserve Apparatus

FUS	Fire Underwriters Surveys.
GPM	Water flow rate measured in American gallons per minute.
Heavy Rescue	Is a type of specialty firefighting apparatus. They are primarily designed to provide the specialized equipment necessary for technical rescue situations such as traffic collisions requiring vehicle extrication, building collapses, confined space rescue, rope rescues and swift water rescues. They carry an array of special equipment such as the Jaws of life, wooden cribbing, generators, winches, hi-lift jacks, cutting torches, circular saws and other forms of heavy equipment unavailable on standard trucks.
Igpm	Water flow rate measured in imperial gallons per minute.
Initial Attack Apparatus	Aka (Quick Attack) Fire apparatus with a fire pump of at least 250 gpm (1000 L/min) capacity, water tank, and hose body whose primary purpose is to initiate a fire suppression attack on structural, vehicular, or vegetation fires, and to support associated fire department operations.
Midi Pumper	Similar to a pumper with a smaller pump and smaller water tank but with a bigger pump and larger water tank than a mini pumper.
Midi Rescue	Is similar to a heavy rescue other than it typically carries less similar equipment, but more task specific. The vehicle is smaller than the heavier rescue.
MFR	Medical First Responder program sponsored by the Province of Nova Scotia's Emergency Health Services, provided by trained local fire fighters.

Mutual-aid	<p>Fire Underwriters define Mutual-aid as anything requested after a unit arrives on scene needed during the fire or and is not part of the first alarm assignment, or outside aid.</p> <p>NFPA-1201 Standard for Providing Fire and Emergency Services to the Public, 2015 Edition defines mutual-aid as a reciprocal assistance by emergency services under a prearranged plan.</p>
NFPA	National Fire Prevention Association
Quint	Fire apparatus with a permanently mounted fire pump, a water tank, a hose storage area, an aerial ladder or elevating platform with a permanently mounted waterway, and a complement of ground ladders.
Pumper	Is a vehicle that is primarily designed to carry hose, a small water tank, some cases a foam tank, a fire pump, foam pump, miscellaneous tools and manpower, for the purpose of pumping water onto a fire
Pumper Tanker	Is similar to a pumper other than the water tank capacity is larger than 800 imperial gallons of water.
Rehab	NFPA-1500 Fire Fighter Safety, requires on-scene rehabilitation which shall include at least rest, hydration, active cooling where required, basic life support care, food where required, and protection from extreme elements.
Relay	The method of moving fire water over long distances employing fire pumps and large diameter hose.
RFF	The amount of water flow required measured in imperial gallons per minute to control and mitigate a fire.

Reserve Apparatus	A fire apparatus retained as a backup apparatus and used to replace a primary (front line) apparatus when the primary (Front Line) apparatus is out of service.
Shuttle	A method of transporting water to a fire scene from a water source, employing pumps and mobile water tankers.
SOC	Span of Control, this is the number of persons ideally that a supervisor can effectively manage in the work environment. In the fire service the general guideline, depending upon job function is one (1) supervisor to every five (5) direct reports.
Special Services Vehicles	A multipurpose vehicle that primarily provides support services at emergency scenes. These services could be rescue, command, hazardous material containment, air supply, electrical generation and floodlighting, or transportation of support equipment and personnel.
TMR	Is a digital (P25) two-way radio system that uses a digital control channel to automatically share frequencies/channels with groups of users. The Trunked Mobile Radio System (aka TMR2 in Nova Scotia) is used by multiple Public Agencies across the Maritime provinces. The system is shared between NS/PEI/NB. The TMR2 system operates in the 700 MHz range of frequencies. TMR and VHF radios are discrete and cannot share systems.
ULC	Underwriters Laboratory of Canada
VHF	A radio frequency range used by certain emergency responders and private companies. Very-high frequency (VHF) is the designation for radio frequencies in the range between 30 megahertz (MHz) and 300 megahertz, with wavelengths ranging from ten meters to one meter. Fire Departments generally use radios in frequency

ranges between 138 and 158 MHz. VHF marine radio is 156-158 MHz. TMR and VHF radios are discrete and cannot share systems.

## STAKEHOLDERS & CONSULTATIONS

## STAKEHOLDERS AND CONSULTATIONS

The early focus for this study was to speak to stakeholders. Eighty-four stakeholders were interviewed, as follows:

- Firefighters from all West Hants and Windsor stations,
- Chief Fire Officers from all West Hants and Windsor stations, as well as Uniacke and Walton Shore FDs,
- The former West Hants REMO/Fire Service Coordinator,
- Municipal CAOs,
- West Hants Chief Building Official,
- EHS (as a coordinating service provider),
- RCMP (as a coordinating service provider),
- Valley Communications (who in addition to providing paging services, is one of four provincial Public Safety Answering Points for 9-1-1. In addition, Valley Comms provides Emergency dispatching services for 86 fire departments including all the West Hants departments and the Windsor fire department.),
- A member of the NS Critical Incident Stress Debriefing (CISD),
- The DNR Chief Fire Technician for the area (as a coordinating service provider), and the
- Municipality of East Hants, (to review methodology for their mutual-aid agreements and contracting of fire services with the Brooklyn Volunteer Fire Department)

All the stakeholders and reference sources were open with their thoughts and opinions and were appreciative of the fact that they had an opportunity to meet with us. They all understood the value of contributing to the process.

### **WHAT WAS HEARD**

For the Windsor/West Hants (W/WH) firefighters, there is a common concern over the possible outcome of this study, especially as it relates to whether Council will accept the recommendations. In particular, there is concern over the place of the fire services in the new municipality, especially with regards to support by Council for the budgetary needs of the fire services and support from municipal administration.

In general, there are some positive themes. Many firefighters and chief officers have expressed that there is a need for change. This is encouraging as it means there appears to be a strong basis

for closer cooperation in the future. These themes are in addition to the aforementioned budgetary concerns and include ideas that have the potential to improve the relationship with the municipality and should improve the delivery of services to the communities.

On the whole the firefighters appear to be open to change and agree on the need to work more cooperatively with each other. They do have some fears, but those are generally in line with not being in control of an evolving process of municipal consolidation.

Although there is an expressed desire for improvement, that is not to say that everything will be completely smooth moving forward. There are signs that there is the need for some strong central direction and support, and there is also the need to ensure that past service level gains are not lost. There is also the need for effective and sensitive handling of stakeholder concerns.

## **THE PROCESS**

In order to solicit feedback from the fire chiefs, a user-friendly Responsible-Accountable-Communicate-Inform (RACI) questionnaire was distributed. This questionnaire included most if not all areas that accompany managing and operating a fire/rescue service. The objective was to obtain an initial snapshot of what the chief officers perceived as their responsibilities, and what they were actually doing in terms of best practices from a management perspective.

At the same time a Strengths-Weaknesses-Opportunities-Threats (SWOT) exercise was initiated with the fire chiefs. This was an opportunity for them to express their vision for a future fire service in the consolidated municipality.

All four W/WH fire departments were issued a workbook to collect various critical data related to this study. The requested information covered a number of service delivery areas.

## **CHALLENGES**

A review of existing and future fire services, such as this study, is very heavily dependent upon data. Data is required to analyze, as well as report, key elements of an organization's performance, challenges, and successes as well as the community's risks and demands for

services. Data quality is essential for a “complete picture” and helps to ensure the accuracy of conclusions. The timely availability of data is also important, as study timelines are finite.

Expert analysis of data can lead to insights and recommendations that have the potential to improve service delivery, efficiency, and firefighter safety. It can also contribute, (for the benefit of the municipality, Council and the public) to improved transparency and accountability. Data analysis can identify service gaps and over-servicing; if and where they occur.

In this study, (as with many similar ones); data completeness, the relevance of what has been collected, and even the existence of needed data, has all been challenges. As a result, there will need to be more reliance on best-practices and our professional insights to fill in data deficiencies.

The timeliness for obtaining the existing data was challenging. There are several reasons for this, not the least of which is likely the stresses of managing organizations through these times of change. We cannot thank enough the assistance we have received from municipal staff.

## **CONSULTATIONS**

Consultations with a number of reference sources for best practices in the areas of volunteer recruitment, retention, training, governance and communications, to name some of the areas, as well as in pursuit of verifying matters and interpretive intent relating to legislation were conducted.

Some of the organizations and Agencies consulted were;

- Kennebecasis Valley Regional Fire Department, Kennebecasis Valley, NB
- Town of Sussex, NB Volunteer Fire Service.
- Charlottetown, PEI, Regional Fire Service
- HRM Fire & Emergency Services, Senior Staff
- Town of Wolfville Volunteer Fire Department
- Enfield volunteer Fire Department
- DNR, NS Windsor Office
- Fire Services Association of Nova Scotia Committee Chair, Fire Service Communications and Dispatch.

- NS Emergency Health Services
- NS Fire Service Critical Incident Stress Committee Member
- Office of the Provincial Fire Marshal
- Department of Municipal Affairs Policy Group
- Municipality of East Hants
- Various Regional Fire Services Coordinators from across the province
- Insurance Bureau of Canada, Atlantic
- Workers Compensation Board, Office of Policy
- Volunteer Fireman's Fund Insurance Services
- NS Department of OH&S
- NS E-911 Assistant Manager

All municipal personnel, Windsor//West Hants fire personnel and persons of the above government departments, agencies, volunteer organizations and businesses have in one way or another contributed to this Regional Fire Services Review.

## LIABILITY, REGISTRATIONS, SERVICE AGREEMENTS & POLICIES

## **LIABILITY**

A big question for any municipality/fire department/firefighter is their exposure to liability claims. The MGA does provide some protection from litigation related to mutual-aid in §302, and more generally in §300 and §301.

However, the MGA also allows that claims are possible against both the fire department and or the municipality in cases of gross negligence or through vicarious liability (actions of employees/agents/members).

Litigation against municipalities for the actions or omissions of their fire departments and emergency personnel is a real concern. Liability concerns can arise from virtually every aspect of the fire service. Fire service delivery actions that present opportunities for liability risk are those surrounding fire-inspections, fire-investigations, emergency response (e.g. rescue), and all fire suppression activities.

The majority of claims surround the failure on the part of the municipality/fire department to implement appropriate policies, procedures, guidelines, training; and usually start with the failure to act or the alleged actions of firefighters/officers in the execution of their duties. Allegations could include negligence, gross negligence, breach of duty, and generally not meeting the standard of care.

Defending against such law suits requires proving that actions and preparations met the standard of care; i.e. of a similarly situated fire department/municipality/firefighter in a similar situation.

Some Canadian cases demonstrate that liability concerns are real, and appear to be occurring more frequently. Note that not all are emergency response related.

**LITIGATION REGARDING FIRE SERVICES**

<b>Year</b>	<b>Case</b>	<b>Alleged</b>	<b>Situation</b>
1984	Riverscourt Farms Ltd v. Niagara-on-the-Lake	Negligence, inadequate water supply, failure to attack fire, failure to secure additional water supply in timely manner	Fire at farm, hydrants/water system were not able to provide adequate flows for fire protection, hazards in building
1988	Halabura v. Fraserwood Fire Dept.	Negligence; failure to extinguish previous days wildland fire	Wildland rekindle next day, loss of building
1989	Ennis-Paikin Steel v. City of Hamilton	Negligence; Failure to establish fire watch from previous incident led to later fire	Large Fire after 5-6 hours earlier overheated fan incident
1991	Smith v. Jacklin (Parry Sound)	Breach of duty, failure to enforce Fire Code and By-law; violations directly led leading to injuries to resident when fire occurred	Fire in tenement, enforcement action not taken against owner who was given grace period
1993	Bayus v. Coquitlam	Breach of Duty, outdated maps lead to delayed response	Fire in tenement, firefighters could not find dead-end street
1999	Schouten v. Rideau Township	Negligence (acts and omissions); failure to establish proper size-up and tactics	Feedlot fire, loss of barn and storage silos with feed
2009	Healy et al v. Halifax Regional Municipality et al	negligence, gross negligence; failure to mop-up and establish fire-watch caused rekindle	Large wildland fire, multiple homes lost
2009	Ontario (Ministry of Labour) v. Town of Meaford	Failure to take reasonable measure to ensure safety of firefighters, firefighter injured	Restaurant fire, firefighter became lost, ran out of air
2010	Univar Canada v. City of Kelowna	Negligence and breach of duty, failure to stop the fire from entering building and failure to pre-plan, failure to inspect	Strip mall fire with internal exposures that spread to chemical storage causing environmental cleanup
2011	Schulz v. City of Mississauga	Negligence, breach of duty, bad faith	Fire truck collision, killed driver of car
2013	Promutuel Insurance et al v. le-Verte	Negligence; slow to arrive, no pre/emergency plan, improperly equipped, slow to call for assistance	Multi-fatality (32) care-home fire
2016	Stringer v. Town of Oakville	Negligence; fire in roof not extinguished completely	Rekindled house fire,
2017	Robertson et al v. Town of the Pas	Breach of duty and negligence; fire not completely extinguished first time	Rekindle hotel fire, large loss

One aspect of standard of care is the level of service delivery. This involves several aspects, including qualifications of personnel and benchmarks and/or best practices in service delivery. An often referred to set of such standards for both service delivery and qualifications is the National Fire Protection Association's set of consensus standards. The following will help understand the place for these standards in Nova Scotia's fire departments.

## **NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)**

References to NFPA standards will be made numerous times in this report. There are no requirements for the general adoption of NFPA firefighting standards in Nova Scotia or indeed in Canada. However, NFPA qualification standards are referenced by the Nova Scotia Fire Marshal's office (NSFMO) and in firefighter standards setting organizations in NS that are supported by the NSFMO.

Numerous NFPA standards are the basis for requirements under several NS regulations, a few examples of which follow, (restricted to references that pertain to fire services);

<b><u>Required by Legislation</u></b>	<b><u>Section</u></b>	<b><u>NFPA Std</u></b>	<b><u>Reference</u></b>
NS Reg 52/2013; Workplace Health and Safety	§23.13(2)(a)	NFPA-1901	Aerial apparatus
NS Reg 52/2013; Workplace Health and Safety	§23.13(2)(b)	NFPA-1911	Aerial apparatus
NS Reg 44/99; Occupational Safety General Regulations	§191	NFPA-1971	Firefighter helmets
NS Reg 44/99; Occupational Safety General Regulations	§192	NFPA-1971	Firefighter boots
NS Reg 44/99; Occupational Safety General Regulations	§193	NFPA-1971	Firefighter gloves
NS Reg 44/99; Occupational Safety General Regulations	§194	NFPA-1971	Firefighter protective coat and trousers
NS Reg 44/99; Occupational Safety General Regulations	§195(1)	NFPA-1981	Firefighter SCBA (respiratory protective equipment)
NS Reg 44/99; Occupational Safety General Regulations	§195(1)	NFPA-1981	Firefighter hood (balaclava)
NS Reg 44/99; Occupational Safety General Regulations	§195(2)	NFPA-1981	Firefighter buddy system
NS Reg 44/99; Occupational Safety General Regulations	§195(3)	NFPA-1982	Firefighter PASS (man-down alarm)
NS Reg 44/99; Occupational Safety General Regulations	§198	NFPA-1983	Firefighter body harness, ropes, hardware
NS Reg 44/99; Occupational Safety General Regulations	§200	NFPA-1931	Ground ladder purchasing
NS Reg 44/99; Occupational Safety General Regulations	§200	NFPA-1932	Ground ladder maintenance and inspection
NS Reg 44/99; Occupational Safety General Regulations	§201	NFPA-1914	Testing of aerial ladder devices
NS Reg 38/97; Nova Scotia Building Code	Numerous	Numerous	Apply to fire safety systems
NS Reg 160/96; Automatic Sprinkler System Maintenance	§4	NFPA-25	Inspection testing and maintenance of water-based sprinkler system
National Fire Code (adopted by the Fire Safety Act)	Numerous	Numerous	Apply to fire safety systems

The NFPA is a USA based organization<sup>1</sup> that has been involved with fire safety for a long time. It has international participation in establishing its standards. According to its webpage;<sup>2</sup>

“The National Fire Protection Association (NFPA) is a global self-funded nonprofit {sic} organization, established in 1896, devoted to eliminating death, injury, property and economic loss due to fire, electrical and related hazards.

<sup>1</sup> The National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts, USA 02169-7471.

<sup>2</sup> <https://www.nfpa.org/overview>

NFPA delivers information and knowledge through more than 300 consensus codes and standards, research, training, education, outreach and advocacy; and by partnering with others who share an interest in furthering our mission. Our mission is to help save lives and reduce loss with information, knowledge and passion.”

NFPA develops consensus<sup>3</sup> standards and codes<sup>4</sup> in the field of fire safety, which includes most notably building and occupant fire safety codes that are widely adopted in the USA. In Canada, NFPA fire protection standards are also widely adopted for fire prevention and firefighter equipment purposes, often incorporated into building codes and fire codes, and into provincial regulation.

NFPA also develops standards on qualifications and processes for the provision of municipal firefighting services. In Nova Scotia, NFPA standards relating to municipal firefighting are sometimes recognized as guidelines (not necessarily as standards) and only for specific and generally narrow purposes. This is typical for all of Canada.

The Nova Scotia Fire Services Professional Qualifications Board (NSFSPQB) produces voluntary certification standards, and some of the NFPA standards are specified as part of an individual’s voluntary certification process. This usage of the NFPA standards is not an adoption per se of the standards, but more properly falls under the adage of “why reinvent the wheel” and a further recognition of a consensus process of the standard’s development; i.e. a best practice.

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<sup>3</sup> “Important Notices and Disclaimers Concerning NFPA Documents...” colophon page of NFPA-1001, 2013 edition, “NFPA® codes, standards, ... are developed through a consensus standards development process approved by the American National Standards Institute. This process brings together volunteers representing varied viewpoints and interests to achieve consensus on fire and other safety issues. While the NFPA administers the process and establishes rules to promote fairness in the development of consensus, it does not independently test, evaluate, or verify the accuracy of any information or the soundness of any judgments contained in NFPA Documents.”

**Note:** To See more on the *NFPA* process; <https://www.nfpa.org/Codes-and-Standards/Standards-development-process/How-the-process-works>

<sup>4</sup> List of available *NFPA* codes and standards; <https://www.nfpa.org/Codes-and-Standards/All-Codes-and-Standards/List-of-Codes-and-Standards>

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## **SOCIETY REGISTRATIONS**

As reviewed in the **Appendix IV; Provincial Legislation**, the *Municipal Government Act* (MGA) Part X contains the provisions for “*Fire and Emergency Services.*” §293 allows the Municipality to:

“Maintain and provide fire and emergency services by providing the service, **assisting others to provide the service**, working with others to provide the service or a combination of means, 1998, c, 18, s. 293” {emphasis added}

The MGA provides for a corporate body (society fire department) to register as a fire department under the provisions of §294. Essentially, the municipality does not have the right to refuse registration, provided the fire department meets the municipality’s conditions.

In consultation with the Provincial Department of Municipal Affairs, Policy Office and the Office of the Fire Marshal, it is highly recommended that in addition to the registration of the corporate body, that a service agreement between the corporate body and the municipality be established to clarify and agree to expectations of service provision.

Currently, all of the corporate bodies (fire departments) that provide fire and emergency services in West Hants are registered with the municipality. This includes the Brooklyn Volunteer Fire Department (two stations), the Summerville and District Volunteer Fire Department, the Uniacke and District Volunteer Fire Department, and the Walton Shore (volunteer) Fire Department.

Hantsport is a fully municipal service (two stations) and is not registered with West Hants. The Windsor Fire Department is not a registered Fire Department with West Hants or with Windsor.

**GA recommends** that when the new regional municipality officially comes into being April 1, 2020, that all the fire departments, municipal<sup>5</sup> or otherwise, providing fire and rescue services

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<sup>5</sup> The MGA §294(3) says “(3) A fire department, including a fire department of a municipality, village or fire protection district, shall register in each municipality in which it provides emergency services.”

This is echoed in the MGA Fire and Emergency Services Guide (1999) which says “Every fire department must register in every municipality in which it provides emergency services on a regular basis. This provision covers all volunteer fire departments as well as fire departments of municipalities, villages and fire commissions such as rural fire districts.” {emphasis added}

within the region, including those that are contracted by the municipality, register with the new municipality on an annual basis.

**GA recommends** that the municipality include a multi-lateral automatic aid provision in their service agreement with each of the society fire departments. This provision will simplify utilizing the closest, appropriate, and adequate resources to incidents in all of the geographic area of the Region, irrespective of registered protection area (aka fire districts). This will accomplish a number of things;

- Permit the development of Region-wide Run-Cards designating pre-planned resource deployment for identified risks,
- Recognition that the services provided are not just within their first response districts,
- Authority to provide appropriate resources wherever needed in accordance with the mantra of the closest appropriate resources,
- Reinforce and facilitate the principal of resource dispatching and not just station dispatching,
- Generate closer working ties between departments,
- Help ensure that standardized guidelines and operating procedures prevail in the Region,
- Assist with better statistics in that multiple resource allocations are not mutual-aid and can be coded for their actual nature.

**GA recommends** that a review of the current registration form used by the Municipality of West Hants be used as the base registration document, and that it be amended to reflect the new regional municipality and its needs.

Attached as **Appendix 1** to this report is a Model Fire Service Registration Policy Document, provided by the NS Joint Municipal Fire Services Committee. This document may aid in the development of a new registration policy and format.

## **FIRE SERVICE AGREEMENTS**

### **Municipality of the County of Kings and the Municipality of West Hants**

Currently, the Municipality of West Hants, provides fire services to the Hantsborder, Bishopville, Lockhartville, West Brooklyn, Avonport, and Black River Lake communities and to the Glooscap First Nations reserve located within the boundaries of the Municipality of the County of Kings. The signed fire service agreement between the Municipality of the County of Kings expires March 31, 2020

#### ***Concerns with Municipality of the County of Kings Fire Services Agreement***

In the Municipality of the County of Kings and the Municipality of West Hants Fire Services agreement, Section 3 outlines a number of obligations on West Hants/Hantsport Fire Department. There are two specific clauses and one fire district that are of particular concern.

*“3.c. Conduct and sponsor research into the cause of fires and methods of preventing fire losses;”*

There is no clarifying editorial explaining the intent or the meaning of this clause. On face value this is a very huge undertaking complete with a very heavy financial burden especially for any fire service not alone a small volunteer fire service.

Multimillion-dollar organizations, like the National Research Council of Canada, Factory Mutual and Warnock Hersey are primary fire research organizations that provide the type of research indicated in clause 3c of the agreement.

**GA recommends** the Kings County registration, clause 3.c. be edited for clarity. If the intention here is simply to require fires to be investigated then that should be stated clearly.

The next clause of concern is as follows;

*“3.d. Endeavor to educate and instruct the citizens in methods of fire prevention and fire ‘suppression’;”*

**GA recommends** that in the Kings County registration; either a) replace the term “*fire suppression*” with “*fire extinguisher training*” or b) delete the reference to “*fire suppression*.” Again, without clarity it is challenging to understand the meaning or intent of the term “*fire suppression*”.

One must ask why would any fire service educate non-fire service citizens in fire suppression. If the intent is to teach citizens how to use a fire extinguisher, then that is typically part of fire prevention (fire-safety education) activities.

Another clause that should be reviewed and edited is;

*“7 c. Review and amend, as required to make consistent with this agreement, the Hantsport Fire Department’s by-laws and regulations.”*

**GA recommends** in the Kings County registration, one of two options; a) delete cause 7.c. or b) reword the clause to reflect the following;

*“The municipality and the Hantsport fire station will endeavour to amend its operating procedures and guidelines to meet the objectives of the Regional Municipality of Windsor -West Hants and Municipality of the County of Kings Fire service agreement”*

Whereas the Hantsport fire department is now a municipal department of the Municipality of West Hants and no longer a society, one must ask what the probative value is of this clause.

Also in the agreement, there is a definitions section that defines "Fire District"

*“f. "Fire District" means the area which the Fire and Emergency Services will be provided, consistent with the Hantsport Fire Department Registrations with Kings and West Hants pursuant to Section 294 (4) of the Act;”*

There is an area within Kings County (Duck Pond Road/Black River Lake) that originally was serviced by the Greenwich Volunteer Fire Department. However, this area is not accessible by road from Kings County, so the Duck Pond Road area which consists of dirt, likely seasonal, roads and cottage like development is currently the responsibility of the Hantsport fire department.

In reviewing the Hantsport Fire Department Fire Services Registration with the County of Kings, the Duck Pond Road/Black River Lake area is not referenced in their Registration, however, Kings County does show this area as Hantsport fire department protected on their county road map.

**GA recommends** that Duck Pond Road area of Kings County, as indicated on the map noted as Schedule 'A' of the Kings County agreement, be serviced by Southwest Hants. The Southwest Hants fire station is the closest station and the Duck Pond Road will fall within their recommended fire response district.

### *Glooscap First Nations*

Glooscap First Nations provides an annual fee for fire service delivery in the amount of \$7,065 (2019). This service fee has only increased by \$1.00 over the past four years. Unfortunately, no fire service agreement was provided for review. Whereas it is apparent that there is a contractual arrangement, probably unwritten.

**GA recommends** that the arrangement with Glooscap FN be formalized through a service agreement between the two entities to establish the fire service programs and service levels that will be provided by W/WH.

### *The Municipality of East Hants Contracted Fire Services*

To provide coverage for the extreme boundary areas of the municipality, West Hants receives fire services in its north-westerly boundary area from Walton Shores (volunteer) Fire Department and in the east from the Uniacke and District Volunteer Fire Department. There are currently no fire service agreements in place for either coverage area. The provision for the contract services are solely reliant on the required annual fire department registrations as outlined in Chapter X section 294 of the MGA.

**GA recommends** that a formal service agreement be established with the Walton Shore Volunteer Fire Department that specifies the services and service levels and other expectations that the Regional municipality has. As noted in the section on *Fire District Revisions* starting on

page 191, the continued receipt of services from Uniacke and District Volunteer Fire Department is not recommended.

**Municipality of East Hants and the Brooklyn Volunteer Fire Dept.**

The Brooklyn Fire Department Society is a registered body with the Municipality of East Hants for the provisions of Fire and Emergency Services to the South Rawdon area of the Municipality of East Hants. There is no additional Fire Service agreement between the two parties. The service is provided solely based upon the fact that Brooklyn is a party to the Mutual-aid agreement between the Municipality of East Hants and the East Hants Fire Services Association. The last fully executed mutual-aid agreement that was provided for inclusion in this Review was dated 2012.

The Brooklyn Fire Department receives funding for those services from the Municipality of East Hants for the designated response area of East Hants, based upon an area assessment and area fire rate. For the three years between 2017 and 2019 East Hants paid \$143,768 for these services.

**Beneficial Ownership Agreement**

The Municipality of West Hants signed with the Summerville and District Volunteer Fire Department a Beneficial Ownership Agreement dated April 30, 2019 outlining apparatus ownership in the event Summerville and District volunteer fire department ceases to provide fire and/or other emergency services, or on the sale of assets that the municipality has contributed funds for.

## **MUTUAL-AID AGREEMENTS**

The Municipal Government Act §302 provides the municipality the authority to enter into Mutual-aid Agreements.

Mutual-aid agreements are important because they set out the expectations of each party to the agreement, and also provides some liability protection. See **The Municipal Government Act** section starting on page **328** in **Appendix IV**.

These expectations should include the type and standard of service that will be exchanged, or any limitations thereto. The agreement should set out who has the authority to request or to provide the aid. It should set out any cost recovery expectations. It should set out any conditions under which the aid may be reasonably refused. It may also set out certain rules related to chain of command and responsibility at the incident, personnel safety, and other stipulations similar to operating guidelines, and so forth.

Although the MGA is not explicit in requiring a mutual-aid agreement, the gist of this section of the MGA is the protections that come with a mutual-aid agreement. Specifically the protections from liability.

### **Municipality of West Hants.**

The current Mutual-aid Agreement in effect with the Municipality of West Hants includes the following West Hants departments; Summerville, Brooklyn and its substation station located in Garlands Crossing, Hantsport and its substation located in Vaughan. In addition, the two East Hants departments that provide service to the municipality of West Hants, Walton Shores and Mount Uniacke and District volunteer fire department are signatories to the agreement and the Town of Windsor fire department signed onto the mutual-aid agreement, February 28, 2019.

The mutual-aid agreement is a standard mutual-aid agreement used throughout the Annapolis valley.

One section of the West Hants mutual-aid agreement, or any mutual-aid agreement the municipality is a signatory to, that should be reviewed is exemplified by §6 “*Mutual Assistance Reciprocal*” of the agreement. Which is dated 28 February 2019. This clause states

*“All Fire Departments hereto agree that mutual assistance at emergency scene is reciprocal and that no demand will be made by any Fire Department for monetary reward”.*

This clause is fairly clear that a mutual-aid department cannot levy against the department receiving the aid any charges that would be interpreted as monetary reward.

What is missing in this agreement is a reciprocal clause that affords a participating Fire Department the ability to charge for reasonable consumables. It is not uncommon for mutual-aid agreements to have a clause that reimbursing assisting fire departments for fuel consumed at scene, any consumables (e.g. firefighting foam used), and if required sustenance and accommodation for fire personnel at scene.

**GA recommends** that a consumables cost recovery clause be developed and considered for inclusion in any mutual-aid agreement.

*Impact of Consolidation on current West Hants Mutual-Aid agreement.*

If Council selects the integrated municipal fire department (i.e. Model 2), there will not be a requirement for mutual-aid or auto-aid agreements between the six regional fire stations or with the municipality. The reason for this is that the fire services under that model will operate as a single fire department within the region.

**GA recommends** that any model the Council chooses that maintains the existence of individual incorporated fire departments (i.e. Status Quo model-1 or Hybrid model-3) should have a multi-lateral mutual-aid agreement in place between the municipality and each fire department, as well as with all other municipalities that the fire department might provide assistance to if they are to enjoy all the protections provided under §302 of the MGA. This would likely include Kings County, The Municipal District of East Hants, the District of Chester (Lunenburg County), and Halifax Regional Municipality.

**GA recommends** that the East Hants fire departments of Walton Shores and Uniacke should execute a Mutual-aid Agreement with the Regional Municipality. By virtue of being a Regional Municipality and employing a Regional fire service model if so chosen, the municipality will be signing mutual-aid agreements with other parties on behalf of all of the Regional fire stations.

#### *East Hants Fire Services Association and Brooklyn Volunteer Fire Department*

The Brooklyn Volunteer Fire department is party to the Mutual-aid Agreement between the Municipality of East Hants and the East Hants Fire Services Association. There were several Agreements provided. However, none of the agreements provided had complete sign off by all parties named in the agreement other than the 2012 agreement.

#### *Hantsport and Kings County*

The Hantsport Fire Department is a signatory to the Municipality of the County of Kings mutual-aid agreement. The agreement is a standard mutual-aid agreement and basically mirrors other agreements mentioned in this report.

**GA recommends** that the Kings County mutual-aid agreement should be reviewed and updated with any required amendments since the last update for this agreement is from 2001, and include execution by W/WH.

#### *Southwest and Lunenburg County*

**GA recommends** that the new Regional municipality enter into a mutual-aid agreement with the Municipality of the District of Chester (MDC) in Lunenburg County and the New Ross and Chester Volunteer Fire Departments. MDC shares a border with the Region and with the fire districts of the New Ross Fire Department and the Chester Fire Department.

#### *Mutual-aid Summary*

**GA recommends** that all mutual-aid agreements be signed by the municipalities involved, not only by the individual fire departments. The mutual-aid agreements currently in force are standard across the region. The main difference is who are the signatories to the agreements.

Whereas the municipality has ownership of the majority of the capital investment of the regional fire services then the municipality has significant responsibility in providing mutual-aid services. Whereas there will be a new regional municipality commencing April 2020 all the mutual-aid agreements will require amending to reflect the new regional municipality.

## **FIRE DEPARTMENT OPERATING POLICES AND PROCEDURES**

The Review requested a review of policies and guidelines of the municipalities and the various fire departments to identify any gaps in relation to legislative requirements, and inconsistencies between the fire departments.

As a result of a lack of information provided by some departments, a complete and thorough review of policies and operating guidelines including all departments was not possible.

However, the review that was conducted, and did reveal non standardized practices in the selection of volunteers, promotion processes, rank structure and qualifications, membership classifications and policies in dealing with honorariums across the region.

The limited review on operational procedures and policies is augmented by comments made by stakeholders during the many stakeholder meetings. Comments made during those sessions strongly confirm our understanding of inconsistencies in some operating procedures and guidelines amongst the various fire departments. Review of promotional procedures and recruitment practices as well as areas of operations and human resource management are varied across the region's fire stations.

**GA recommends** that regardless of the organizational model chosen by council, that a review and standardization of all policies, procedures, and guidelines of all types, that apply to the fire departments is undertaken quickly. The goal should be to produce consistency and fairness, and to meet the best practices of a collaborative fire and emergency service delivery program for the Region.

### **West Hants Policy COGE-007.00**

The above referenced policy was approved by Municipal Council October 09, 2018. The policy (COGE007) is a well thought out document and attempts consistency in service delivery across the region by the individual service providers.

There are a couple of areas that require review and amending, one in particular, may pose a risk to not only the department providing the service but the municipality itself.

Schedule 4 of COGE007, addresses the duties and responsibilities of the “*Custodial Fire Support Position*” under role expectations. Sentence 4 states;

*“Respond to emergency calls by being qualified to drive and operate equipment and apparatus and acting as Incident Commander at emergency sites until a senior officer relieves them of duty.”*

Sentence 6 states;

*“Willing to work with all members of the Fire Department including training with and providing assistance to training staff.”*

Individual fire departments have policies that determine qualifications for individuals, particularly officers, in order for them to be able to perform in an incident command role. The reasons for requiring such qualifications are sound and necessary. The role of the incident commander carries much responsibility and liability.

Policy COGE007 provides for an individual who does not even have to be a firefighter to perform in an Incident Command role. Further, there is no mandatory requirement for the individual in this position to participate in firefighter training. The policy suggests they “*be willing to train with*” but there are no stipulated requirements on what subjects or skills to be trained in. This equates to having a passerby run the emergency scene until such time a senior officer arrives on scene.

In the policy, there is no definition for “*Senior Officer*.” The senior officer term in many organizations refers to only those that have the word “chief” in their rank title, others define it as an officer position higher than an individual’s current rank within the organization. However, it must be assumed that the term in this clause refers to anyone who is a firefighter.

It is understood that in one station the custodian is a volunteer Deputy Chief of that station, so at that location the issue does not exist. However, in another station, the custodian is not even a firefighter, yet under this policy they could be the Incident Commander.

**GA recommends** that policy COGE007 be amended to more appropriately place responsibilities on station custodial staff. Sentence 4 of the policy has the potential to place a number of people and organizations at risk, not to mention the responders themselves.

### *Fire Related Bylaws*

A review of the following Municipal Fire related bylaws was conducted.

#### *Town of Windsor:*

Bylaw 18, March 05, 1997, Prevention of Fire Bylaw (This is basically a bylaw requiring a permit to burn)

Bylaw 39, December 03, 2010, Outdoor Fires Bylaw.

GA's recommendation of these by-laws are in the next sub-section.

#### *Municipality of West Hants:*

False Alarm Bylaw, March 16, 2011, (This Bylaw permits fining property owners who experience multiple false alarms).

Fire Protection Bylaw, September 22, 2004. (This Bylaw is basically an out of doors burning bylaw).

**GA recommends** that the Windsor and West Hants false alarm, fire protection, burn permit and outdoor fires by-laws be reviewed and harmonized. The Bylaws relating to out of doors burning may need to address differing needs by area due to the rural nature of the Municipality of West Hants vs the very urban nature of Windsor.

West Hants' False Alarm Bylaw is an admirable bylaw in an effort to reduce unnecessary fire responses, especially to those occupancies who have ongoing issues with their fire alarm systems or occupancies whose operating conditions or maintenance lapses manifest into accidental alarms and owners fail to take appropriate measures to address issues causing the unnecessary

alarms and unneeded fire department responses. GA understands that the bylaw has not been enforced.

Unless the Bylaw is enforced there are two scenarios that could lead to negative consequences and possible civil action against the municipality. The first challenge to those occupancies in which fire alarms are not uncommon, responders become complacent and do not respond as per standing operating procedures, and the noncompliant typical standard response causes either a delay in response or a lack of resources responding and upon arrival there is a working structure fire. This could possibly result in a litigation against the fire department and the municipality.

The second scenario is where occupants fail to evacuate the building as they should when the alarm sounds, since they have become acclimatized to alarms sounding as an annoying but otherwise nonconsequential event. In a real fire scenario these residents could be in jeopardy for their lives and the expectations on the fire department will be to rescue them, which may not be feasible and/or could result in injury and death to firefighter and residents.

**GA recommends** that if the false fire-alarm by-law is not enforced, that the by-law should be repealed.

## HUMAN RESOURCES

## **RECRUITMENT AND RETENTION**

Traditional volunteer firefighter recruit sources have changed. The old model of neighbors helping neighbors is all but gone in most places, as many people don't have strong ties to or even know their neighbors anymore. We have always relied on multigenerational families passing down the tradition of joining the local fire department, but that is also becoming a thing of the past. As with many other industries, as the baby boomers retire en masse on the back end, they need to be replaced with young people on the front end.

In sheer number, there aren't enough millennials and iGens to replace the baby boomers, and worse for us, those two younger generations aren't trending toward the fire service. With many young people needing two jobs to survive, plus other obligations, the free time necessary to be part of the emergency sector is a luxury few can afford. In addition, the number of non-profit organizations recruiting the same volunteers is at an all-time high, and frankly, our fire service, as it exists with its current culture, is not an attractive option for younger generations who value flexibility, creativity, and inclusivity.

The ability to attract/recruit and retain volunteer firefighters is in part a demographic challenge. Prospective volunteers must be fit enough and available. Generally, fit means a healthy adult who is not too young nor too old. The aging population means there are fewer younger persons in the community, and current volunteers eventually get too old to withstand the rigours of being a firefighter.

A secondary demographic problem is local employment. Volunteer firefighters with jobs that are distant from their fire station are less likely to remain volunteer firefighters. They are not able to effectively respond to incidents while at work; and they spend more time commuting and therefore have less time available for volunteer firefighting. A volunteer firefighter should expect to contribute between 100 and 300 hours per year in scheduled activities; training, equipment maintenance, fund-raising, meetings, and in going to incidents.

Management of fire departments need to be skilled, understand, and have effective strategies for dealing with the challenges.

## Recruitment

There is an inextricable link between recruitment and retention. Often non-profit volunteer managers have a tendency to focus their time and attention on recruitment only to be stuck in a holding pattern of perpetual recruitment in part due to increasing competition among non-profits and everyday life. High turnover rates within a volunteer organization, creates an urgent and ongoing need for new bodies to fill the positions. The time, effort and costs for recruitment can severely impact negatively on service delivery, especially for the volunteer fire service and burnout for those involved with the recruitment process.

Volunteer energy is a natural resource which is a “human-made, renewable/recyclable resource that can be grown.” In their conceptualization, if organizations use the volunteer energy responsibly and positively then it will be sustainable but if it is used inappropriately then the volunteer energy risks exhaustion and depletion. When an organization exploits this resource through overuse or neglect there is a high risk of drop-out or burn-out, which not only leads to being in perpetual recruitment mode but also contributes to the depletion of the total pool of volunteer energy.

When people think of volunteer work, they tend to evaluate it in terms of sacrifice and reward. The sacrifice part is easier to understand. Volunteers are using their time, energy and, at times, knowledge for the benefit of the organization and for the most part with little or no monetary compensation.

Understanding why a particular volunteer has chosen to serve can help the volunteer manager use appropriate rewards to encourage the volunteer which will raise their satisfaction level and lead to higher rates of retention.

The sacrifice and rewards involved in a particular volunteer relationship are part of a larger concept central to volunteer management, the contract. The contract is an individual’s beliefs regarding the terms and conditions of a reciprocal exchange agreement between the volunteer and the organization. When a volunteer signs on to work with an organization they bring their own individual perspective on what promises, conditions and agreements have been made. Each

party has their own idea and expectation of their reciprocal obligations based on their own intention, interpretation and perception of implicit and explicit messages.

In the context of volunteer relationships, when there are perceived breaches in the contract (which can occur at any stage in the relationship) there can be consequences such as dissatisfaction, lowered level of participation in the organization, or actual withdrawal from the organization. Fulfillment of the contract can occur through organizational efforts to express recognition of the volunteer and show that they value the relationship and care about the well-being of the volunteer.

In one study conducted by Farmer and Fedor (1999),<sup>6</sup> Volunteers who reported their expectations were met, and they perceived organizational support and care was there; they were shown to have increased attendance and intentions to remain. This study found that organizations were perceived to be better at meeting expectations of ongoing support than they are at matching expectations that volunteers had upon entry. However, the study also showed that when volunteers sense the organization cares about their general *well-being*, they are more willing to overlook particular unmet expectations.

How to achieve and meet expectations/needs of both the volunteer and the organization is a time-consuming challenge to any organization. Volunteers bring their own expectations to the organization based upon perceived knowledge, information passed on by current volunteers, who may over sell the position or organization, and in today's world, on social media.

### *Retention all Starts with Recruitment!*

Recruitment should start with a needs assessment of the organization. Each community's demographics are different, especially in rural and smaller urban communities where the population is aging, local manufacturing is closing, and the younger citizens are moving to more urban settings. There is often competition amongst volunteer organizations.

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<sup>6</sup> Farmer, S. M., & Fedor, D. B. (1999). Volunteer Participation and Withdrawal: A Psychological Contract Perspective on the Role of Expectations and Organizational Support. *Non-profit Management & Leadership*, 9 (4), 349-367.

A review of the fire service needs may reveal that there are positions that do not require young, physically fit, gung-ho individuals. Positions such as in public fire-safety education, administration, radio operators, traffic control persons, occupational health and safety opportunities, truck drivers. There may be seniors or retired firefighters who are looking to keep active and are willing to provide some time, a skill set, and experience that can fill a void within the organization.

In today's volunteer services there are two groups of functions that are needed in the delivery of fire and emergency services, line and staff. Line is the most labour intensive and on the front-line of the service delivery. Staff positions are the folks that support the front-line responders.

Traditionally, the majority of volunteer fire services required any and all members of their respective departments to be firefighters. They were then trained in all services offered by the department. This has caused some issues, as not all members wanted to respond to, for examples: medicals incidents, or high angle rope rescue, or possibly water rescue, and etc. Some volunteer firefighters just wanted to fight fires.

The challenges facing the recruitment of volunteers firefighters today requires a change in recruitment practices and a reconsideration of the past the standard requirement of being a firefighter first.

This begs the question, *“Do all volunteer fire department members have to be fire trained”?*

The answer is no.

Volunteer fire departments do need the majority of their membership to be fire trained so as to be able to deliver the department's core services; i.e. responding to and rescuing people from danger and extinguishing fires.

### *Positions for Non-Firefighter Members*

What types of functions/positions are required at the scene of a structure fire that are required to be firefighter qualified?

- Firefighters
- Fire Officers

- Fire Incident Safety officer
- Accountability Officer

What are some of the functions/positions that are required at the scene of a structure fire that **do not** require being a trained firefighter?

- Apparatus driver/operator
- Air/SCBA support person
- Command Post - radio communicator/scribe
- Firefighter rehabilitation support personnel
- EMS
- Traffic Safety Control
- Logistics

What are some of the other types of emergency services do some fire departments provide that **do not** require volunteer members to be firefighter trained?

- Water rescue, (Boat enthusiasts, SCUBA Drivers)
- Ice Rescue
- High angle rescue service
- Medical First Responders (MFR)

Additional non-emergency Staff functions in which volunteers do not need to be firefighter trained but could be most beneficial to the fire department.

- Administration, Mgt of Records (data) and reports, budget, inter-government relations)
- Fire Prevention (fire-inspection)
- Fire Prevention (fire-safety educator)
- Fire Prevention (fire-investigator)
- Maintenance of equipment
- Communications
- Research & Planning
- Community Relations/Public Information
- Financial Management
- Personnel Management

Regardless of the function/role of the volunteer, all volunteers will require specific subject/service training, skills, maintenance of skills, and fire department orientation.

The use of non-trained firefighters in non-active firefighter roles will lessen the burden on the firefighting volunteers and help prevent early burnout and the potential of member loss to the organization.

### *Review Needs*

**GA recommends** that the new fire department administration conduct a human resource needs assessment of the fire service in the Region. The recommendations on active front-line firefighter numbers is contained in **Recommended Front-Line Staffing and Equipment** starting on page **210** of this report, but there are numerous support (staff) positions not identified there.

**GA recommends** a review of the current recruitment and selection process, including currency with best practices, modifications required to meet the real needs of the organization, compliance with current Human Rights requirements, and alignment with corporate human resource policies.

**GA recommends** a review of fire department job descriptions, ensuring there is a job description for every position, volunteer or otherwise. Job descriptions should be complete with expectations and rewards. They outline necessary qualifications, time commitments (frequency and length), responsibilities and activities involved, the organization's accountability structure, and the performance evaluation methods.

It is important to match volunteer interests and talents with organizational needs, not only for recruitment purposes but also for long term retention.

### *Caution in selecting volunteer applicants.*

It may be tempting for the fire service to accept any help that is offered; after all the fire service is resource dependent and volunteers could be viewed as free labour. Though seemingly correct, this logic is based on false assumptions and understandings. A volunteer firefighter is not the equivalent of free labour. If the recruitment and retention of volunteer firefighters is to be

effective it will require some expenditure in the areas of orientation, training, promotion, and materials.

At the front end the fire service must pour a lot into the volunteer firefighter candidate in order to bring them to a point where they will be capable and effective. Cost-effectiveness is achieved when a volunteer can exemplify the established level and quality of services offered to the public. When this occurs then the volunteer firefighter acts as an expansion of resources, i.e. is no longer a burden. In order to get to that point, the fire service must first devote time, energy and resources in growing the volunteer firefighter.

Therefore, it will serve the organization well to be selective in choosing volunteers who have the skills and abilities necessary to fulfill the role requirements. The organization must conduct proper vetting in advance in order to uncover any conflicts or contradictions. Valuable resources will be wasted unnecessarily if the organization indiscriminately signs on volunteers and pours resources into them only to find out later that the volunteers are unable or unwilling to fulfill their role. This is a real danger because people experience a euphoric feeling about signing on to do good but at this juncture that feeling is based on a romantic idealism of how things will be and coupled with both a low commitment and sense of loyalty to the service.

In a volunteer service, volunteer firefighters are required in each of its fire districts/communities. Some districts are in need of volunteers more than others. Some of the reasons are demographics. There is a current practice of volunteers living in one fire district and yet belonging to a different fire district, thus depleting a potential resource to the district in which they reside. Anecdotally, there are reports of some volunteers that respond from their home in one district, through other fire districts, so as to attend an incident in the fire station district that they have chosen (and been accepted) to be a member of.

**GA recommends** that membership in a fire department be restricted to those volunteer firefighters who actual reside in the fire district. Moving forward, the current practice of selectively choosing the fire department you prefer should no longer be permitted. As this practice robs the community of which a volunteer resides of a valuable resource. It also increases

the risk of an accident as the volunteer rushes longer than necessary distances to attend the fire station when the pager goes off.

With a properly constructed recruitment policy in place and followed, the end result will be a contract between the volunteer and the fire service that meets the needs of both.

### *Recruitment Process.*

**GA recommends** that volunteer firefighter recruitment be a region-wide program for the regional fire service and that successful applicants be assigned to a regional station, based upon the closest station (i.e. fire district) to their residence.

**GA recommends** that the recruitment process commence with a properly designed marketing program throughout the region. This coordinated approach to recruiting will help to ensure standards are met and will ease the burden on individual stations. Turnover in volunteer fire departments is typically as much as 20% annually, but GA does not have the actual figures for WWH. It is likely that there is a need for an annual recruitment process, managed regionally with direct input and assistance from each of the stations.

See Appendix V, ; **Model; Volunteer Recruitment and Selection** Process starting on page 346 of this report.

### *Retention*

Retention is a difficult management task, with challenges requiring a continuous effort on behalf of management. Officers and managers in each station must have the requisite human resource and soft skills, leadership training, and acumen (emotional intelligence) to be able to manage and address the complex nature of not only the current volunteers but newer younger volunteers who reside and live within a world environment that may be foreign to the individual officers and the organization as a whole. Station leadership is crucial in managing retention.

Retention is the maintenance phase of the volunteer/organization relationship. This phase focuses on communication, individualized feedback, and the need to provide recognition and appreciation for volunteer efforts. A simple coffee card or a department t-shirt for performance

little above and beyond expectations can go a long way. As the old saying goes, “little hinges swing big doors”.

People often volunteer for differing reasons. Some believe that they possess certain skills and traits that the organization can take value from. For others it’s the desire to help others, and for others it is simply a desire to have an affiliation with a social entity.

Volunteers often tend to stay because of the rewards experienced such as opportunities for socializing and enjoyment of the tasks with which they are assigned. In other words, for personal reasons.

If the station’s District Fire Chief or other officer recognizes a volunteer’s lack of engagement there are a couple of paths to assist in the retention of the volunteer who is a valuable asset to the organization. It is vital that the reasons for the loss of engagement is diagnosed, if it is possibly medical or related to family or work stresses, then the appropriate course of action is to seek appropriate care.

Sometimes it is necessary to, if possible, redefine their role or provide opportunities that meet their motivational change and still meet the needs of the organization. Sometimes it’s to permit a restorative break, (leave of absence), so that the volunteer can deal with his/her issues.

It is important during the restorative break; the manager should stay in contact and check-in on them during their away time. This will allow for easier re-entry and will send the message that the organization cares about the volunteer as a person and not just because of what they do for the organization. This is an important distinction in being able to protect volunteer energy and keep it as a renewable, sustainable resource. This should be done even if there is no guarantee that the volunteer will return.

### *The Critical Role of the volunteer Fire Chief*

Potential volunteers have many choices as to where to spend their time. Time is valuable and limited, and how fire chief uses a volunteer’s time in the fire department is key to retaining active volunteers.

Capable volunteer fire chiefs know how to focus volunteer firefighters' time and energy on activities that have the greatest impact on the department's mission, its service to the community, and the life safety of its members and citizens. Much of this comes down to understanding the volunteer chiefs' role and how they can use their skills to support their members.

### *The Volunteer Fire Chief's Responsibilities*

Today's volunteer fire chief has one foot in the organization and one foot in the community. Chiefs must work to expand the quality and quantity of services to the citizens by integrating the community with fire department staff. Chiefs initiate projects and ideas with the support of volunteers, but must realize their ideas are likely to succeed only when the volunteers actually buy in. Volunteer chiefs have several additional responsibilities:

- Clarify volunteer-related issues in order to reduce confusion and resolve conflict.
- Document the various ways the volunteers impact the quality of life in their community, telling their stories when necessary.
- Think about new ways to do the things that the fire service does and why they do what they do.
- Coach volunteers by providing training, guiding and counseling.

A volunteer fire chief's general role and responsibilities have more to do with people skills than with emergency response roles. The chief must serve as a leader, manager, coordinator, enabler, change agent, capacity-builder, role model, human resource manager, facilitator, volunteer advocate, visionary and planner. A District Fire Chief who is an excellent emergency leader may be a poor choice as a personnel manager. Personnel management is the key role that will make or break the retention of volunteer firefighters.

Increasingly, advanced skills will be required of fire chiefs, whether paid or not. Chiefs should create a professional development plan and make the time to develop their own leadership and management skills.

**GA recommends** that the Regional Municipality invest in developing the leadership and management skills in the officers of all fire departments in the Region, as appropriate to their respective roles.

### Valuing Volunteers

The most significant asset in any volunteer fire department organization, is the volunteers themselves. Stations, equipment and apparatus are indeed valuable, but really serve no purpose without competent staff to operate them.

Fire chiefs who manage volunteers must ensure that a motivational climate within the fire department creates a friendly and healthy environment. General praise is critical to team success. Chiefs must realize that they are a cheerleader for the department and the volunteers by maintaining their own enthusiasm for the efforts of volunteers.

Further, chiefs should look for additional talent and skills that volunteer members bring to the department that can help build a successful organization, as well as deliver quality services that meet expectations.

Contributing, satisfied, and well-managed volunteer firefighters will remain active longer. A successful fire chief will allow more people to be engaged in managing the organization. Volunteers will want to make contributions if leadership will allow it. A good organization has leaders at all levels in the organization.

Reasons most often heard why volunteers quit: It's not fun, I'm not appreciated, it's a waste of time, there were unrealistic expectations, there was too much organizational drama, people were resistant to my ideas, and I do not feel important. These are more than likely the symptoms of a larger problem within the department related to a lack of leadership.

Everyone has value. There are different levels of value based upon personality, attitude and activity level. Effective leaders make volunteers feel that they are high-priority, valued members, and show respect for their individuality.

Never take volunteers for granted. Managing volunteers is a REAL job. It is not about being compensated; it is about the personal determination to accept the duties and responsibilities – and do the job. Compensation (or lack of) is not an excuse for success or failure.

Volunteer retention studies and information received from GA's station tours and meetings with the regional volunteers highlight a number of key expectations of the volunteer. All stated financial gain was not the reason for becoming a volunteer. However, in a regional setting they all expect the region to provide the following.

- Their wellbeing looked after
- Inclusiveness
- Open two-way communications, they too have things to contribute
- Fair and equitable treatment across the Region
- Recognize and value the volunteer's knowledge, skills and time

#### *Points to Consider in volunteer valuation*

- Most firefighters said a simple "thank you" from superiors would motivate them.
- Celebrate department successes.
- Recognition can be as small as a social media post.
- Officers need improved people skills.
- Research and implement recognition and benefit practices that are personalized to your department and are scalable.
- Evaluate the effectiveness of the practices you implement.
- Include your members' families in recognitions.
- Focus on both tangible and intangible benefits.
- Recognize administrative members for their contributions, not just firefighters.
- Make sure recognition not only comes from the top but also from peers.

#### **Recruiting and Retention Summary**

The objectives of volunteer recruitment and retention are inextricably linked. A volunteer manager must consider the reciprocal impact of the one on the other in order to successfully build and maintain a volunteer work force. Volunteers have a complex and an innumerable assortment of motivations and expectations that can cause difficulties in facilitating long term commitments. The most important activity a volunteer manager can attend to in attempting to retain volunteers is building relationships. The relationships built should be between the

volunteer and the volunteer manager as well as between the volunteer and the volunteer community. An individual who feels genuinely cared for and has a strong sense of belonging is willing to overlook other unmet expectations and will demonstrate higher levels of commitment and loyalty.

### *Current Retention Program*

Currently, across the Region there are differences amongst the various stations as to how they recruit, and provide for the wellbeing and recognition of their volunteers. In some cases we were told, areas of difference were dependent upon the financial resources of the individual station. Volunteers compare, and are aware of differences, which was expressed as dissatisfaction. In one case another station was disparaged for spending money on annual banquets, and a few minutes later it was asked why they themselves don't have the funds to do it. The risk here is that unequal treatment can lead to the perception that some are less appreciated by the organization.

Currently there are some stations covered by worker's compensation benefits (WCB), while others are not. Those stations that are not covered by WCB pay for accident and sickness insurance coverage for their personnel. WCB can cover the volunteer firefighter when their fire department responds to an emergency incident either within their community or on mutual-aid as a result of a request by another department.

Mutual aid causes issues when one department has WCB coverage and another does not. It is possible to have covered and non-covered volunteer firefighters working side by side; one firefighter with protection and one without. The practice of firefighters belonging to more than one station, so called "mutual-aid firefighters," gets complicated when one of the stations they belong to has coverage and the other does not.

However, in mid-October, 2019, the Nova Scotia Provincial Government announced changes were forthcoming to legislation that will require all municipalities in the province to register their volunteer firefighters with WCB and pay for the coverage. This will eliminate the issue previously reported. However, the regulations are not expected to come in force until late 2020.

**GA recommends** that the Regional municipality register their volunteer firefighters with WCB before the eventual requirement for such registration occurs. Such registration will address the issues of concern mentioned above sooner.

All of the fire departments currently subscribe to some level of coverage by VFIS<sup>7</sup> insurance, with the lowest coverage of \$50,000 and the highest at \$250,000 principal amount. The Windsor and Hantsport/South West firefighters are currently covered under WCB and have access to EAP. All others do not.

With municipal WCB coverage, the volunteers are covered by the provincial Presumptive Cancer regulations<sup>8</sup>. However, those stations that do not have WCB coverage do not have access to the benefits of this coverage.

Individual departments provide their membership with an annual Banquets and awards program. Some are individual station and some are combined station banquets.

Typically, volunteers are issued some form of a uniform at no cost and are exempt from paying provincial vehicle registration for their personal vehicle.

Each station provides for annual Honorariums. Again, there is no uniformity across the region. This particular issue causes organizational stressors. Some stations issues T4s as required by federal CRA rules with others pay honorariums by cash and do not issue the required T4s. This last method of payment does not provide for transparency, is in violation of CRA rules and prevents the volunteer from accessing tax credits both federally and provincially. During GA's stakeholder interviews it was discovered that many of the volunteer firefighters were not well informed on CRA exemptions and reporting limits and deductions.

### **Retention Program Recommendations**

As with any organization, it is often a challenge to develop a program that will meet the need and desires of all participants. However, if there is a standard program paid for by the municipality

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<sup>7</sup> See **Appendix VI**, starting on page **351** for details of all recommended VFIS coverage plans.

<sup>8</sup> Firefighters' Compensation Regulations, N.S. Reg. 140/2003

and is seen as being fair and equitable across the region it will go a long way to minimize any negativity and will enhance the relationship between the various stations across the region.

**GA recommends** the following recruitment and retention initiatives be implemented as part of a Region-wide program aimed at volunteer firefighter retention and in recognition of the special needs of volunteer firefighters;

- The Regional Municipality Fire Service develop a volunteer retention policy and program, that includes providing managers and officers with the appropriate skills to lead and manage the volunteer firefighters. There are resources<sup>9</sup> available to assist with developing such a program.
- The Regional Municipality provide the following wellbeing coverages for all fire department members;
  - WCB coverage at the maximum coverage rate
  - VFIS<sup>10</sup> programs; on-duty Accident and Sickness (AD&D) at \$200,000 principal amount and \$300/\$700 weekly payment; off-duty AD&D coverage for the member and family as a co-pay program; Member and Family Assistance Program (MFAP),
  - Group life insurance coverage at the principal amount of \$100,000
  - Liability insurance for errors and omissions associated with on-duty activities
- The Regional Municipality provide for an annual awards banquets
- The Regional Municipality manage and administer a Regional Fire Service Honorarium program
- All Honourariums be issued by Municipal cheques addressed to each recipient
- All Honourarium recipients be issued CRA T4s as required by legislation and CRA policy.

### *Recruitment and Retention Conclusion*

Recruitment and retention are a business the fire service needs to corner the market on volunteer availability. The business needs to promote programs that will invigorate and inspire community minded citizens to not only become a part of, but feel needed and appreciated. Programs of recognition and programs that enhance individual self-satisfaction are important to assist in the retention of volunteers. Recruitment and retention are continuous year-long endeavors.

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<sup>9</sup> Consider; Recruitment and Retention Guide released in 2009, by the Office of the Fire Marshal and the Fire Service Association of Nova Scotia; Recruitment and Retention Toolkit by the Office of the Fire Marshal, NWT, 2014.

<sup>10</sup> Reference details of these program coverages at **Appendix VI** starting on page **351** of this report.

## **HONOURARIUM**

### **Intent of the Volunteer Honoraria**

The client's request for proposal required the consultant to review the current honourarium program in place across the Region. This required; reviewing Canada Revenue Agency's regulations pertaining to Volunteer Renumeration/Honourarium, Provincial Regulations as to the definition of a volunteer firefighter and the many Society related bylaws and departmental programs and procedures as well as other jurisdictions that offer remuneration programs for their volunteers.

One of the issues in reviewing the current situation was the availability of information as to what actually was paid out in previous years. One department did actually provide this information. The combined municipal budget estimate in fiscal year 2019/20 for pay-out to the fire departments for honourariums was \$200,100.

A high-level review of the available information for the current situation reveals the following (not all inclusive):

- The rules governing the payments of the departments honourarium are contained within their operational procedures or guidelines.
- Lack of standardization across the region either in funding the program, the eligibility requirements to receive an Honourarium, and who actually qualifies to receive remuneration.
- The review indicated that one department is paying Honourarium bonuses for certain department positions with a rate difference of 56% when compared to another department.
- Over the course of the review, it was learned that one department would pay a bonus based upon the type of fire department vehicle one drives. This included any vehicle from a half ton truck to an aerial apparatus, while others do not.
- Some departments provide non-firefighting volunteers that assist with fund raising for the department an honourarium, although these are minimal amounts.
- Base honourarium rates for a department Fire Chief range from \$900 per annum to \$5,000 per annum.
- One department pays in cash, with no T4s issued.

### Honourarium Expectations

Honourarium is a component of the volunteer firefighters' satisfaction. When speaking with volunteers at the several meetings during this Review, many volunteer firefighters spoke to the fact that *"it is not the money why they volunteer."* However, they are very aware of the differing honourarium programs between the fire departments across the region. This is a stressor relating to the topic; the volunteers expect the honourarium will recognize value and be fair and equitable region-wide. One of the reported issues is that each station has a different ability to fund the honoraria. Seeing as the majority<sup>11</sup> of honourarium comes from the municipal budget, equity and fairness should be achievable.

### Honourarium Definition and Intent.

What actually is the definition of Honourarium? An honourarium is a voluntary payment that is given to a person for services for which fees are not legally or traditionally required. Honoraria are under CRA and provincial rules, and are intended to assist in covering expenses incurred by the individual volunteers during their volunteer activity. Some often refer to it as remuneration.

Remuneration is defined as compensation for work done and includes honourarium, wages, salary and other payments. In other words, not much difference between the term remuneration and honourarium.

The initial intent and objective of honoraria in the volunteer fire service for the volunteer was to cover out of pocket expenses for those individuals who actively participate in an emergency role; i.e. firefighting, rescue, medical, environmental, or in an incident support role. However, over the years it has become a tool to assist with recruitment and retention as well as recognition for the volunteer's time and dedication to the community and is expected as remuneration for individuals volunteering their time.

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<sup>11</sup> West Hants policy COGE-007.00 states the following in this regard: "The Municipality shall establish and fund annual honorarium budgets for each Registered Service Provider. The method of distribution of a Registered Service Provider's annual honorarium allotment shall be established by the Registered Service Provider, who may, based on funds from sources other than the Municipality being available to fund it, award an honorarium greater than the total value of the amount awarded by Council.

The *Volunteer Fire and Ground Search and Rescue Services Act* of Nova Scotia, §3(d) defines a volunteer fire fighter as;

““volunteer firefighter” means an individual performing services for a volunteer fire department who does not receive in respect of those services

(i) compensation, other than reasonable reimbursement or allowance for expenses actually incurred, or

(ii) money or other thing of value in lieu of compensation in excess of five hundred dollars per year or such other amount as prescribed by the regulations.”

Honourariums are for compensating volunteers who meet minimum criteria for out of pocket expenses, nothing more, nothing less. GA’s review of the various department’s procedures and protocols to determine how much an individual will be entitled to receive for any given fiscal year, some of those policies and procedures do not necessarily comply with the intent of or definition of honourarium as defined by provincial and federal regulations.

Examples:

- A fire department has a travel and meal policy in addition an honourarium policy
- Bonus payment based upon size and type of vehicle being operated by a volunteer.
- Active firefighters in one department can earn extra credits (points) depending on how long the incident is in duration and they remain on scene. The points turn into a dollar value.
- Honourarium bonuses for attendance at certain types of department functions other than those outlined in the regulations.
- Honourariums plus position pay based upon rank

### *Honourarium Complexities*

Given the many differences in roles, positions, duties and responsibilities as well as expectations across the many fire stations, creates many challenges. There are a number of factors that need to be considered in defining and developing a fair and equitable Regional Volunteer Fire Service Honourarium Program that complies with the intent of the CRA and Provincial regulations such as:

- Position Role and Responsibilities
- On Call periods

- In House Training
- Out of Municipality Training
- Fire Department Related Communication meetings (i.e. not Society related)
- Public Events
- Fund Raising
- Committee service
- Use of Personal Vehicle for Emergency response and station activities.
- Part time department employees who also serve as volunteers
- Manageability of the program
- Municipal Affordability.
- Provincial rules
- Federal CRA rules

### *Municipality of West Hants Honourarium Policy*

West Hants Fire and Emergency Services Policy COGE-007-00 establishes the funding of an Honourarium Program for Registered providers. The above policy was approved by Municipal Council October 2018.

Section 19, page 14/15 of the policy address Honourariums and states:

“An honorarium is a voluntary payment that is given to an Active Volunteer for **services** for which fees are not legally required”. (Note: Honourariums for volunteer firefighters by definition and regulations **cannot** be paid for services).

- a) The Municipality shall establish and fund annual honorarium budgets for each Registered Service Provider. The method of distribution of a Registered Service Provider’s annual honorarium allotment shall be established by the Registered Service Provider, who may, based on funds from sources other than the Municipality being available to fund it, award an honorarium greater than the total value of the amount awarded by Council.
- b) Registered Service Providers agree to comply with all applicable income tax requirements in the distribution of the honorarium to individual personnel.”

The policy attempts to recognize fire and emergency services responders for their contribution of time and expenses towards protecting the municipality by establishing a fund and requiring the registered providers to comply with Canadian Revenue Agency requirements for the issuing of T4s.

The policy although admirable, has some shortcomings. The policy has actually established a means for affluent registered providers to provide a higher honourarium payout than other providers across the municipality. The policy does not establish criteria for honourarium payments, permitting variances in volunteer honourarium payment across the municipality for the same level of commitment.

The policy does not provide direction as to the method of payment nor any procedures for tracking and accounting for monies received and paid out by the registered provider.

Issues pertaining to Honourariums were aired during some of the meetings held with the firefighters across the region as a contentious item.

The Municipality's policy requires an amendment as to the purpose of the honourarium as Honourariums by federal and provincial regulations are for expenses incurred not for services.

#### *Nova Scotia Volunteer Firefighter Tax Credit*

The Nova Scotia Department of Finance and Treasury Board provides a five-hundred-dollar provincial Tax credit for eligible volunteer firefighters. To be eligible the individual had to serve a minimum of six months within the taxation year, attended 20% each of all training, emergency calls and meetings. And have **not received** any payments (salary, wages, compensation or anything in lieu of salary) outside of reasonable reimbursements or allowances for expenses, in respect of firefighting or ground search and rescue services.

The department Fire Chief must complete the required forms and submit by January 31 of each year. On the form it asks the question did the volunteer receive any compensation, if the volunteer received any honourarium, then the answer is "YES". In addition, the volunteer firefighter also qualifies for vehicle registration cost exemption.

In Canada, honoraria are considered salary and thus, taxable income under the *Income Tax Act*. In the case where a gift is substituted for honorarium (gift in lieu of money), it is still classified as a taxable benefit by Canada Revenue Agency. These rules must be taken into consideration in creating an honourarium program.

### Emergency Services Volunteers - CRA

Under the Income Tax Act, a government, municipality, or public authority may exclude reporting as income up to \$1,000 from amounts paid to any of the following individuals:

- volunteer firefighters
- volunteer ambulance technicians
- emergency service volunteers who help in the search or rescue of individuals, or in other emergency situations and disasters

The \$1,000 exemption only applies if the amount paid for the duties that the individual performs is a nominal amount compared with what it would have cost in the same circumstances to have the same duties performed by a regular full-time or part-time individual.

The \$1,000 exemption does not apply if the individual was employed in the year by the **same** public authority for the same or similar duties (such as a full-time firefighter who, from time to time, acts as a volunteer firefighter or rescue worker for their employer), or a part-time station maintenance person who is also a volunteer firefighters for that same organization.

Individuals who receive a T4 slip may also qualify for the volunteer firefighters' tax credit or the search and rescue volunteers' tax credit. When eligible individuals file their income tax and benefit return, they can choose to either receive an income exemption or claim a tax credit.

### Honourarium – Canadian Revenue Agency Rules.

A volunteer fire fighter is eligible (in addition to the provincial tax credit) to claim \$3,000 for the volunteer firefighters' amount (VFA) or the search and rescue volunteers' amount (SRVA), but not both, if the volunteer meets all of the following conditions:

- A person was a volunteer firefighter or a search and rescue volunteer during the year.
- They completed at least **200 hours** of eligible volunteer firefighting services or eligible search and rescue volunteer services in the year.

The volunteer firefighter can combine the hours they volunteered for both search and rescue and firefighter activities to claim either the VFA or the SRVA. However, if you were also employed by the same organization, other than as a volunteer, for the same or similar duties, you cannot

include any hours related to that organization in determining if you have met the 200-hour threshold.

### Eligible services

Eligible volunteer firefighting services with a fire department include:

- responding to and being on call for firefighting and related emergency calls as a firefighter
- attending meetings held by the fire department
- participating in required training related to preventing or suppressing fires

### Pensionable and Insurable Rescue or Volunteer Firefighter Income

The Canada Revenue Agency has rules that specify when income earned from search and rescue or volunteer firefighting organizations is pensionable or insurable. As a general rule, volunteer firefighters are not employees and would not be considered engaged in insurable or pensionable employment. If, however, the volunteer is being paid to perform services, the firefighter would not be considered a volunteer.

### Regional Honourarium Program Recommendations

**GA recommends** that the new Regional Municipality strike a committee of the appropriate fire service and municipal personnel, including finance personnel, to establish a fair, equitable and affordable honourarium program across the region. The program should meet the following points;

1. The objective is to promote an active volunteer program and appropriately recognize the service through the honourarium.
2. The program should be applied to the volunteer firefighters who have reached the Age of Majority for the Province of Nova Scotia, and who are eligible for renumeration.
3. The program should establish participation standards for attendance at training, emergency incidents, and department operational communication meetings (i.e. not Society business or other meetings).
4. The program should develop an annual honourarium base amount for each volunteer within the organization regardless of position and regardless of incident volumes of that station, then further identify and define what is reasonable bonuses based upon position, and services (e.g. emergency responses) provided by the volunteer.
5. Procedures for the distribution and payment should also be established, especially surrounding payment method, i.e. individual cheques and the issuance of T4s by the municipality.

### Honourarium Conclusion

The original intent of the honourarium was to replace expenses incurred by the volunteer in their performing of a volunteer service. Over the many years it has grown into remuneration for volunteer services provided; which is not in compliance with current federal and provincial regulations. It can be used as a tool for recruitment and retention, unfortunately if not managed properly it can become a source of frustration and discontent. Volunteers for the most part accept they do not get paid for service. However, like most employees in a work place they want to be treated fairly and equitably.

The challenge for the municipality is to ensure that the program is fair and recognizes equal contributions by all, and meets the requirements of both the Provincial and Federal legislation and policies.

## **FIRE SERVICE PROMOTIONS**

According to General Colin Powell,<sup>12</sup> “*Ultimately, it is people-not plans, systems, structures, or budgets-who make the difference between organizational success and organizational failure*”. For this reason, it is important that fire departments take the time to identify reliable and valid processes to select personnel for promotion; processes that will help ensure the most qualified person meeting the needs of the organization effectively is chosen.

In general, promotion practices in the volunteer fire service can be contentious and are often based on ancient practices. In the context of modern expectation of fairness and promotional competence, there can be some glaring gaps between existing practice and good HR policy/practice.

Fire Lieutenants and Fire Captains probably have more influence on retention, morale of the fire volunteers, and cost reduction than any other group or position within the fire station.

Being a front-line volunteer fire officer is one of the most difficult, demanding, and challenging jobs in any organization. It is also very rewarding even at the first level; a supervisor must be able to think and act in terms of the total system of operation. This includes defining and assigning priorities, planning and organizing, and programming and coordinating the operating tasks of a department so that the objectives of both the department and the community as a whole are achieved.

The front-line fire officer must excel in interpersonal skills. More and more, the trend is for volunteers to be a heterogeneous group of individuals, many of whom are not especially dedicated to their jobs, or their departments. Handling the variety of attitudes and values in this multiple-generation base has become extremely difficult.

It is the front-line fire officer who must cope with volunteers face to face and day to day. Being able to communicate effectively is vital. Being able to work with people is the most important characteristic a front-line fire officer can have.

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<sup>12</sup> Harari, O (2002). *The Leadership Secrets of Colin Powell*. New York, NY: Mc Graw-Hill, p.24

Frontline officers must have technical competence in their role. Frontline officers must be able to themselves perform the specific tasks they ask their assigned personnel to do, and must understand the equipment used.

Having good technical skills allows supervisors to deal with the many challenges that firefighters face in accomplishing their assigned objectives/tasks, and facilitates their ability to mentor and train their subordinates.

A fire officer is always accountable and responsible for the outcomes associated with the assigned tasks and roles of the position. There are various fire officer ranks, and the main difference between them is the amount of accountability and responsibility as well as the expected technical competence.

For a specific example; a fire lieutenant (which is the entry level officer position) is a front-line and hands-on fire officer. Lieutenants are required to have good technical competence in operating forceable-entry tools (axe, sledge hammer, Haligan bar, power saws, etc.). He/she is responsible for mentoring and training the crew members to also have effective forceable-entry skills, and to work successfully together as a team; such that they achieve assigned or needed objectives.

On the other hand, the Fire Chief, who no doubt had good hands-on skills at one time when he was a Lieutenant, is no longer expected to maintain his/her task skills in this particular area. However, the Fire Chief does have a part to play in forceable-entry. It is the Fire Chief's responsibility to ensure that the Lieutenant and her/his crew have the required tools to achieve forceable-entry and to ensure that the rules of engagement (e.g. as to when forceable-entry is appropriate) are developed and clear to everyone in the fire department, and to address when the rules are violated. The Fire Chief is accountable for the service being provided. He is responsible for ensuring that the fire service operates within best practices and that it meets public expectations.

### Review of current Practices

Following is a high-level overview of current promotional practices within the region. It should be noted that entire details of each department's process are not included in the overview.

However, terms of office, eligibility and qualification criteria are different for each department.

#### *Summerville Volunteer Fire Department:*

Summerville has a subjective annual process where a nominating committee receives attendance and credential records of all members, and presents a selection of nominees for the general membership to vote on. If during the year there is a vacancy it will be filled by special resolution of the membership. If there is no nomination the chair (Fire Chief) may appoint.

#### *Brooklyn Volunteer Fire Department:*

Brooklyn chiefs and front-line officers are appointed subject to an application and interview by the Society's executive committee. Each position has a set service term and prerequisite of qualifications required to be met before a candidate is eligible to submit their application.

#### *Windsor Fire Department:*

Windsor chief and front-line officers are appointed subject to an application and interview process. Each position has a set service term and prerequisite of qualifications required to be met before a candidate is eligible to submit their application.

#### *Hantsport Fire Department:*

The chief officers are elected every two years. The front-line officers, Captains and Lieutenants are appointed by the Chief officers, subject to eligibility and qualification criteria.

### Promotion Recommendations

There are a number of agencies, associations and organizations that provide qualification recommendations for each of the positions within a fire department. These recommendations are general in nature in an attempt to cover a broad spectrum of communities and fire service

organizations. The base line for any trained firefighter is NFPA-1001,<sup>13</sup> Level I. For fire officers it is NFPA-1021.<sup>14</sup>

The Fire Services Association of Nova Scotia has produced a set of recommendations for various volunteer firefighter and officer qualifications according to position within the department. These standards reference NFPA-1001 Level I, and indirectly several other NFPA standards since available training is through the Nova Scotia Firefighters School which trains to NFPA standards.

The following recommendations are based upon an organization having separate and identified Incident Safety and Health and Safety officer positions as well as the usual line officers. It is in accordance with the general theme of current practices within the region. The recommended qualifications standardized across the many stations has many benefits for the organization, not only in knowing the volunteers of similar rank regardless of station can fulfill the same position at another station or at an incident in time of need.

### ***KSAs***

Any and all training has three basic components comprised of Knowledge, Skills and Abilities (KSA). Any person who attends a quality training program will attain Knowledge and Skills; Abilities will be attained to a degree. However, abilities require as the fire term suggests “*Time In*”, in other words experience. Certain positions regardless of the training and education received will require a certain amount of time-in, and experiences to be able to fulfill the mandate of the position. Thus, the reason for years of service requirements for the certain positions. Typically, the higher the position the more time-in is required.

### ***Incumbents***

If the recommendations are accepted, the incumbents who may not meet all of the qualifications in their current position should remain in their current position until their current term expires or until such time as there are candidates available that meet the minimum eligibility and

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<sup>13</sup> National Fire Protection Association; NFPA-1001, Standard for Fire Fighter Professional Qualifications

<sup>14</sup> National Fire Protection Association; NFPA-1021, Standard for Fire Officer Professional Qualifications

qualification requirements. Incumbents who do not meet the minimum qualifications should be afforded every opportunity during their remaining term, to acquire any necessary qualifications so as to maintain their position/rank, if they desire to do so.

### *Recommended Position Qualifications*

**GA recommends** that the following table of qualifications be implemented as a standard baseline for officer promotions in all fire departments in the Region.

<u>Position</u>	<u>Term (years)</u>	<u>Probation Period (years)</u>	<u>Min. Years Service Eligibility</u>	<u>Minimum Qualifications</u>
Health and Safety Officer (HSO) <sup>15</sup>	Indefinite	1	4	<ul style="list-style-type: none"> <li>- Have thorough knowledge of the NFPA standard on Fire Department Occupational Safety, Health, and Wellness Program (NFPA-1500)</li> <li>- Familiarity with NS OH&amp;S regulations (training by recognized provider)</li> </ul>
Incident Safety Officer (ISO)	2	1	Minimum 1 term as a Fire Captain	<ul style="list-style-type: none"> <li>- Pro Board-Certified Fire Safety Officer as per NFPA-1521</li> <li>- Completed Fire Officer Level II (NFPA-1021 qualified)</li> <li>- Incident Command, ICS 200 (NSFS course 4042)</li> <li>- All the requirements of a Fire Captain</li> </ul>
Fire Lieutenant	2	1	Minimum 4 years as a FF	<ul style="list-style-type: none"> <li>- MFR (EHS recognized program)</li> <li>- Incident Command, ICS 100 (NSFS course 4041)</li> <li>- Managing Company Tactical Operations (NSFS course 4030)</li> <li>- Any requirements of a firefighter for the district station assigned</li> <li>- NFPA-1001 Level I with NFPA-1072 Haz Mat Ops sect. 6.2 &amp; 6.6 (NSFS courses 1001-1023)</li> <li>- Level II FF by end of term (NFPA-1001 qualified)</li> <li>- Fire Officer Level I by end of term (NFPA-102 qualified)</li> <li>- Fire Service Instructor Level I, by end of term (NFPA-1041, qualified)</li> </ul>
Fire Captain	2	1	Minimum 1 term as a Lieutenant	<ul style="list-style-type: none"> <li>- Certified Fire Service Instructor Level I</li> <li>- Fire Officer Level I</li> <li>- Fire Investigation Fundamentals (NSFS course 3200)</li> <li>- ICS 200 (NSFS course 4042)</li> <li>- Any requirements of a firefighter for the district station assigned</li> <li>- Completed Fire Officer Level II by end of term (NFPA-1021 qualified)</li> </ul>
Deputy District Fire Chief	3	1	1 term as a Fire Captain in the respective District Station	<ul style="list-style-type: none"> <li>- All qualifications of a Fire Captain</li> <li>- Completed FMO Course on Roles and Responsibilities of a Local Assistant to the Fire Marshal</li> <li>- Risk Hazard Analysis</li> <li>- Individual communications skills course</li> <li>- Respect in the Workplace course (corporate HR course)</li> <li>- Fire Service Personnel Leadership course</li> <li>- ICS 300 by end of term</li> <li>- NFPA-1021 Fire Officer II (NSFS course 4060) by end of term</li> </ul>
District Fire Chief	3	1	1 Term as a Deputy in the Regional fire service	<ul style="list-style-type: none"> <li>- All of the requirements of the District Deputy Fire Chief</li> <li>- Certified Fire and Explosion Investigator, CFEI (current)</li> <li>- Budgeting (corporate Finance training)</li> <li>- Dalhousie University Certificate in Fire Service Leadership</li> <li>- Strategic planning (corporate management training)</li> <li>- Risk Management (corporate management training)</li> </ul>

<sup>15</sup> As per the NS fire Services OHS Guide of 2003, this is an appointed position by the District fire Chief. However, the recommendations listed in the table above are guidance to the District Fire Chief in their selection of the HSO.

### *Recommended Promotional Process*

**GA recommends** the following promotional process.

- Annually the promotional cycle for all districts shall be completed by December 01 of each calendar year.
- The process should commence with each District Station adhering to the annual completion date and their respective Bylaws/procedures for the establishment of a nominating committee(s).
- The committee should complete their internal processes in the developing of a promotional list each year for the filling of fifty per cent of the Lieutenants, Fire Captains and Incident Safety officer positions based upon the incumbent's term; i.e. staggered terms for each rank category. For the Deputy District Chiefs and the District Fire Chiefs this too should be staggered on a three (3) year cycle.
- All Candidates under consideration by the District committees, should produce a current driver abstract, a criminal/vulnerability background check, a medical health report, and proof of qualifications, all as part of the selection process.
- Once the District has completed their process for the positions of Incident Safety Officer, Lieutenant, and Captain, the list with Candidate qualifications should be submitted to the District Fire Chief who will review the Candidates with the Director of Public Safety/Fire Chief (DPS), before proceeding to interview the Candidates.
- The District Fire Chief should seek the agreement of the DPS before offering any position to a selected Candidate.
- Successful Candidates will be notified in writing by the DPS/FC and will commence their duties effective January 01 of the next calendar year.

For the positions of District Deputy Chief and District Fire Chief, the entire process should commence one month earlier than the other ranks process, so that the new chief officers can participate in the selection process of lower ranks.

- Candidates recommended by the nomination committee(s) should be submitted to the DPS/FC, who will meet with the committee to review the process and qualifications, including previous experience.
- Once the Candidates are selected by the DPS/FC, they should be notified in writing by the DPS/FC and will commence their duties effective January 01 of the next calendar year.

**GA recommends** that performance evaluations be done by the immediate supervisor annually.

- Captain and Lieutenant evaluations should be performed by the District Deputy & the evaluation confirmed by the District Fire Chief.
- The ISO and HSO should be reviewed by the District Deputy Chief and the evaluation confirmed by the District Fire Chief.
- The Deputy District Chief should be reviewed by the District Fire Chief and confirmed by the Director of Public Safety/Fire Chief (DPS).

- The District Fire Chief should be reviewed by the DPS.

DPS/Fire Chief has the authority to remove any officer from any position for cause and with due process in accordance with Corporate HR procedure and process.

## **HEALTH AND SAFETY POLICIES REVIEW.**

### **Introduction**

A review of Health and Safety Policies was asked to be conducted as part of the Fire Service Review contract. The basis for the review was the Nova Scotia *Occupational Health and Safety Act* and associated Regulations along with the Nova Scotia Fire Services Occupational Health & Safety Reference Guide; which is based upon NFPA-1500 *Standard on Fire Department Occupational Safety and Health Program*.

A fire service safety program is mission critical to any organization, even more critical for the fire service. Any injury that involves lost time for a volunteer or even death is costly not only in financial terms, and quality of life but the possible degradation of department morale and the negative psychological impact on members of the department and the community. A fire service safety program includes two distinct functions, a staff function, “*Occupational Health and Safety*” and a Line function “*Incident Safety Officer*.” Although these roles have safety as their base responsibility, the roles have very different responsibilities and skill sets.

The objective and goals of any fire service safety program is to identify problems in wait and develop methods, procedures, and control measures to address prevention, then train personnel in those measures to lessen the risk to all department members and ultimately the municipality.

### **The Review**

There are no less than ten (10) NFPA standards addressing firefighter safety. This review focused on only two of those standards NFPA-1500; *Standard on Fire Department Occupational Safety and Health Program* and NFPA-1521; *Standard for Fire Department Safety Officer*.

In addition to reviewing the provided fire department procedures and operating guidelines, two surveys were used covering eight (8) targeted subject areas, including 44 topics.

Targeted subject areas included:

- Occupational Health & Safety officers, numbers of, and qualifications
- Incident Safety Officers numbers of, and qualifications

- Emergency response vehicles
- Targeted fire equipment, i.e. ladders and hose
- Personal Protective Ensembles (PPE)
- Rescue rope
- Respiratory Protection (SCBA)
- Fire extinguishers

Based upon the survey results; regionally the compliance-average was 71%.

### *Firefighter Rehabilitation*

In an additional area, the review of the provided departments' standard operating procedures, guidelines, policies and administration procedures, showed no reference to firefighter rehabilitation either at the emergency scene or in training exercises. (Rehabilitation was not specifically included in the safety survey).

As part of firefighters' health and wellbeing there is a need during emergency operations and training exercises to monitor their physical condition. This is normally done to help identify any issues that may lead to serious medical conditions that would require medical attention, or even worse, hospitalization.

NFPA-1584; *Standard on the Rehabilitation Process for Members During Emergency Operations and Training Exercises*, establishes protocols and requirements for emergency responder at scene rehabilitation. The NFPA Standard identifies rehabilitation preparedness, criteria for rehabilitation area responsibilities and characteristics, and outlines the procedures for emergency scene and training rehabilitation.

**GA recommends** that standard operating procedures/guidelines (SOP/Gs) be developed that outline a systematic approach for the rehabilitation of members operating at incidents and training exercises; in accordance with NFPA-1584. The procedures need to address cooling and warming, medical monitoring, Emergency Medical Care, member accountability, and documentation.

### *The Occupational Health and Safety officer and the Incident Safety Officer.*

A review of department positions appeared, in some cases, not to differentiate the role of the department Safety Officer into its two safety functions. What is the difference between a fire department Occupational Health and Safety Officer (HSO) and that of the Incident Safety Officer (ISO), which are distinct and separate roles?

Both roles are responsible for identifying risks and putting into place, practices, policies and procedures to prevent injury to fire department personnel. Their roles differ as one position, the ISO is part of an incident Command Team during an incident and addresses acute dangers present during an emergency incident.

#### *ISO ROLE*

The role of the ISO is one of a formidable task and includes but not limited to;

- Assists in the development of the Incident Action Plan.
- Conducts ongoing risk assessments.
- Assists in the management of risks at the incident.
- Assists in the development of the Incident Action Plan.
- Co-approves with the Incident Commander the Incident Action Plan.
- Monitors the Incident Action Plan throughout the incident.
- Checks for unsafe acts.
- Checks to unsafe conditions.
- Checks for unsafe behaviours.
- Has authority to alter or terminate operations to prevent injury
- Conducts at scene Accident Investigations
- Prepares documentation for required HSO investigation
- Conducts Posit Incident Analysis

#### *ISO SKILL SET*

The ISO position must have the necessary background, training and experience such as,

- Comprehensive knowledge of incident hazards
- Risk management criteria, including what constitutes unacceptable level of risk;

- Ability to apply knowledge of fire behavior and fire dynamics and their impact on conditions, building construction, hazardous energy, reading smoke,
- Experience as a fire ground officer

### *HSO ROLE*

The HSO is responsible for programs and policies relating to chronic illnesses that could result from an event or accumulation of events that can occur prior to and post an emergency incident, or of a training event, or from station conditions. These include exposure to the effects of fire or an environmental incident, or around the fire station. The HSO ensures that proper protocols are carried out as per provincial legislation and best practice standards for certain types of equipment.

The role of the HSO is labour intensive and includes but not limited to;

- Development of and implementation of the OHS organizational risk management plan dealing with chronic issues.
- Identify risks; develop goals, objectives, and action plans to manage those risks; analyze data; perform cost-benefit analysis.
- Develop a plan for the treatment and transport of an injured or ill member.
- Conducts Facilities inspection.
- Develops, implements and manages the organization's Accident prevention program.
- Conducts safety and health investigations.
- Manage the collection and analysis of data related to accidents, occupational deaths, injuries, illnesses, and exposures to infectious agents and communicable diseases.
- Recommend safety-related specifications for fire apparatus and fire equipment, given new or existing fire apparatus and fire equipment specifications.
- Analyzes the fire department health maintenance program and makes recommendations if required.
- Develop, implement and manage the fire department's infection control program.

### *HSO SKILL SET*

The HSO position must have the necessary background and experience in

- Occupational Health and Safety
- Understanding the intent of applicable Acts, regulations and standards
- Ability to assess, classify and determine risks and implement appropriate control measures.
- Ability to identify risks, develop goals, objectives, and action plans to manage those risks; perform cost-benefit analysis; compile and analyze data,

- Ability to conduct investigations and write comprehensive legal reports.
- Ability to manage the collection and analysis of data.

**GA recommends** that separate roles for ISO and OHS be established at each fire station.

### *TRAINING, and CERTIFICATION vs QUALIFICATION*

Training of ISOs and HSOs as well as the difference between Certification and Qualification and its potential impact on the fire service will be discussed in the Training section of this Fire Services Review report. However in brief, the ISO should be certified, while the HSO should be qualified.

### *OH&S SUMMARY*

A fire services organization strives to improve operational excellence while keeping firefighters and the community safe. If the organization is relying on inconsistent, out-of-date or incomplete policies for guidance, then the organization is at increased risk of experiencing an adverse event, and the potential for significant legal liability, and specifically in the area of OH&S there is a possibility of the laying of criminal charges.

It is the utmost importance to ensure that the regulations and standards for personnel safety and the maintenance of fire equipment are adhered to.

**GA recommends** that; as required by regulations and standards that an official written occupational safety, health, and wellness policy be developed for the Regional Fire Services that that identifies specific goals and objectives;

- The prevention and elimination of accidents and occupational injuries,
- The management of exposure to communicable diseases,
- The management of exposure to products of combustion (carcinogens, fireground contaminants, and other incident-related health hazards),
- The elimination of preventable illnesses, and fatalities.

This policy must be in compliance with and meet the intent of applicable regulations and applicable best practice standards. The situation for volunteer firefighters vis-à-vis the applicability of the *Occupational Health and Safety Act* and Regulations in Nova Scotia is

currently in flux. However, the general duty clause (§13) of the *Act* clearly lays out an employers' responsibility towards everyone when it states “*Every employer shall take every precaution that is reasonable in the circumstances to...ensure the health and safety of persons at or near the workplace...*” This provision clearly includes volunteer firefighters, and this was confirmed by NS's Occupational Health and Safety Division.

There are ample best practices and standards to demonstrate what these precautions should be for volunteer firefighters, including the provincial government's own *Occupational Health and Safety Reference Guide* developed for the Nova Scotia Fire Services. A failure to follow these clear directions could have serious consequences.

**GA recommends** that the fire service evaluate the effectiveness of the occupational safety, health, and wellness program at least once every 3 years and submit an audited report of the findings to the DPS/FC and corporate CAO.

Overall the current fire departments are managing health and safety fairly well but there are a number of areas that require further review, positive action, and corporate assistance.

## **PROFESSIONAL QUALIFICATIONS AND STANDARDS (TRAINING)**

### **Training Principles**

The Regional Fire Services Review was requested to look into professional qualifications and training standards; more specifically to assess standards of existing department personnel in order to determine current and future training needs (gaps), and with consideration to documentation requirements, and succession planning.

### ***Training and Learning***

What is the difference between Training and Learning?

*Albert Einstein once said, “Education is not about learning of the facts, but the training of the mind to think.”*

According to TalentLMS;<sup>16</sup>

*“It’s important to understand the difference between learning and training. Both assist in leading individuals into expected performances. Of course, they are **inextricably linked**, but they are **unique aspects of any educational process**. Training is the giving of information and knowledge, through speech, the written word, or other methods of demonstration in a manner that instructs the trainee. Learning is the process of absorbing that information in order to increase skills and abilities and make use of it under a variety of contexts.*

*Whatever the goals, the quality of the learning will rely largely on the quality of the training, and so the role of trainer is very important as it can have a huge effect on the outcome of learning for the student.*

### ***The Characteristics of Learning***

*As mentioned above, learning is the process of absorbing information and retaining it with the goal of increasing skills and abilities in order to achieve goals – but it’s more than that. Learning is what we go through when we want to be equipped for non-specific and unexpected situations; and the two are not mutually exclusive. While you*

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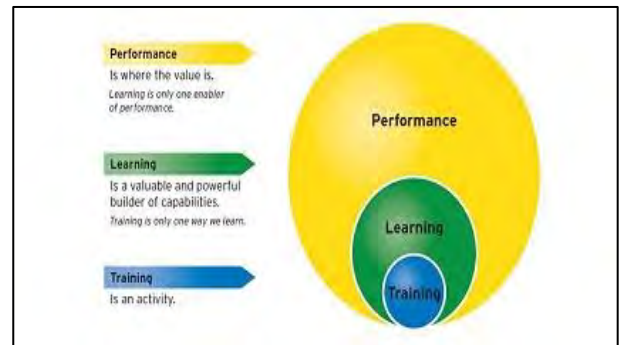
<sup>16</sup> <https://www.talentlms.com/elearning/learning-vs-training>

*do learn to do something specific, you are also inadvertently equipped with the knowledge and/or skills to face future challenges. In essence, **learning is all about equipping a person to tackle not just today's issues, but preparing him/her to creatively come up with ways to tackle tomorrow's issues.***

#### *The Characteristics of Training*

*Training, on the other hand, **focuses more on the development of new skills or skill sets that will be used.** Training is the process each new employee goes through when joining a new organization to learn how to carry out the day-to-day operations, know how their department works and how job-specific tools operate in order to carry out their responsibilities. In essence, through training, we are not looking to reshape the behavior of an individual rather the point is to teach the employee or learner how things are done so that they can then carry out a process on their own."*

In summary; Training is how to do something and is also for compliance purposes. Learning is understanding the; knowing how, experience, and the why. The desired outcome is improved Performance. The accompanying diagram<sup>17</sup> shows this very well.



#### *Fire Service Needs*

The fire service needs both training and learning, as they complement each other. Certain aspects of the firefighter's role will require more on the training equation than that of learning; i.e. the things they need to do even if they do not fully understand why. Other skill sets, depending upon the fire service role, will rely more heavily on learning; i.e. the ability of apply skills to new situations. But all fire service job functions and skill sets require a little of both to enable the firefighter to fulfill their mandate and community expectations. The community expectations, (regardless of whether the firefighters is career or volunteer), are that a professionally trained and qualified person will attend to their emergency.

The fire service needs to be risk averse. In the fire service, whether career or volunteer, training is required to minimize the fire service's, and by vicarious liability the municipality's, exposure

<sup>17</sup> Dr. Rhonda Dubec, 2019, ePost to Lakehead University Teaching Commons

to possible civil litigation. Certain types of training are specifically designed and needed to minimize the risk to workers and the organization in terms of accidents, safety code violations, lawsuits and citizen complaints. In today's modern environment, organizations require diversity training, training about sexual harassment, workplace safety training, customer/taxpayer service training, and other quality initiatives can all help develop better work environments and services while minimizing any hazards along the way.

Traditionally fire service personnel trained only on how to respond, to emergencies, operate, and maintain equipment. Now they must have the required skill sets to write training syllabus, policies, procedures, reports, and to read, understand, and develop complex budgets and financial reports. In some roles to read and understand legislation and legal documents.

### *Fire Service Qualifications versus Certifications*

Credential Creep is a term that means a tendency over time to focus on credentials which in turn leads to an inflation of minimum requirements for a specific task. This is pervasive in the health care industry and has been creeping into the fire service for years. A mass move towards certification requirements has led to significant business opportunities for institutions and private organizations. The move towards certifications are arising in part as a result of litigation against the fire service; i.e. the focus on proven qualifications.

To maintain and retain volunteer firefighters who in today's society are often working more than one jobs to make ends meet, and are raising families is a challenge. The competing needs amongst school, sporting, church activities, and competition with other community volunteer organizations, who do not have the same levels of demands on personal time as the fire department increases the challenge to maintain qualified, not alone certified, community minded volunteers.

If a volunteer knows how to operate a pump, then he/she knows how to operate a pump. In a volunteer world what is the difference whether they are qualified or certified? As long as they have been trained to the standards of pump operation and tested to the Job Performance Requirements (JPRs) of pump operation, and there are standardized records of training, and there is continuous training to maintain skills, there should be no issue.

During GA's stakeholder meetings the issue surrounding qualification versus certification was raised numerous times. The concern was the extra time and costs for certification. To assist in making a decision on which level of training should be accepted by the Region's fire services, i.e. whether all volunteer emergency services courses should be certified, or not, is the answer to the question "*is certification really required and what is the beneficial difference between qualification and certification to the organization?*"

Within the fire service there are two certifying and accreditation bodies, Pro Board<sup>®</sup> and The International Fire Service Accreditation Congress (IFSAC). IFSAC is a not-for-profit, peer-driven, self-governing system of both fire service certifying entities. The IFSAC Certificate Assembly provides accreditation to entities that certify the competency of and issue certificates to individuals who pass examinations based on National Fire Protection Association (NFPA) fire service professional qualifications, and other standards approved by the Assembly. The accreditation is made at the provincial, federal government, or territorial level for fire fighter certification programs. The IFSAC Certificate Assembly accredits the certification (examination) process of certifying entities. This includes evaluation of various elements of knowledge (written) and practical skills examinations,

Pro Board Accredits those public sector organizations (generally governmental or educational) that certify emergency services responders against the requirements of the Standards of the National Professional Qualifications System. Those Standards are promulgated by the NFPA. They do not accredit training systems, programs, or curriculum. Their focus is directed at the testing process used by an eligible agency. They do not accredit for profit companies or concerns. Pro Board accredits organizations that use the NFPA professional qualification standards.

#### **WHAT ARE THE BENEFITS OF CERTIFICATION?**

Professionalism has long been a goal sought by members of the fire service. It has only been within the past 25 years that a system has evolved to produce national professional qualifications standards that an agency can use to establish performance measures for personnel. Agencies that achieve either IFSAC or Pro Board accreditation are recognized as having met the rigors of

review by an independent organization. This third-party independent review is the best way to assure firefighters and governance bodies that the agency's program meets the national standards.

The term "*Professional*" does not differentiate between career or volunteer, it refers to a person formally certified by a professional body of belonging to a specific profession by virtue of having completed a required course of studies and/or practice; whose competence can usually be measured against an established set of standards.

#### WHAT IS CERTIFICATION?

Certification is a voluntary program administered by a non-governmental organization. Depending upon the subject It grants the use of a credential to individuals for a specific period of time. Certification is available to those who meet predetermined and standardized criteria for knowledge, skills, or competencies. Testing is by a third party. Depending on the field of study, recertification after a prescribed period of time may be required.

#### WHAT IS QUALIFICATION?

Qualification is awarded for achievement of a narrow body of knowledge with very specific learning objectives. This type of program often takes the form of a classroom learning experience and some practical exercises, followed by an assessment to determine if the desired learning goals and objectives for the training have been met. Testing is typically administered by the course instructor or course agency. Qualifications typically have no recertification component.

#### WHAT IS TRAINED TO?

"*Trained to*" is a term in the fire service the means an instructor in a specific subject has trained students to a certain standard. However, there was no method of ensuring the students in attendance acquired the specific knowledge or skills of that standard, or associated with the course attended. In other words, there was no testing or validation that either the instructor provided the required information or that the student absorbed or acquired the taught knowledge and skills. The student ends up with, basically, a certificate or record of attendance.

### *Certification Needs*

The Review required the fire departments to provide current training records and to complete a training survey indicating the various training received by its members; identifying whether the training was a qualification or a certification. Unfortunately, as a result of lacking and conflicting data, the review was not able to verify results. However, even though meaningful analytics was problematic, it was obvious training was conducted across the region in several areas.

The second part of the Review was to determine what training courses needed to be certified if any. As a result of previous fire industry litigations and the potential for litigation and the need for stringent technical knowledge, it has been determined that there are four (4) identified fire service positions that require certification;

- Training Officers,
- Fire Department Incident Safety Officers, and
- Fire Inspector
- Fire Investigators.

The following certification courses are available through the Nova Scotia Firefighters School, who are able to provide the training locally within the Region.

- Fire Inspector I NFPA-1031
- Fire Investigator NFPA-1033
- Fire Instructor I & II NFPA-1041

Unfortunately, the Incident Safety Officer certification is not available in eastern Canada. There are a number of locations throughout the United States, the most notable being the Fire Department Safety Officer Association programs, in New York.

For individuals interested in becoming a fire inspector or investigator, the Fire Prevention Officers Association of British Columbia offer a Pro Board certification 100% on line program that is available to fire personnel all across Canada. The written and practical exams are conducted by Trained Evaluators across Canada.

A review of the fire service needs, and skill sets required for those needs, may reveal that there are positions that do not require young, physically fit, gung-ho individuals. Positions such as Public Education, administration, radio operators, traffic control persons, occupational health and safety opportunities, truck drivers. There may be seniors who are looking to keep active and are willing to provide some time to a volunteer organization with previous skill sets and experience that can fill a void within the organization.

Traditionally, the majority of volunteer fire services required any and all members of their respective departments to be firefighters, who were trained in additional services offered by the department. This means answering the question, *“Do all volunteer fire department members have to be fire trained”?* The answer is no.

Volunteer fire departments do need the majority of their membership to be fire trained so as to be able to deliver the department’s core services; responding to, rescuing people from and extinguishing fires.

### *Qualification Needs*

What types of functions/positions are required at the scene of a structure fire that are required to be firefighter qualified?

- Firefighters
- Fire Officers
- Incident Safety Officer
- Accountability Officer
- Incident Commander

What are some of the functions/positions that are required at the scene of a structure fire that ***do not*** need to be a trained firefighter?

- Apparatus Driver/operator
- Air/SCBA support person
- Command Post - radio communicator/scribe
- Firefighter rehabilitation support personnel
- EMS
- Traffic Safety Control

- Logistics

What are some of the other types of emergency services that some fire departments provide that ***do not*** require volunteer members to be firefighter trained?

- Water rescue, (Boat enthusiasts, SCUBA Drivers)
- Ice Rescue
- High angle rescue service
- Medical First Responders

Additional non-emergency Staff functions in which volunteers do not need to be firefighter trained but could be most beneficial to the fire department.

- Administration, Mgt of Records (data) and reports, budget, inter-government relations)
- Fire Prevention (fire-safety education, fire-investigation, fire-inspection/enforcement)
- Maintenance
- Communications
- Research & Planning
- Community Relations/Public Information
- Financial Management
- Personnel Management

Regardless of the function/role of the volunteer, all volunteers will require specific subject/service training, skills maintenance, and fire department orientation. All persons in their specifically assigned role will need to be trained and qualified for their assigned role. However, taking the specific assigned role approach to training and learning, some of the traditional basic firefighting courses would not be required and thus make more effective use of allotted training funds and perhaps aid in department recruitment.

### Observations

#### *Documentation*

The first observation related to the review of Professional Qualification and Standards is the lack of appropriate training documentation. The training records that were provided and the training survey data, proved to be challenging in that there were variations and discrepancies. This resulted in the inability to conduct a proper and thorough analytical review.

**GA recommends** acquiring a proper records management system (RMS). If related recommendations throughout this report are accepted, then an RMS training module adhering to NFPA-1401; *Recommended Practice for Fire Service Training Reports and Records* can be acquired as part of an overall Records Management System.

The Municipality of West Hants as part of their Fire Services Policy COGE-0700.00, Dated 2018, provides the basis for a standard training record table. The table only captures one of many required elements required of a proper training record. It is believed this record of training, has more to do with identifying a registered fire department’s ability to provide the level of services in the department’s Fire Service registration filed with the municipality, than a proper recording and tracking of a department’s training program. However, it appears that the form has become the record of choice.

The National Fire Protection Association’s standard, requires training reports and records that are comprised of eight (8) sections, totaling thirty-five (35) recording elements.

The majority of required minimal records for training reports and training records can be found in canned Fire Records Management Systems.

**Schedule 2A – Example of Training Record Format**

Summary of Active Fire Fighters Training Records											
Name	Rank	Year of Service	Level 1 Qualified	Level 1 Certified	Incident Command	Training (Please check all applicable training)					Other (Specify)
						Strategy & Tactics	Fire Safety Officer	Fire Prevention Educator	Fire Investigation	MFR	

**West Hants Training Standards**

The Municipality of West Hants as part of their Fire Services Policy COGE-007.00, Dated 2018, provides a *Minimum Service Level Standards Table*. The table lays out what service level is required. Indirectly this forms the basis, to a point, for the required training standards needed to meet the service delivery standard.

This form raises a couple of questions as it relates to training and standards.



WEST HANTS  
NOVA SCOTIA

POLICY

Minimum Service Level Standards Table:

COGE-007.00

Minimum Service and Level Standards	Per Station		Per Region	Outside Support
	Serviced	Unserviced		
Fire - Structure	yes	yes		
Fire - Defensive	yes	yes		
Medical - Reg First Responder (level 4)		yes		
Medical - Medical Assistance (level 1-3,5,6)	yes			
Veh Rescue-Technician	NA	NA		
Veh Rescue Operational	yes	yes		
Veh Rescue Awareness	NA	NA		
Water Rescue - Technician	NA	NA		
Water Rescue Operational	yes	yes		
Water Rescue Awareness	yes	yes		
Ice Rescue Technician	NA	NA		
Ice Rescue Operational	yes	yes		
Ice Rescue Awareness	yes	yes		
Structural/Excavation Collapse Technician				
Structural/Excavation Collapse Operational			1	HRM
Structural/Excavation Collapse Awareness	NA	NA		
High Angle Rescue Technician			1	1
High Angle Rescue Operational			1	
High Angle Rescue Awareness	NA	NA	1	
Haz Mat Technician				1
Haz Mat Operational	yes	yes	1	
Haz Mat Awareness	NA	NA		
Ground Search and Rescue Provider	no	no		
Ground Search and Rescue Assistance	yes	yes		

*NFPA Standards versus Service Standards Table*

As part of the Service Standards Table is the Appendix A, Definitions. In the definition section it makes references to a few NFPA standards and editions of those particular standards. Some of the standards referenced have had several updates from the year referenced in the policy. One referenced standard edition is 1995, making the edition out of date by twenty-four years.

Examples:

- NFPA-472; Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents, 1997 edition; the Current Edition is 2018.
- NFPA-1983; Standard on Fire Life Safety Rope and System Components 1995 edition. The Current is 2017
- NFPA-1670; Standard on Operations and Training for Technical Search and Rescue Incidents. No version referenced, the most current is 2017.

Other notable observations include the fact that within the policy it makes reference to various specialized rescue services, such as ice rescue and water rescue. The table references NFPA-1670 as noted above. This standard provides outlines as an aid to the user of the standard in developing training for personnel who will be involved in the various levels of the search and rescue disciplines. The standard it is not a competency standard, it is an operational methods standard. The competency Standard that should be referenced is NFPA-1006; *Standard for Technical Rescue Personnel Professional Qualifications*, 2017 edition.

The Service Standards table provides levels of service/training for various specialized services and makes reference to an appropriate level of training for that service based upon NFPA training levels. NFPA levels of competency are hierarchical, meaning you shall be trained and qualified in the very basic level, (Awareness) before you are eligible to move up to the next level (Operations) and you shall be trained in the Operations level before one can move onward to the Technician level.

What is interesting in the COGE-007 policy is that in the table, for some services, Awareness level and Operations level are required but for other services only Operations level is required and Awareness level is marked “*Not Applicable.*” Referencing the previous paragraph, Awareness level is required before one is eligible to acquire an Operational level qualification or certification.

### *Haz Mat Operations*

In speaking with fire service stakeholders there is much confusion and lack of understanding as it relates to the service and training requirements for Hazardous Materials Operations as identified in the COGE-007 Policy table.

The Policy references NFPA-472; *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*, 1997 edition. However, NFPA had already released a new personnel qualifications standard for Haz Mat responses; i.e. NFPA-1072; *Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications*, 2017 edition.

NFPA, in the nineties, amended NFPA-1001 Level I competencies/qualifications/certifications to include skills and knowledge contained within NFPA-1072, Operations (sections 6.2 and 6.6 only). The competencies defined will provide firefighter responders who respond to motor vehicle accidents with the requisite skill sets (as required in the referenced sections) so as to minimize hazards while protecting themselves from potential harm from fluid leaks and spills while wearing only their bunker gear.

Basically, the Haz Mat Operations sections 6.2 and 6.6 requirements provides one with the necessary skills to control fuel spills or anything that can be done in firefighting bunker gear. There is no plugging, no patching skills required as these are required competencies of a full Haz Mat Operational training program. The competencies in 6.2 and 6.6 include product damming, diking, and motor vehicle accident clean up.

Whereas only two sections of the NFPA-1072 training standard are required to complete NFPA-1001 Level I firefighter program, any so called Haz Mat Operation courses solely provided to address sections 6.2 and 6.6 are non-core and non-accredited courses. However, they are required to obtain Firefighter Level I Qualification or Certification. These sections of Haz Mat training do require the participant to obtain either the NFPA-472 or 1072 Awareness level training.

The Nova Scotia Firefighters school's thirty-two-hour Haz Mat Course, for Level I Firefighter includes Awareness Level training as well as Haz Mat Ops Core training which only covers 6.2 and 6.6 sections. The Haz Mat course referenced here does not qualify anyone to be a Core Hazardous Material Responder as per the intent of the NFPA-full 472 or 1072 standards.

#### *Training/Courses Required by Fire Department Position*

Due to the mere fact that the Region's firefighters are volunteers and their time commitment is strained, training requirements must be very judicious and only required on a "as needed" basis. Often the term "minimum" is used. This term must be used in the context of the actual training required to meet the need of the skill sets in order to perform the duties and tasks required of the particular volunteer's position and responsibilities within his/her organization.

A basic Level I firefighter qualification course requires a time commitment of 168 hours plus an additional 32 hours for Haz Mat Operations section 6.2 and 6.6 for a total of 200 hours of volunteer time. If the course was spread out over several sixteen (16) hour weekends this would equate to approximately twelve (12) weekends.

Such a time requirement is very onerous for the volunteer recruit. What is a reasonable interval for a volunteer to acquire their Level I firefighter complete with NFPA-1072, Haz Mat Ops section 6.2 and 6.6? If the interval requirement is too restrictive, a department may lose volunteers, if there is too long of a period of time to meet the qualification, standards can change and the ability for the department to meet it needs may not be met if ever.

**GA recommends** that a three-year period be considered a reasonable period of time for a new recruit to become NFPA-1001 Level I qualified if that recruit aspires to attain a higher rank.

Once a firefighter has obtained their Level I qualification, they are eligible to acquire a Level II firefighter qualification. This training requires an additional commitment of eighty (80) hours or five (5) weekends.

There are a number of agencies, associations and organizations that provide recommendations for each of the positions within a fire department. These recommendations are general in nature in an attempt to cover a broad spectrum of communities and fire service organizations. The base line for any trained firefighter is the Level I.

In addition to the Level I fire fighter qualification, there will be additional training requirements for the volunteer based upon the services and programs offered by the community fire department.

- Vehicle extrication
- Apparatus operator/driver
- Specialized rescue
- Medical First Responder and associated courses i.e. establishing Helicopter landing zones
- Proper Radio Communication Procedures
- DNR Basic Forest Fire Suppression Course

### *Fire Officer Training*

All fire officers, beyond their response skills, should receive training in the management of personnel (soft skills). These skills can be acquired from recognized and authorized personnel/management programs and should be made available to Fire Officers interested in participating in such programs. Most important aspects of their role will be leading and managing volunteers.

### *Training Challenges*

All positions within a fire organization require continuous skill and knowledge retention after initially obtaining their qualifications. This requirement is the mainstay of weekly training sessions for the volunteer fire services.

There are a number of challenges for the local fire service to conduct training which mostly occurs during a two (2) hour session one evening a week. Keeping all of the attendees engaged, especially with members with a wide range in years of experience, is a challenge.

Firefighters, after completing the specific topic KSAs need to focus on team exercises and developing team skills. Engaging experienced firefighters to assist with less experienced personnel (mentoring) can go a long way in personnel and team development and meeting personal satisfaction needs of those involved.

Based upon a years of service survey, (66.6% return rate) the following table is the combined experience of personnel found in the area fire stations.

<b>Years of Service</b>	<b>0-2</b>	<b>3-5</b>	<b>6-10</b>	<b>11-24</b>	<b>25+</b>
Per Centage	12.23%	21.5%	22.56%	25.5%	15.23%

As one can see, there are challenges in meeting the needs of the various levels of experience throughout the group. The challenge is how best to keep everyone interested and engaged.

Another challenge facing the Regional fire stations is that of the various type of department memberships. In particular those that have veteran, veteran driver, mutual-aid multiple fire department memberships.

With veteran memberships, depending upon the station one belongs to, regular training is not a requirement. For veteran drivers their only requirement is to maintain the appropriate class of driver's license.

**GA recommends** a minimum mandatory training of six (6) hours per quarter to maintain Veteran driver status, plus an annual 8-hour training day. This is required to maintain skill proficiencies and teamwork skills.

Another challenge on the fireground is knowing who has what training and experience. Especially with so called mutual-aid and multiple-station type memberships, how does the incident commander, or others, know what qualifications that personnel on scene have? Of particular importance is who is a qualified firefighter and who is not.

One department uses a different colour helmet to distinguish the variation; which is a costly way to distinguish the differences. Other departments in other jurisdictions use a more cost-effective method and that is the use of different reflective coloured stickers and or letters.

**GA recommends** that all stations use the same method, specifically to employ the same colour helmets by rank, and standardize on vinyl reflective qualification stickers.

During GA's stakeholder meetings the issue was raised of firefighters travelling long distances to training, especially for those stations that are considered outside the main stream locations where training is held. The issue is the travel time involved especially after a long day at work, and then having to drive a considerable distance to attend training sessions. The issue can be remedied by having more training delivered at these stations or at alternate locations on a weekly basis or develop more in house capabilities.

#### *Training Officers/Instructors.*

The responses to GA's survey suggested that regionally there are a total of nine (9) Level I trained instructors. and nine (9) certified Level 1 instructors.

What is interesting is that none of the stations within their bylaws nor their Honourarium program or department rank structure identify a Training Officer/Instructor position.

In some stations training is managed by committee and it appears the majority of training is station oriented.

**GA recommends** that there be at least one certified Training Instructor (Minimum Level I Instructor) at each of the region's six stations.

#### *Fire Marshal's Local Assistant Training*

Each fire department has at least one if not two or more senior positions within the department appointed by the provincial fire marshal as a Local Assistant under the authority of §14.1 of the *Fire Safety Act*. Their role as Local Assistant is to assist in carrying out the provisions of the *Act* and the Fire Code. To ensure the Local Assistants have basic knowledge of their duties and responsibilities the Office of the Fire Marshal provides cost free training. As a result of changes in polices within the OFM and regulations all Local Assistants are required to attend refresher training in 2020.

#### *Training Methodology/Programs*

Delivery of training and education in today's world, is many faceted. Today's educational environment encompasses self-study, online programs, instructor lead classroom sessions, attendance at higher learning institutions such as colleges, accredited fire schools etc.

NFPA-1500; *Standard on Fire Department Occupational Safety, Health, and Wellness Program*, 2018 Edition - requires all departments to:

- Prepare and maintain written policies and standard operating procedures that document training requirements,
- Establish and maintain a training, education, and professional development program with a goal of preventing occupational deaths, injuries, and illnesses.
- Provide training, education, and professional development for all department members commensurate with the duties and functions that they are expected to perform.
- Establish training and education programs that provide new members initial training, proficiency opportunities, and a method of skill and knowledge evaluation for duties assigned to the member prior to engaging in emergency operations.
- Develop a recurring proficiency cycle with the goal of preventing skill degradation and potential for injury and death of members.

- Develop and maintain a system to monitor and measure training progress and activities of its members.
- Provide an annual skill check to verify minimum professional qualifications of its members.

In today's environment there are a number of courses available on line including courses that one can lead to certification. The programs still require time commitment for the students. However, depending upon the course or program the student is able to proceed at their own pace and in the comfort of their home, so long as they have a computer and internet.

As stated previously, a good portion of training is conducted in the local fire station delivered by experienced firefighters with a training background. However, due to the nature of the business, field training exercises and out of classroom training experiences are essential to maintain skillsets. It appears that a majority of the training involving live burning occurs at the Nova Scotia Firefighters School in Waverley, Nova Scotia. For the student this involves time away from home and travel.

There are two options to address this issue. One is to develop a centrally located training facility that has the ability for live fire training or the other is to use the fire school's mobile burn unit. Previously there were scheduling issues for booking the mobile burn unit, those issues have now been addressed. The school is also in the midst of acquiring a mobile vehicle burn unit, to provide programs involving live vehicle fire extinguishing techniques.

A centrally located training area for the region is needed to provide many of the practical skill sets required not only for the individual firefighter, but also for team skill sets, and inter-station and mutual-aid departments to practice joint operating procedures and inter-departmental taskings together.

GE recommends that the Region invest in construction of a properly designed, central training facility can meet most of the training needs of the Regional fire service.

GA does not recommend the inclusion of a live fire training facility. Due to the high risk of firefighter injury and liability associated with live burn scenarios, and given the associated costs of building and maintaining a live fire facility (that must be built, maintained and operated in accordance with NFPA-1403; *Standard on Live Fire Evolutions*) and with the availability of the

Fire School's mobile unit to travel to the Windsor – West Hants region, the Region should take advantage of the school's mobile burn units. Use of the mobile burn units will meet the needs of the local fire services, will be more cost effective and reduce risk to the department or municipality.

IN addition, the Nova Scotia Fire School offers a number of non-accredited but free courses at their facility. The courses available (2019) at no charge are as follows:

- Introduction to Haz Mat
- Operations at Haz Mat incidents
- Vehicle Extrication
- Incident Scene Safety Officer
- Emergency Vehicle Driver Training
- Managing Company Tactical Operations
- Emergency Responders Traffic Management Guidelines
- Incident Command System, (ICS 100 & ICS 200).

In conversation with the fire school management, almost any and all courses can be delivered locally. In some cases, they are able to fast-track (i.e. compress) courses based upon need. A fast-track course was delivered to a local department within the last couple of years.

#### *Annual Regional Training Weekend.*

**GA recommends** that an annual 3-day Regional Training Weekend be established and organized on an annual basis. Such a weekend could be rotated annually amongst the six station locations, each playing host in turn.

Another tool in the tool box featured by many departments is organizing and developing an annual three-day training and symposium weekend. Such a weekend can involve invited subject matter experts from outside the area and is an opportunity for all of the regional firefighters to attend classroom plenary educational sessions and also practical exercises. Such opportunities may allow for the testing of large operational procedures such as tanker shuttles or long pumper relays that may have not been practiced for a period of time or practical for a single station to test, and permit (especially) newer members to participate who previously may not have had an opportunity to do so.

These weekends promote camaraderie, allow firefighters to intermix, and expose attendees to new and different trainers/instructors and topics. Such weekends are invaluable in building trust amongst fire services team members as well as an opportunity to meet and know newer members. There is an old fire service metaphor “*It is always better to know your neighbor before you need them.*”

### ***Medical First Responder***

Medical first responders (MFR) must complete MFR training through one of the EHS approved Medical First Responder training agencies; i.e. St. John Ambulance (\$400) or Canadian Red Cross (\$499). Anyone who is 19 years of age or older, has successfully completed MFR training by an EHS approved MFR training agency, is a current resident of Nova Scotia, and is associated with an EHS MFR response agency is eligible for this training. Each consecutive year, a fully sponsored EHS MFR agency is entitled to receive partial reimbursement for MFR training of two (2) persons at a maximum rate of \$150/person.

MFRs are required over a three-year period to maintain their EHS/MFR competencies.

Competency training is available free through the EHS/MFR program. The program has the ability to provide to the department a volunteer paramedic, free of charge, to deliver the required maintenance training locally.

### **Training Summary**

Inadequate or deteriorating knowledge and skills due to improper training, or lack of on-going competency assessment, is an issue with any organization. Successful operations require continuing education and skills enhancement training.

All team members must make a commitment to lifelong learning. Periodic competency assessments foster deeper understanding of skills and encourage individual pride through safely completing operational tasks.

The fire services should research available programs to meet the needs of the department so as to meet the needs of the community and take a cost-effective approach to developing individual and

team Knowledge, Skills and Abilities. A cooperative and collaborative approach with others is always recommended. This promotes standardization amongst the many stations.

Each station should have its own assigned training officer with the responsibility to ensure standards and training needs are being met and to coordinate the training and educational activities with the station's training committee if one exists.

**GA recommends** that an individual, at least on a part time basis, be hired Regionally (Division Chief) to guide and assist in the development and delivery of Region-wide, standardized, focused, and appropriate training and personnel development to the fire departments and firefighters. If the desire is to have a regional single focused fire operational service, then all associated training must also be singularly focused. For this to occur, a regional-wide program, with homogenous training policies and procedures, with common goals, and common objectives needs to be implemented and managed.

## **SUCCESSION PLANNING**

Succession planning is a process for identifying and developing new leaders who can replace old leaders when they leave, retire, or die. Succession planning increases the availability of experienced and capable employees that are prepared to assume these roles as they become available.

The typical succession planning program is achievable in a full-time work place where certain individuals who are considered potential leaders are targeted and placed on a career development path. In an organization in which the top senior positions (District Fire Chief or District Deputy Chief) and the various officer positions are elected every two or three or so years, by the membership, and where there may be minimum requirements to qualify for the chance of being elected, or in some cases no required qualifications, then succession planning in the true sense of the definition is not really achievable in the traditional sense.

What is achievable is to ensure that the organization has programs in place that provide educational opportunities for those individuals with an interest, at some point in the future, to take on a leadership role. With clearly defined organizational goals, objectives, along with defined position requirements and opportunities for training and education to meet those requirements; that is really all of the succession planning that a volunteer organization is able to accomplish. This is especially so in an organization where the more senior positions are elected and have the ability to oversee who receives the training and educational opportunities.

However, depending upon organizational model chosen along with numbers and type of supportive career staff, then at that time a proper succession plan can be evaluated and implemented.

## ORGANIZATION AND STAFFING

## **OVERVIEW OF CURRENT FIRE SERVICES**

The fire departments in the regional area of Windsor and West Hants (W/WH) have a very long history of proudly serving the citizens within the area. Windsor fire department was established in 1881, other departments have been providing emergency services to their communities and the surrounding area for over 100 years.

Currently, within the new Region of Windsor and West Hants Municipality there are four independent volunteer fire departments (Summerville, Brooklyn, Windsor and Hantsport) with six fire stations, one is considered a municipal department (Hantsport).

The three departments of the Municipality of West Hants, serve a population of approximately, 15,368 in an area of approximately 1,244 square kilometers. The Windsor Fire Department provides services to a population of 3,068 in an area of 9.11 square kilometers. There are also significant numbers of tourists and the travelling public on the 100 series highway or local road networks.

Brooklyn Volunteer Fire Department operates out of two stations, one located in Brooklyn, the second located in Garland's Crossing. Hantsport volunteer fire department provides and manages fire service operations from the Southwest Hants Society fire station located in Vaughan. The Windsor Fire Department provides fire services to the Town of Windsor.

In order to provide reasonable fire service coverage in the outer reaches of the western and eastern part of the municipal boundary, the Municipality of West Hants has quasi-agreements for response services with two Municipality of East Hants Fire Departments, Walton Shores to the west and Mount Uniacke and District Fire Department to the east.

The Brooklyn Volunteer fire department provides contract response services to the South Rawdon area of the Municipality of East Hants on behalf of that Municipality. The Municipality of West Hants has a service agreement with the Municipality of Kings County for the delivery of fire service to the Hantsborder area of Kings County as well as providing services the First Nations people of Glooscap. Glooscap First Nation is located halfway between the towns of

Wolfville and Windsor, not far from Blomidon Provincial Park. The fire service to that area of Kings County is provided by the Hantsport Volunteer Fire Department.

As shown on the accompanying map, taken from the West Hants municipal website, each fire department currently has their own geographic response district. Also shown are the areas covered by the Windsor Fire Department, Walton Shore VFD and Uniacke and District VFD

Summerville, Brooklyn and Windsor fire departments are managed by registered societies under the Societies Act of Nova Scotia. Hantsport, is solely a municipally operated and managed department.

There is a volunteer Fire Chief with volunteer deputies and corresponding volunteer rank and file for each district/department. Each of the departments have part-time cleaners and some are equipment maintainers, some of whom are also volunteer fire department members.

In 2018, all the fire departments within the Municipality of West Hants signed a mutual-aid response agreement with each other. In 2019, the Windsor Fire Department was added to the agreement. The Brooklyn Volunteer Fire Department signed a mutual-aid agreement with the East Hants Fire Service Association. The Hantsport Fire Department signed a mutual-aid agreement with the Municipality of Kings County in 2001 (before dissolution).

In August, 2019, a draft auto-aid agreement was introduced involving the Windsor, Brooklyn and Hantsport fire services. This agreement established what the departments would send simultaneously to an incident in any of their jurisdictions. It specified what type and number of apparatus which is based on the location and type of incident. Although not formally executed, this draft agreement appears to be operational at this time and helps ensure that the three stations, together, adequately staff incidents.

### *Services Provided*

Fire departments were initially formed to provide what is typically defined as core fire services. Core services are the basic services directly linked to the term fire, such as firefighting, rescuing

people from fires, the provision of regulated fire prevention activities such as fire inspections and Fire Code enforcement, and public fire prevention education activities.

Over the years, the addition of non-core services has expanded the fire department's role and there are now multiple services provided by modern fire services. Currently, departments within the Municipality of West Hants and the Town of Windsor provide core fire services (except for fire inspections and code enforcement) along with responses to environmental incidents, motor vehicle collisions/entrapment, water rescue, ice rescue, and medical first response. It is also usually the fire department that is called to natural disasters and other emergencies, whether or not they are specifically trained and equipped to deal with them

### Standardization

A review of the individual fire services within the region has revealed that there is little that is standardized. From recruiting practices, firefighter classifications, promotions, service levels, other areas; each department has their own methodology.

### Organizational Design and Staffing Models

To design an organization for the delivery of fire services, a number of questions must be asked and answered.

- What are the organization's core and subsidiary services?
- What will be the staffing profile in the delivery of the services?
- What line and staff functions are required in achieving and in supporting the organization's goal and objectives?
- How will the organization be funded?

Typically fire services are divided into two basic organizational functions, Line and Staff.

A Line function (aka Operations) is one that directly advances the organization in its core work as it interfaces with the customer, i.e. the public. For the modern fire service, the primary core work is emergency response to and mitigation of incidents using appropriately trained and equipped personnel. Property Inspection and Fire Code Enforcement are also core components of

the typical fire services line function. Both emergency response and inspection work are regulated under provincial legislation.

A Staff function supports the achieving of organizational goals by supporting the line functions, as well as overall corporate goals, through specialized advisory and support functions. For example:

- Administration (Mgt of records/data, reports, budget, inter-government relations)
- Fire Prevention education, incident investigation
- Training
- Health & Safety
- Equipment maintenance
- Communications
- Research & Planning
- Community Relations/Public Information
- Financial management
- Human Resources and personnel management

Once line and staff functions are identified, the next question is how should the individual line and staff positions be staffed.

### *Staffing Models*

In the fire service there are many possible combinations for staffing a local department. Staffing combinations include: full-time paid, part-time paid, paid on call, and volunteer, or combinations of these. The choice of how to staff the fire department, what staffing model to use, is determined by the community based on a number of factors. What works well for one community may not work well in another.

There are a number of factors worth considering that may influence the preferred fire department staffing model.

- Financial resources of the municipality.
- Range of fire services expected.
- The availability and skill set of volunteer personnel.

- Frequency of and type of incidents.
- Workload load created by the objectives for Staff functions
- The type of department preferred by the community.

The experience in Windsor-West Hants has been for many generations, emergency response services have been delivered by volunteer firefighters, and citizens. This basic staffing model for line functions seems to work well and we found no suggestions that it be changed. We note that volunteer firefighter skill levels are rising, and they need to, as the type of incidents continues to evolve, and thereby demands higher level and sometimes different skill sets.

The one main concern is that in today's litigious society it is becoming more common for fire department errors to be challenged in court. One part of a municipality's defense is to ensure that firefighter skills meet best practices, which generally means meeting established standards; one example is NFPA-1001<sup>18</sup> Level I. These standards need to be recognized and established through policy. Firefighters need to achieve the standard skills, and the achievements must be well documented. This is not currently happening in a sufficiently consistent manner even though the fire department registration process with the municipality demands it.

As for staff position, i.e. senior officers, we note that these positions seem to be struggling with the work load imposed on them. Currently, all fire chiefs and deputies are volunteers. In the recent past the fire chief in Windsor was a full-time position, but this has lapsed. Several comments were made by chiefs that more assistance from the municipality is needed.

In the RACI<sup>19</sup> survey that was conducted as part of this Review it was noted that quite a few required programs have either not been introduced or are not being accomplished as expected. Some of this may be due to lack of knowledge but some is due to lack of available time.

During stakeholder meetings with firefighters, line officers, and chief officers, there were several themes. One was that the volunteer firefighters did not want to be responsible for Fire Code

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<sup>18</sup> National Fire Protection Association, NFPA-1001; Standard for Firefighter Professional Qualifications. Level I is the basic level. The standard includes a more advanced Level II.

<sup>19</sup> RACI (Responsibility, Accountability, Communicate, Inform) is a means to decipher who is doing what in the establishment, management, review, direction and providing leadership for necessary programs and processes in the fire department. All of these programs/processes are either best practices or established through legislation.

inspections and enforcement in their communities. Inspections and enforcement are currently a function of full-time municipal staff.

Another theme was that the chief officers were desirous of reducing their administrative responsibilities. They required assistance, including the provision of municipal assistance with HR issues.

In our opinion they need assistance in other areas as well where administrative loads can be high and/or where municipal standards demand that a particular process be followed for the expenditure of public funds, for example major purchases.

### *Current Staffing at Stations*

The current staffing levels in the W/WH fire departments are as follows;

<b>Position</b>	<b>Windsor</b>	<b>Hantsport</b>	<b>South-West</b>	<b>Brooklyn</b>	<b>Three Mile Plains</b>	<b>Summerville</b>
Fire Chief	1	1	0	1	0	1
Deputy Chief	2	2	0	1	2	1
Captain	5	4	1	7	3	2
Lieutenant	4	1	1	0	0	2
Firefighter	13	20	10	29	19	18
Safety Officer	0	1	2	1	1	0
Mutual-aid firefighter	0	3	2	0	0	2
Veteran/Driver	6	0	0	0	0	2
Veteran	5	4	0	0	0	7
Dispatcher	0	1	0	0	0	0
Totals: (188)	36	37	16	39	25	35

Veterans are former firefighters who continue to participate in a non-firefighting role, usually as support personnel at major fires, doing odd jobs. Veteran/Drivers are veterans who drive and operate the fire trucks when needed but have no further firefighting role.

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## **FIRE SERVICE LINE FUNCTION STAFFING/POSITIONS; EXISTING AND PROPOSED**

Typically, the fire service hierarchy includes senior officers in the positions of Fire Chief and Deputy or Assistant Fire Chief. These positions function as both line and staff positions, having responsibility in both areas. At emergency incidents, typically larger or more complex ones, they are expected to assume overall responsibility for the conduct of operations.

Front line officers typically consist of Captains and Lieutenants. These positions are primarily focused on the preparation for and response to incidents, both emergency and non-emergency. They have first-line supervisory roles at the station as well as at the incident scene. At an emergency incident, a line officer is usually in charge of the response to the incident including all other firefighters, and under legislation of the public also. When relieved by a more senior officer (Chief/Deputy) the line officer retains similar responsibility at the incident, but for a smaller portion of it.

There are other formal staff positions in the fire department than those already mentioned. These positions also have line and staff functions, in varying degrees according to their assignments.

The following section outlines the responsibilities of each formal staff position in the fire department. Except as noted, all are currently filled by volunteer firefighters.

### *Fire Chief*

In the Municipality of West Hants each of the four fire chiefs is responsible for emergency response in their specified response District, as previously noted on the map. The fire chief is responsible for;

- the executive management and direction of a department,
- strategic and master planning,
- budget preparation,
- establishment of legislated and best practice programs,
- personnel and equipment management,
- safety initiatives, and
- incident management, which is hands-on at larger incidents.

The fire chief is appointed as a local Assistant to the Provincial Fire Marshal, which is the fire department's conduit for provincial authority under the Fire Safety Act.

### *Deputy Fire Chief*

The Deputy Fire Chief(s) is the second in command of a fire department. The deputy is responsible for;

- Assisting the Fire Chief in all aspects of department operations and management,
- assuming the role of the Fire Chief in the latter's absence,
- responding to emergencies,
- ensuring proper training is delivered,
- ensuring department policies and procedures are followed, and
- managing line officers as direct reports.

The position includes a combination of administrative work and time spent in the field to keep operations running efficiently in the fire department. A deputy chief may have a specific area of the fire department function that he/she is specifically responsible for; for example, administrative functions like fire reports.

### *Assistant Chief*

Some fire organizations use the title Assistant Chief in lieu of Deputy Chief. Typically, they are assigned to oversee and manage particular function such as the firefighter training program or administrative duties.

Similar to the deputy fire chief, an assistant fire chief may act as the Fire Chief in the absence of the Fire Chief, assuming the Fire Chief's roles, responsibilities and authorities. There are currently no Assistant Chiefs in Windsor-West Hants.

### *Division Chief*

This position is one that is between the rank of Captain and that of either, an Assistant Chief or Deputy Chief. The role of the Division Chief is specific to his Division; and includes the administration, management, planning, organizing and implementing of specified programs.

Some typical assignments for a Division Chief include the Training and Safety Division, Communications Division, Fire Prevention Division, and Maintenance Division.

There are currently no Division Chiefs in Windsor-West Hants.

### *Fire Inspector*

The Nova Scotia *Fire Safety Act* §19 requires all municipalities to appoint at least one fire-inspector and to “*establish a system of fire-safety inspections...*” Also, in the *Act*, are stipulated requirements for record keeping and minimum inspection schedules.

The *Act* does not specifically stipulate that municipally appointed fire-inspectors be qualified, but elsewhere in the *Act* such a stipulation is there for the Fire Marshal’s appointed fire-inspectors and for local assistants who also have the powers of fire-inspectors.

In the *Act*, §3(ad) “‘*qualified*’ means acceptable to the Fire Marshal.” This suggests that fire-inspectors in Nova Scotia should meet the requirements of NFPA-1031<sup>20</sup> as detailed by the Nova Scotia Professional Qualifications Board.<sup>21</sup> The Fire Inspectors Association of Nova Scotia (FIANS) offers, in cooperation with the Nova Scotia Fire Marshal’s office, a Fire Inspector Certification Program.

In the Windsor-West Hants region the responsibility for providing a municipal fire-inspector has varied, but is currently undertaken by building officials in the West Hants Planning and Development Department. The building officials split building and fire inspection tasks amongst their qualified staff. Fire inspection is a secondary responsibility. Personnel assigned fire-inspection duties have taken the FIANS course.

A fire-inspector is responsible for inspection of properties and determining if the properties meet the minimum requirements of the National Fire Code, as required by the provincial *Fire Safety*

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<sup>20</sup> National Fire Protection Association; NFPA-1031, Standard for Qualifications for Fire Inspector and Plan Examiner.

<sup>21</sup> Minimum competencies are laid out by the Nova Scotia Fire Service Professional Qualifications Board (NSFSPQB), an organization that is sponsored by the Fire Marshal’s office.

*Act* and associated Regulations and according to the municipal policy on fire inspection schedules.

Some of the specific responsibilities of a fire-inspector are;

- to inspect buildings to locate hazardous conditions and Fire Code violations,
- inform the owner/occupant the corrective actions necessary to bring properties into compliance with the Fire Code,
- conduct follow-up inspections to ensure that corrective actions have been taken,
- make and keep records of every fire inspection performed,
- review and approve fire emergency plans, and
- lay charges for offenses contained in the *Act* pertaining to fire-inspections and Fire Code violations, and support the charges through the court system as might be required.

This position ideally will have a firefighting background or experience to better inform the fire-inspector to issues relating to firefighting access and operations, especially where interpretation of fire department issues is stipulated in the Fire Code.

### *Fire Investigator*

The Nova Scotia *Fire Safety Act*<sup>22</sup> §32 requires that the *Local Assistant* to the fire marshal;

*“immediately, and in no case later than twenty-four hours following a fire, investigate, or cause to be investigated, the cause, origin and circumstances of every fire by which property has been destroyed or damaged...”*

Under §14 of the *Act*, the Local Assistant is “*a qualified fire chief or, with the consent of the fire chief, another qualified member of the fire chief’s fire department.*” In Windsor-West Hants each fire department’s fire chief is the local assistant within their response jurisdiction. We have been advised the fire chief, and in some cases the deputy fire chief(s) conduct the required fire investigations.

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<sup>22</sup> Nova Scotia *Fire Safety Act*. 2002, c. 6, s.1.

As stated in the *Act*, fire investigation should be conducted by qualified<sup>23</sup> personnel. This means persons who meet the job performance requirements of NFPA-1033.<sup>24</sup> Fire investigation is a highly sophisticated process and must follow another recognized standard, NFPA-921,<sup>25</sup> for the results of the investigation to be valid and defensible. Qualified fire and explosion investigators are designated as a Certified Fire and Explosion Investigator (CFEI).

### *Fire Training Officers*

Currently there are no dedicated training officers in the Windsor-West Hants fire services organizational charts, as such. However, Captains have been tasked with the delivery of training and there are a number of training committees.

Typically, training officers research training needs, identify resources, and developing training programs as required to meet the needs of emergency services delivery. Training is a critical component of the delivery of fire services. It helps to ensure the effectiveness, and efficiency of the service, and is key component in firefighters' safety.

The Nova Scotia Fire Service Professional Qualifications Board has established a qualification standard for fire service instructors that is based on NFPA-1041<sup>26</sup>, levels I and II. In the standard, level I is a person who delivers instruction to firefighters, and level II is someone who is responsible for “*The management of instructional resources, staff, facilities, and records and reports.*”

In W/WH the level of training officer qualifications is inconsistent; with two department reporting persons qualified to level I and no departments reporting persons qualified to level II.

Typically, the station training officer, qualified to level I would;

- provide advice to the Fire Chief regarding training needs,

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<sup>23</sup> According to the *Act* the incumbent must meet the Fire Marshal's requirements for competence. Minimum competencies are laid out by the Nova Scotia Fire Service Professional Qualifications Board (NSFSPQB), an organization that is sponsored by the Fire Marshal's office.

<sup>24</sup> National Fire Protection Association, NFPA-1033, Standard for Professional Qualifications for Fire Investigators

<sup>25</sup> National Fire Protection Association, NFPA-921, Guide for Fire and Explosion Investigations

<sup>26</sup> National Fire protection Association, NFPA-1041, Standard for Fire Service Instructor Professional Qualifications

- coordinate weekly training sessions at the station and/or assist the line-officers in the conduct of training,
- provide logistical coordination for local training,
- resource and/or develop lesson plans,
- maintain the training data base of all training, and
- prepare training safety-plans for all hands-on training sessions.

The last two bullet items are particularly critical.

### *Captain*

Currently in W/WH, the fire Captain position is the senior operational officer. Every station has at least one Captain. There is currently a total of 22 Captains in W/WH departments.

At an emergency incident there must be enough Captains at the scene to maintain an effective span-of-control (SOC). Ideally this means that each Captain has three to no more than five direct reports. There is insufficient data to determine the current situation re SOC at emergency incidents in W/WH. However, looking at the station staffing numbers we can make some reasonable assumptions that the ratios seen in the station will also be seen at incidents.

The SOC ratio is inconsistent in W/WH, with current station staffing numbers suggesting that the SOC for Captains varies significantly between as low as 3:1 to as high as 10:1. Numbers exceeding 5 are undesirable and suggest that coordination and control of firefighting actions at incidents will suffer. Some stations need to train and appoint more Captains.

The Captain is responsible for the direct supervision of firefighters and other duties, as follows;

- the welfare and performance of their assigned personnel,
- may oversee multiple lieutenants,
- directs a firefighter team at incidents,
- reports to the incident commander on conditions and resource needs,
- firefighter safety at all times,
- is the incident commander unless relieved by a more senior officer,
- participate and/or deliver training to their assigned personnel (company), and
- discipline and conformance to department policies and procedures by subordinates as the first line supervisor.

The Nova Scotia Professional Qualifications Board has established a certification program for fire officers. The standards are based on NFPA-1021<sup>27</sup> and include qualification Levels I through Level IV. Roughly speaking, a Fire Officer Level I is a Lieutenant, a Fire Officer Level II is a Captain, a Fire-Officer Level III is a Deputy/Assistant/Divisional Chief, and a Fire Officer Level IV is a Deputy Chief/Fire Chief.

According to the data we have gathered, in W/WH the qualifications of fire officers is inconsistent. At least one department has certified some of their fire officers at Level I and trained others to that level also (but not yet certified). Another department has trained some of their fire officers to Level I.

### *Lieutenant*

A Lieutenant is a rank between that of a firefighter and Captain. It is the entry level officer position. Lieutenant is a rank that is present in all W/WH fire departments, except Brooklyn and consequently in Three Mile Plains station.

- The Lieutenant is a transition role between that of an experienced/senior firefighter and a Captain. It provides an opportunity for the person in this position to learn new skills and the role of fire officer through one-on-one mentoring and coaching by a Captain, to ready them for their future role as a Captain.
- In the absence of Captain, the Lieutenant assumes the Captain's responsibilities and duties.
- A Lieutenant can also participate in training firefighters and assist the Captain in completing their assigned duties.
- At an incident scene, a Lieutenant is expected to be a team leader and helps maintain a manageable span-of-control.

### *Incident Safety officer (ISO)*

An Incident Safety Officer (ISO) is not a line-officer per se although this position is most prominent at the scene of emergency incidents. The main function is as an extra pair of eyes and ears for the incident commander, with a specific focus on mitigating hazards to firefighters.

In W/WH the formal recognition of the ISO as an organizational position is inconsistent. Regardless, at all major emergencies there is a high likelihood of a senior firefighter or officer

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<sup>27</sup> National Fire Protection Association, NFPA-1021, Standard for Fire Officer Professional Qualifications

acting in the capacity of ISO and assisting the incident commander. Almost all of the W/WH fire departments reported that they had numbers of firefighters trained (not certified) as ISOs. All departments should have enough officers or senior firefighters trained/qualified such that there is a high probability that a qualified ISO will be in attendance at every incident.

Typically, this position is a well experienced Captain who has both extensive emergency response experience and experience as an incident commander. It is also advantageous that the ISO has building construction knowledge.

The ISO monitors incident operations and advises the incident commander on all matters relating to safety and health of all responders at the emergency. In particular the ISO;

- is responsible to the incident commander for the operations of systems and procedures necessary to ensure ongoing assessment of hazardous environments, including development of the incident safety plan, and the coordination of multi-agency safety efforts,
- exercises emergency authority during an incident to stop and/or prevent unsafe acts,
- initiates preliminary investigation of accidents within the incident area, and
- assists in the development of department safety standards.

There is a recognized standard for the ISO position, NFPA-1521.<sup>28</sup> However, certification as a safety officer is not currently available in Nova Scotia. The Nova Scotia Firefighters School, in Waverley, does offer their Incident Scene Safety Officer course free of charge to volunteer firefighters. This course is based on NFPA-1521 and provides a qualification certificate for successful completion. The next step would be to the Firefighters School achieve accreditation for the course so that participants could apply for certification.

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<sup>28</sup> National Fire Protection Association, NFPA-1521, Fire Department Safety Officer Professional Qualifications

### *Occupational Health & Safety Officer (HSO)<sup>29</sup>*

This position is different than the Incident Safety Officer and is an organizational appointment in accordance with best practices. This appointment can be any individual with an interest in occupational health & safety and who is adequately trained in this field.

This position addresses;

- the day to day health and safety of the individual firefighters,
- recognizes and takes action to control occupational health and safety issues that impact firefighters, such as unsafe conditions in the fire station,
- insures and plans that required testing and inspections of apparatus, PPE, SCBA, ladders, fire extinguishers, and etc. are completed,
- conducts facility and equipment inspections, maintains records and takes corrective action to minimize risks and exposure of firefighters and staff to hazards,
- chairs station OH&S committee,
- monitors OH&S programs, and
- instructs/monitors firefighters in OH&S issues and procedures, i.e. proper cleaning of PPE after an event.

The basis of the recommended occupational safety and health program is NFPA-1500<sup>30</sup> and applicable provincial legislation. Firefighter safety and health must be a strong focus for fire department management. There is currently some inconsistency in how this is interpreted and understood across the W/WH fire departments.

### *Firefighter*

The firefighter position is, on the one hand, the entry level to firefighting and, on the other hand, also can be the most senior and experience person in the fire department. There are consequently many practical levels of firefighters, reflecting the training, skills, and experience of each person.

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<sup>29</sup> The Nova Scotia Fire Services Occupational Health and Safety Reference Guide, 2003, recommends the appointment of a Health and Safety Officer “*that performs the duties and responsibilities as stated in section 29 of the Nova Scotia Health and Safety Act.*” This guide is a consensus guide (participation of career, volunteer, composite fire services and the OFM) that was developed and “recommended to be considered a minimum standard for safe operations.”

<sup>30</sup> National Fire Protection Association; NFPA-1500, Standard on Fire Department Occupational Safety and Health Program

The widely accepted standard for firefighter qualifications is NFPA-1001<sup>31</sup>. The Nova Scotia Fire Service Professional Qualifications Board has recognized certification levels as a Firefighter I and Firefighter II, which matches the NFPA-1001 job performance requirements.

In W/WH every fire department has persons in the firefighter ranks. The current total is approximately 110 with that specific designation. Some of these firefighters have designations in accordance with their skills and knowledge and responsibilities, as follows;

- Probationary or Recruit firefighter (not fully qualified)
- Driver/Operator (of specified heavy vehicles)
- Veteran and/or Veteran Driver (semi-retired former firefighters, not in the 110 total)
- Junior/cadet firefighter (young people learning to be firefighters not in the 110 total)

More generally a firefighter;

- follows the directions and orders of department officers
- is the principal hands-on working member of the fire department at incidents,
- uses all available tools, machines, and equipment to achieve objectives,
- administers emergency medical care and saves lives.
- applies knowledge of numerous technologies and methodologies,
- does search and rescue activities in burning buildings or hazardous conditions.

#### *Driver/Operator, Engineer*

A driver/operator, sometimes called a fire department engineer (a hangover from early days of fire service nomenclature), is a firefighter who mainly drives and operates the fire apparatus' water pumps, aerial devices, and in a volunteer, department is not always required to be a trained firefighter. Their main role is to;

- do minor maintenance on the apparatus and equipment,
- do the daily or pre-trip safety inspection,
- bring any safety issue to the OH&S officer or company officer,
- drive the apparatus in a safe manner,
- respond to incidents with their assigned vehicle, and

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<sup>31</sup> National Fire Protection Association; NFPA-1001, Standard for Fire Fighter Professional Qualifications

- operate the fire pump and other vehicle-based devices as required.

### *Fire Service Coordinator*

A review of this position was conducted for its role and value to the fire service within the new Regional Municipality. This position is not a regulated/required position in NS.

Several interviews were conducted with Fire Service Coordinators from across the province and from these it was learned that none had any authority within their fire departments. The coordinators' roles and responsibilities greatly varied and in some cases the role of coordinator was not accepted by the volunteer chiefs and the position was really only of any value to the municipal administration, presumably.

We conclude that there was little to no real value going forward to propose a fire coordinator position within the organizational structure for the new regional municipality.

### *Administrative Assistant*

The Administrative Assistant is primarily responsible for administrative support to assist the Director of Protective Services/Fire Chief and Assistant Fire Chief. The position will also assist the Divisional Chief and the District Chiefs in carrying out their respective administrative responsibilities

The Administrative Assistant assists senior management with a wide variety of complex administrative duties. Key responsibilities include planning, coordinating and reviewing assigned activities, administrative programs and functions, including data management and reporting; budget preparation and monitoring; fiscal and expenditure auditing; submitting payroll information and processing accounts payable, accounts receivable, deposits and petty cash for the Fire Department. Other responsibilities include administering and customizing Records Management Systems; liaising with inside/outside contacts on behalf of the Fire Chief; creating/typing/formatting reports, presentations, correspondence; facilitating prompt attention to telephone/visitor/email inquiries and complaints; participating on project teams; and other duties as assigned.

### *Rotational ON-CALL Opportunities*

There are certain services that the fire departments throughout the region provide that can lead to volunteer burnout, unnecessary overstaffing for certain types of incidents and inappropriate use of qualified firefighting personnel. A way to manage these issues is to provide an on-call rotational period for each of the targeted services so as to address the current and ongoing issues.

Currently the three services recommended for the possibility of rotational on-call program are:

- Medical First Responder (MFR)
- Fire Investigations
- Incident Traffic Control

#### *Medical First Responder*

During the many stakeholder meetings, many raised the issue of volunteer burnout, especially with regards to Medical First Responder (MFR) calls. The majority of the MFR incidents can be responded to and managed with no more than three responders. There have been call reports which indicated six or ten volunteers responded to the fire hall for a two or three responder event, where the excess personnel are left standing in the fire station. Doing this hundreds of times annually can lead to dissatisfaction.

There are two methodologies to reduce the potential for MFR burnout, one is reducing the call volume by changing the level of service offered or offer an alternative to the current method of responding.

The reason for high number of responders is that at certain times no one really knows who is available at any given moment. To lessen the burden on volunteers and the potential for burnout, a rotational system of three-four volunteers per a shift period, (to be determined), per station would be on call and if an MFR response is required, only the on-call group would be the volunteers to respond.

#### *Investigations*

During the many meetings others were concerned over fire investigations and the lack of support from the Fire Marshal's office and the length of time some investigations can absorb from a

volunteer's day or days. In review of available training data, for those who have been trained as a fire investigator, the majority are also the same individuals who have active roles in commanding the fire scene. One cannot perform both at the same time. Investigations should start during the incident.

As part of the hybrid model, it allows for a group of volunteers on a regional basis to be placed on rotational call periods. The on-call investigators would be on call for the entire regional municipality. On-call staffing requires only one investigator to be on-call per shift. (Rotational Shift period to be determined). If a confirmed detailed fire investigation is needed, then an additional fire-investigator(s) would also be called to assist as necessary.

### *Incident Traffic Control*

Other than residential MFR calls, every incident, especially motor vehicle collisions along the 101 and higher speed secondary highways, require traffic control to protect the emergency responders. This traffic control requirement for the most part is provided by frontline volunteer firefighters. In conversation with the RCMP they are simply too under staffed to provide traffic control services and look towards the fire service to provide. Whereas scene safety is a priority function of the fire service, they have taken this role on. The Nova Scotia Government in cooperation with policing services and fire have developed a Traffic Management Training Program and Guide.

The real issue is how to appropriately staff this service. Currently it is the front-line firefighting personnel that provide this service using very expensive frontline fire apparatus. The other issue, as witnessed during the review, a structure fire had a qualified frontline fire captain directing traffic, instead of working at the fire incident.

There is an opportunity to provide this safety service on a regional basis, operating out of two stations. It is recommended that Windsor and Brooklyn stations be the ideal location for the provision of this safety service. Their communities may have the best opportunity to be able to recruit non-firefighting volunteers to provide this service. Each traffic control unit only requires two to three volunteer staff and each incident would require responses by both units.

To ease in the staffing issue and volunteer burnout, this is another service that could benefit from the on call rotational program.

## **FIRE PREVENTION**

### **Overview of Services Provided**

Fire departments were initially formed to provide what is typically defined as *core fire services*. Thus, the reason for inclusion in Model 3; Hybrid Regional Fire Services. Core services are the basic services directly linked to the term *fire*, such as firefighting, rescuing people from fires, and fire prevention. The provision of regulated fire prevention activities such as fire-inspections, Fire Code enforcement, fire-investigation, and public fire-safety education activities are now collectively called fire prevention.

Fire prevention consists of the three focus areas

- Public fire-safety education,
- Post-fire investigations to determine cause, origin, and circumstances, and
- Fire-inspection/enforcement of the Fire Code;

Fire-safety education to the public is intended to warn persons of potentially hazardous conditions, what to look for. It is also intended to encourage changes in behaviour, behaviours that are known to cause fires. Fire-safety education usually includes training, often of children and other particularly vulnerable groups, on how to behave in a fire emergency. The *Fire Safety Act* §16 expands on these concepts.

The consequences of fires can be devastating, including loss of irreplaceable personal items, loss of home, loss of employment, loss of life and serious injury to self and others. There are many standardized programs in existence, through several sources, to assist in the development of programs that are properly targeted to the community's fire safety challenges. If these challenges are known. One big component of a successful fire-safety education program is to determine the community fire risks.

Post-fire incident investigation is a mandated<sup>32</sup> service under the NS *Fire Safety Act*. All fires must be investigated immediately after the fire but in no case later than 24-hours after.

Completed reports of the fires must be filed with the NS Fire Marshal's office no later than seven days after the fire. It is the responsibility of every fire chief and/or other appointed Local Assistant to the Fire Marshal to investigate fires.

The objective of the investigation is to discover the area of origin of the fire and what caused it, and the circumstances under which that combination started a fire. The intention is to discover if the fire was caused by;

- Nature (e.g. lightning);
- Human caused: accidental, deliberate, criminal, negligent, malicious, etc.;
- Equipment malfunction: used incorrectly, neglected, overheated, etc.;
- Caused by another fire: sparks, radiation, conduction, convection;
- Or other combination.

The investigation also determines if there is contribution to economic or life loss/injury because the occupancy did not meet Fire Code requirements at the time. For example; in a hotel the doors at the top and bottom of the stairs are part of a fire separation and are required to be closed at all times (that someone is not walking through them) to prevent the spread of smoke and heated gasses/flame. If a fire occurred on the first floor, trapping persons on the second floor because smoke and fire travelled through these stairwell doors that were blocked open with wedges, then the secondary cause of any deaths or injury, and fire/smoke damage to the second floor was Fire Code violations.

Discovery of these circumstances would be cause for further investigation into similar occupancies in the community that are equipped with stairwell doors. This provides an appropriate focus for resources. Proper investigations apportion responsibility properly.

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<sup>32</sup> Fire Safety Act, 2002, c. 6, s. 1., as amended, see §32

Property fire-safety inspection and Fire Code enforcement are also mandated<sup>33</sup> by the NS *Fire Safety Act*. All municipalities are required to appoint a fire-inspector. Municipalities are required to keep records of the inspections made by the inspector.

The *Act's* associated Regulations<sup>34</sup> require inspections every three years for all assembly occupancies (Group A). The municipality must also carry out a scheduled program of inspection in all buildings containing residential occupancies of more than three-units, and in business, personal services, mercantile, and industrial occupancies. The implication is the schedule be based on the results of the fire-inspections, and the risk of fire in the community.

Money spent on fire prevention is well spent on many levels. Effective fire prevention can avoid some fire-response costs by lowering emergency incident volumes (i.e. fires) and their severity/impact on the property owner, and on the economy and social fabric of the community. It can also lower insurance rates community wide.

### *Fire-Inspection*

GA was able to manually determine the occupancy classifications for some of the approximately 13,300 properties in the Region. Sorted by current fire station district the following table shows this distribution. It is very likely that this information is not complete.

The C classifications shown are for multi-unit buildings and do not include any single-family residences. They are not parsed for greater or lesser than 3-unit buildings, because that data was not known or provided.

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<sup>33</sup> Fire Safety Act, 2002, c. 6, s. 1., as amended, see §19

<sup>34</sup> Fire Safety Regulations, N.S. Reg.48/2003

**FIGURE: DISTRIBUTION OF IDENTIFIED OCCUPANCIES**

<b>Station</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
Windsor	30	8	33	11	8	6
Hantsport	25	2	20	4	1	17
South West	9				1	1
Brooklyn	28		8	3	6	14
Three Mile Plains	18	1	8	3	8	28
Summerville	9		1	1		3
Uniacke						
Walton Shore	3					2
<b>Totals:</b>	<b>107</b>	<b>11</b>	<b>62</b>	<b>22</b>	<b>21</b>	<b>57</b>

West Hants introduced the *Policy Respecting a System of Municipal Fire Inspections* in 2010. In that policy they set out the following fire-inspections schedule.

- Assembly occupancies (Group A) will be inspected every three years.
- Residential occupancies (Group C) with more than three units will be inspected every three years unless the fire-inspector deems risk of fire and loss of life requires a more frequent inspection of one or more buildings.
- Mercantile occupancies (Group E) will be inspected every five years unless the fire-inspector deems risk of fire and loss of life requires a more frequent inspection of one or more buildings.
- Business and Personnel service occupancies (Group D) will be inspected every five years unless the fire-inspector deems risk of fire and loss of life requires a more frequent inspection of one or more buildings.
- Industrial occupancies (Group F) will be inspected every five years unless the fire-inspector deems risk of fire and loss of life requires a more frequent inspection of one or more buildings.

West Hants fire-inspectors inspected a total of 56 assembly occupancies in 2017 and 2018.

Assembly occupancies appear to be the focus and the work is likely approaching the three-year required cycle. For other occupancy types the inspection numbers suggest that they will not meet the minimum 5-year cycle in the policy. According to fire incident records and Provincial/National statistics the most fires/injuries/deaths occur in residential (Group C) occupancies and not Group A.

In 2017 the Windsor fire-inspector inspected 7 assembly occupancies. Based on the incomplete data for number of occupancies of various Groups inspected, in Windsor the 2017 inspection rate for A occupancies appears to fall significantly short of producing the required inspections every three years. GA does not have sufficiently complete data to draw any other conclusions.

The provision of fire-inspection services has been dynamic over the past few years. Both Windsor and West Hants have had their own inspectors, but combined with other responsibilities. Windsor once shared with Wolfville, and then with a split role as part-time fire chief, part-time inspector. West Hants shares building and fire inspection duties distributed amongst several staff, and currently provides these services to Windsor also. Fire-inspection is a secondary priority for the building officials in West Hants, and currently they have one vacant position.

### *Enforcement*

For every building owner or occupant, failure to be in compliance with the *Fire Safety Act*, by currently having violations of the National Fire Code is a summary offence in Nova Scotia.

Under §17 of the *Act*,

“...every owner of land or premises, or a part thereof, and every person shall take every precaution that is reasonable in the circumstances to achieve fire safety and to carry out the provisions of this Act, the regulations and the Fire Code.”

Furthermore, under §44(1) of the *Act*;

“ Every person who ...

(g) fails to comply with an order made pursuant to this Act, the regulations or the Fire Code; or

(h) otherwise contravenes this Act, the regulations or the Fire Code,

is guilty of an offence.”

What the above means is that, under the law, any owner or occupant of a building where there are Fire Code violations has already broken the law and is subject to summary offense proceedings. This is similar to speeding on a town street. If you are caught, you will in all likelihood get a speeding ticket, unless the infraction was trivial, and then you were lucky.

The fire-inspection practice in W/WH is probably similar to most jurisdictions in NS, but is potentially flawed. As GA understands the currently practiced process in W/WH; upon a fire-inspection being conducted in an occupancy, violations are noted by the fire-inspector and submitted in writing to the owner/occupant with a demand that the violations be rectified within a specified time-period.

The fire-inspector should be immediately issuing an Order under the provisions of the *Act*. An Order lists the offences and stipulates their correction, and can include a period of time to accomplish the correction. Such Orders are required to be filed with the Fire Marshal's office, and are appealable.

Furthermore, in circumstances where a fire-inspector;

“...determines that there is a significant risk that a fire will occur, or a likelihood that a person will be killed or injured if a fire does occur, the fire official, with the approval of the Fire Marshal, and upon such terms and conditions as the Fire Marshal considers proper, may

(a) *order that an owner of the land or premises close the land or premises and prevent persons from entering until the corrective actions ordered ... are completed;*”

It is important to note that the *Act* requires the issuance of an Order according to the rules under §25, and §26. According to the *Act*, the owner/occupant has already broken the law. The *Act* stipulates the offenses and refers the fire-inspector to the *Summary Offences Act* for process.

The *Act* provides the Order process, which is part of a legal process, and is the means to commence the process of correcting offences. Orders are not a substitute for prosecution, they are a parallel step along the way.

It's GA's understanding that few if any owners or occupants have been prosecuted for violations of the *Fire Safety Act - Fire Code*. We note in the Fire Inspection Report for the Year 2017 various inspections with the dates of the inspections and the dates for follow-up inspections. Follow-up inspections means that there were violations noted at the original inspection and that the owner was instructed to fix them. Most of these follow-up dates are about six weeks after the original inspection, but some were 12 weeks, and one was just shy of eight months.

GA does not know if any Orders under the *Act* were issued, but suspects not many were. There should have been Orders issued in every inspection where violations were found. Failing to use the tools in the *Act* to issue Orders and prosecute owners for violations can incur negligence liability for the municipality and for the fire-inspector. If a deadly fire occurred within the grace period, the fire-inspector provided the owner, between inspection and re-inspection(s) the fire-inspector would be held proportionately liable if the condition in violation was material to the

loss/death. This liability is vicariously shared with the municipality and the municipalities liability insurance carrier.

**GA recommends** that a thorough evaluation of current fire-inspection practices and procedures be conducted to determine compliance with the *Act*. Changes should be immediately made where discrepancies are found or practices open up the municipality to avoidable liability.

### Fire Investigation

Fire investigation, as mentioned, is a mandated activity after every fire. The person currently responsible for doing the investigation is the district fire chief, who is generally automatically appointed as a *Local Assistant to the Fire Marshal*. The *Act* allows other members of the fire department to be delegated as Local Assistants and to do fire investigations.

GA interviewed the district fire chiefs and they do own the responsibility for investigations. However, they also expressed that with time and energy expended fighting the fire, and with being responsible for the department during and after the fire; often they are not well motivated to spend more time the next day at a fire doing a detailed investigation. They lean on the Fire Marshal's office (OFM), and in several noted cases have leaned on an insurance company adjuster to provide investigation of the fire.

The Fire Marshal's fire investigators will investigate fires, but only do a fraction of the province number of fires every year. There must be a death, serious injury, very large loss, or suspicion there is something of provincial interest, for the OFM to accept doing an investigation. The catch is, in order to know if these triggers are present, some investigation needs to be done locally first.

Insurance companies are motivated to avoid paying out dubious or fraudulent claims; which is understandable. Unfortunately, this makes them an inherently biased source for fire investigation services. Most use contracted services, who are hopefully competent. GA was told of one prominent case in the area where two insurance companies were in dispute over the cause of a fire, and the apportioning of responsibility. Fire investigation is a science, and must be conducted accordance to forensic investigation rules. Conclusions must be supportable in court.

The RCMP is responsible for prosecuting Criminal Code offenders for arson. To do this they need evidence from a fire to build a case for prosecution. Usually, the RCMP work with the OFM in obtaining this evidence, if OFM accepted the fire for investigation.

Under the rules of the *Canada Evidence Act*, the police need probable cause to obtain a warrant before they can start taking physical evidence from the fire scene in a criminal investigation. If the OFM is not involved in an investigation, then the probable cause must come from the fire department's investigator. Probable cause is most effective when it comes early in a case, and not 24-36 hours later after potential evidence is lost, destroyed or altered. It is also more valuable, and secure, if it comes from a credible source; i.e. a qualified fire-investigator. It is GA's experience that a successful fire investigation should start while the fire is still in progress.

Fire investigation is a professional skill, and takes considerable training and experience to become competent. This is a deterrent for Local Assistants (fire chiefs) to take on the role that they have forced on them, and is a deterrent to getting a well processed and informed investigation that will withstand scrutiny. For the average citizen who experiences a fire loss, the value is the insurance company will more likely pay-out the loss. For the municipality, the value is an opportunity to focus fire-safety education and inspection programs appropriately.

**GA recommends** that qualified fire-investigators be retained by the Regional fire service for the purposes of investigating all fires for their origin, cause, and circumstances.

### *Fire-Safety Education*

The local fire departments currently do some fire-safety education in their communities. Some of these activities include open houses where children and parents have the opportunity to visit the fire station and fire trucks and possibly pick up a smoke alarm pamphlet. For a number of years one station went out into the community once a year and did home smoke alarm checks and friendly home risk inspections. This initiative eventually morphed into a fund-raising activity and so was dropped.

Anecdotally, GA heard the following comments on station based "fire prevention." Many firefighters do not enjoy participating in fire prevention (i.e. fire-safety education) activities.

Those that do, do so as time permits, often as an individual initiative. Some stations have firefighters go to schools and nursing homes. Some stations are against doing a smoke alarm program where the firefighters go out into the community and visit homes. One group mentioned a possible partnership with ground search and rescue where GSAR could get fundraising support in exchange for assistance with fire-safety education assistance.

GA saw no evidence that there is any Regional coordination and resourcing for these activities, although there are modest funds in the budget for this purpose. West Hants Policy COGE-007.00, under which the local fire departments are registered to provide their services, expressly states a desire for the above to happen, as follows;

*“The purpose of this policy is:*

*d) To provide for other matters necessary and expedient for the provision of fire and emergency services, including: ...*

*(3) To create the framework by which the participating Service Providers and the Municipality can explore opportunities to **standardize the delivery** of fire and non-fire emergency services including **fire prevention activities** such as promoting awareness and providing education, ...” {emphasis added}*

**GA recommends** that more resources, coordination, and emphasis be placed on fire-safety education activities. These activities should be delivered locally but coordinated regionally and in accordance with risks in the community.

## **THE FIRE SERVICES ORGANIZATIONAL REVIEW OBJECTIVE**

The Review was intended to determine a cost effective and efficient organization for the delivery of fire services throughout the new Regional Municipality.

The Review included all of the current services being offered, current service levels, staffing, staffing types and staff functions. Recommendations were requested that would enable the new regional municipality to establish a fire protection service delivery program that would be homogeneous across the entire regional municipality. Part of the goal was to consider the valued history and individuality of the local community culture of each of the current fire departments.

Change is implied when a fire service is reviewed as a result of municipal evolution. Sometimes it is hard to accept the changes needed to provide better fire and emergency services. Although the status quo may need to change, change is never easy and is not universally acceptable, especially to those who are heavily invested in the present.

However, sometimes the expectations of the public, who receive and pay for the services, will push the need for change. In that case it is better for those who provide the services to understand the need for progress and to embrace and become part of the change. The service providers contributions past and present are appreciated.

In general, the fire services have believed that the solution to new and developing challenges was to apply more resources; i.e. more money, more staff, more equipment, and etc. A study of the true needs to meet new demands for service can show in some cases that the *need more resources* approach is not the only solution, and may in fact not be the appropriate solution as there are inherent challenges for the organization in adding resources, not to mention the financial strain on taxpayers.

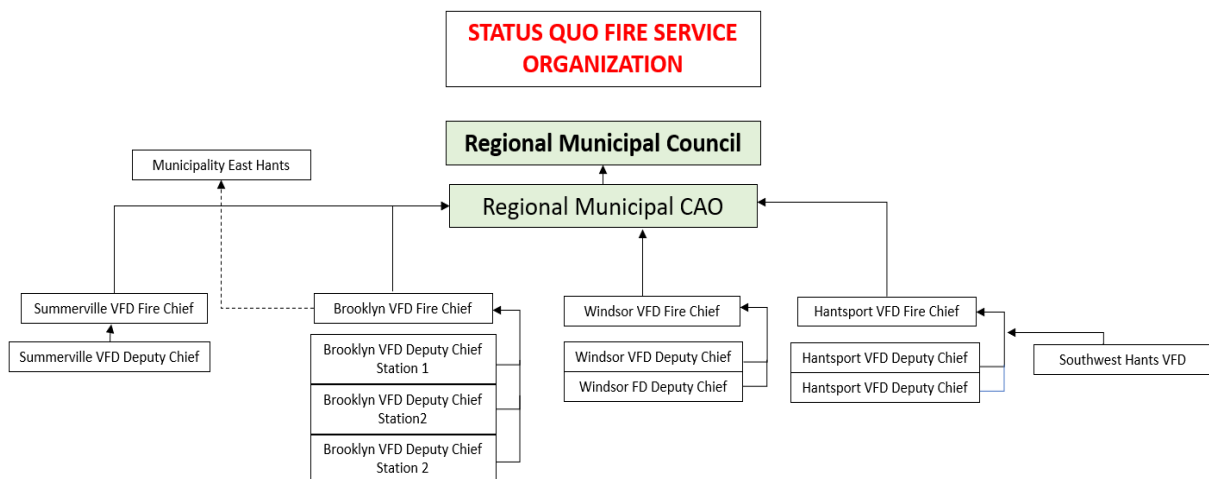
One of the fundamental questions posed as part of this Fire Services Review was whether or not the current fire department resourcing was sufficient to meet service demands. In our opinion the resources are adequate, but should be considered within the context of optimizing their access for use. In other words, current resources should be used more efficiently, as part of a better coordinated system of service delivery.

To that end, three organizational models were evaluated to determine if they would meet the stated objectives and goals of the Review. In any organizational structure it takes great collaborative leaders and support from within the organization to meet the organization’s objectives. With the caveat that it is most unlikely that any proposed organization will work without the right leadership, GA has developed for consideration the following three organizational models.

**Model 1: The Status Quo**

One of the main goals of this Review was to propose how to provide a more homogeneous service. The evidence of the past and current procedures, policies, interdepartmental relationships, and department competitiveness distracts from any true standardized service delivery. There have been steps taken to address a few of the issues, but much more needs to be done, if there is to be any real progress.

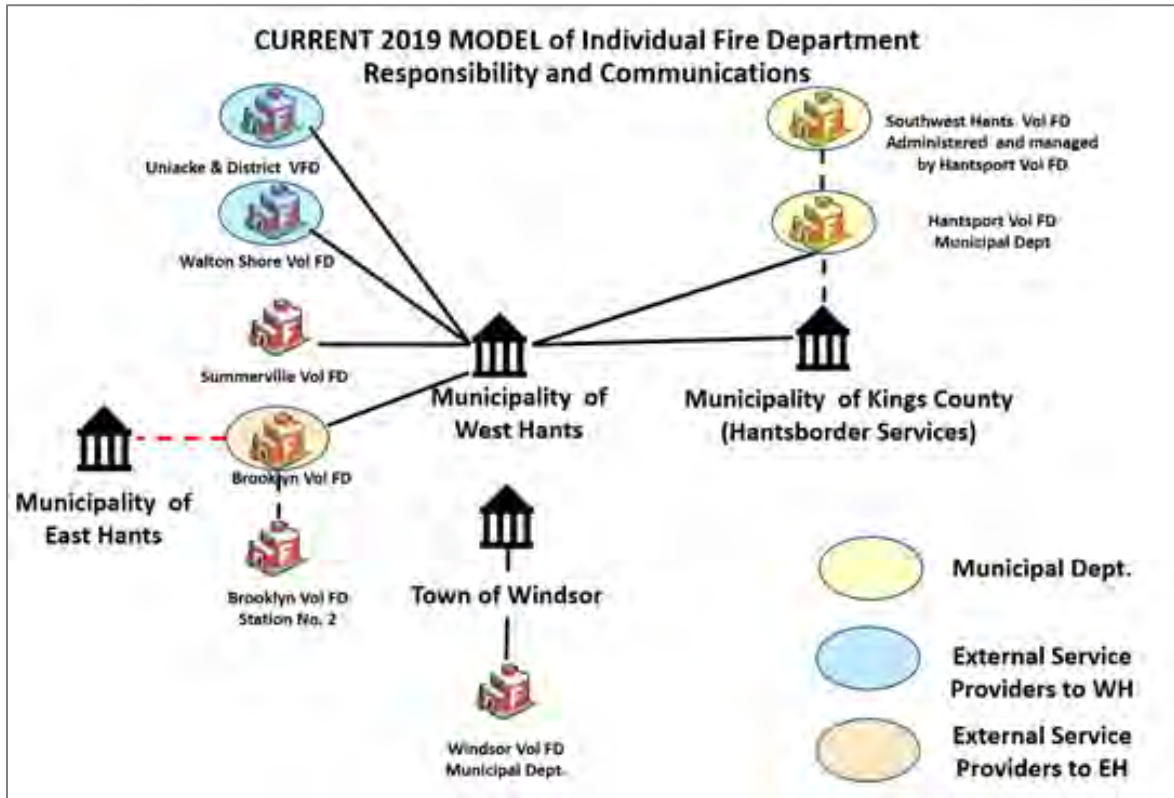
In the current situation, all but one department is managed by a registered society. The following represents the current/existing organizational model



The reporting relationships of this model are complex and largely tenuous. Many relationships are at arms-length from the municipality, and indeed may not be known to the administration and

may not be formalized although they likely carry liability. The following diagram illustrates these relationships.

**Model 1; Relationship Diagram**



An analysis helps to clarify the pros/cons of this model. The results are captured in a S.W.O.T. (Strengths, Weakness, Opportunities, Threats) analysis chart, as follows on the next page:

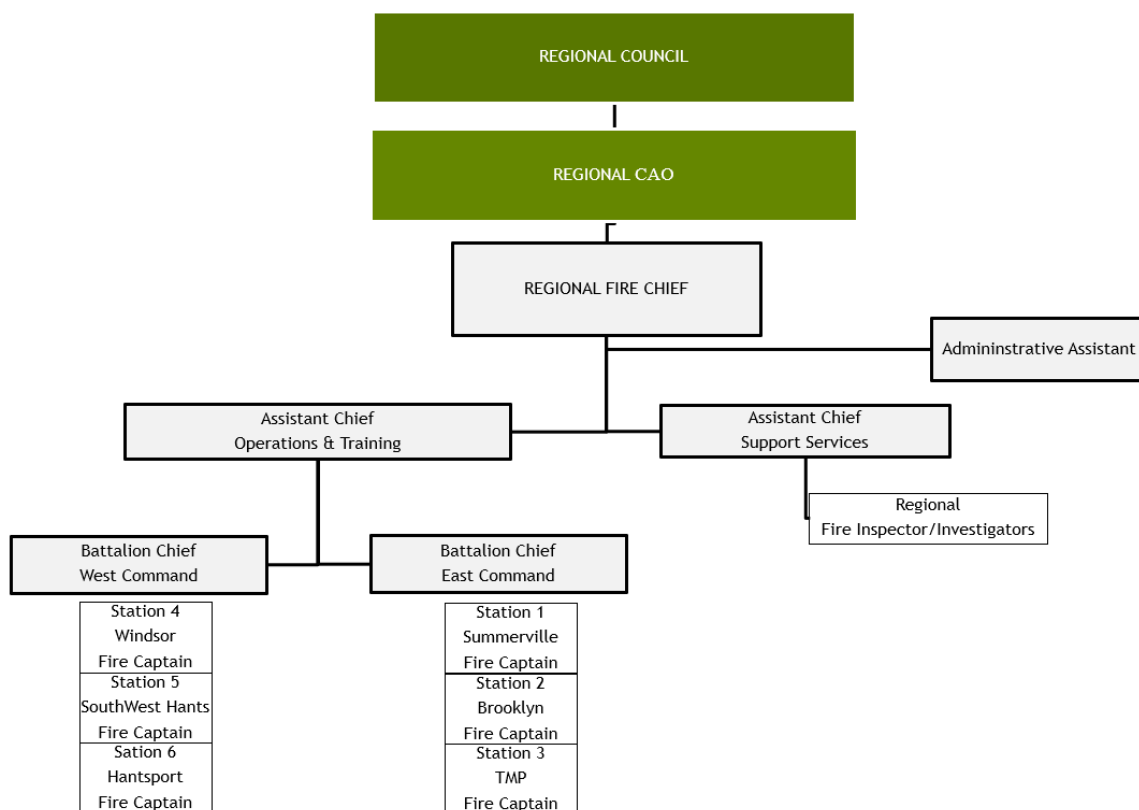
**Model 1; S.W.O.T. Analysis**

STRENGTHS		WEAKNESSES	
1	Because Societies have responsibility for the administration, management, and operation of their departments, within municipal set rules, there is little municipal overhead required on a day to day basis	1	Lack of Municipal oversight for those that are Society Departments, and who are accountable to their society and local community residents
2	The current model has provided 60 plus years of service to the communities.	2	Lack of complete Accountability & Transparency Funding issues are problematic
3		3	Perpetuates the possibility of self-serving interests
4		4	Lack of Collaborative Leadership
5		5	Often big picture of service delivery is lost
6		6	Possibility of differing service levels throughout the Regional Municipality
7		7	Could possibly create an over or under funded department, exceeding or not meeting needs of the local community
8		8	Lack of overall Regional strategic focus
		9	Only responsible to deliver a service level to local area.
9		10	Not all policies and procedures between departments are compatible; possibly causing operational challenges and personnel issues
OPPORTUNITIES		THREATS	
1	Opportunity for change to permit effective collaboration so as to meet the needs of the Regional Municipality	1	Liability Risk to Regional Municipality is high
2		2	Must negotiate with service provider on any proposed changes to service delivery methodology and accountability
3		3	Often suggested alterations to current conditions are perceived as a threat to individual organization's viability and possibly impact business relationship and political fallout
4		4	Major disagreement may threaten provision of services and municipality may have to scramble to find alternative solution
5		5	Costs to municipality may continue to increase with little ability to find alternative cost model due to lack of true insight into needs

**Model 2: Integrated Regional Service**

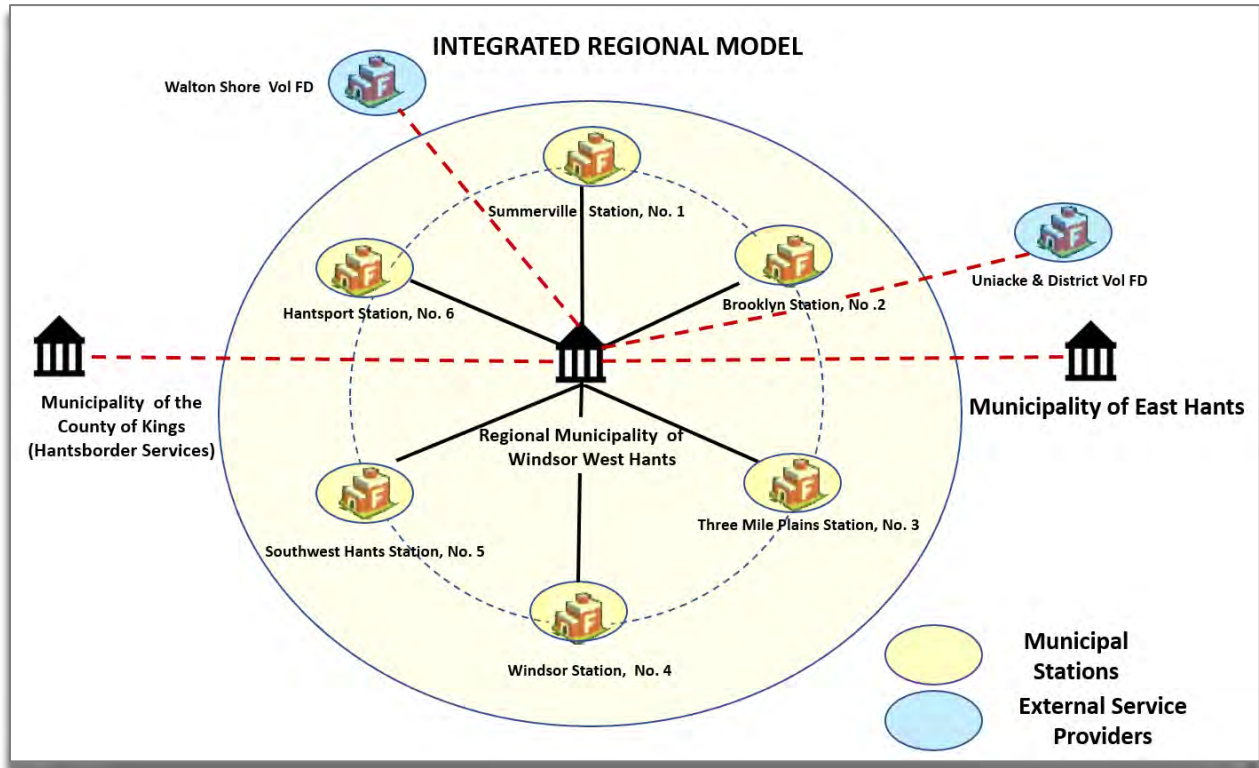
This model is similar to the HRM (Halifax Regional Municipality) Model. It is a fully integrated municipal fire service model featuring a single management group that is part of the municipal management structure; supported by line and staff positions, and with each station having a senior Fire Captain in charge, reporting to the consolidated management group.

Complete and full responsibility, accountability, and funding for the service rests solely with the Regional Municipality. Establishing this model would require the Municipality to buy-out or displace the existing Society run services.



The reporting relationships of this model are well known and defined. All relationships are direct to the municipal management team, with each municipal department contributing its expertise as with any other municipal operational department. Accountability and transparency are subject to administration and Council oversight. The following diagram illustrates these relationships.

**Model 2; Relationship Diagram**



An analysis helps to clarify the pros/cons of this model. Analysis results are captured in a S.W.O.T. (Strengths, Weakness, Opportunities, Threats) analysis chart, as follows on the next page:

**Model 2; S.W.O.T. Analysis**

STRENGTHS		WEAKNESSES	
1	Provides Municipal oversight	1	Drastic change will put exteme stress on volunteer/Corporate relationship
2	Provides Accountability & Transparency	2	Lacks recognition of individual department history and contribution to their local residents and the community at large.
3	Accountability to all regions and citizens of the municipality	3	Lacks redundancy with in the operating function of the organization
4	All departments provide service, without mutual aid or auto-aid agreements, to all areas of the Regional Municipality	4	Potential impact on volunteer recruitment and retention as there are few promotional positions/opportunities with the service
5	Provides for big picture overview of entire fire and emergency service delivery. Stronger Corporate understanding of issues and challenges	5	
6	Provides one Regional strategic focus in service delivery	6	
7	Standardizes, administrative, management and operational policies, including , training, safety, service delivery, HR and volunteer benefits	7	
8	Reduces Municipality's liability in service provision	8	
OPPORTUNITIES		THREATS	
1	Opportunity for change to permit effective administration and management of the fire service so as to meet the needs of the Regional Municipality	1	Remote management could lead to mass resignations of volunteers
2		2	Negative Political impact likely in near term
3		3	Potential lessening of integration with the local community

### **Model 3: Hybrid Regional Fire Service**

This model is a blend of the current (status quo) and the integrated regional model. It is a partially integrated municipal service featuring a distributed management group that includes; a Director of Protective Services/Fire Chief (DPS/FC) who is part of the municipal management structure, some regional staff positions to support administration and regional priorities, and a management committee of district fire chiefs representing local fire station management.

The role of the Director of Protective Services also includes responsibility for the Region's Emergency Management Program and will act as its Regional Emergency Management Officer when called upon. In addition, the role of Protective Services Director, on behalf of the CAO/Council, is the main liaison between the Region and Emergency Health Services and Policing.

This model provides better responsibility and accountability to the Regional Municipality than the status quo while still recognizing a semi-autonomous role for local management of fire stations.

Individual district fire chiefs, within their respective response districts, will have responsibility for local issues and will ensure that their station and volunteer firefighter staff are ready and able to respond to incidents as required. The regional DPS/FC will have responsibility for the overall fire services delivery, including operational and financial management of the fire services and responsibility for implementing Council's directives on standards and levels of service. His/her responsibility will be to ensure the provision of an effective, efficient, and safe emergency response service that meets best practices and that is accountable to the municipality's Chief Administrative Officer and Council.

It is recommended that individual fire stations maintain their individual community names in order to maintain that local connection to the community. For this reason, we are also recommending that all six W/WH stations operate as individual entities within their communities, not as substations.

This model features a District Fire Chiefs' Management committee that meets with and reports to the Director of Protective Services/Fire Chief. This committee is recommended to not only improve communications throughout the W/WH fire service, but to also achieve consensus on issues of importance.

This model is anticipated to provide full accountability and transparency, and will take advantage of the benefits of standardization of service, equipment, training, and response procedures. One of the benefits will be cost-efficiencies in region-wide purchasing of equipment and also the better use of unique equipment region-wide.

The recommendation is to include a part-time Divisional Chief of Training, Safety and Communications. The role of this part-time position is to develop standardize programs, and to implement and manage those programs across the regional fire service.

This organizational model also proposes to enhance the current positions of part-time station maintenance and cleaning personnel to include the duties of a firefighter/driver. This will enhance response during those times of the day and days of the week where volunteer response is low.

This model provides for an Assistant Chief position that, in addition to filling in for the Director of Protective Services/Fire Chief his during absences, is also responsible for the Regional Municipality's Fire Prevention initiatives; i.e. fire safety-education, and regulated fire-inspection, and fire-investigation services.

It is proposed that the current practice of fire-safety education, delivered to the public by their local stations, continue. What we have heard during this study is that this initiative is in need of coordination across the Region and better support. It is not essential that active firefighters provide this service. Interested civilians, seniors, or retired firefighters are often interested in participating in these programs, and this model improves that opportunity.

Currently fire-inspection services are being performed by the West Hants building inspection personnel. There are currently insufficient resources assigned to this task to meet legislated and bylaw requirements for fire-inspection. Fire-inspection is a secondary priority for the busy

building inspectors and there needs to be more focus on what is in fact a potentially life-saving service and overall cost saving program. For this reason, we are proposing that fire-inspection and Fire Code enforcement services be delivered by the Regional fire services. Effective communications with building and planning staff is required to continue. GA has worked with the proposed model in several jurisdictions and it does work well.

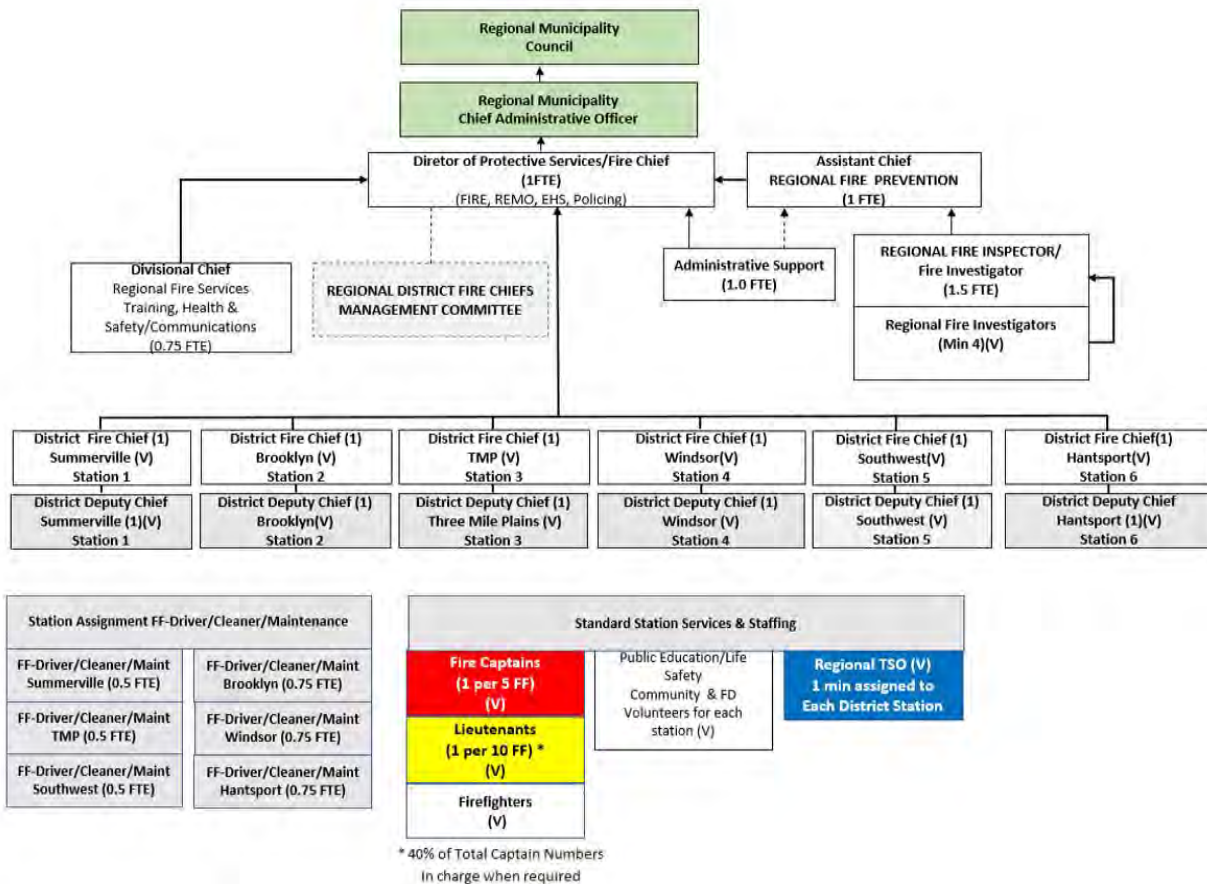
The model provides for 1.5 FTE fire-inspectors. The inspectors will also have a role to play in fire-investigations. Very often Fire Code violations become evident during a fire investigation to those who know the requirements well, i.e. fire-inspectors. These violations are often contributory to loss and injury suffered during the fire.

Currently, fire-investigations are not meeting best practices nor the requirements of legislation. Adequate numbers of properly trained staff are required to ensure that every fire is investigated within the legislated time-lines, and that the required fire incident reports are completed and filed with the Fire Marshal's office, also within the legislated time-lines. We are proposing that a small cadre of interested volunteers be trained as part-time fire-investigators, and that they be deployed region-wide, on an on-call basis, and as-needed to support the incident commander by providing effective fire investigation resources in a timely manner.

We are suggesting that for radio communication effectiveness and personnel safety that the stations and assigned apparatus be assigned a unique number/ID. That concept is incorporated in the proposed model.

The following diagram shows the basic features of the proposed organization model.

**Model 3; Organization Chart**

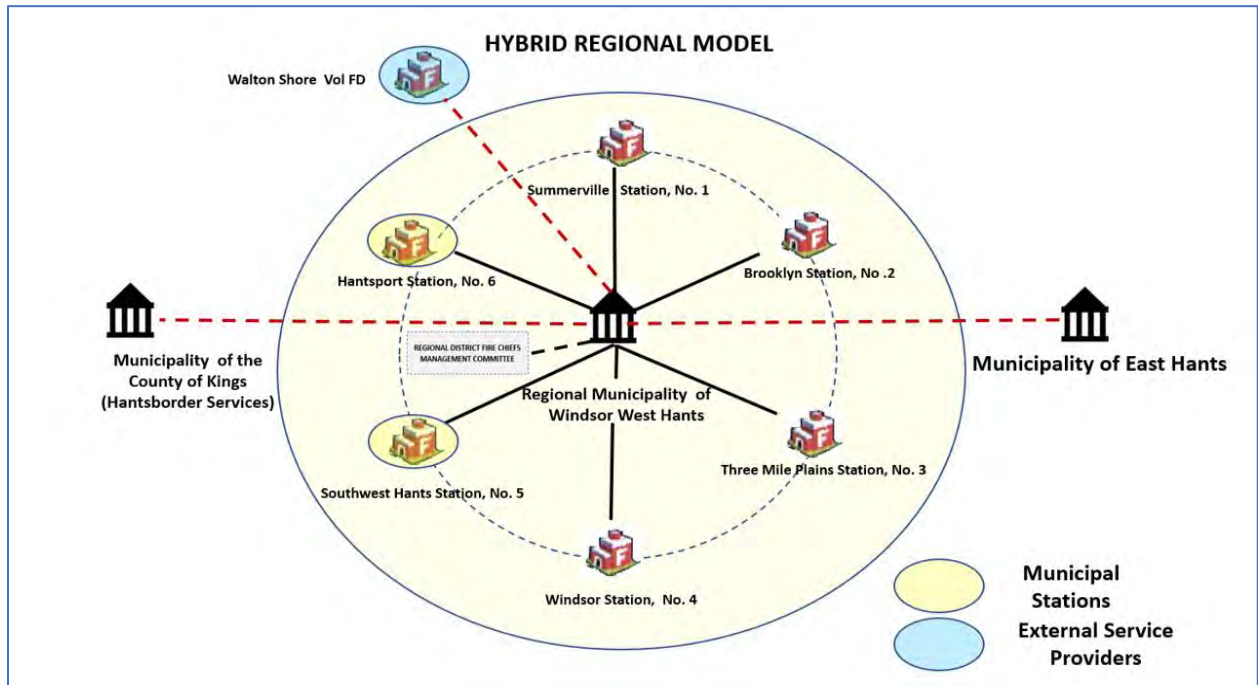


The reporting relationships of this proposed model are well known and defined. All relationships are direct to the municipal management team through the DPS/FC. Each municipal department will be able to contribute its expertise as with any other municipal operational department. Accountability and transparency are subject to administration and Council oversight. The following diagram illustrates these relationships. With this model, the part time contract position of REMO will become the responsibility of the Regional Fire Services most senior position.

In addition, an Assistant Chief of Fire Prevention will also be required to carry out the responsibilities of the Fire Safety Act/Regulations but also act as the Director during the Director’s absences.

This model requires an administrative support position to support both the Director and the District Fire Chiefs.

**Model 3; Relationship Diagram**



An analysis helps to clarify the pros/cons of this model. The results of the analysis are captured in a S.W.O.T. (Strengths, Weakness, Opportunities, Threats) analysis chart, as follows on the next page:

**Model 3; S.W.O.T. Analysis**

STRENGTHS		WEAKNESSES	
1	Provides Municipal oversight by the CAO and Director of Protective Services	1	Not being able to fill the positions with persons having the correct skill set and willingness to accept role responsibilities.
2	Provides protective services, i.e. fire, REMO, fire inspections, fire prevention, Emergency Communications and liaison with emergency services partners, i.e. EHS, RCMP under one roof.	2	Certain positions identified as requiring Certifications may not be accepted.
3	Retains, department individuality & Recognizes within current department districts the role of District Fire Chief	3	Initial start up costs
4	Provides District Fire Chiefs direct input to the overall administration and management of the Regional service to the Director of Protective Services and ultimately the CAO; via the District Fire Chiefs Management Committee	4	Time is needed to obtain buy-in and plan implementation.
5	Provides Accountability & Transparency	5	
6	Accountability to all regions and citizens of the municipality	6	
7	Provides for big picture overview of entire fire and emergency service delivery.	7	
8	Provides one Regional strategic focus in service delivery	8	
9	Standardizes, administrative, management and operational policies, including, training, safety, service delivery, HR and volunteer benefits	9	
##	Provides redundancy across fire service positions across the region thereby reducing volunteer stress and burnout. Improving retention rates		
##	Significantly Reduces Municipality's liability in service provision		
OPPORTUNITIES		THREATS	
1	Opportunity for change to permit effective administration and management of the fire service so as to meet the needs of the Regional Municipality	1	Often suggested alterations to current conditions are perceived as a threat to their organizations viability and possibly impact department morale and business relationships
2	Provide volunteers and staff growth opportunities within the organization	2	Lack of buy-in
3	Provides the opportunity to provide a best practice, affordable service, meeting the needs of not only the municipality but the needs of the volunteers and staff of the fire service organization.	3	Lack of funding to implement all crucial objectives in a timely manner

### Sample Fire Services Job Descriptions

To assist the reader in understanding and appreciating some of the fire services positions more fully, draft sample duties/job descriptions are attached as **Appendix VII; Sample Job Duties and Descriptions** to this report.

The positions included are:

- The Director of Protective Services/Fire Chief
- Assistant Chief of Fire Prevention
- Divisional Chief of Training, OHS, and Communications
- Regional Fire Inspector/Investigator

### Organization Conclusion, Recommendations

F. Buckminster Fuller is quoted as saying: "*You never change things by fighting against the existing reality. To change something, build a new model that makes the old one obsolete.*"

Can we use technology to gain efficiencies in service delivery? Can we use existing, not commonly used, resources from varying, sometimes competing, entities to meet the need rather than buying more?

The organization just needs to put things together differently and better. The organization needs to focus on wholistic service delivery. The results/outcomes would possibly achieve the very thing claimed to be desirous in the first place; i.e. a change for the better. Individuals know *what* needs to be done; the deeper question is *how*. If there is one dominant theme which runs through all of today's challenges, it is awareness that the way things have been done is no longer acceptable in today's environment.

Collaborative leadership needs to create a space in which each of the leaders and professionals come together to design and build the new model for systematic program delivery.

Collaborative leadership can be implemented at any time and can resolve the problem of silo-thinking and achieve cost-effective goals and objectives.

Successful change requires time and relationship intensive consensus building with due sensitivity to, and the broad-based participation of, key stakeholders. Highlighting to all stakeholders the need to manage liability and risk issues is an important component of any regionalization/consolidation process. Seasoned leadership and support staff are key success factors to the successful initiation of this strategy and to sustain it over the long run.

There are two key challenges in managing organizational change; developing trust and consensus among key stakeholders, and managing diverse volunteer fire department desires.

**GA recommends** the implementation of Model 3; Hybrid Regional Fire Service, for all of the reasons discussed starting on page **120** above.

**GA recommends** the hiring of a full-time Director of Protective Services/Fire Chief.

**GA recommends** the hiring of a full-time Assistant Fire Chief.

**GA recommends** the hiring of a part-time Divisional Chief.

**GA recommends** the hiring of a full-time Administrative Assistant.

**GA recommends** the hiring of four part-time paid on call fire-investigators.

**GA recommends** the transfer of 1.5 FTE Fire-Inspectors from Planning & Development, Building, to the regional fire services.

## OPERATIONS

## EMERGENCY CALL TAKING AND FIRE SERVICE RADIO COMMUNICATIONS

### **911 CALL TAKING AND ROUTING**

The *Emergency “911” Act* was enacted in 1992;

“The purpose of this Act is to establish the number “911” as the primary emergency telephone number for use in the Province and to implement a Province-wide system for the reporting of emergencies to emergency service agencies. 1992, c. 4, s. 2.”

It is useful to pull some definitions out of the Act for our discussion, as follows;

“3 In this Act,

(h) “primary public safety answering point” a primary public safety answering point means a communication centre that is normally the first point of reception of emergency calls;

(i) “public safety answering point” means a communication centre that functions to receive emergency calls and to dispatch such calls to the appropriate emergency service agency;

...

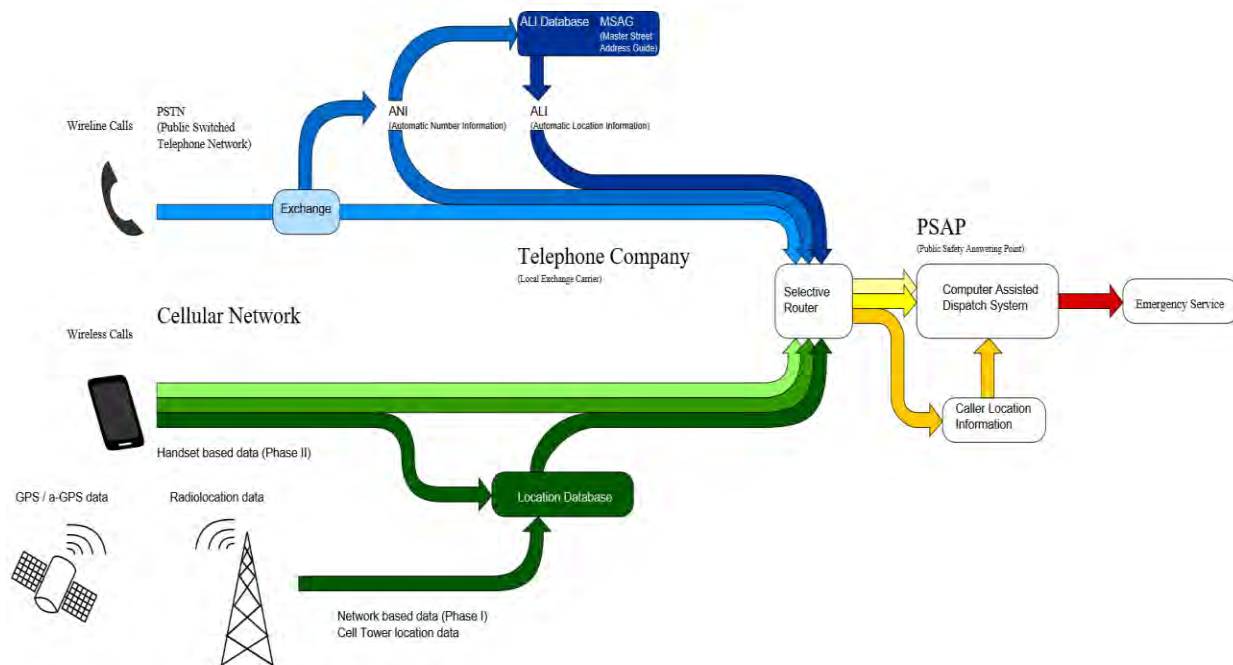
(k) “secondary public safety answering point” means a communication centre to which emergency calls are transferred from a primary public safety answering point that is normally the agency responsible for dispatching emergency personnel;”

### **Windsor/West Hants 911 Service**

The 911 system (E-911) service for the Windsor/West Hants fire departments commences with a caller in need dialing 911. This 911 call is routed to the Primary Public Safety Answering Point (PSAP). The PSAP for Windsor/West Hants is Truro RCMP in Truro, NS. If they are too busy then Valley Communications picks up the overflow, followed by HRM, and finally CBRM.

Due to the technology of telephone and cellular service providers and the capabilities of the E-911 system, two key pieces of information are immediately provided, the telephone number from the caller’s telephone (called an ANI, Automated Number Identification) and the address and/or location (either the civic address if call is made by landline or the closest cellular tower if by cellular phone) from which the call is being made (called an ALI, Automated Location Identifier).

These two very important pieces of automated information assists the E-911 operator in determining to which emergency service the call should be transferred to, in a timelier fashion.

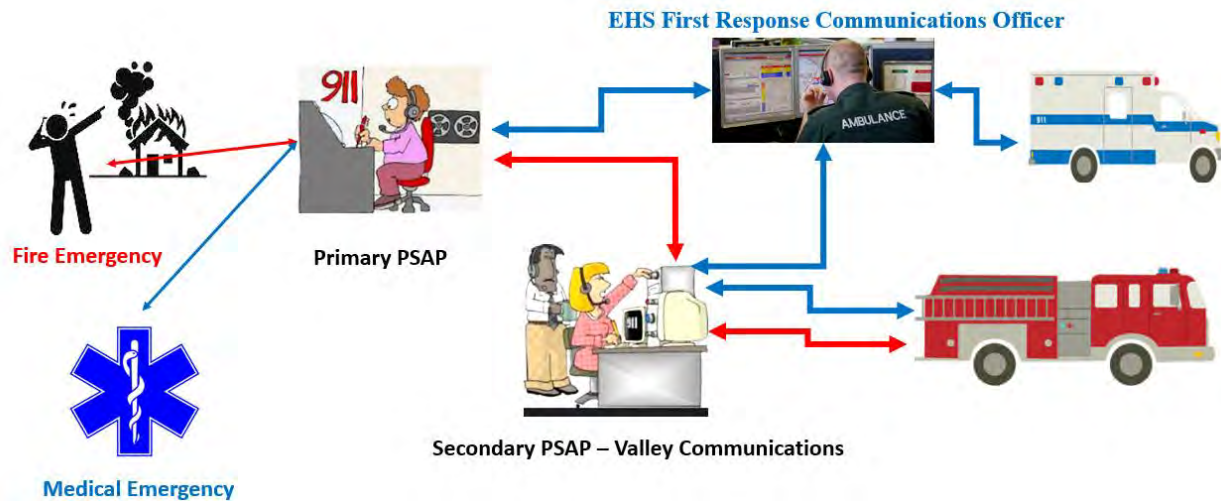


For fire incidents, once the Primary PSAP call taker determines the nature of the emergency (police/fire/ambulance) and confirms the location against the ALI information, the call taker then transfers the call to the Secondary PSAP/Dispatch centre for fire services in that area. The above graphic from Wikipedia<sup>35</sup> illustrates the process.

In the Windsor/West Hants region the fire dispatch service is operated by Valley Communications. For medical emergencies, medical calls received by 911 Primary PSAP are transferred to an EHS First Response Communications Officer (FRCO) located in their communications center in Dartmouth. EHS then triages the nature of the medical emergency, and will dispatch the closest ambulance and contact a secondary PSAP to dispatch the closest fire department; in accordance with provincial EHS and local Fire Department Medical First Responder protocols.

<sup>35</sup> <https://en.wikipedia.org/wiki/9-1-1>

Once Valley Communications determines the nature of the service required, i.e. Medical First Responder, fire, rescue, and etc., they will dispatch the appropriate fire department(s).



## VALLEY COMMUNICATIONS

Valley Communications (VComms) was established in 1959, then known as the 'Kentville Telephone Answering Service', to provide emergency call taking with dispatch service to the Kentville Volunteer Fire Department. Other areas of the business developed to provide service to other agencies that required around the clock coverage.

At present, Valley Communications operate as one of four 911 PSAP's (Public Safety Answering Points) in the province of Nova Scotia. They act as a Primary PSAP for the town of Kentville and the surrounding area cellular towers and act as a Secondary PSAP for the Town of Windsor and the Municipality of West Hants. They also provide fire dispatch for about 94 fire departments in the counties of Kings, Annapolis, Hants, Lunenburg, Queens, Colchester and Cumberland, and act as a secondary 911 answering point for these areas. This translates to 8,000 fire calls per year or 20 to 30 calls per day. Valley Communications also provides telephone answering service to over 100 clients and monitors over 2,000 security alarms province wide.

The Town of Windsor and the Municipality of West Hants both have active service contracts with Valley Communications. Both of which expire June 30, 2020. (Ref. Appendices II and III). The contracts, although for basically the same services, are different.

### Communications/Dispatch Service Contract Notes

The following are some observations related to the service level agreements reviewed between the municipalities and the supplier that should be addressed to ensure an appropriate level of service is maintained. The contracts differ between the two municipalities. One references the provision of dispatch services, the other communication services.

**GA recommends** that future communications/dispatching contracts reference all services required, for example; *“provision of fire department dispatching and emergency communication services”*.

The following notes are for the current services being provided;

- There is no clarification on how Valley Communications are to keep the records, who has access, who does the auditing of the records and who manages quality control related to records management.
- There are no service level performance requirements,<sup>36</sup> such as time required to process receipt of a 911 call to time of dispatching the appropriate services.
- No required level of training and or qualification of operators.
- There is no record or copy of a signed Non-Disclosure agreement.
- The recording of all emergency calls with accurate time and date is required *“when at all possible”*. (West Hants Contract). Question why would it not be possible?
- A copy of digital recordings, *“if available”*, are to be kept on site for the duration of the Agreement. (West Hants Contract) Why would the digital recordings not be available?
- The West Hants contract permits the Municipality to periodically review Standard Operating Guidelines and update from time to time. The term periodically is not defined.

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<sup>36</sup> Fire Service Association of Nova Scotia (FSANS) Fire Dispatch Standards requires that the number of Call-Taker/Dispatchers on duty to be determined by the following performance benchmarks: C(i) 95% of emergency calls shall be answered within 15 seconds and 99% within 40 seconds. C(ii) 95% of emergency dispatching shall be completed within 60 seconds.

## Valley Communications Operations

### *Communication Facility*

The most recognized standard for communications facilities is NFPA-1221; *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*. This is a very stringent standard. In 2017, the Fire Services Association of Nova Scotia (FSANS) produced a *Fire Dispatch Minimum Standards* document that is based upon the NFPA-1221 standard, while recognizing modified requirements for existing structures.

The current facility is a vintage converted residential above ground structure, featuring offices and the communications center, complete with a backup power generator for the comms center. It is located at 218 Belcher Street in Kentville, NS.



### *Staffing*

Day time hours (8:00 am to 4:00 pm) there are three (3) to five (5) staff on duty, if the center gets extremely busy some of the office administration staff are able to assist. The 4:00 pm to 8:00 pm shift, three (3) staff are on duty and the 8:00 pm to 8:00 am shift two (2) staff are on duty.

The minimum staff on duty are still required to provide primary and secondary PSAP services as well as being the backup Primary PSAP for Truro and Cape Breton Regional Municipality as well as process and dispatch fire calls on behalf of 94 fire departments (20 to 30 calls per day), acknowledge security alarms, and do client paging services. Depending upon time of day and work volume, off-hour staffing could become very challenged to meet demand in an effective and efficient manner.

### *Call Taker/Dispatcher Training*

Training is all done internally and features a six (6) month mentorship program with a competent dispatcher, 911 is the last part of the training program. All new personnel start off as part-time staff.

Valley Communications (VComms) has developed their own training manual; employing a lot of the Halifax Regional Municipality information. Training includes seven (7) days of PSAP training conducted by provincial EMO staff at their Dartmouth PSAP. Local training includes operation of communications equipment and related software. Every Two (2) years refresher training for all staff is required with E-911 for PSAP operations. PSAP operation follows provincial operating procedures.

**GA recommends** that Valley Communications have one or two staff attend a recognized certification program such as offered by the Association of Public-Safety Communications Officials (APCO). Such courses are offered in a number of colleges in Ontario. Extensive training is also available through APCO online.<sup>37</sup>

The FSANS Dispatch Service Standards (2017) requires the following;

“9) Trainee Call Taker/Dispatchers shall successfully complete a Call Takers/Dispatchers training program recognized by APCO or other authority”

NFPA-1061<sup>38</sup> also establishes qualification requirements for “*Telecommunications*” personnel, and is a good resource for additional training needs and programs.

### *Dispatch Facility*

Standards for Dispatch Facilities are provided in the Fire Services Association of Nova Scotia (FSANS) Dispatch Service Standards and some of which are highlighted below.

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<sup>37</sup> <https://www.apcointl.org/training-and-certification/course-options/institute-online/>

<sup>38</sup> National Fire Protection Association; NFPA-1061, Standard for Professional Qualifications for Public Safety Telecommunications Personnel

BACKUP FACILITY

FSANS Fire Dispatch Standard requires;

- 1) Every Comm Centre providing emergency dispatch or notification services shall have a reliable, fully functional backup facility sufficiently geographically separated from the primary facility so as to minimize dependence on the same electrical distribution, sanitation and transportation infrastructure.
- 2) A backup facility shall be maintained in full standby mode such that dispatchers can be relocated to it on short notice and immediately resume full service to clientele.
- 3) The backup facility communications equipment shall be tested at least once a month. At least once every six months the backup facility shall be operated for one full shift.

Valley Communications has a backup facility located in the Kentville Fire Station. According to the supplier, the facility has never been tested.

**GA recommends** that the backup dispatch/communications facility's communications equipment be tested at least monthly.

**GA recommends** that at least once every six months the communications/dispatch backup facility shall be operated for one full shift as per FSANS standard and that records of all testing and operations of the backup facility be created and maintained, including all maintenance provided.

BUSINESS CONTINUITY-SUCCESSION PLANNING

- 1) The owner or manager of a Comm Centre providing emergency call taking, dispatching, or notification shall develop and maintain a business continuity plan to acknowledge the possibility of catastrophic events either physical or human.
- 2) The owner or manager of a Comm Centre shall develop and maintain a succession plan for continuation of service for a reasonable period of time in the event of a loss of any key personnel from the organization.

**GA recommends** that the dispatch/communications service provider undertake the development and implementation of business continuity plans and successions plans, if they have not already been made, as soon as possible.

### *Call Taking and Dispatching Operational Issues*

An operational review was conducted of the Valley Communications Services (VComms) and their interaction with the fire services within the Region of Windsor and West Hants Municipality. A total of twenty-seven areas of service topics were reviewed. Both the fire services and VComms raised issues during the Review that impact efficient and effective services. Both had an equal part in some of the deficiencies. The good news is with collaborative efforts between all the parties involved, the Municipality, Valley Communications and the fire services the issues are all fixable.

Some of the findings of the review include the following.

- Quality Control of incident reports and data appears to be inconsistent
- Data entry errors, missing data. Some of the missing data can be attributed to the fire departments not reporting properly, or completely, or in a timely manner to Valley Communications (VComms).
- VComms time data entry is occasionally wrong (i.e. “*Depart Time*” and “*Time at Scene*” times reversed) & other time recording issues. These appear to be human operator errors, but a good CAD system would not permit such anomalies to occur, i.e. error trapping.
- Use of nonstandard time terms in the electronic CAD system; i.e. “*Time at Scene*” instead of “*Arrival Time*.” In the majority of FD CAD/reporting systems “*Time at Scene*” is total elapsed time the FD actually spent at the scene. “*Depart*” time is the term used by VComms for the industry standard “*Enroute*” term, and etc. Although not fatal flaws, they are disconcerting because they do not meet standard understandings.
- Incident call classifications are non-industry standard. In some cases they do not allow a fine enough understanding on the part of the responder, and later the reviewer, into the true nature of the incident.
- Incident type dispatched by VComms vs their report tables at times do not match up. This is likely a symptom of the previous bullet point.
- Lack of E-911 automated ANI/ALI information populating the CAD and therefor fire departments’ RMS.
- Valley Comms CAD reportedly does not record all 911 calls.
- Reportedly the back up facility is not being tested according to any recognized standard.

VComms has access to language translation services provided by ATT in Toronto; who have the ability to translate 70 languages. The time it takes to connect and translate is unknown, and reportedly has never been measured.

The transfer of calls between PSAPs is all verbal no ANI/ALI data available. Reportedly, VComms does not have the necessary equipment.

### Computer Aided Dispatch

VComms uses a Computer Aided Dispatch (CAD) software program, developed in Nelson BC, called Fire Pro2 (FP2). Windsor Fire Department also uses FP2 for their Records Management system (RMS) and call tracking and service analytics. However, reportedly, as a result of VComms inability to receive the E-911 ANI/ALI information, all caller information received from the Primary PSAP is by voice only. This requires the VComms call taker/dispatcher to re-enter the call information manually by typing the information into their CAD system, which has led to many typographical errors, which in turns produces incomplete and erroneous incident data.

The Windsor Fire Department FP2 Records Management System, includes the module that permits downloading all incident data information from the VComms CAD system. This could permit the hands-off automated downloading of the Date, time, dispatch, response times, type of incident, responding units, and etc. This data could then be stored in an incident records module that permits future data mining and analyzing of the information. Data analysis allows the fire service to review and adjust service delivery programs in an effective, efficient manner.

Unfortunately, as a result of manual data manipulation and entry errors the information downloaded in many cases was incorrect and created additional effort on behalf of the fire service to correct the errors. Errors such as misspelling of addresses (e.g. Gray versus Grey) creates duplicate calls to civic addressing that were in fact not duplicate calls. Other data has been corrupted, which had nothing to do with ANI/ALI data, was discovered causing RMS errors that had to be manually corrected. Some examples are apparatus Enroute times were actually apparatus Arrival times and Arrival times being Enroute times. Meaning (nonsensically) the apparatus arrived before being dispatched. As a result of the data entry errors, the automated data download feature was turned off by the fire service.

Analytics in today's fire service delivery is of the utmost importance; but is only effective if it is timely and accurate. Analytics is needed to review fire and rescue trends developing within

communities. With a good understanding of service demands and issues, adjustments in service delivery can be made in real time and budget planning can be more accurate.

Fire RMS also make modules available for almost every aspect of the fire service. These can assist in managing the fire service delivery programs for each station, Modules include incident reports, equipment management/inventory, training records, personnel records, and etc.

There are several Canadian software programs available that integrate with E-911 data, are map based, include CAD capabilities and provide holistic RMS.

**GA recommends** that the Regional Municipality investigate a cost-effective fully integrated Fire CAD/RMS program. It is recognized that with the large client base of VComms that it may not be possible to reach consensus on a single CAD/RMS system for all fire departments. However, a possible and attainable goal is to have VComms' system operate properly, provide accurate data, and be able to interface and reliably data-dump, with error checking, to the RMS system that the Regional Municipality chooses.

The other benefit to this research and acquisition is that depending upon the CAD/RMS program preferred, the other 80+ fire departments that VComms services might be interested in joining a larger client base for acquisition and maintenance of the preferred CAD/RMS and this may provide lower costs to the Regional Municipality.

### *Municipality Responsibilities*

The contract requires the Municipality of West Hants to supply the equipment, tools and software ("Equipment") to the Supplier, or appropriate replacement Equipment, and may provide such additional Equipment as it deems necessary.

The contract requires the Town of Windsor and/or the Windsor Fire Department to supply the transmitters and receivers for the provision of Communication Services and the Town is responsible for all costs and charges for its own telephone linkage and any other costs and charges associated with the installation, repair and upkeep of equipment.

### 911 Call Taking and Dispatch Recommendations

**GA recommends** that Valley Communications adhere to FSANS Fire Dispatch Standards

**GA recommends** that the Regional municipality and Valley Communications acquire the required software and firmware/hardware to enable the capture of any and all ANI/ALI data from the Primary PSAP.

**GA recommends** that the Regional municipality appoint a single contact person to manage emergency dispatch/records management, radio communications, and be the primary liaison between the municipality and Valley Communications.

**GA recommends** that Valley Communications test, and time, Language Translation services provided by ATT in Toronto.

**GA recommends** that the Municipality and Valley Communications implement a proper and ongoing incident call reporting and auditing program.

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## FIRE SERVICES RADIO COMMUNICATIONS

The various fire stations across the region use two types of radio systems, a) their own private Very High Frequency System (VHF) and the province-wide multiagency Trunk Mobile Radio (TMR) system.

Several issues were raised by Stakeholders, as follows:

- Proper radio etiquette is an issue,
- Overkill on Medical calls. Reportedly, 3 departments paged for one medical incident.
- EHS dispatch lacks information when transferring calls to Valley Comms
- Fire Services switching back and forth between TMR and VHF frequencies during an incident.
- Not all channels being used are recorded
- Fire Services take over full radio control.

Current practice is for the fire departments to use both their VHF paging system, as a fire ground radio, and the TMR system, simultaneously. The fire services switching back and forth between different operating systems is a major safety issue and causes lack of continuity between the Dispatcher and the fire service during an emergency incident. This will be further discussed in the Fire Services Communications Section below.

### *IamResponding Application/Software*

In addition to the radio communications all stations employ a software communications program called IamResponding.<sup>39</sup> This platform is a web-based system which saves critical time for fire departments, when responding to emergencies. When paging firefighters over the radio system, the dispatcher also routes the page to this application. After receiving a dispatch notification through the existing VHF radio system (or through IamResponding to any mobile device), responders simply speed dial one number on any phone, or press a button on IaR's free apps. On a computer screen in the stations (or accessed through any computer or mobile device with internet access), the station, chiefs, team leaders, and dispatchers immediately see who is

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<sup>39</sup> <https://iamresponding.com/v3/Pages/Default.aspx>

responding, their level of certification/qualification, the time that they are responding, and the location where they are responding (station or scene).

IamResponding also provides: supplemental dispatch notifications to members (if data has been previously collected and inputted by the fire department) via app push notifications, text messages, emails and alpha-pagers (all simultaneously, and all managed by the members themselves). The supplemental information available includes; mapping and routing to the scene of the incident, customizable mapping layers showing the real-time location of all of your responding members, hydrant and water source locations, pre-plans, hazards, road closures, AED and FDC locations, and other customized map markers. It also features an internal mass-messaging system for easy and fast communications with all department members, records management tools for certification tracking, training records, incident reporting, and attendance.

GA does not know what if any additional features are being employed by the various stations.

### *Radio Hardware Inventory.*

A review of the current radio inventory of the various stations throughout the region indicates that all stations have a mix of two manufacturers' radio hardware, with a multitude of differing models. Motorola by far outweighs the second supplier Kenwood in volume of product. Pagers are all manufactured by Motorola, and are of two different model versions. The following table provides a summary of the current inventory as provided by the individual fire stations.

			Summerville	Brooklyn	TMP	Windsor	Southwest Hants	Hantsport	
TMR	Motorola	Portables	14	17	0	5	4	13	53
		Mobiles	0	3	1	9	3	6	22
	Kenwood	Portables	0	0	1	0	0	0	1
		Mobiles	0	0	0	0	0	0	0
VHF	Motorola	Portables	16	35	33	22	5	27	138
		Mobiles	0	0	7	13	3	10	33
	Kenwood	Portables	2	7	0	0	0	0	9
		Mobiles	0	6	0	1	0	0	7
		Sub Total	32	68	42	50	15	56	263

Total Portables 201 Total Mobiles= 62. Windsor has 1 Marine Radio, plus 1 VHF Motorola repeater which brings the total radio compliment. 265 being reported.

TMP has 1 mobile base radio included in the VHF mobile number of 7.

**NOTE:** Summerville reports no base stations nor mobile radios.

In addition to two-way radio hardware all stations use VHF pagers for emergency response notifications. These Motorola pagers are ubiquitous in the fire service and, by necessity, operate on a VHF radio system. There are few, if any, suitable alternatives for firefighter pagers.

Dept Pagers	Freq Type	Manufacturer	Models	Channels	Number	Sub Total
Summerville	VHF	Motorola	Minitor 5		22	
	VHF	Motorola	Minitor 6		10	32
Brooklyn	VHF	Motorola	Minitor 5		27	
	VHF	Motorola	Minitor 6	1	4	
	VHF	Motorola	Minitor 6	5	28	59
TMP	VHF	Motorola	Minitor 5		1	
	VHF	Motorola	Minitor 6	1	1	
	VHF	Motorola	Minitor 6	5	24	26
Windsor	VHF	Motorola	Minitor 5		51	51
Southwest Hants	VHF	Motorola	Minitor V		12	
Hantsport	VHF	Motorola	Minitor V		34	46
					<b>TOTAL</b>	<b>214</b>

According to Industry Canada, as a standard rule in Canada, about 85% of radios sold are either in the UHF, or higher frequencies like 700 MHz (for public safety) or 900 MHz. The TMR2 system in Nova Scotia is 700 MHz, P25 compatible (i.e. digital).

The W/WH fire departments each have their own licensed VHF radio channels, as follows;<sup>40</sup>

Municipality of West Hants								
<b>Brooklyn</b> ▶								
Frequency	License	Type	Tone	Alpha Tag	Description	Mode	Tag	
152.30000	XJ1515	RM	71.9 PL	Brooklyn FD Ops	Fire Operations	FM	Fire Dispatch	
154.62000		M		Brooklyn FD Simp	Fire Simplex	FM	Fire-Tac	
<b>Hantsport</b> ▶								
Frequency	License	Type	Tone	Alpha Tag	Description	Mode	Tag	
150.95000		M		Hantsport PW	Public works	FM	Public Works	
154.34000	VAC765	RM	71.9 PL	Hantsport FD	Fire department	FM	Fire Dispatch	
<b>Summerville</b> ▶								
Frequency	License	Type	Tone	Alpha Tag	Description	Mode	Tag	
154.71000	XJ1517	M		Summerv. FD	Fire department	FM	Fire Dispatch	
<b>Vaughan</b> ▶								
Frequency	License	Type	Tone	Alpha Tag	Description	Mode	Tag	
152.63000	CFA680	RM	88.5 PL	SW-Hants FD	South West Hants fire department (Hantsport station #2)	FM	Fire Dispatch	
<b>Windsor</b> ▶								
Frequency	License	Type	Tone	Alpha Tag	Description	Mode	Tag	
151.46000	XJW400	RM	107.2 PL	Windsor FD	Fire department	FM	Fire Dispatch	
153.98000		M		Windsor PWks	Public works	FM	Public Works	

Currently, as a reality check, to meet standards VComms needs the ability to monitor, respond/communicate, and record conversations on all of the above noted VHF channels (six) plus the various TMR channels that the W/WH fire departments could use.

If one station is assisting another, some of a responding trucks' conversation will at some point jump from their own VHF channel to the other station's VHF channel, and very possibly back and forth if they continue to communicate with other trucks or stations that may be still on their own or TMR channels. It is easy to understand why this issue is a concern.

<sup>40</sup> <https://www.radioreference.com/apps/db/?ctid=4699> Note: only the scanner frequency is shown. Most of the channels use a pair of frequencies for repeater operation (i.e. unless labelled simplex)

## KPIs

To aid in fire service delivery's program performance analysis, Key Performance Indicators (KPIs, aka Fire Ground Bench Marks) must be documented during an incident by announcing and recording the pre-defined KPIs. This process is often referred to as benchmarking.

Benchmarking also assists those in command and dispatch as to the status of the incident and helps determine if additional resources or a change in tactics is required.

Some examples of KPIs required during an incident are:

- On Scene, this is the time captured by the Dispatcher, as transmitted, by the first arriving unit of a dispatched call.
- Conditions on arrival (Sit Rep), a brief description of the incident upon arrival of the first unit; e.g. nothing showing, or house fully involved, heavy smoke showing etc. This helps all responding personnel understand what to expect upon arrival and if additional help is required.
- Water on Fire, this is important as it determines the time it took from arrival of the first crew(s) to the time they start minimizing loss. This is important as there are many response time standards and bench marks used in litigation that consider time of call to time of intervention. This equates to service delivery performance standards being met. Internally, this leads to investigating what circumstances led to delays, and whether there are tactics possible to address them for the next time.

There are others such as primary search complete, secondary search complete, under control, loss stopped, all clear, and a few other less common ones.

Why is the foregoing referenced here? The issue is that all of the bench marks should be broadcasted over the radio system as they occur, and should be recorded by the radio recording system along with a time-stamp, be manually noted/recorded by the Dispatcher (in CAD), and thereby entered (dumped) into the incident report.

Times, and sequence of events can be critical to post-incident analysis for fire service managers and personnel. It is a great training tool. However, it serves a larger purpose also if there is litigation over an incident. One of the consultants is currently participating in a post-incident analysis associated with a large lawsuit; and the recorded events and time-stamps are critical pieces of evidence for the defence of the municipal fire service.

### Who is Listening?

The main issue that is of concern in W/WH is that the fire departments are using two different radio systems (and possibly up to six VHF channels plus TMR channels) at the scene of an emergency and often alternate their radio transmissions between their individual department's VHF and the province's TMR radio systems. GA has noted fire officers and others carrying and simultaneously using two different radios. Anecdotally, fire officers have related occurrences where halves of conversations occurred on each system. This not only leads to confusion, frustration and missed key information during a fire, it makes recording of radio transmission virtually meaningless, and it is also a serious firefighters safety and efficiency issue.

If a firefighter(s) is in need of urgent assistance and requests immediate assistance over the radio system (Mayday Call), what radio system do they use, will the incident commander and others hear the call for help? Anecdotally, stakeholders have related trying to answer a radio transmission and used the wrong radio and had missed parts of transmissions. In GA's opinion this is a serious issue, that was also expressed as a concern by several officers.

During GA's review of communications systems and procedures/practices, both the VComms and the fire department officers complained about missed information, wrong information being recorded, the Dispatcher not responding to calls on the radio in a timely manner and the VComms complaining that when their Dispatcher attempt to contact the on-scene fire department there is no response.

There appear to be a small number of actions that have led to the issues highlighted. First let's consider the contractual role of Valley Communications for the provision of dispatching and communications services. The contract<sup>41</sup> between West Hants and VComms is for the provision of;

"Emergency Dispatch Services and shall keep full and complete records of incoming and out-going dispatch communications."

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<sup>41</sup> Please see [Appendix II; West Hants /Valley Communications Contract](#) starting on page 320 for more details of this contract.

The contract between Windsor and VComms is different, and does not speak to any intent to record transmissions. The entire service is contained in the first clause as follows;

“The Communication Service shall provide communications services for the use and benefit of the Town.”

What is the intent of these contracts? GA believes that the intent of the contracts, at least on the part of the fire departments, is to provide full dispatching and emergency communications between VComms and the response firefighting personnel at scene and to maintain records of the communications and the incident. However, the use of multiple radio systems is a serious complication.

Some of the noted anomalies in the use of the communications services are noted below;

- Some incidents, the responding fire department take over full control of radio communications by placing a “dispatcher” in the fire station and using the station’s base radio.
- Some departments have designated volunteer radio operators who operate as the main emergency radio communication center for incidents; but only when they are available. There is an inevitable delay in them responding from home/wherever to the fire hall to perform their duties and there is a consequential loss of critical dispatch information. Once they take over control VComms loses continuity in radio traffic as the fire department switches from TMR to VHF radio channels. Important dispatch and communication traffic data may be missing and is needed to properly complete required incident reports.
- Using two radio systems simultaneously causes lack of continuity, and if VComms is busy, the Dispatcher loses track of the incident flow. The Dispatcher is dealing with other fire departments who also need communication services and are not hopping around between systems.
- With the fire departments taking, for some incidents, control of communications during an incident, it makes it unclear who has responsibility for those communications. This could have serious consequences if it is necessary to determine responsibility or track the sequence and timing of events in the case of litigation, or even an enquiry; e.g. by the coroner if there is a fire related death.
- Not all communications channels are recorded and time-stamped.

All of the foregoing leads to dysfunctional and missing radio communications that may lead to serious consequences. Not to mention the financial burden of needing to equip, maintain, and train on two operating systems at an emergency.

The resolve should be simply to use the contracted services as intended and a single emergency radio system for all dispatching and the TMR system for emergency scene communications.

### *Radio System Related Recommendations*

**GA recommends** that VComms acquire the necessary radio transmission recording equipment to record all fire department used channels.

**GA recommends** that the Regional fire departments operate on TMR channel 23 for all incident dispatches and incident operations, and TMR channel 22 for water shuttle and Traffic Control operations, etc.

**GA recommends** that the Municipality maintain the current VHF system for fire service paging only. The Municipality should strike a committee of the fire services to examine if there are any compelling reasons why the VHF system must be maintained for other than paging use.

**GA recommends** that the fire departments permit VComms to provide the contracted services for dispatching and communications as required by the service contract, by discontinuing the practice of taking over radio communications from fire stations.

**GA recommends** that the fire departments and VComms implement the use of industry standard radio transmitted benchmarks (KPIs) for all fire incidents.

**GA recommends** that dispatch protocols for MFR incidents be revised so that only one MFR capable unit is dispatched to single patient incidents.

**GA recommends** that the fire departments collectively develop and implement a standardized training program to make all personnel aware of required radio operating procedures, benchmarks, channel usage, and all other aspects critical for effective and efficient radio system usage.

### Alternative Service Providers

GA was asked to look at alternatives to the current service provider. Consideration was given to other dispatch/communication opportunities. However, given the combined service costs for services of the two municipalities for the current provider, (\$44,443/annum) it was highly unlikely that a more cost-effective service could be found. The other consideration moving forward is that there have been ongoing discussions between the Fire Services Association of Nova Scotia and the Provincial Government for a single province wide fire dispatch and communication system, to include all fire departments except for HRM, and CBRM. It is being suggested to GA that within the next couple of years movement on this possibility will take place.

Given that the issues that require some form of addressing are not insurmountable nor terribly costly, are not unique to any one communications service, and there is currently the ability to make procedural and equipment changes;

GA recommend that the new regional municipality negotiate with VComms in 2020 for a new service agreement. The agreement should address the issues raised in this report. With the province possibly moving forward with fire dispatch services, the idea to seek an alternative provider should be placed on hold for the next while.

### **FIRE SERVICE RADIO AND UNIT IDENTIFICATION SYSTEM**

A system of standardized identification of trucks and personnel is needed to avoid errors in radio communications that could lead to confusion or lack of understanding; and thereby to deadly consequences. To aid in standardization across the Region, fire apparatus unit numbers and radio assignments by rank and position should be established.

A review of neighbouring municipality's unit and radio assignment numbering programs was conducted. From that review, and considering the current methodology within the Windsor/West Hants region, the following program is being recommended.

### Fire Station Numbering

The purpose of numbering fire stations is to assist in the associated fire apparatus and personnel radio identification. Ease of communications and a standard structure and is the basis for the program. The numbering system chosen starts with a single digit station number; commencing with the Summerville fire station and moving clockwise. This results in the following station number assignments.

- Summerville Fire Station        1
- Brooklyn Fire Station            2
- Three Mile Plains Fire Station   3
- Windsor Fire Station              4
- Southwest Hants Fire Station    5
- Hantsport Fire Station            6

### Fire Apparatus Identification

Each current unit will be assigned a new unit classification/type.

<u>Current Unit Nomenclature</u>	<u>New Unit Nomenclature</u>	<u>Class</u>	<u>Unit Numbering Series</u>
Squad/Engine/Pumper	Engine	Water tank less than 650 lgal	11-15
Squad/Engine/Pumper	Engine	Water tank 651 - 1,000 lgal	15-19
Pumper-Tanker & Tanker	Tanker	Water tank 1,100-2,000 lgal	21-25
Pumper-Tanker & Tanker	Tanker	Water tank 2,100+ lgal	26-29
Rescue	Rescue	Light capacity	31-35
Rescues	Rescue	Medium or Heavy capacity	36-39
Aerial Ladder/Snorkel/Platform, etc.	Aerial	All	41-45
Quint	Quint	All	46-49
Utility	Utility	All	50
ATV/RTV/UTV w/wo trailer	RTV	All	60
Special Vehicles (dedicated purpose only): i.e. Command, Rehab, Tactical	Unit Type + ###	Example; Command 271	70
Boats	Marine	Example; Marine 1 (i.e. Summerville)	Station number

Each unit number will be prefaced by its assigned station number. Please see the following examples.

Examples

Station	Old ID	New ID
Hantsport	11	Engine 611
Hantsport	12	Engine 615
Summerville	Truck 1	Engine 115
Brooklyn	Squad 3	Engine 211
Windsor	Aerial 4	Aerial 441
South West	14	Tanker 526

Position Radio Call Signs

As with any fire organizations there are several identifiable positions within the organization, which is especially important at an incident. All positions need to be clearly identified (position ID) and standardized across the region. Whereas the fire service is a hierarchical and paramilitary organization, so must be the radio call signs.

Again, the use of fire station numbers come into play. The following Position IDs are premised upon the selection of the hybrid organizational chart. The use of phonetic lettering and numbers are used jointly in some of the radio identifications.

CHARLIE ONE (C-1) Director of Protective Services		CHARLIE TWO (C-2) ASSISTANT CHIEF FIRE PREVENTION		CHARLIE Three (C-3) Divisional Chief Training/Safety/Communicaitons	
101 DISTRICT FIRE CHIEF SUMMERVILLE	201 DISTRICT FIRE CHIEF BROOKLYN	301 DISTRICT FIRE CHIEF THREE MILE PLAINS	401 DISTRICT FIRE CHIEF WINDSOR	501 DISTRICT FIRE CHIEF Southwest Hants	601 DISTRICT FIRE CHIEF HANTSPORT
102 DISTRICT DEPUTY CHIEF SUMMERVILLE	202 DISTRICT DEPUTY CHIEF BROOKLYN	302 DISTRICT DEPUTY CHIEF THREE MILES PLAIN	402 DISTRICT DEPUTY CHIEF WINDSOR	502 DISTRICT DEPUTY CHIEF CHIEF SOUTHWEST	602 DISTRICT DEPUTY CHIEF HANTSPORT
FIRE CAPTAIN SUMMERVILLE 191 192 193	FIRE CAPTAIN BROOKLYN 291 292 293	FIRE CAPTAIN TMP 391 392 93	FIRE CAPTAIN WINDSOR 491 492 493	FIRE CAPTAIN SOUTHWEST 591 592 593	FIRE CAPTAIN HANTSPORT 691 692 693
FIRE LIEUTENANT SUMMERVILLE 181 182 183	FIRE LIEUTENANT BROOKLYN 281 282 283	FIRE LIEUTENANT TMP 381 382 383	FIRE LIEUTENANT WINDSOR 481 482 483	FIRE LIEUTENANT SOUTHWEST 581 582 583	FIRE LIEUTENANT HANTSPORT 681 682 683

Firefighters

Firefighters radio identification will be based upon their unit number that they responded on. Under the proposed system of radio identification it might look like the following chart for the particular fire apparatus chosen for the example. The choice of a captain or lieutenant was arbitrary in the examples; just depends who got on the truck. Also, not every seat might be filled. For Aerial 441, it only seats five, and 526 only seats three.

<u>Station</u>	<u>Apparatus ID</u>	<u>Capt.</u>	<u>Lieut.</u>	<u>FF ID</u>	<u>FF ID</u>	<u>FF ID</u>	<u>FF ID</u>	<u>FF ID</u>
Hantsport	Engine 611	691		611-1 (driver/operator)	611-2	611-2	611-2	611-2
Hantsport	Engine 615	692		615-1	615-2	615-3	615-4	615-5
Summerville	Engine 115		181	115-1	115-2	115-3	115-4	115-5
Brooklyn	Engine 211	291		211-1	211-2	211-3	211-4	211-5
Windsor	Aerial 441	493		441-1	441-2	441-3	441-4	
South West	Tanker 526			526-1	526-2	526-3		

Firefighters arriving on scene with personal vehicles will be assigned radio call signs by the Accountability Officer or Command following the radio ID standard.

Other Functional Radio IDs

The following are some standard radio identification protocols that should be adapted for use Region-wide.

<u>Person/Position/Function</u>	<u>Radio ID</u>	<u>Condition, Example</u>
Valley Communications	FIRE CONTROL	
Incident Commander	Location + COMMAND	Example: Burlington Street COMMAND
Accountability Officer	ACCOUNTABILITY	Once the position is established
Entry Control Officer	ENTRY + Location	Example: ENTRY East Side
Incident Safety Officer	SAFETY	Charlie 3 assumes this ID once on-scene as the ISO
Incident Safety Officer, station based	SAFETY + Stn ID+1 <sup>st</sup> , 2 <sup>nd</sup> , etc.	SAFETY 4-1, SAFETY 4-2, SAFETY 3-1, etc.
Water Supply Officers	WATER SUPPLY + Stn ID	WATER SUPPLY 4, WATER SUPPLY 3, etc.
Fire-Investigators	INVESTIGATOR 1, 2, etc.	Investigators are not station based
Fire-Inspectors	INSPECTOR 1, 2, etc.	Inspectors are not station based
Traffic Control	TRAFFIC + Stn ID + 1 <sup>st</sup> , 2 <sup>nd</sup> , etc.	TRAFFIC 4-1, TRAFFIC 4-2
Staging officer	STAGING + Location	Example: STAGING Burlington Street
Planning Officer	PLANNING	Larger incident IMS model
Logistics Officer	LOGISTICS	Larger incident IMS model
Administration Officer	ADMIN	Larger incident IMS model
Sector Officer	Location + SECTOR	Example: BETA SECTOR, ROOF SECTOR

### Summary and Recommendation Radio IDs

All requests for emergency services commences with a 911 call. Once the call is placed the expectations of the public are extremely high and demanding. Emergency Call taking, dispatching and radio communications must be efficient, timely and very effective.

If any part of the process goes awry, a multiple chain cascade of events can occur that could cost either a citizen's or a responder's life. A delay in response, or responders sent to an incorrect address, or a responder's missed May-Day call are all possible consequences of not having adequate and reliable equipment, training, procedures, and having people not adhering to them. Effective and efficient communications is the incident commanders' best tool in his/her tool box to manage an incident and to protect citizens and responders alike.

Communications must be a disciplined process right from the time a call is received for service to completion of the event. It is a total collaborative process. In addition to being a tool and process that permits talking and listening, the process, if properly equipped and managed, allows for analytics that permits the organization to establish key performance indicators and adjust service needs and levels according to past history of events. A good quality computer aided dispatch software integrated fire department records management system, permits an efficient means for not only capturing data, analyzing data, but will likely aid in the defense of any civil suit or investigation. If the system, equipment, and processes are not robust, nor meet best practices, it can become a liability.

As a result of the review of the dispatch and communication systems and procedures, a number of recommendations are provided for consideration in addressing some of the issues referenced. They are fixable and relatively inexpensive to address.

**GA recommends** that fire stations be numbered starting with Summerville as number 1 and going clockwise from there.

**GA recommends** that a standard system of IDs be utilized for identifying functional positions on the fire-ground, starting with the regional staff and extending down through to all apparatus seat positions and to firefighters who arrive on-scene in a private vehicle.

**GA recommends** that standard radio protocol titles be established for all regular positions at an incident scene.

## INCIDENT RESPONSE OPERATIONS

### EXISTING OPERATIONS

#### Fire Stations, existing

There are currently six fire stations in the Region, as follows;

**FIGURE: STATIONS**

<u>Station</u>	<u>Location</u>	<u>Apparatus Space</u>	<u>Firefighters<sup>42</sup></u>
Windsor	King St. Windsor	5,955 sqft	36
Hantsport	5 Oak St. Hantsport	2,338 sqft	37
South West Hants	1870 Highway 14, Vaughan	1,558 sqft	16
Brooklyn	995 Highway 215, Brooklyn	8,000 sqft	39
Three Mile Plains	5984 Highway 14, Garlands Crossing	3,400 sqft	25
Summerville	59 Wharf Rd. Summerville	2,840 sqft	35

#### Fire Apparatus, existing

In those stations are the following numbers and types of fire apparatus and utility vehicles;

**FIGURE: CURRENT APPARATUS INVENTORY**

<u>Station</u>	<u>Pumper</u>	<u>Tanker *</u>	<u>Aerial</u>	<u>Rescue</u>	<u>Utility</u>	<u>RTV</u>	<u>Boat</u>
Windsor	3	1	2	1	2	1	1
Hantsport	2	1	0	1	2	0	0
SWH	0	1	0	1	0	0	0
Brooklyn	2	1	1	1	1	1	0
TMP	2♦	1	0	0	1	0	0
Summerville	1	2	0	0	1	1	1
<b>Totals:</b>	<b>10</b>	<b>7</b>	<b>3</b>	<b>4</b>	<b>7</b>	<b>3</b>	<b>2</b>

\* All current tankers have large pumps, equivalent to that of a pumper

♦ One of these pumpers is currently out of service

Several of the existing vehicles are long past their replacement date, both in age and condition. Both aerials in Windsor should no longer be in the fleet. One has an aerial device failure (structural) and will not pass the aerial device certification inspection. It is not equipped with a pump or water tank. It serves no useful purpose and is almost 31 years old.

<sup>42</sup> Included in the overall total of 188 staff are: 16 veterans, (none firefighting), 1 dispatcher, 7 who respond to more than one station, 8 drivers only.

The other aerial is a Snorkel, an articulating-arm platform design, which is no longer a common aerial device type. This apparatus has a pump that will not pass ULC testing and is no longer certified. The pump was a proprietary design by the apparatus manufacturer, who went out of business in 1985 (one year after this apparatus was built). It is very likely that to rebuild the pump there will need to be custom machined parts made, if a successful and reliable rebuild is even possible. The apparatus is over 35 years old and is obsolete.



**FIGURE: CURRENT APPARATUS DETAILS**

ID	Type of Apparatus	Seats	Age 2019	Builder Chassis/Body/Aerial	Engine	Built NFPA	Pump Brand	Pump Capy	Tank Volume	Station
A-8	Aerial-Ladder	2	30 ¾	ALF/ALF/ALF	DET 6V-92	Yes	N/A	N/A	0	Windsor/OOS
Twr-6	Aerial-Platform	6	3 ½	Pierce/Pierce/Pierce	CUM ISL	Yes	Waterous	1,750	325	Brooklyn
A-4	Aerial-Platform	5	35 ½	King/King/King	DET 6V-92	Yes	King	1,099	0	Windsor
S-3	Pumper	6	3 ½	Pierce/Pierce	CUM ISL	Yes	Darley	1,250	640	Brooklyn
11	Pumper	6	17 ¾	EOne/EOne	DET DD13	Yes	Hale	1,050	600	Hantsport
12	Pumper	6	4 ¼	Pierce/Pierce	CUM ISM	Yes	Waterous	1,250	662	Hantsport
Tr-1	Pumper	6	3 ¼	Freightliner/Fort Garry	CUM ISL	Yes	Darley	1,319	800	Summerville
S-9	Pumper	6	4	Pierce/Pierce	CUM ISL	Yes	Waterous	1,543	634	TMP
P-1	Pumper	5	32 ½	Ford/Hub	CAT 3208	Yes	Waterous	1,050	800	TMP/OOS
E-1	Pumper	6	26 ½	EOne/Superior	DET 6V-92	Yes	Waterous	1,500	800	Windsor
E-5	Pumper	6	19 ½	EOne/Superior	CUM ISM	Yes	Hale	1,500	800	Windsor
E-11	Pumper, Wildland	5	14 ½	International/Superior	IHC DT570	Yes	Hale	1,050	600	Windsor
P/T-2	Pumper-Tanker	2	17 ¼	Freightliner/LRB	MER MBE4000	Yes	Darley	840	3,200	Brooklyn
P/T-4	Pumper-Tanker	6	15	ALF/ALF	DET DD15	Yes	Hale	1,750	2,000	Brooklyn
21	Pumper-Tanker	2	16 ¼	Peterbilt/Superior	CAT 3126	Yes	Hale	840	2,000	Hantsport
Tr-3	Pumper-Tanker	3	12 ¾	Sterling/Fort Garry	CAT C13	Yes	Darley	1,319	2,350	Summerville
14	Pumper-Tanker	3	4 ¾	Freightliner/Pierce	DET DD13	Yes	Waterous	1,250	2,500	SWH
T-10	Pumper-Tanker	2	4	Freightliner/Pierce	CUM ISL	Yes	Hale	840	2,842	TMP
T-2	Pumper-Tanker	2	16	International/Superior	CUM ISM	Yes	Hale	1,500	2,000	Windsor
Tr-2	Tanker (vacuum)	2	8 ½	International/EOne	IHCMaxforce13	Yes	Hale	1,099	2,950	Summerville
R-5	Rescue	5	4 ½	Dodge/Lantz	CUM ISB	No	N/A	N/A	N/A	Brooklyn
31	Rescue	6	3 ¼	Freightliner/Lantz	CUM ISB	No	N/A	N/A	N/A	Hantsport
33	Rescue	5	18 ¾	Ford/Lantz	Powerstroke 7.3	No	N/A	N/A	N/A	SWH
R-6	Rescue	2	28 ¾	International/Lantz	IHC DT366	No	N/A	N/A	N/A	Windsor
R-7	Utility	5	5	Dodge Ram	Hemi 5.7	N/A	N/A	N/A	N/A	Brooklyn
32	Utility	2	15 ½	Ford F-150	NR	N/A	N/A	N/A	N/A	Hantsport
51	Utility	5	11 ¼	Dodge Ram	CUM ISB	N/A	N/A	N/A	N/A	Hantsport
Tr-4	Utility	5	16 ¾	Dodge Ram	Powerstroke 6L	No	N/A	N/A	N/A	Summerville
R-11	Utility	5	4 ¼	Dodge Ram	Hemi 5.7	N/A	N/A	N/A	N/A	TMP
U-9	Utility	5	11 ¾	Dodge Ram	CUM ISB	N/A	N/A	N/A	N/A	Windsor

ID	Type of Apparatus	Seats	Age 2019	Builder Chassis/Body/Aerial	Engine	Built NFPA	Pump Brand	Pump Capv	Tank Volume	Station
V-7	Passenger van	8	11 ¼	GMC	Vortec 6L	N/A	N/A	N/A	N/A	Windsor
Boat	Rescue Boat	NR	11 ½	Zodiac	Yamaha 60	N/A	N/A	N/A	N/A	Summerville
Boat	Rescue Boat	9	14 ¾	Zodiac	Yamaha 60	N/A	N/A	N/A	N/A	Windsor
RTV	Rough Terrain	4	8 ¾	Kubota	NR	N/A	N/A	N/A	N/A	Windsor
RTV-8	Rough Terrain	2	4 ½	Polaris	NR	N/A	Honda	250	80	Brooklyn
RTV	Rough Terrain	4	7 ½	Polaris	NR	N/A	N/A	N/A	N/A	Summerville
NR	Trailer	N/A	NR	NR	N/A	N/A	N/A	N/A	N/A	Brooklyn
Totals:		159						24,049	26,583	

NR = not reported OOS = out of service

Brooklyn has a pumper that is out of service for mechanical reasons (unspecified) and is also 32 years old. It is currently parked at the Three Mile Plains station, and is shown on their inventory.

One of the pumper trucks in Windsor was designed as a wildland/urban interface truck for the Vaughan station. It is unsuited for use in Windsor and of questionable value even in South West Hants due to features making it very difficult to work with.

In total, there are seven fire apparatus that require replacement and/or retirement in 2020 based on their serviceability and/or their age. These include two aerials, three pumpers, one rescue and one rescue/utility. They are yellow highlighted in the above table. Except for the Brooklyn pumper (P-1) and one Windsor aerial (A-4) these are all still in service.

Generally, a standard make and model of fire pump should be specified for all fire apparatus equipped with a pump.

- Servicing a greatly reduced variety of pumps will reduce the need for unique parts and knowledge, peculiar to each make and model. This reduces servicing costs and down-time.
- Generally, standardize on fire pump capacity. Reducing the variety of pump capacities<sup>43</sup> in pumpers and pumper-tankers will facilitate coordination in pumper relays and improve the effectiveness, and therefore value, of this equipment.
- Standardization on the engine, or engine family, used in the heavy vehicles is recommended. Although generational development of engines will continue, standardization will decrease servicing time/costs and down-time.
- Standardization of custom cab/chassis specification will improve the access to proprietary, manufacturer's parts that all custom cabs/chassis use. It will also improve maintenance efficiency, thereby reducing time/costs and down-time.

<sup>43</sup> Typically aerials have larger pumps due to the need to force water through aerial master streams. A pumper of slightly small capacity will usually feed an aerial adequately.

- Standardization of commercial cab/chassis specification will improve the access to proprietary, manufacturer's parts that all commercial cabs/chassis use. It will also improve maintenance efficiency, thereby reducing time/costs and down-time.

The Windsor rescue boat is almost 15 years old. In GA's experience, these inflatable boats are prone to leaking and sudden deflation and/or rupture once they reach a certain age, the fabric rots. This makes them unreliable and even dangerous to use.

**GA recommends** that fire apparatus specifications be standardized<sup>44</sup> across the region, by type and class of apparatus.

**GA recommends** that the Windsor boat be professionally inspected to determine its need for replacement.

**GA recommends** that a standardized, and coordinated, scheme of unique fire apparatus number identifications be established Region-wide, as follows;

- There be established a coordinated apparatus ID scheme between all the W/WH stations/departments. The current uncoordinated approach detrimentally affects coordination at incidents where stations are working together.
- The ID scheme should reveal the apparatus' primary purpose either through including the purpose in the name (e.g. pumper-31) or through a standard format, similar to what Hantsport has done where IDs ending in 1 are pumpers. This will improve coordination at incidents where apparatus from different stations are working together.

### *Incident Responses*

GA was provided, and analysed, incident response data from January 2014 through to December 2018. The provided data was incomplete and many key indicators, valuable for statistical analysis and program development, were missing.

**GA recommends** that steps be immediately taken to establish a robust internal data collection protocol for all incidents, not just fires, including;

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<sup>44</sup> See [The Value of Fire Apparatus Standardization](#) on page 218.

- The gathering of all key benchmarks as required by the NS Fire Marshal, and according to best practices,<sup>45</sup> and as needed for fire department's internal programs related to; staffing needs, training needs, apparatus needs, equipment needs, performance times, safety and health, costs and cost recovery, fire safety education, fire investigation, code compliance, liability, and preplanning for performance and business continuity;
- instruction to the Fire Dispatch contractor on data to be benchmarked by their communicators;
- the purchase of a good data records (RMS) software;
- providing firefighters access to computers at every station;
- the training of firefighters in how and what data to collect;
- the maintenance of oversight of data collected for the purposes of ensuring data collection occurs, data error checking, and data analysis;
- the immediately filing of fire reports with the provincial Fire Marshal's office after every fire call, as required by legislation.

GA, attempted an analysis of incident data using the provided incident data, which was largely provided by the fire dispatching contractor Valley Communications. Fire Chiefs were also requested to provide missing data for all incidents reported as fires for the years 2014-2018. Some additional information was provided.

The following tables are summaries of the analysed data on incidents during that time span.

Valley Communications does not separate page-outs for Three Mile Plains from Brooklyn, so the data is largely entangled for both stations. For fire incidents, those that occurred in TMP's home district (based on incident address) are identified in an abbreviated table below. It should be noted that in the majority of these fire incidents it was a joint Brooklyn/TMP response. This joint use of resources helps ensure sufficient personnel and equipment are provided.

For each station in the tables below, totals are shown for each category line (left side buff cells) and for each year column (buff cells across the top). Pale green cells show the proportional breakdown of incidents.

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<sup>45</sup> There are some good benchmarks for data collection. The NFPA 900 series is extremely comprehensive, the Ontario Fire Marshal's *Standard Incident Report (SIR)* addresses all incident types (which is important) and is an excellent example of an effective system.

There appears to be a pretty clear upward trend in total incident numbers across the five years of data that was examined. There is no clear indicator of the driver for this increase, and GA advises caution in deriving too much inference from annual changes, as in our experience annual statistics can be significantly variable year over year. Longer term trends are a better indicator coupled with regression analysis.

What can be clearly seen is the impact on the 2016 decoupling of Windsor from providing fire services into West Hants that shows most clearly in the Windsor, Brooklyn numbers, and to a lesser degree on Hantsport.

At the end of the tables is a summarization for the entire region.

**FIGURE: TABLE OF INCIDENT DISPATCHES BY STATION**

<b>Category</b>	<b>Totals</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>By station</b>
<b>WINDSOR</b>	<b>858</b>	<b>251</b>	<b>229</b>	<b>123</b>	<b>136</b>	<b>119</b>	
Fires	153	59	42	33	7	12	17.8%
Pre-Fire Conditions	292	88	69	39	52	44	34.0%
Rescues	141	50	51	12	18	10	16.4%
Hazards	28	5	7	5	8	3	3.3%
Assists	104	12	9	19	33	31	12.1%
MFR	125	33	43	13	18	18	14.6%
N/A	15	4	8	2		1	1.7%
<b>HANTSPORT</b>	<b>825</b>	<b>135</b>	<b>149</b>	<b>165</b>	<b>185</b>	<b>191</b>	
Fires	161	27	21	45	30	38	19.5%
Pre-Fire Conditions	116	11	12	29	34	30	14.1%
Rescues	144	16	18	41	35	34	17.5%
Hazards	22	3	7	3	4	5	2.7%
Assists	151	7	3	24	51	66	18.3%
MFR	229	70	88	23	30	18	27.8%
N/A	2	1			1		0.1%

Category	Totals	2014	2015	2016	2017	2018	By station
<b>SOUTH WEST</b>	139		6	51	54	28	
Fires	35		2	18	5	10	25.2%
Pre-Fire Conditions	15		1	11	1	2	10.8%
Rescues	16			6	6	4	11.5%
Hazards	2		1	1			1.4%
Assists	45		1	4	36	4	32.4%
MFR	24		1	9	6	8	17.3%
N/A	2			2			1.4%
<b>BROOKLYN</b>	1,709	204	213	408	444	442	
Fires	298	37	39	98	65	61	17.4%
Pre-Fire Conditions	148	10	17	41	44	36	8.7%
Rescues	305	33	29	73	82	88	17.8%
Hazards	28	1	2	10	10	5	1.6%
Assists	244	5	17	28	96	98	14.3%
MFR	672	114	106	152	146	154	39.3%
N/A	14	4	3	6	1		0.8%
<b>THREE MILE PLAINS</b>							
Fires	83		2	26	25	30	
Pre-Fire Conditions							
Rescues		Remaining data is combined with Brooklyn					
Hazards							
Assists							
MFR							
N/A							
<b>SUMMERVILLE</b>	401	77	67	80	90	87	
Fires	72	20	17	13	13	9	18.0%
Pre-Fire Conditions	14	5	3	1	3	2	3.5%
Rescues	22	3	1	7	6	5	5.5%
Hazards	2			2			0.5%
Assists	55		10	12	22	11	13.7%
MFR	231	46	35	44	46	60	57.6%
N/A	5	3	1	1			1.2%

FIGURE: INCIDENT DISPATCHES, ALL WWH STATIONS

<b>WWH All Stations</b>	3,932	667	664	825	909	867	
Fires	719	143	121	205	120	130	18.3%
Pre-Fire Conditions	585	114	102	121	134	114	14.9%
Rescues	628	102	99	139	147	141	16.0%
Hazards	82	9	17	21	22	13	2.1%
Assists	599	24	40	87	238	210	15.2%
MFR	1,281	263	273	241	246	258	32.6%
N/A	38	12	12	11	2	1	1.0%
Variation vs. Average:	786.4	-15.2%	-15.6%	+4.9%	+15.6%	+10.2%	

**Details on Incident Types**

For the sake of convenience, the 61 incident types that Valley Communications uses have been grouped into six groups, as shown in the above tables. The N/A group is not actually a group, but represents incidents that were not categorized; i.e. are of an uncategorized or unknown type. The following is a summary of the incident types that GA has assigned to each group. These type descriptions are as assigned by Valley Communications when they dispatch firefighters to incidents.

**FIGURE: INCIDENT TYPE GROUPINGS**

<b>Group</b>	<b>Incident Type</b>
Fires	Bales of hay, chimney fires, commercial vehicle fire, flammable liquid fire, grass/brush, passenger vehicle fire-car/van, power lines down/arcing, power pole on fire, structure-barn/warehouse, structure-commercial, structure-industrial/factory, structure-other, structure-residential/house/garage/shed, transformer on fire, trash/garbage bin fire, vehicle fire-other, woods/trees
Pre-Fire Conditions	Commercial fire alarm, electrical, electrical appliance, investigation, other alarm, residential fire alarm, smoke condition
Rescues	Building collapse, commercial/industrial accident, confined space, grain bin/silo, multi-casualty event, MVA-confirmed entrapment/unknown, MVA-no entrapment, off-road vehicle, other rescue, persons trapped, residential accident, vehicle extrication, water/ice rescue, water rescue
Hazards	CO gas-carbon monoxide, CO2 gas, flood, fuel spill-diesel, fuel spill-gas, other gasses-ammonia/chlorine/etc., other response, other spills, propane, public assistance, suspicious odour, toxic chemical spill
Assists	Assistance to another fire department, assistance to other agencies, assistance to police, mutual-aid to the scene, stand-by at another station, stand-by at own station
MFR	Assistance to EHS, lift assist, medical

**MFR** (medical first response) incidents consist of two contributors; lift assists and medical responses in support of the EHS system (i.e. ambulance). Lift assists are calls to assist residents who have fallen and cannot get up. These are a very small contributor to the total numbers, about 4% of MFR calls overall.

MFR is the most prevalent type of incident that the W/WH fire services attend, at 32.6% overall. That varies from station to station; from as low as 14.6% (Windsor) to as high as 57.6% (Summerville). In large measure these variations are due to the choice of Response Level that the individual fire department has chosen.

EHS defines these response levels as follows;

**FIGURE: EHS ASSIGNED RESPONSE LEVELS FOR VOLUNTEER FIRE DEPARTMENTS**

Level 1	Do <u>Not Notify</u> my department/agency for medical calls.
Level 2	Only notify my department/agency if requested by the responding paramedics.
Level 3	Notify my department/agency for "Time Critical" emergency calls only, as determined by EHS Communications Officer.
Level 4	Notify my department/agency for all emergency calls in our community.
Level 5	Notify my department/agency for cardiac arrests, motor vehicle collisions and lift assists only.
Level 6	Notify my department/agency if requested by the responding paramedics and for all cardiac arrests and motor vehicle collisions.

The choice of level has an impact on the fire department, the number of incidents generated by MFR calls, and the overall activity level of the station. The following table shows which station is providing what level of MFR service.

**FIGURE: CURRENT CHOSEN LEVELS FOR MFR RESPONSE**

Station	Level	Description	Incident Number Impacts
Windsor	<b>5</b>	Life threatening medical conditions/situations, plus assistance to mostly senior citizens in distress	Lower incident number impact while ensuring notification of life-threatening incidents. Will generate non-emergency incidents for lift assistance of people who have fallen.
Hantsport	<b>6</b>	Life threatening medical conditions/situations	Lowest incident number impact while ensuring notification of life-threatening incidents
South West	<b>4</b>	Life and not-life threatening medical conditions/situations, plus assistance to mostly senior citizens in distress	Highest incident number impact. If the ambulance is responding then an incident is generated for the fire service. Incidents will be only about 20-30% critical life threatening.
Brooklyn	<b>4</b>	Life and not-life threatening medical conditions/situations, plus assistance to mostly senior citizens in distress	Highest incident number impact. If the ambulance is responding then an incident is generated for the fire service. Incidents will be only about 20-30% critical life threatening.
Three Mile Plains	<b>5</b>	Life threatening medical conditions/situations, plus assistance to mostly senior citizens in distress	Lower incident number impact while ensuring notification of life-threatening incidents. Will generate non-emergency incidents for lift assistance of people who have fallen.
Summerville	<b>4</b>	Life and not-life threatening medical conditions/situations, plus assistance to mostly senior citizens in distress	Highest incident number impact. If the ambulance is responding then an incident is generated for the fire service. Incidents will be only about 20-30% critical life threatening.

From stakeholder interviews there is a range of opinion on the provision of MFR services. Some firefighters do not like them and others feel the contribution to the community is of value. Some chiefs feel it is an essential service and others feel it is burning out their firefighters and changes are needed to avoid alerting more firefighters than necessary for these types of incidents calls. There is undoubtedly some costs associated with these incident calls, integrated into existing budgets.

**Fires and Pre-Fire Conditions** together represent the largest number of incident types for all stations, collectively (33.2%). This is particularly so in the more urban stations (Windsor,

Hantsport) where the selected lower MFR level generates fewer medical incident calls. South West is the anomaly in this case.

The two incident groups (fire/pre-fire) are lumped together in this analysis because all fires transition through a pre-fire condition before they become a fire, so they are often linked.

One possible exception is false fire alarm incidents. Of the 585 pre-fire conditions incidents in the last five years, 374 (64%) were associated with commercial/residential/other alarm system triggers. It is very likely that a lot of these alarm system incidents were not associated with an actual fire/pre-fire event, but were due to malicious, mistaken, maintenance, and environmental causes. Some alarms would certainly have identified some genuine pre-fire conditions; for example, motorized equipment failing in an HVAC system that triggers a smoke detector connected to an alarm system; undetected a fire would have resulted.

In the GAs' experience the percentage of fire alarm system false alarms is of concern to the fire departments. In Windsor, which has 57.8% (216) of the alarm system generated incidents, there is a false alarm by-law which penalizes owners of buildings where there are excessive false alarms.

**GA recommends** that a Region-wide False Fire-Alarm by-law be developed and enforced.

Enforcement reduces the number of false alarms and; benefits occupants who can become inured to alarms sounding and ignore them in a real fire, reduces costs for fire departments by reducing incident volumes (by incentivizing the reduction in false alarms), and allows some cost recovery, and reduces frustration/complacency on the part of firefighters.

With a total of 719 fire incidents of all types, fire incidents represent the second largest group of incidents, after MFR. Responding to fires is a core component of a fire department's reason for being. There are a few main drivers of these numbers which the following table identifies. Some types have been combined in the following table since they are, semantically, the same broad type of incident.

**FIGURE: PREDOMINANT FIRE INCIDENTS BY TYPE**

Type	Number	%
Structure-Residential + Chimney	147+134 = 281	39.1%
Grass/Brush + Woods/Trees (aka Wildland fires)	107+45 = 152	21.1%
Power Lines Down/Arcing + Power Pole on Fire	74+30 = 104	14.5%
Passenger Vehicle Fire/car/van	68	9.5%
All others	114	15.9%
	<b>719</b>	
Breakdown by Fire Station	Residential/Chimney	Wildland
Windsor	55	24
Hantsport	80	35
South West	18	5
Brooklyn	64	44
Three Mile Plains	28	Inc Brooklyn
Summerville	32	18

The data shows that over the last five years the leading location for fires is in or associated with dwellings. Not all of these incidents likely had an active fire, some would have been reported in error. This includes data potentially includes single family, multi-family, attached, semi-detached homes, apartments, flats, and both owned and rental dwellings. Dwelling fires are the leading type of fires Nationally.

**Rescues** appears to be a group that is increasing. Almost all rescues are motor vehicle accident (MVA) type related. During this same five-year period there were seven water rescues reported. The following tables shows what might be an upward trend; further years’ data is needed to verify.

**FIGURE: RESCUE TYPES**

Type	2014	2015	2016	2017	2018	Totals
MVA-Confirmed Entrapment/ Unknown	55	45	56	63	71	<b>290</b>
MVA-No Entrapment	47	47	79	82	69	<b>324</b>
	<b>102</b>	<b>92</b>	<b>135</b>	<b>145</b>	<b>140</b>	<b>614</b>

**FIGURE: MVA RELATED INCIDENT DISTRIBUTIONS (2014-18)**

Station	Number	%
Windsor	135	22.0%
Hantsport	141	23.0%
South West	16	2.6%
Brooklyn/Three Mile Plains	302	49.2%
Summerville	20	3.3%
	<b>614</b>	

**Assists** as a group are almost totally related to mutual-aid between the four-fire departments (and six stations) inside W/WH. About 75 (12.5%) were actually outside the Region. Mutual-aid either involves travelling to the scene of the incident, or providing stand-by at the station of a fire department who has provided resources to the scene. The following table shows the mutual-aid data;

**FIGURE: MUTUAL-AID DISTRIBUTION, MUTUAL-AID GIVEN**

Station	2014	2015	2016	2017	2018	Totals	%
Windsor	12	7	18	33	30	<b>100</b>	17.7%
Hantsport	7	2	21	47	65	<b>142</b>	25.1%
South West			4	35	4	<b>43</b>	7.6%
Brooklyn/TMP *	5	17	28	93	96	<b>239</b>	42.3%
Summerville		7	7	17	10	<b>41</b>	7.3%
	<b>24</b>	<b>33</b>	<b>78</b>	<b>225</b>	<b>205</b>	<b>565</b>	

\* Brooklyn station #1 responses into station #2's (TMP) area have been classified as mutual-aid responses.

Assistance incidents that involve intra-regional incidents actually do not represent unique W/WH incidents; they are an appendage to a pre-existing Regional incident. In that sense, they distort the number of actual incidents, and instead they represent the number of fire department page-outs. In other words, over the five-year period of data, the total number of discrete incidents is less than the 3,932-number suggested by the Valley Communications statistics. The total number of discrete incidents is more closely represented as 3,393.<sup>46</sup>

<sup>46</sup> Valley Communications reported they made 3,932 incident pages, minus the 539 internal mutual-aid calls (i.e. 614 -75).

### Incident Responses by Community, Growth

Examining incident numbers by community is necessary for the projection of potential changes in incident response demand.

**FIGURE: RESPONSES BY COMMUNITY, 2014-18**

Community	Station	2014	2015	2016	2017	2018	Totals	%	Properties in Community	Annual <sup>47</sup> Response Rate
Ardoise	Brooklyn	19	11	19	29	35	113	3.3%	586	3.9
Ashdale	Brooklyn		1	2	7	2	12	0.3%	48	5.0
Avondale	Brooklyn	3	2	5	13	6	29	0.8%	167	3.5
Belmont	Brooklyn	4	3	7	3	11	28	0.8%	131	4.3
Brooklyn	Brooklyn	52	47	46	54	34	233	6.7%	449	10.4
Ellershouse	Brooklyn	22	18	30	25	25	120	3.5%	378	6.3
Five Mile Lake	Brooklyn						0	0%	19	0
Greenhill	Brooklyn	11	10	14	6	8	49	1.4%	135	7.3
Hillsvale	Brooklyn	5	1	3	6	3	18	0.5%	121	3.0
Mantua	Brooklyn	1	1	1	11	3	17	0.5%	37	9.2
McKay Section	Brooklyn	9	3	7	8	4	31	0.9%	131	4.7
Miller Creek	Brooklyn						0	0%	1	0
Mosherville	Brooklyn	6	8	3	8	8	33	0.9%	78	8.5
Newport Corner	Brooklyn	14	19	24	14	23	94	2.7%	166	11.3
Poplar Grove	Brooklyn	9	2	9	4	11	35	1.0%	96	7.3
Scotch Village	Brooklyn	9	20	18	16	12	75	2.2%	252	6
Union Corner	Brooklyn	10	13	20	17	14	74	2.1%	179	8.3
Upper Burlington	Brooklyn	6	14	10	11	21	62	1.8%	178	7
Woodville	Brooklyn	4	7	4	2	8	25	0.7%	90	5.6
Bishopville	Hantsport	14	3	4	9	2	32	0.9%	58	11
Falmouth	Hantsport	25	48	45	103	63	284	8.2%	1,195	4.8
Hants Border	Hantsport	25	29	16	15	17	102	2.9%	100	20.4
Hantsport	Hantsport	43	63	26	28	28	188	5.4%	595	6.3
Leminster	Hantsport	3	3	8	9	3	26	0.7%	139	3.7
Mount Denson	Hantsport	13	5	12	27	10	67	1.9%	355	3.8
Upper Falmouth	Hantsport	2	15	16	21	31	85	2.4%	469	3.6
Mill Section	South West	4		9		6	19	0.5%	48	7.9
Panuke Lake	South West						0	0%	7	0
Upper Vaughan	South West	2	8	19	9	21	59	1.7%	207	5.7
Vaughan	South West	9	10	33	20	37	109	3.1%	877	2.5
Wile Settlement	South West	1	1	5	3		10	0.3%	71	2.8
Bramber	Summerville	18	12	11	5	11	57	1.6%	308	3.7
Centre Burlington	Summerville	14	8	12	9	14	57	1.6%	215	5.3
Cheverie	Summerville	9	13	16	20	11	69	2.0%	333	4.1
Kempt Shore	Summerville	5	7	5	8	12	37	1.1%	150	4.9
Lower Burlington	Summerville	14	10	8	9	10	51	1.5%	150	6.8
Riverside	Summerville	1		3	2	5	11	0.3%	83	2.7
Summerville	Summerville	10	3	12	12	12	49	1.4%	180	5.4
Garlands Crossing	TMP	8	12	8	18	22	68	2.0%	445	3.1

<sup>47</sup> This rate is expressed as the average annual number of incidents per 100 properties occurring over the five years of data in the table. The overall average rate for all of W/WH is shown at the bottom of the table, and is 5.2 incidents per 100 properties.

Community	Station	2014	2015	2016	2017	2018	Totals	%	Properties in Community	Annual <sup>47</sup> Response Rate
Gypsum Mines	TMP	2	5	3	3	2	15	0.4%	62	4.8
Martock	TMP	7	5	6	13	8	39	1.1%	267	2.9
Newport Station	TMP	3	9	10	9	3	34	1.0%	239	2.8
St. Croix	TMP	11	16	27	20	30	104	3.0%	244	8.5
Sweets Corner	TMP	9	6	4	7	7	33	0.9%	111	5.9
Three Mile Plains	TMP	23	23	24	40	37	147	4.2%	816	3.6
Wentworth Creek	TMP	4	4	9	3	4	24	0.7%	99	4.8
Windsor Forks	TMP	7	4	6	16	11	44	1.3%	239	3.7
Lakelands	Uniacke		1	2			3	0.1%	2	30
Cambridge	Walton	5	7	1	5	2	20	0.6%	180	2.2
Cogmagun	Walton	3		15	11	5	34	1.0%	97	7
Pembroke	Walton	1	2	2	4		9	0.3%	95	1.9
Walton	Walton	1		3	3	5	12	0.3%	71	3.4
Curry's Corner	Windsor	7	8	4	10	10	39	1.1%	146	5.3
Windsor	Windsor	103	78	108	106	95	490	14.1%	1,436	6.8
<b>Totals:</b>		<b>590</b>	<b>598</b>	<b>714</b>	<b>811</b>	<b>762</b>	<b>3,475</b>		<b>13,331</b>	<b>Avg. 5.2</b>

Note: In the above data, strict interpretation of the data as a reliable indicator of fire risk in the community should be undertaken with caution. The incident numbers in the table include responses to all incident types, including responses to motor vehicle accidents (MVA) on transiting highways (e.g. Highway-101) as well as mutual-aid<sup>48</sup> call-outs. In communities with few properties, even a small number of incidents can calculate to a large rate.

## **SERVICE DEMAND GROWTH**

### *Population*

Growth in population and consequently housing growth is usually the largest driver for increases in service demand for fire departments. Service demand means the number of incidents that occur annually. Incident numbers are largely driven by population size, and secondarily by travellers and visitors; in other words, by people.

<sup>48</sup> See the section on mutual-aid responses starting on page 165 of this report.

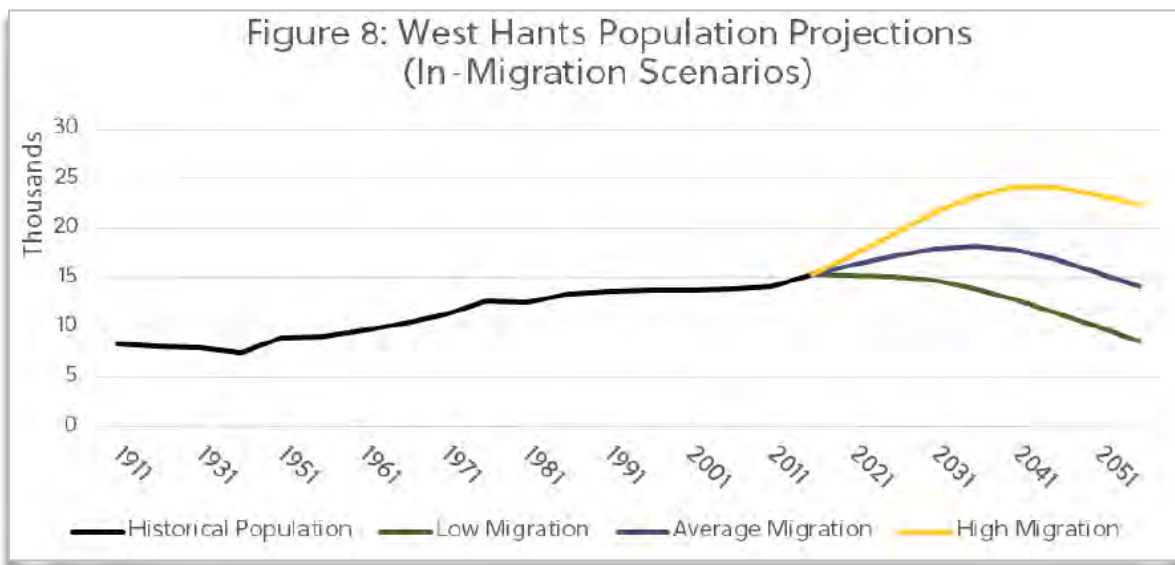
Population projections<sup>49</sup> by West Hants Planning and Development Department show that a significant increase in West Hants population is unlikely over the next 10 years. See the chart from the Population Report that follows on page 168.

One extreme of the projections actually shows a decline in population by 2031, which is just beyond the threshold of our projection mandate. There is, unfortunately, a several-hundred-% difference between the lower and upper projections.

The chart’s “average” projection for 2031 shows a modest population increase to 18,120 which is up almost 2,800 (+18%) from the 15,350 reported by StatsCan in 2016. After 2031 the population is projected, in this version also, to level off and decline.

The most optimistic scenario shows a population increase to as high as 24,166 (+57%) by 2041; before then declining. All three projection scenarios predict a declining population, over the long term, starting at or before 2041.

**FIGURE: WEST HANTS POPULATION PROJECTION CHART**



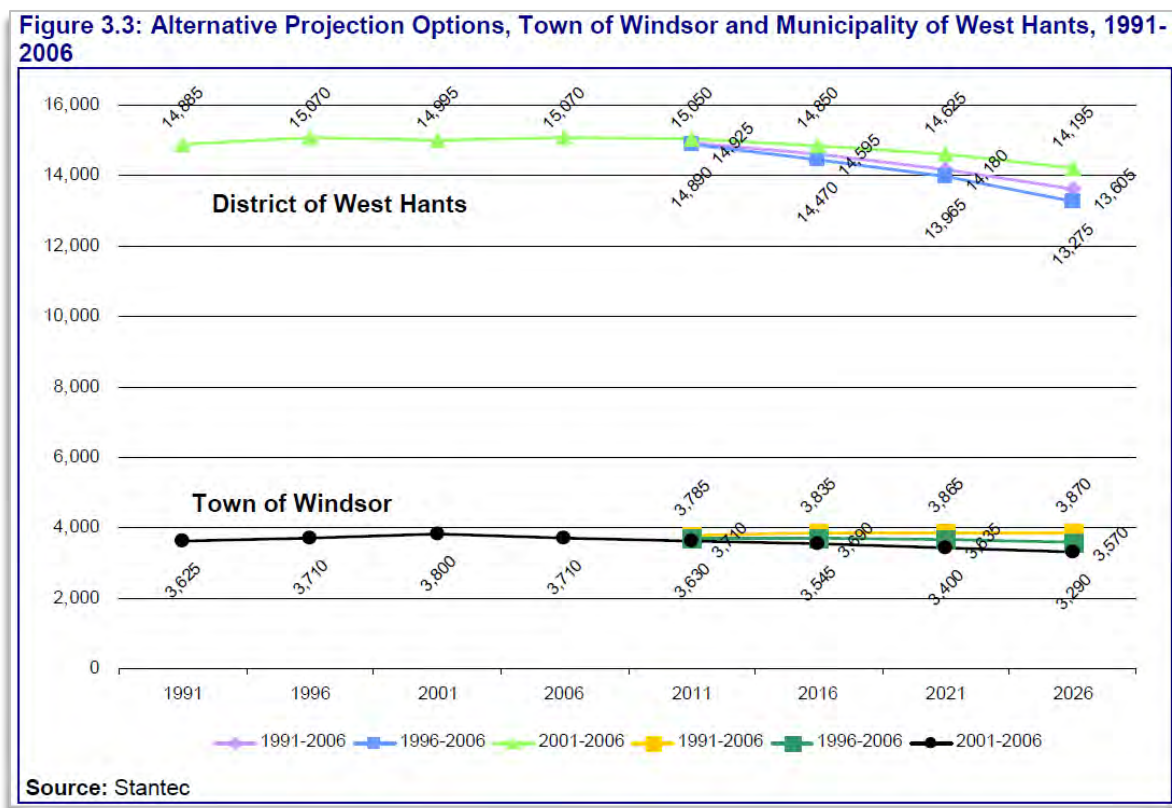
<sup>49</sup> West Hants Planning and Development Department, Background Report: Population, March 2018, page 8.

A further study<sup>50</sup> by Stantec, done in 2010, shows a less optimistic population projection for West Hants, and includes the Town of Windsor as well as West Hants. See the chart on page 169.

In this chart, the population for West Hants is projected to be below 14,000 by 2026 while the Windsor population holds flat. This Stantec study is relatively consistent with the West Hants study, done 8 years later, in that growth projections for the Region appear to be relatively flat.

For the Town of Windsor, StatsCan<sup>51</sup> reports that between 2011 and 2016 the population of Windsor contracted 3.6%, down from 3,785 in 2011 to 3,648. This actual data corresponds well to the median prediction on the Stantec chart, six years after it was written.

**FIGURE: STANTEC POPULATION PROJECTION CHART**



<sup>50</sup> Windsor Integrate Community Sustainability Plan, 2010, page 3.21

<sup>51</sup> <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?B1=All&Code1=1208002&Code2=12&Data=Count&Geo1=CSD&Geo2=PR&Lang=E&SearchPR=01&SearchText=Windsor&SearchType=Begins&TABID=1>

**Planned Growth Areas, West Hants**

West Hants in their updated Municipal Planning Strategy<sup>52</sup> (WHMPS) has established growth goals for West Hants as follows;

*“3.3 Growth Centres*

*Growth Centres are intended to accommodate most of the future non-rural development which will occur in West Hants, thereby relieving development pressure from non-renewable resource lands. It is expected that a full range of municipal services, including water and sewer, recreation facilities, street lights and sidewalks, will eventually be provided in these communities as they become necessary. Concentrated development makes the provision of such services more economical. Because of the expense involved in constructing, extending and maintaining municipal water and sewer infrastructure, these services will be provided only in the two existing Growth Centres of **Three Mile Plains** and **Falmouth**, as well as the **Windsor-West Hants Joint Industrial Park**.” {emphasis added}*

Significantly, from a fire protection point of view, these areas of preferred growth are adjacent to the Town of Windsor. Having development in a more concentrated area contributes to fire protection planning efficiency.

**Three Mile Plains**

For Three Mile Plains, West Hants had identified some specific development goals, as shown in the accompanying snapshot from the WHMPS document;

**3.3.1 Three Mile Plains**

The Three Mile Plains Growth Centre, located adjacent to the Town of Windsor, is fully serviced with municipal water and sewer and has the capacity to accommodate a considerable amount of new commercial and residential development.

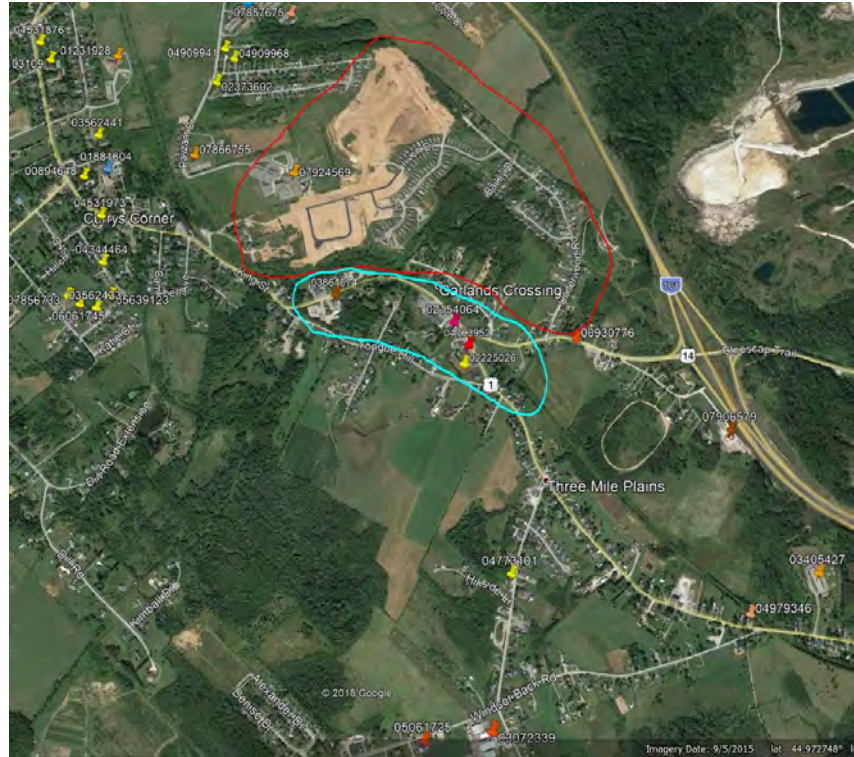
**Three Mile Plains Development Objectives**

- Accommodate the majority of future commercial growth in West Hants.
- Permit an urban residential growth pattern which includes higher density development.
- Enable vacant land behind existing homes and businesses to be developed as needed.
- Address traffic concerns on Highway 1 by ensuring commercial driveway accesses are better defined through width, landscaping and other land use by-law requirements.
- Allow for the development of small lots to make better use of existing infrastructure.

<sup>52</sup> Municipality of the District of West Hants, Municipal Planning Strategy, May 13, 2008, updated December 25, 2018.

The area where residential development is primarily occurring is called Garlands Crossing. A snapshot of the Garlands Crossing area from Google Earth shows where development is currently occurring. The red circled area is residential development. This image is from 2015 and many more homes have been constructed than the image shows. The teal coloured area is an existing area of commercial buildings.

There is also a new fire station in that area, called the Three Mile Plains (TMP) station throughout this study. The red stick pin, with PIN number ending in 776 is the fire station.



The accompanying graphic from the WHMPS shows the TMP designated commercial core;

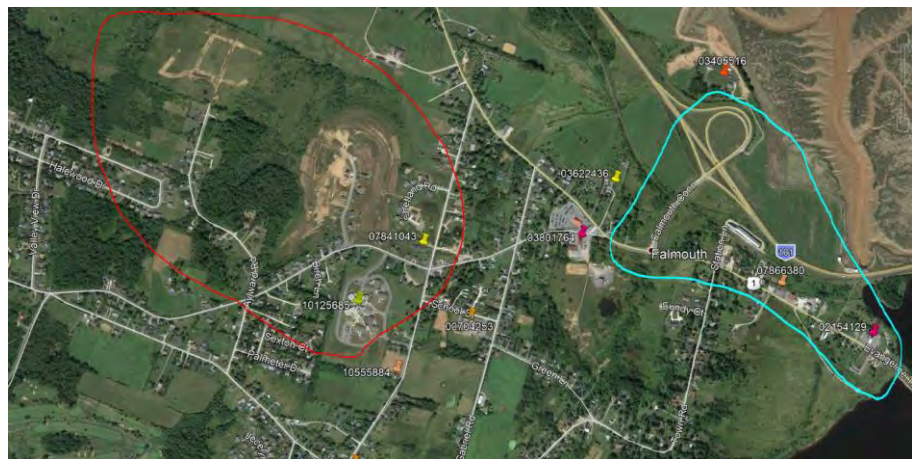


*Falmouth*

In Falmouth, residential growth has also been observed. The WHMPS had identified some specific development goals, as shown in the following snapshot from the report;

A 2015 Google Earth snapshot shows some of the Falmouth growth areas. The red circle is current residential development and the teal colour is part of designated commercial area.

- Falmouth Development Objectives**
- Provide for the development of Falmouth as a predominantly residential community, with a defined growth boundary based on the Municipality's ability to provide necessary services.
  - Accommodate rural lifestyle activities to the extent that such activities are compatible with a moderate density of residential development.
  - Monitor the extension of services and, when necessary, limit service extension to ensure the capacity of the municipal sewer and water systems is not exceeded.
  - Encourage street design in new residential developments that separates local traffic from through traffic.



This accompanying graphic from the WHMPS more clearly shows the designated Falmouth commercial hub.

If population/residential and accompanying commercial growth does occur in West Hants, it is likely to be in the two designated growth centres as described above.

*Windsor*

In 2010 Windsor commissioned Stantec to produce the ICSP<sup>53</sup> study. The main focus of recommendations seemed to be the renewal/improvement of infrastructure and services, and the enhancement of lifestyle and natural assets of the Town. Redevelopment of existing vacant industrial lands was a priority as well as enhanced cooperation with West Hants, and others. Regarding municipal population growth, the ICSP made the following comments;

**Stantec**  
**TOWN OF WINDSOR INTEGRATED COMMUNITY SUSTAINABILITY PLAN**  
**Potential Municipal Planning Strategy Changes**  
 March 17, 2010

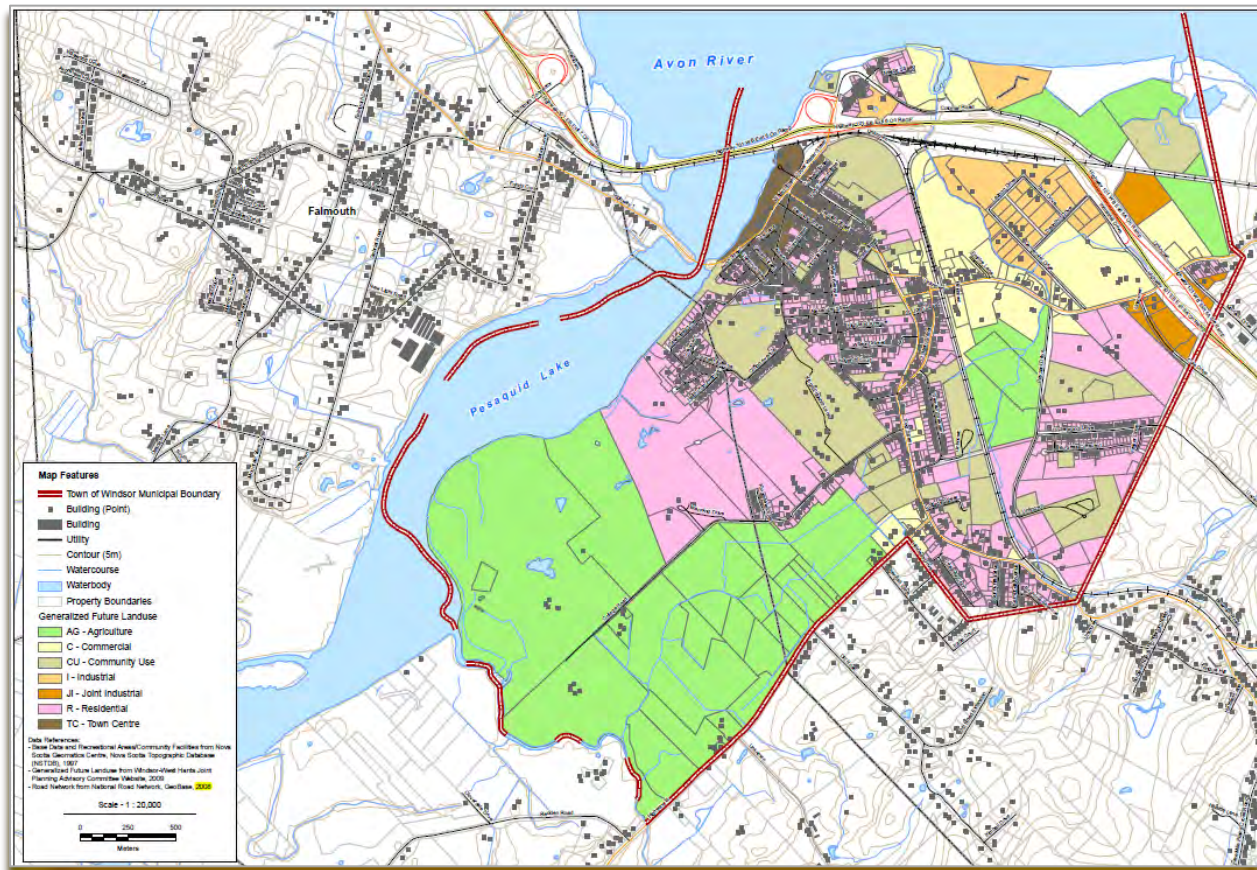
ICSP Goal/Action(s)	MPS Status	Future Considerations
<i>Attract young adults and families</i> 1. Encourage affordable, quality residential development. 2. Maintain related services, particularly schools. 3. Enhance recreation options.	The MPS recognizes that population in Windsor is aging but does not contain any policy directly addressing the encouragement of population growth.	No change.

The above does not seem to reflect a focus on the part of the Town of Windsor in 2010 towards residential growth. This idea is supported by several other focus areas in the ICSP.

There are, however, still significant undeveloped and designated residential areas and infill space within the Town boundary that could support significant residential development, if such were to occur.

The space for residential growth is shown in pink on the accompanying land-use planning map snapshot from the ICSP.

<sup>53</sup> Town of Windsor Integrated Community Sustainability Plan, March 17, 2010

**FIGURE: WINDSOR LAND USE MAP**

### Conclusion, Population Growth Service Demands

It is GA's conclusion that there is land available for residential growth. However, population projections do not support any significant long-term population growth. It is therefore likely that population growth will be small within the ten-year span of interest for this fire services review.

However, residential construction may continue as it has for the past few years, but it is likely that this construction will be mainly for rehousing of downsized families, some new to the area, which is a common occurrence in many communities where the average number of persons per household is slowly declining as the population ages and children leave the home, and as senior partners pass-on.

Modern home construction does not attract as many calls for fire services as does older construction. New codes, techniques, and materials are less prone to fire events. However, as the population ages, it can be expected that ambulance service calls will increase. If the fire department continues to support EHS in the provision of pre-hospital emergency health care, then it can be expected that the proportion of medical related calls will continue to climb.

With most of any population increase happening in and around Windsor, the impact of any growth will be felt by the closest fire stations. These are located in Windsor and in Garlands Crossing.

**GA recommends** that the Windsor and Three Mile Plains stations be appropriately resourced to deal with any population and residential growth that creates increased service demand.

With the “average” projected population<sup>54</sup> increase of 18% applied to the growth areas in West Hants, and also applied to Windsor, the following chart shows potential impacts on annual incident volumes by 2031. An increase for Brooklyn is applied, at 4.5%, as it is a designated Village in the WHMPS with modest growth supported. Hantsport is not included since housing starts there are low and population numbers have been stable/contracting.

**FIGURE: SELECTED COMMUNITY HISTORIC INCIDENT NUMBERS AND POTENTIAL RESIDENTIAL GROWTH**

<b>Community</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Totals</b>	<b>%<sup>55</sup></b>	<b>2031</b> (projected annual)
Brooklyn	52	47	46	54	34	233	6.7%	36
Curry's Corner	7	8	4	10	10	39	1.1%	12
Falmouth	25	48	45	103	63	284	8.2%	74
Garlands Crossing	8	12	8	18	22	68	2.0%	26
Three Mile Plains	23	23	24	40	37	147	4.2%	44
Wentworth Creek	4	4	9	3	4	24	0.7%	5
Windsor	103	78	108	106	95	490	14.1%	112
Sub-total:	222	220	244	334	265	1,285	37.2%	313
W/WH Totals, all communities:	586	598	705	811	756	3,456		

<sup>54</sup> Expressed in the Planning and Development Department Population Background Report.

<sup>55</sup> Percentage of the Region's 3,456 incident volume total for the five years of data shown.

For this projection it is assumed that the increase/growth would occur proportionally to all communities, although in fact this is unlikely. However, with the exception of Brooklyn, all the above communities are closest to the TMP and Windsor fire stations, so fluctuation amongst the growth communities is irrelevant from an impact perspective.

The salmon column titled 2031 shows the increase applied to the 2018 annual totals for each community. It should be noted that the annual projected numbers for 2031 are completely or nearly within the annual variations already seen for each community, and for the annual totals for these communities. This suggests that there is currently the capacity/ability to service these projected incident numbers.

### **DEVELOPMENT GROWTH, FIRE SERVICE CAPABILITY**

The development of large commercial, industrial, and residential facilities can increase the demand for service capability. In this circumstance, service capability means the ability of the fire service to mitigate the incidents that occur in buildings larger or with more complex risks than they are currently equipped to handle.

For example; the development of high-rise<sup>56</sup> apartment buildings can place a high demand on manpower, processes, training, and technology for the fire department. This is especially so if the fire department has no prior experience with such buildings. This would be the case in W/WH where there buildings heights are typically 3-4 stories, and the tallest are churches.

To mitigate fire incidents in new development that is outside of the capability envelop of the fire service requires specialized equipment, specific procedures, diligent fire safety enforcement, and usually higher staffing numbers on-scene at an incident. The municipality does have a significant degree of control over allowing these types of development, and consideration of the impact on the fire services and the costs of increasing capability should be part of municipal development plans.

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<sup>56</sup> High-rise buildings are buildings that are 6 stories and above in height.

West Hants Planning and Development Department reports<sup>57</sup> that it is unlikely that big box retailers and power centres<sup>58</sup> will be developing in W/WH, without a larger population to attract them. Such a development would be outside the current capability of the fire departments.

Industrial and resource-based development is reportedly<sup>59</sup> not booming in West Hants. Permits and values have been low. A Windsor-West Hants shared industrial park is the preferred location for industrial development, and there are currently a few industries located there, although none are very large. The number of commercial development permits is trending downward, although the value of these may be upwards.

Growth in the commercial, industrial, and resource sectors is unlikely to increase substantially over the next 10 years. It is therefore unlikely that an increase in fire services capability will be driven by extraordinary development.

**GA recommends** that the new Regional government carefully consider potential impacts on fire service capability with every new industrial, large commercial, or large residential planning application. The fire service should not be opposed to such developments, but must speak clearly about needs and plan accordingly for any such large-scale development.

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<sup>57</sup> West Hants Planning and Development Department, Background Report: Economic Development, March 2018, page 16.

<sup>58</sup> IBID; in 2010 power centres had an average of 25 tenants, including several big-box retailers.

<sup>59</sup> West Hants Planning and Development Department, Background Report: Industry and Resource, March 2018, page 4.

## **COMMUNITY FIRE RISK FACTORS**

Risk can be simply described as a combination of incident frequency and incident consequences. The best predictor of incident frequency is statistics, i.e. the fire experience in the community. The assumption is that unless something is done proactively to change the root causes of fires, then they will continue to occur at a similar frequency.

Incident consequences are often limited to the persons directly involved (i.e. a family's home), but consequences can also impact the community at large. A significant fire in a major employer can result in negative economic consequences to the community through job loss, damage to infrastructure, loss of viability for suppliers, and loss of tax base. These consequences can also be social as the community may lose hope in a secure future, former workers may be forced to seek employment elsewhere, often outside the community, and sadness over the loss of a long-established bastion.

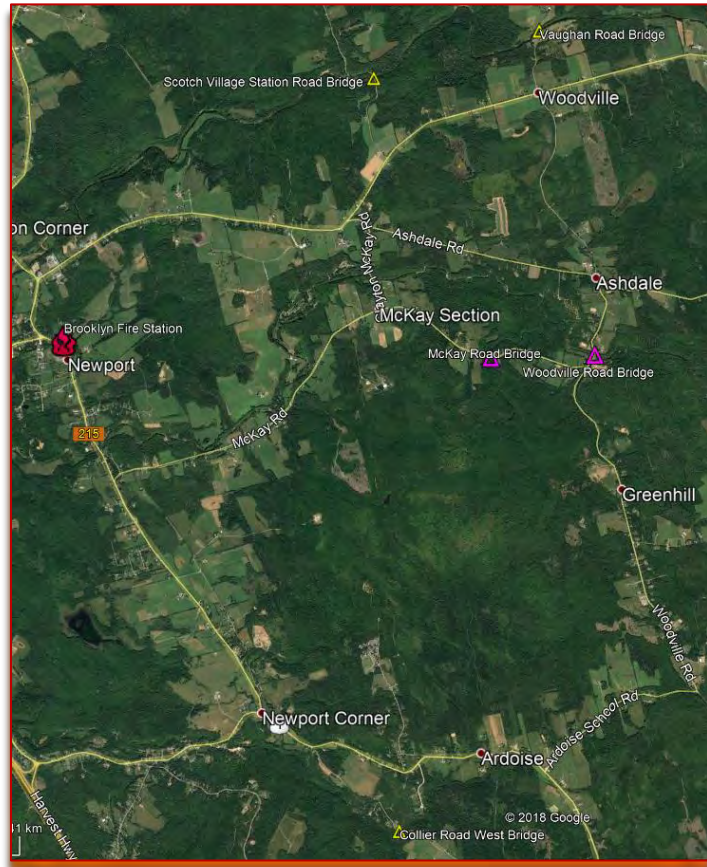
The current role of the Regional fire departments in addressing community fire risk is mainly in responding to incidents and attempting to mitigate the consequences of fires that are already in progress. There are a number of factors that affect the efficiency and effectiveness of this role. These will be addressed in the following section.

### **Bridges**

Access to incidents by the fire department occurs along public roads. Fire apparatus can be large and heavy, and restrictions in the roads can determine the route used to travel to the incident. Bridges are one difficulty for fire apparatus.

GA issued to the fire departments a request for information on restrictive bridges. The query returned information on seven bridges, as identified by the fire departments, with weight restrictions which might limit transit by the heaviest fire apparatus. Two of these bridges are avoided by the fire departments for that reason. One of these bridges was noted as a private bridge of unknown capacity.

- Cogmagun Road bridge across the Cogmagun River, not posted but 20 Tonnes advised maximum (Summerville FD).
- Benny Muckle Road, private single lane bridge of unknown capacity (about 5.5 km east of Bramber) (Summerville FD).
- McKay Section Road, single lane bridge posted 20 Tonnes, rated as poor condition, avoided.
- Vaughan Road, Woodville, single lane bridge posed as 20 Tonnes, rated as good condition.
- Scotch Village Station Road, single lane bridge posed as 20 Tonnes, rated as good condition.
- Woodville Road, Ashdale/Greenhill, single lane bridge posed as 20 Tonnes, rated as fair condition, avoided.
- Collier Rd. West, Newport Corner, single lane bridge posed as 20 Tonnes, rated as poor condition, not avoided since it is the only access.



The accompanying Google snapshot shows the bridges in the Brooklyn response district.

**GA recommends** that there be response plans developed to ensure that all personnel Region-wide are well aware of bridge restrictions where fire apparatus cannot cross. This is particularly important for fire stations in other fire districts who may be contributing pumpers, tankers, or aerial apparatus to assist at a fire in another jurisdiction. A typical pumper weighs 25 Tonnes, a

tanker weighs 30+ Tonnes, and an aerial weighs 35 Tonnes, and an aerial-platform typically weighs over 40 Tonnes.

### Rural Water Supply Infrastructure

Rural water supplies are used to provide a source of firefighting water in areas of the Region where there is no public water supply and fire hydrants. These sources can also be significantly useful where there are fire hydrants, during very large fires, where the public water supply is not able to cope with required flow rates or total water demands.

Fire Underwriter Survey recognizes<sup>60</sup> approved alternative water supplies (i.e. not municipal hydrant systems) for properties if the water supply point is within 2.5 km by road for commercial risks and 5 km by road for residential risks. Essentially, this means that dry-hydrants or static drafting locations should be available within those distances to most if not all properties in the Region, according to their type of property.

GA issued a request to the fire departments for information on their established rural water supply sources. The rural water supply query returned information on 18 rural water supply sites;

- seven dry-hydrants on a lake/river/pond,
- one dry-hydrant on a cistern,
- one wet-hydrant gravity fed from a pond,
- two private water systems, and
- seven drafting sites on a lake/pond/river.

All of the identified sites were rated excellent to good, except one that was rated adequate. The information revealed that not every site is tested<sup>61</sup> and flowed/maintained regularly. One site is established in downtown Windsor and will be useful in supplementing the Town's water supply in a large fire or during water interruption.

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<sup>60</sup> Fire Underwriters Survey, *Alternative Water Supplies for Public Fire Protection, an Informative Reference Guide for use in Insurance Grading*.

<sup>61</sup> National Fire Protection Association, *NFPA-1142, Standard on Water Supplies for Suburban and Rural Fire Fighting*.

NFPA-1142 is the standard for rural water supplies. The standard requires that dry-hydrants be inspected and maintained at least quarterly and flow tested at least annually, and that records be kept of all maintenance and testing. It also requires that all static water sources be equipped with a dry-hydrant.

Although there are a number of rural water sources established, the number is insufficient to provide adequate coverage for all populated areas of the Region.

**GA recommends** that dry-hydrants be installed at all planned rural water supply points in the Region. Water supply points should be established within 5 kilometers by road to all hamlets and clusters of residential housing, and within 2.5 kilometers to all commercial risks. All dry-hydrants should be developed in accordance with the requirements of NFPA-1142, and should also be maintained in accordance with the standard.

**GA recommends** that good records of all dry-hydrant maintenance, inspections, and testing should be kept as protection against liability and for reference and pre-planning purposes.

**GA recommends** that all dry-hydrants or other static water sources that are established on private property be accompanied by an executed agreement defining rights, duties, and liabilities.

## Residential Fire Risk

### STATISTICS CANADA RESIDENTIAL DATA

Statistics Canada<sup>62</sup> provides the following information for the Region;

line	Item	Windsor		West Hants		W/WH	%	Hantsport <sup>63</sup>	
1	Population 2016	3,648		15,368		19,016		1,124	
2	Total private dwellings	2,367		7,175		9,542		519	
3	Private Dwellings occupied by usual residents <sup>64</sup>	2,214	93.5%	6,426	89.6%	8,640	90.5%	494	95.2%
4	Population density, persons per km <sup>2</sup>	500.0		12.4				528.2	
5	Land area, km <sup>2</sup>	10.5	0.8%	1,244	99.2%	1,255		2.13	
6	Single detached homes	1,310	59.3%	5,750	89.4%	7,060	81.7%	385	78.6%
7	Apartment in building five or more stories	5	0.2%	0	0.0%	5	0.1%	0	0.0%
8	Semi-detached house	115	5.2%	65	1.0%	180	2.1%	10	2.0%
9	Row house	45	2.0%	25	0.4%	70	0.8%	10	2.0%
10	Apartment or flat in a duplex	40	1.8%	55	0.9%	95	1.1%	20	4.1%
11	Apartment in a building fewer than five stories	575	26.0%	165	2.6%	740	8.6%	65	13.3%
12	Other single-attached house	15	0.7%	10	0.2%	25	0.3%	0	0.0%
13	Moveable dwelling	105	4.8%	360	5.6%	465	5.4%	0	0.0%
14	Household sizes; 1 person	765	34.5%	1,470	22.9%	2,235	25.9%	140	28.3%
15	2 person	780	35.2%	2,700	42.0%	3,480	40.3%	185	37.4%
16	3 person	320	14.4%	1,035	16.1%	1,355	15.7%	95	19.2%
17	4 person	250	11.3%	865	13.5%	1,115	12.9%	55	11.1%
18	5 or more person	100	4.5%	355	5.5%	455	5.3%	20	4.0%
19	Number persons in private households	4,815	91.7%	15,345	99.9%	20,160	97.8%	1,115	99.2%
20	Average household size	2.2		2.4				2.3	
21	Owned dwellings	1,260	56.4%	5,540	86.2%	6,800	78.5%	380	75.2%
22	Condominium dwellings	45	2.0%	30	0.5%	75	0.9%	0	0.0%
23	Rented dwellings	930	41.6%	855	13.3%	1,785	20.6%	125	24.8%
24	Occupied private dwellings by construction period, 1960 or before	835	37.3%	1,910	29.7%	2,745	31.7%	280	55.4%
25	1961 – 1980	535	23.9%	1,860	28.9%	2,395	27.6%	130	25.7%
26	1981 – 1990	335	15.0%	905	14.1%	1,240	14.3%	25	5.0%
27	1991 – 2000	175	7.8%	785	12.2%	960	11.1%	35	6.9%
28	2001 – 2005	50	2.2%	305	4.7%	355	4.1%	25	5.0%
29	2006 – 2010	165	7.4%	375	5.8%	540	6.2%	0	0.0%
30	2011 – May 2016	145	6.5%	290	4.5%	435	5.0%	10	2.0%
31	Occupied private dwellings - major repairs needed	195	8.7%	670	10.4%	865	10.0%	35	6.9%

<sup>62</sup> <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?B1=All&Code1=1208002&Code2=12&Data=Count&Geo1=CSD&Geo2=PR&Lang=E&SearchPR=01&SearchText=Windsor&SearchType=Begins&TABID=1>

<sup>63</sup> Hantsport was dissolved on July 1, 2015, after which it became an integral part of West Hants. Hantsport numbers are included in the West Hants and W/WH total numbers. They are shown here for reference.

<sup>64</sup> From StatsCan: "Private dwelling occupied by usual residents' refers to a private dwelling in which a person or a group of persons is permanently residing."

Dwellings are defined by the National Building Code: "Dwelling unit means a suite operated as a housekeeping unit, used or intended to be used by one or more persons and usually containing cooking, eating, living, sleeping and sanitary facilities."

An examination of the above data leads to a few observations related to fire protection.

- The percentages shown in the salmon coloured analysis column refer to the data (uncoloured cells) to their immediate left, and refer to totals in that column only. For example; line 3 for Windsor, 93.5% of the 2,367 total private dwellings are occupied by usual residents.
- The green total column in the W/WH (Windsor West Hants) column is the sum of the Windsor and West Hants data columns.
- Line 3: Of the 9,542 private dwellings, 9.5% (900 dwellings) are not occupied permanently. These are either seasonal, vacant, or housing transients. The occupancy rates are lower in West Hants than in either Windsor or Hantsport. Vacant buildings are a hazard to the community and firefighters.
- Line 4: The average population density in Windsor and Hantsport is more than 40 times that it is for West Hants. Denser populations are cheaper to service but are more susceptible to devastating fires that affect multiple buildings/occupancies.
- Line 6: The percentage of single detached homes in the region is high at 81.7% overall, but this is very much skewed towards West Hants. In Windsor the percentage is much lower at 59.3%. A fire or similar incident in a home in Windsor is 40% more likely to affect more than one dwelling. Consequently the fire risk is higher.
- Line 7: Although there is apparently one building that is 5-stories or taller in Windsor, all residential buildings in the region are 4-stories or lower. Five stories is classified as a mid-rise building; while 4-stories or less are low-rise buildings and can be laddered by the longest ground ladders.
- Line 23: Region-wide 20.6% of households live in rented accommodation. This is particularly so in Windsor, where 41.6% of households are in rental accommodations. The insurance industry claims that only about half of renters carry fire insurance. Fires in rental dwellings can be even more devastating to residents without insurance.
- Line 25: In Hantsport 55.4% of the occupied residential building stock (505 units) was built in or before 1960. Older buildings are more prone to fires since they have older utilities and systems.
- Lines 28-30: Since 2001 only 35 of these new dwellings have been built in Hantsport.
- Line 31: Shows that region-wide almost 10% of dwellings are in need of major repairs. Fire occurrences can increase in under-maintained structures.

The residential fires are the main risk for fire occurrences in most communities. They are also the main risk for injuries, and deaths, both of civilians and of firefighters.

According to national statistics<sup>65</sup> for Canada;

*“Fires in residential properties accounted, on average, for 69% of all structural fires and 79% of all structural fire deaths. ... Homes representing one/two family dwellings, apartments and mobile homes accounted for 82% of all fires in residential properties*

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<sup>65</sup> Fire Losses in Canada Year 2007 and Selected Years, Wijayasinghe, September 2011, presented to the Canadian Council of Fire Commissioners and Fire Chiefs, <http://www.ccfmfc.ca/stats.html>

*and 83% of all residential fire deaths. .... In Canada, home fires accounted for 30% of all fires and 67% of all fire deaths.”*

As shown on the chart on page 164, and partially repeated below, in the Region residential fires are the leading occupancy where fires are occurring. In the Region, according to the statistics received, the occurrence of residential fires (at 39.1% of all fire incidents) is above the national average of 30%.

**FIGURES: REGIONAL DWELLING FIRES**

Type	Number	%
Structure-Residential + Chimney	147+134 = 281	39.1%
<b>Breakdown by Fire Station</b>		
	<b>Residential/Chimney</b>	
Windsor	55	
Hantsport	80	
South West	18	
Brooklyn	64	
Three Mile Plains	28	
Summerville	32	

Dwelling Fires	2014	2015	2016	2017	2018	Total
Combined	61	57	69	45	49	281
Chimney	26	17	38	29	24	134
Structure	35	40	31	16	25	147

The following table shows statistics from Windsor relating to all reported structure fire losses. One civilian and one firefighter injuries were reported for the five years. Both injuries occurred at residential fires. No fire loss amounts or injuries were reported by the other fire departments.

**FIGURE: STRUCTURE FIRE LOSSES (WINDSOR)**

Fires (Windsor)	2014	2015	2016	2017	2018	Total	# incidents
Residential	\$131,500	\$91,000	\$76,500	\$5,000	\$6,000	\$310,000	281
Barn/Warehouse	\$0	\$380,000	\$0	\$0	\$0	\$380,000	25
Commercial	\$0	\$0	\$1,600,000		\$1,500	\$1,601,500	15
Industrial/Factory					\$0	\$0	1
Other	\$100	\$0	\$0	\$0		\$100	18
	<b>\$131,600</b>	<b>\$471,000</b>	<b>\$1,676,500</b>	<b>\$5,000</b>	<b>\$6,500</b>	<b>\$2,291,600</b>	<b>340</b>

From the limited statistics available it is clear that in W/WH the risk of fire is greatest in residential properties. There is no breakdown on responses to residential fires by building type; i.e. single detached, semi-detached, row, multi-unit, owned, rented, number of stories, number of units, etc. Such a breakdown is very useful in better understanding the underlying risks associated with each building type, and can assist in determining fire prevention priorities.

**GA recommends** that complete fire statistics be collected and records kept, including all information requested by the NS Fire Marshal for inclusion in the provincial database. Records retention rules generally do not require retention of such data beyond five or seven years. It is further recommended that fire statistics be kept at least 15 years in order for trends to be clearly seen and analysed.

Fires in other property types are not as frequent as residential fires. However, even from the Windsor data, it can be clearly seen that fires in commercial and industrial properties can be of high loss values. The Windsor data shows that almost all of the commercial loss in the five years of data is attributable to a single fire in a low-rise apartment building on King Street.

Fires in commercial/mercantile/industrial buildings can be much more demanding to combat than fires in typical dwellings. They are generally larger fuel loads, larger in area and height, often require specialized equipment like aerial ladder apparatus, have limited access, and have more hidden spaces in which fire can spread. Additional occupants can add to the pressure on the firefighters to perform rescues and to search for persons who might be inside. The risk per incident to firefighters is much higher at these larger building fires than it is in a single-family residence.

**Large Building Fire Risks**

The National Building Code<sup>66</sup> (NBC) categorizes every building or part of building (occupancy) according to its Major Occupancy Classification. The accompanying table shows these classifications. For some examples of this;

- schools are classified as A2,
- the shopping mall is an E,
- a nursing home is a B2, and
- both single family residences and apartment buildings are classified as C.

**3.1.2.2. Division B**

**Table 3.1.2.1.**  
**Major Occupancy Classification**  
Forming Part of Sentences 3.1.2.1.(1) and 3.1.2.2.(1)

Group	Division	Description of Major Occupancies
A	1	Assembly occupancies intended for the production and viewing of the performing arts
A	2	Assembly occupancies not elsewhere classified in Group A
A	3	Assembly occupancies of the arena type
A	4	Assembly occupancies in which occupants are gathered in the open air
B	1	Detention occupancies
B	2	Treatment occupancies
B	3	Care occupancies
C	—	Residential occupancies
D	—	Business and personal services occupancies
E	—	Mercantile occupancies
F	1	High-hazard industrial occupancies
F	2	Medium-hazard industrial occupancies
F	3	Low-hazard industrial occupancies

The major reason for this classification system is to identify common fire safety concerns, and therefore common fire safety measures/requirements. This method carries over into the National Fire Code (NFC) and is used for identifying building inspections and Code enforcement requirements. Within each classification Group there are also special rules for specific types of occupancies. For example; even though a private family house and a 20-unit apartment building are both classified as a C occupancy, there are different fire safety requirements for both of them. So the occupancy classification isn't the whole story.

For firefighters, building classification tells them about the built-in fire protection systems and construction measures. It also informs on the risks and the needs to pre-plan for an incident at that location. For example; a fire in a B2 is probably at a nursing home or a hospital. Such a fire has the potential to be very challenging with many persons to evacuate or rescue. Many nursing homes are old and not sprinklered. Therefore, fires can be fast moving and residents are slow moving. Staffing numbers at the nursing home, during the overnight, may not be sufficient to evacuate all patients in a timely manner without assistance from firefighters and other first

<sup>66</sup> National Building Code of Canada, 2015 edition

responders. If firefighters assist with searching and rescuing, then firefighting is delayed because of limited staff within the first few critical minutes. The fire may then progress and threaten more people, etc. Knowledge in advance is valuable.

In the above example, it seems obvious that firefighters would be aware of a nursing home in their community. However that may be, firefighters are not necessarily aware of all the converted old homes, that used to be large single family, 2-3-story residences, and that now contain several rented rooms and/or apartments. These types of C occupancies are prone to serious fires and search and rescue is very challenging.

In an effort to identify some of the risks associated with the existing building stock, property data from Windsor and West Hants was analysed and some of the properties were classified in accordance with the NBC. Although W/WH was unable to provide an already populated database with this information, GA was able to manually classify 294 of the properties in the database out of the 600 top-valued assessment properties. Past fire inspections and building permit data assisted in identifying some of these properties. This limited data will be referred to in analysis that follows in this report.

### Assessments and Property Counts

The total assessed value of all property in W/WH is \$1.6B. There are 13,335 properties. According to the address of the properties, thereby identifying the community, the following shows approximately how the properties are currently distributed to the fire departments and their associated assessment values. Kings or East Hants properties are not included in the following table.

Fire Department	Properties	Value	%
Windsor	1,582	\$333,228,500	21%
Hantsport	2,911	\$397,645,000	25%
South West	1,210	\$126,156,700	8%
Brooklyn	3,242	\$352,598,900	22%
Three Mile Plains	2,522	\$273,877,100	17%
Summerville	1,419	\$78,890,600	5%
Uniacke and District	2	\$15,200	0%
Walton Shore	443	\$32,434,600	2%
Unclassified	4	\$170,800	0%
<b>Totals:</b>	<b>13,335</b>	<b>\$1,595,017,400</b>	

The above distribution is based on the current fire districts.

The assignment of occupancy classifications allowed GA to observe the distribution of risks in the communities, and by current fire station district. The following table shows this distribution. The C classifications shown are for multi-unit buildings and do not include any single-family residences. The following data is not a complete capture of the occupancies that should be assigned their classifications. That data does not apparently currently exist. Please see the previous page for a description on how this was done.

**FIGURE: DISTRIBUTION OF IDENTIFIED OCCUPANCIES**

Station	A	B	C	D	E	F
Windsor	30	8	33	11	8	6
Hantsport	25	2	20	4	1	17
South West	9				1	1
Brooklyn	28		8	3	6	14
Three Mile Plains	18	1	8	3	8	28
Summerville	9		1	1		3
Uniacke						
Walton Shore	3					2
<b>Totals:</b>	<b>107</b>	<b>11</b>	<b>62</b>	<b>22</b>	<b>21</b>	<b>57</b>

Windsor in particular, and Hantsport to a lesser degree, appear to be the business, apartment, and service centres in the Region. Windsor and Brooklyn have the bulk of buildings associated with halls, schools, and/or restaurants (A classification). Windsor has most of the care and treatment facilities (B classification), multi-unit rental accommodations (C classification), and personal service and business (D classification).

Three Mile Plains has a large industrial base because the joint Windsor/West Hants industrial park (Wentworth Creek) falls into Three Mile Plains' response district; but there is still a lot of risk in Hantsport.

More so than detached dwelling fires, fires in the above identified occupancies have the potential for significant community impact. Such fires can also be challenging for the fire department. Fortunately, occurrence rates are relatively low.

### Community Fire Risk Profile

A risk profile chart is useful in visually highlighting various risk factors. The following table identifies risk factors that influence firefighting tactics, manning, apparatus, and equipment needs. Every community/fire department will have a few occurrences of almost everything in the following table. However in this table, the **X** indicates where the factor is often or usually a governing factor in a fire/rescue incident.

<b>FACTOR</b>	<b>Windsor</b>	<b>Hantsport</b>	<b>Southwest</b>	<b>Brooklyn</b>	<b>TMP</b>	<b>Summerville</b>
Older building stock (prone to fire development, pre-Code, combustible construction)	X	X				
Higher incident volumes (simultaneous calls more possible)	X	X		X		
Large area occupancies (special tactics, equipment)	X	X				
Employment occupancies (economic impact)	X	X			X	
Population density (high, more people at risk)	X	X				
Building density high (i.e. exposures to other buildings)	X					
Conflagration potential (contiguous blocks)	X					
Converted homes (apartments, rooming/boarding, difficult fires)	X	X				
Apartment buildings (many residents impacted)	X	X				
High Hazard use occupancies (F, firefighter/community hazards)		X			X	
Vulnerable person occupancies (B, occupants fragile)	X					
Large Assembly occupancies (special tactics, equipment)	X	X			X	
Buildings above 3-stories in height (too tall for ground ladders)	X	X				
Travel times long (fire development with time)		X	X	X		X
Bridge restrictions (heavy vehicles cannot cross)				X		X
Wildland -Urban Interface (homes in the woods at risk)			X	X		X
Recreational waterways (water/ice rescue demand)	X		X			X
Rural water supply predominant (tanker shuttle relay needed)			X	X		X
Highway (100+kmph) (high speed MVC, hazard for firefighters)	X	X		X	X	
Growth area, changes in district (keeping up with changes)	X			X	X	
High required fire flow incidents (pumper relays needed)	X	X			X	
High staff demand incidents (large responses, multi-stations)	X	X				

Windsor's response district, and to a lesser degree Hantsport's, both exhibit typical characteristics of an urbanized fire risk environment. In urban areas, especially older ones, fire departments must be prepared for fires that are; difficult to extinguish, large, that can consume entire blocks, difficult to access, that cost the community anxiety, lost businesses, lost housing.

Pumpers, strong water systems, multiple ground ladders, aerial ladders, as well as sufficient staff to operate all of these and to fight fires in several buildings simultaneously is what urbanized firefighting environments demand. These fires can extend for several days, so depth of resources is also important.

Brooklyn has high incident<sup>67</sup> volumes, but this is somewhat distorted. If you look at the combined fire and pre-fire incident numbers, they are virtually the same as Windsor's combined totals. The records also show that Brooklyn has high numbers of rescue incidents, virtually all of which are MVCs, with about 20% being on Highway-101. Windsor's rescue responses dropped significantly and Brooklyn's jumped about the same amount after the Windsor response boundary changeover in 2016. With a regionalized service this should partly rebalance.

Brooklyn also has a high number of region-internal mutual-aid incidents, to other fire-district's fires. Brooklyn also carries the highest MFR incident load of any Regional fire department, due to their election to respond to every ambulance incident in their territory. Brooklyn is a busy station, but its core-service incident demand is similar to Windsor's.

Brooklyn and Summerville's response districts exhibit all the characteristics of a rural fire risk environment. Travel distances are long, water supply is established through tanker shuttles, occupancies are widely spaced, there are likely some wildland/urban interface issues. There are a few larger occupancies; e.g. churches, farm buildings, isolated commercial/industrial, schools, and etc. The primary fire risk is residential.<sup>68</sup>

Rural fire environments require pumpers for fire attack and tanker operations, tankers to transport water, ground ladders, and off-road vehicles for wildland fire incidents.

South West is also a rural fire risk environment, but they have very few larger occupancies. What they do have in abundance is cottages and year-round occupied homes built in the woods. South West's major challenge is long access on smaller roads to remote areas, winter weather challenges, wildland/urban interface issues, and the potential for a wildland fire to threaten numbers of residents and homes, with limited escape roads.

Three Mile Plains is essentially in a suburban fire risk environment. They are located in a housing growth area. Congestion and population density are higher than the rural areas of the Region, but lower than Windsor/Hantsport. They do have responsibility for most of the industrial park and are in proximity to Highway-101.

Three Mile Plains close proximity to Windsor makes them an ideal partner to supply the additional equipment and manpower resources needed to deal with fires in Windsor's urban environment.

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<sup>67</sup> Reference the Figure: Table of Incident Dispatches by Station starting on page 159 of this chapter.

<sup>68</sup> See **Residential Fire Risk** starting on page 182.

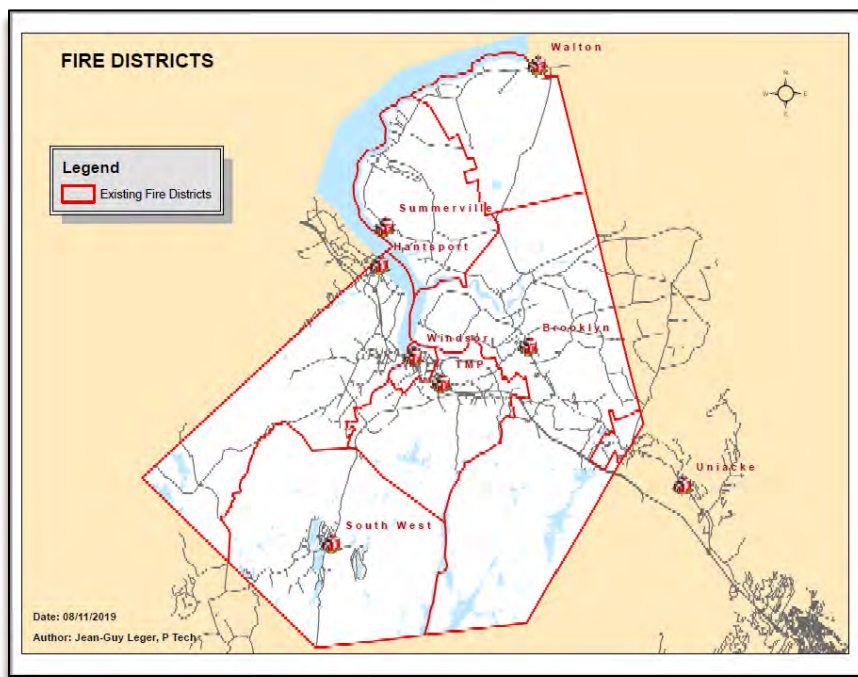
## **FIRE DISTRICT REVISIONS**

### **Current Fire Districts**

The fire districts in existence when this Fire Services Review was commissioned reflect decisions made after the withdrawal of fire protection services by Windsor Fire Department; previously Windsor fire department responded into large parts of West Hants Regional Municipality. From a more recent perspective, that of a consolidated municipality, these existing fire districts are not optimum and require adjusting for efficiency and effectiveness.

The determination of fire districts should be based on a seemingly simple principal. For any incident the closest appropriate resources should be sent first. Appropriate means a resource (fire apparatus, manpower, equipment, knowledge, etc.) that can and will be used to mitigate the situation.

**FIGURE: EXISTING FIRE DISTRICT MAP**



The existing response districts were based on responding to fire incidents. Windsor’s fire district was the Town boundary. For West Hants, the assigned fire districts divided up the municipal area amongst the five West Hants fire stations, plus the Walton Shore fire department, and the Uniacke and

District fire department. These last two provided coverage of areas within West Hants although they are actually located in East Hants.

For West Hants, with Windsor being in the middle this caused some challenges in drawing the response maps. Road network and obstacles affected the fire districts boundaries.

### Revising Fire Districts

GA was tasked with redrawing the fire district response map, this time including all six W/WH fire stations, and considering the potential contributions of Uniacke and Walton Shore departments. The objective was optimized fire response districts with all resources considered.

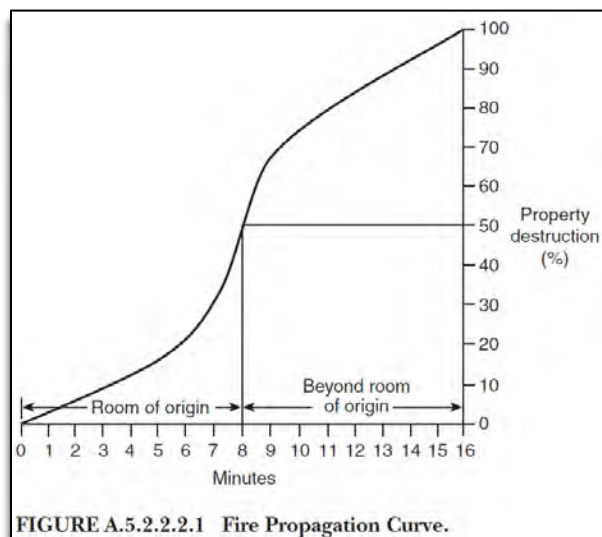
GA utilized a map-based computer simulation program. GA estimated travel times over the existing road networks; from each existing fire station to all parts of the new Region. Road speed-limits, congestion, grades, traffic, obstacles, and fire apparatus capabilities were accounted in the simulations. The estimates were then compared against historical response times to emergency incidents, and adjustments made as necessary.

### *Response Factors*

It is desirable to achieve the best response-times possible to reports of emergency incidents. This is particularly so in circumstances of life or property threatening incidents. Fires are one such incident type.

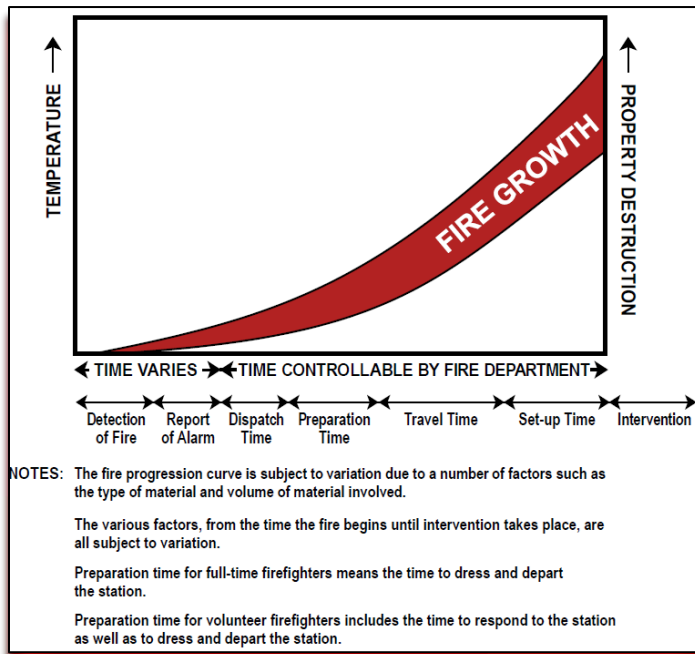
#### **FIGURE: NFPA-1710 FIRE PROPAGATION CURVE**

Fire grows over time. All fires start small, and grow (if unchecked) until such time as they run out of fuel. In a structure, there are other factors involved as well. Particularly the availability of oxygen. This means that in a closed building, an unchecked fire will consume all the available oxygen, and thereby slow down its growth, until such time as additional oxygen is introduced by opening doors/windows or by fire burning through part of the structure. Survivability of persons inside is unlikely by this point.



The time at which the fire department starts to respond to the fire is not at time zero on the Fire Propagation Curve. Several other processes must occur first.

**FIGURE: FIRE PROGRESSION AND RESPONSE CURVE**



This timeline chart illustrates these processes. Someone, or a detection system, must discover the fire. The fire discovery must be transmitted to a 9-1-1 call-centre, or alarm monitoring agency. The fire department dispatch centre must be informed. The dispatch centre must page the volunteer firefighters to respond to their fire station. The volunteers must prepare and respond to the station and get into their personal protective equipment.

Sufficient personnel must be available to man the fire apparatus as appropriate, typically at least four persons.

The travel-time response portion of the entire response-time sequence then begins. Firefighters travel to the incident location in the fire apparatus. When they arrive, they must set-up by getting organized and understanding the situation, make a plan, deploy equipment and staff to address the emergency. For a fire this means (in part) deploying hoses and charging them with water, and gaining entry to the building. At that point, fire suppression/intervention starts. Thereafter, the fire is expected to be mitigated, i.e. the curve levels off and diminishes. Sometimes if insufficient resources or tactics are applied, the fire continues to grow.

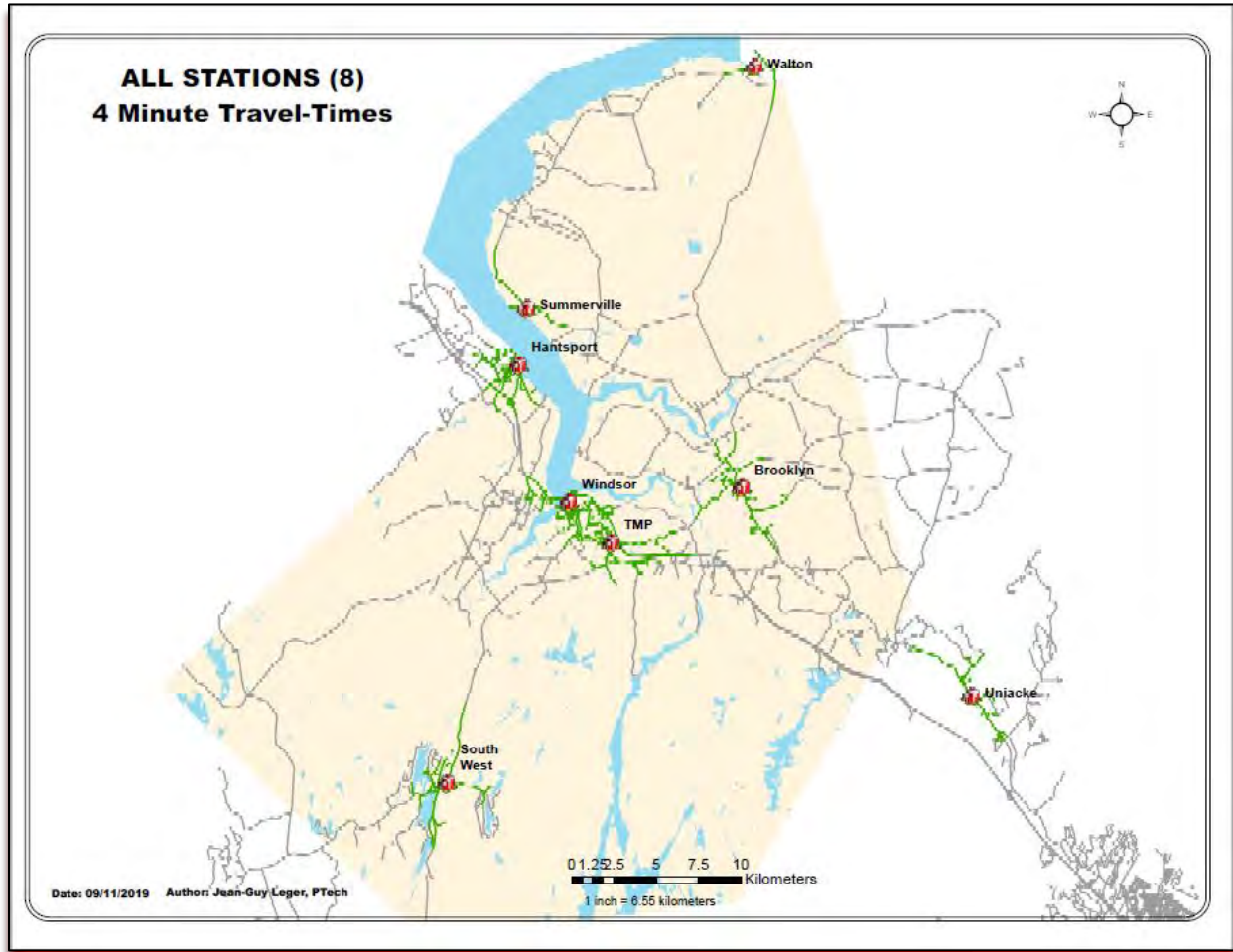
Firefighters, might however not start fire suppression right away. The first arriving crew may be committed to victim search and rescue instead, in which case the fire continues to grow.

Travel-time can be a big component of the above response-time sequence. Therefore, identifying efficient fire station response districts based on travel-times is important.

*Travel-Time Details*

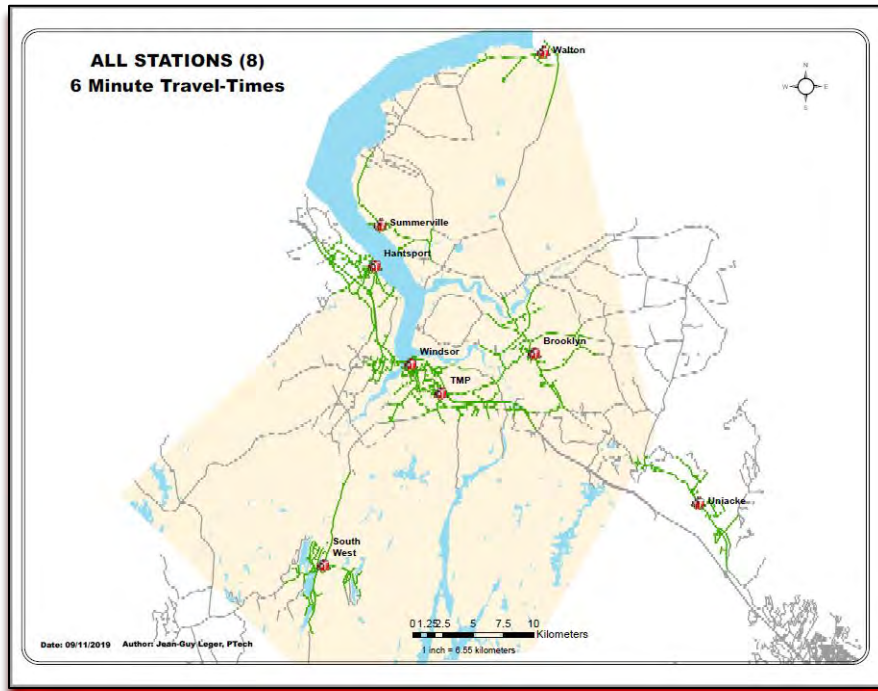
Travel-time predictions from the various existing stations was calculated by GA and revealed the following. Maps were produced that show estimated distances travelled in 2-minute intervals; i.e. at 4, 6, 8, and 10 minutes of travel-time.

**FIGURE: 4-MINUTES TRAVEL-TIME**



The green colours on the road segments represent how far fire apparatus are predicted to travel in 4 minutes after leaving the fire station.

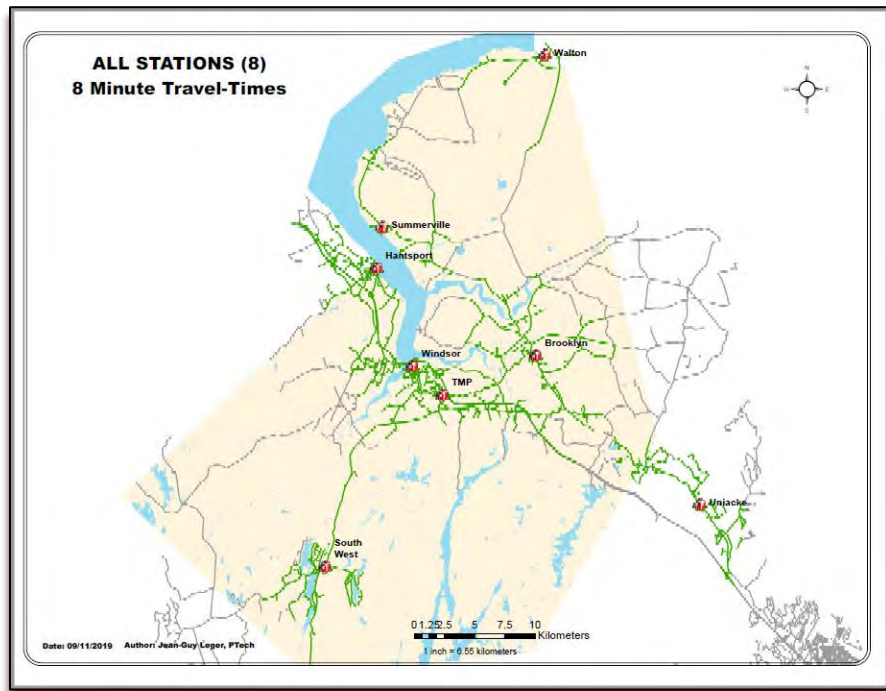
**FIGURE: 6-MINUTES TRAVEL-TIME**



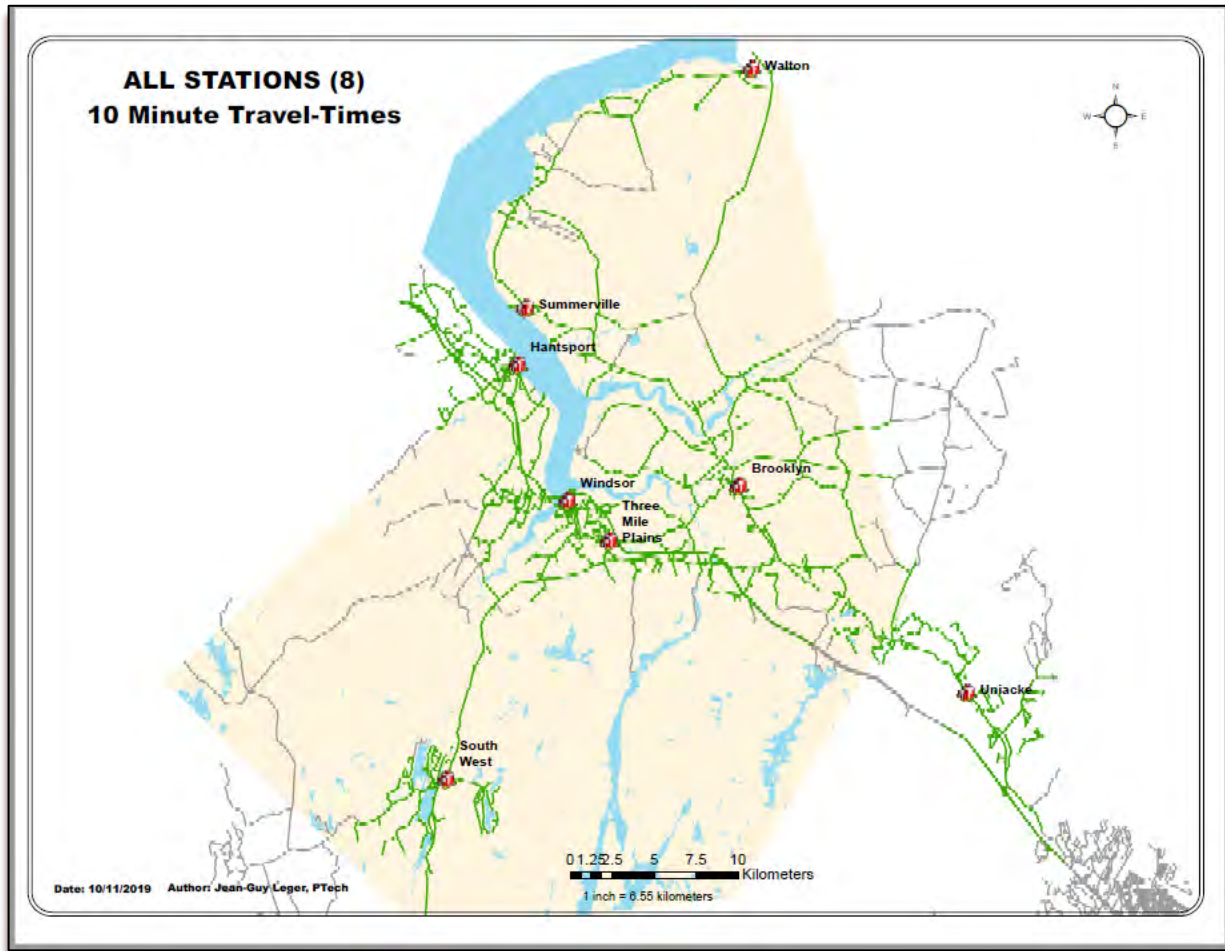
The green colours on the road segments represent how far fire apparatus are predicted to travel in 6 minutes after leaving the fire station.

**FIGURE: 8-MINUTES TRAVEL-TIME**

The green colours on the road segments represent how far fire apparatus are predicted to travel in 8 minutes after leaving the fire station.



**FIGURE: 10-MINUTES TRAVEL-TIME**

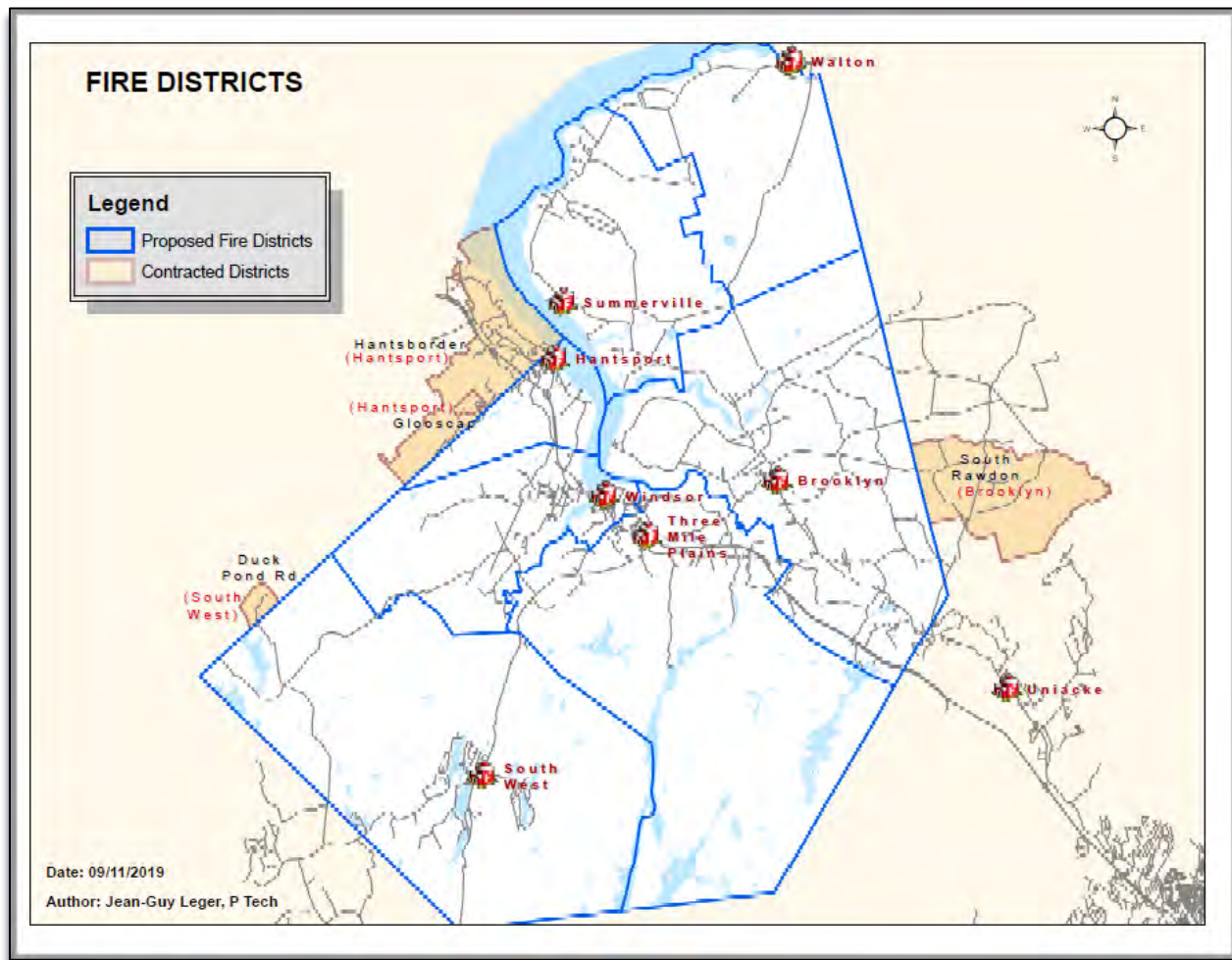


The green colours on the road segments represent how far fire apparatus are predicted to travel in 10 minutes after leaving the fire station.

Revised Fire Districts

GA recommends, based on the travel-time predictions, the following fire station response districts.

**FIGURE: RECOMMENDED FIRE DISTRICT MAP**



In the recommended fire district map, please note the following clarifications;

- Contracted districts are areas where W/WH fire departments are currently offering emergency response services under contract, outside of the W/WH boundaries.
- These contract areas include portions of Kings County assigned to Hantsport station and noted as Hantsborder on the map. Also included is the Glooscap first nations territory.
- Also included in Hantsport’s current coverage is Duck Pond Road (Black River Lake) area in the south west of the municipality.

- Brooklyn currently provides contract services into the area of East Hants known as South Rawdon.

**GA recommends** that where Uniacke previously responded into the east Ardoise area that this arrangement not continue. Analysis revealed that the travel-time to that area is virtually the same for both Brooklyn and for Uniacke. The additional complication, cost, and inefficiency of managing an additional fire service in that sparsely occupied area does not contribute measurably to potential outcomes.

**GA recommends** that the Duck Pond Road - Black River Lake area be serviced from the South West fire station.

## STANDARDS FOR PROVISION OF APPARATUS AND MANPOWER

### **NFPA-1720, BENCHMARKS**

NFPA-172069 is the recognized standard for volunteer fire departments providing fire and rescue services. The standard recommends<sup>70</sup> the following staffing and response time objectives;

<b>Ref. Obj.</b>	<b>Demand Zone</b>	<b>Demographics</b>	<b>Minimum Staff to Respond</b>	<b>Response Time (minutes)</b>	<b>Meets Objective(%)</b>
<b>A</b>	Urban area <sup>71</sup>	>386 people/km <sup>2</sup>	15	9	90% of responses
<b>B</b>	Suburban area	193-386 people/km <sup>2</sup>	10	10	80% of responses
<b>C</b>	Rural area	<193 people/km <sup>2</sup>	6	14	80% of responses
<b>D</b>	Remote area <sup>72</sup>	Travel distance ≥ 12.9 km	4	Distance determined	90% of responses
<b>E</b>	Special risks	As determined by AHJ <sup>73</sup> policy	Based on risk	AHJ determined	90% of responses

**GA recommends** that the following first-response objective staff/time benchmarks for each of the following communities be established; in accordance with the recommended revised fire districts.

<b>Community</b>	<b>Response Station</b>	<b>Ref. Obj.</b>	<b>Community</b>	<b>Response Station</b>	<b>Ref. Obj.</b>	<b>Community</b>	<b>Response Station</b>	<b>Ref. Obj.</b>
Ardoise	Brooklyn	<b>C, D</b>	Upper Burlington	Brooklyn	<b>C</b>	Summerville	Summerville	<b>C</b>
Ashdale	Brooklyn	<b>C</b>	Woodville	Brooklyn	<b>C</b>	Curry's Corner	Three Mile Pl.	<b>B</b>
Avondale	Brooklyn	<b>C, D</b>	Bishopville	Hantsport	<b>D</b>	Garlands Crossing	Three Mile Pl.	<b>B</b>
Belmont	Brooklyn	<b>C</b>	Hants Border	Hantsport	<b>C</b>	Gypsum Mines	Three Mile Pl.	<b>C</b>
Brooklyn	Brooklyn	<b>C</b>	Hantsport	Hantsport	<b>A</b>	Martock	Three Mile Pl.	<b>C</b>
Ellershouse	Brooklyn	<b>C<sup>74</sup></b>	Mount Denson	Hantsport	<b>C</b>	Newport Station	Three Mile Pl.	<b>C</b>
Five Mile Lake	Brooklyn	<b>D</b>	Leminster	South West	<b>D</b>	St. Croix	Three Mile Pl.	<b>C</b>
Greenhill	Brooklyn	<b>C</b>	Mill Section	South West	<b>C</b>	Sweets Corner	Three Mile Pl.	<b>C</b>
Hillsvale	Brooklyn	<b>D</b>	Panuke Lake	South West	<b>D</b>	Three Mile Plains	Three Mile Pl.	<b>B, C</b>
Lakelands	Brooklyn	<b>D</b>	Upper Vaughan	South West	<b>C</b>	Wentworth Creek	Three Mile Pl.	<b>B, C</b>
Mantua	Brooklyn	<b>C</b>	Vaughan	South West	<b>C</b>	Windsor Forks	Three Mile Pl.	<b>C</b>
McKay Section	Brooklyn	<b>C</b>	Wile Settlement	South West	<b>C</b>	Cambridge	Walton Shore	<b>C, D</b>
Miller Creek	Brooklyn	<b>C</b>	Bramber	Summerville	<b>C, D</b>	Cogmagun	Walton Shore	<b>D</b>
Mosherville	Brooklyn	<b>D</b>	Centre Burlington	Summerville	<b>C</b>	Pembroke	Walton Shore	<b>C</b>

<sup>69</sup> National Fire Protection Association; 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.

<sup>70</sup> Areas and distances converted to kilometers from miles.

<sup>71</sup> Population densities (StatsCan): Windsor (2011) 500 / km<sup>2</sup>, Hantsport (2011) 528.2 / km<sup>2</sup>, West Hants (2006) 11.2 / km<sup>2</sup>

<sup>72</sup> With relative accuracy, these areas can be quickly identified in the Fire District maps as areas which are beyond the 10-minute travel times from rural fire stations. See **Figure: 10-Minutes Travel-Time** on page 196 of this chapter.

<sup>73</sup> AHJ = authority having jurisdiction.

<sup>74</sup> Large areas of this community district, and there are other districts as well, are unpopulated or very sparsely populated and those areas would be categorized as D, or even inaccessible except by boat or bush road/trail. The referenced response objective for Ellershouse (in this example) is for the populated and road accessible portion of the community district.

Community	Response Station	Ref. Obj.	Community	Response Station	Ref. Obj.	Community	Response Station	Ref. Obj.
Newport Corner	Brooklyn	C	Cheverie	Summerville	C	Walton	Walton Shore	C
Poplar Grove	Brooklyn	C	Kempt Shore	Summerville	C	Falmouth	Windsor	B
Scotch Village	Brooklyn	C	Lower Burlington	Summerville	C	Upper Falmouth	Windsor	C
Union Corner	Brooklyn	C	Riverside	Summerville	C	Windsor	Windsor	A

Effectively, the first four NFPA-1720 response objectives apply to some part of the new Regional Municipality.

**GA recommends** that for planning purposes related to staffing, apparatus, and public information that these response objectives be implemented.

With an assumed 25% average attendance rate to incident calls, which is in several of the fire departments policies for recognition for full honourarium, the following volunteer numbers would need to be recruited, trained, equipped and be on the fire stations’ active duty rosters; i.e. capable of providing first response firefighting service to incidents.

These following numbers are not the total number of volunteers needed to mitigate the incident, these are just the first arriving contingent, who must arrive at the scene within the response time objective. Total numbers required at the incident for mitigation will exceed the first response numbers.

**FIGURE: ACTIVE VOLUNTEERS REQUIRED ON-ROSTER TO MEET FIRST RESPONSE OBJECTIVES**

<u>Station</u>	<u>Minimum Station Roster</u>	<u>Influential Objective</u>
Windsor	60	A
Hantsport	60	A
South West	24	C
Brooklyn	24	C
Three Mile Plains	40	B
Summerville	24	C
<b>Totals:</b>	<b>232</b>	

Achieving these active numbers will be challenging, and exceed the current complements. In addition, note that the 25% response attendance is an average estimate. There will be times during weekdays when that percentage number will not be met.

Part of the solution is to immediately co-page appropriate stations for fire incidents especially during times/days when volunteer turn-out numbers are expected to be low.

**GA recommends** that the Regional fire department develop Run-Cards to specify when and where certain types of incidents occur that the appropriate closest stations and appropriate resources are simultaneously dispatched. Simultaneous dispatch should occur for all fire/suspected fire events in all response areas. Simultaneous dispatch should occur for all other incidents, other than MFR incidents, in all Rural and Remote areas.

**FIRE UNDERWRITERS SURVEY; TABLE OF EFFECTIVE RESPONSE**

The Fire Underwriters Survey (FUS) uses a *Table of Effective Response* to match fire risks in the community with their requirements for fire apparatus for initial response to the incident, and also for the total response for incident mitigation; including required fire-water flow rates (RFF) and fire apparatus needs.

**FIGURE: FUS TABLE OF EFFECTIVE RESPONSE**

**Table 7.2-1 Fire Underwriters Survey - Table of Effective Response**

The following Table aids in the determination of Engine and Ladder Company distribution and total members needed. It is based on availability within specified response travel times in accordance with the fire potential as determined by calculation of required fire flows, but requiring increases in availability for severe life hazard.

RISK RATING	BUILDING DISTRICT EXAMPLES	FIRE FLOW		INITIAL RESPONSE TO ALARMS		1 <sup>st</sup> DUE	2 <sup>nd</sup> DUE	1 <sup>st</sup> DUE	TOTAL AVAILABILITY NEEDED			
		L/min X1000	Approx. Igpm Range	Engine Companies	Ladder Companies	Engine Company, Minutes	Engine Company, Minutes	Ladder Company, Minutes	Engine Companies		Ladder Companies	
									No.	Min.	No.	Min.
1 (a)	Very small buildings, widely detached buildings.	2	400	1	0	7.5	-	*9	1	7.5	*1	9
(b)	Scattered development (except where wood roof coverings).	3	600	1	0	6	-	*7.5	1	6	*1	7.5
2	Typical modern, 1 - 2 storey residential subdivision 3 - 6 m 10 - 20 ft. detached).	4-5	800-1,000	2	0	4	6	*6	2	6	*1	6
3 (a)	Close 3 - 4 storey residential and row housing, small mercantile and industrial.	6-9 10-13	1,200-2,000 2,200-2,800	2 2	1 (if required by Hazards)	3.5 3.5	5 5	*4 *4	2 3	5 6	*1 *1	4 4
3 (b)	Seriously exposed tenements. Institutional. Shopping Centres. Fairly large areas, fire loads, and exposures.	14-16 17-19	3,000-3,600 3,800-4,200	2 2	1 1	3.5 3.5	5 5	4 4	4 5	7 7	1 **1	4 4
4 (a)	Large combustible institutions, commercial buildings, multi-storey and with exposures.	20-23 24-27	4,400-5,000 5,200-60,00	2	1	2.5 2.5	4 4	3.5 3.5	6 7	7.5 7.5	2 2	5 5
4 (b)	High fire load warehouses and buildings like 4(a).	28-31 32-35	6200-6800 7000-7600	3	1	2.5 2.5	3.5 3.5	3.5 3.5	8 9	8 8	3 3	7 7
5	Severe hazards in large area buildings usually with major exposures. Large congested frame districts.	36-38 39-42 43-46	7,800-8,400 86,00-9,200 9,400-10,000	3	3	2 2 2	3.5 3.5 3.5	2.5 2.5 2.5	10 12 14	8 9 9	4 5 6	7.5 8 9

To use this table effectively it is necessary to correlate occupancies (buildings) with their level of risk. FUS does that through calculating required fire flows (RFF). However, that is not the whole story, and does not speak to total manpower needs for mitigation.

## **MATCHING RESOURCE DEPLOYMENT AND RISK**

The Ontario Fire Marshal’s office (ON-OFM) developed a workbook for benchmarking a fire department’s staffing needs at fire incidents. The workbook identified various *Effective Response Levels*, that correlated with different fire incident risk levels. This incident risk level approach is similar to the FUS Risk Rating. The workbook then identifies *Fireground Critical Tasks*, including standard tasks at all fire incidents, and those that are common at more complex (higher risk/challenge) incidents. The task list generates fireground staffing required to perform the tasks. The process was called Matching Resource Deployment and Risk<sup>75</sup> (MRDR).

Combining the requirements of the FUS table with the tasks and manning matrix of the MRDR workbook will provide a fuller picture of the resourcing needs at any size fire incident. The following snapshot shows the generic critical task list.

**FIGURE: FIREGROUND CRITICAL TASKS**

Fireground Critical Tasks
Incident Command
Pump Operator
Attack Line (Confine & Extinguish)
Additional Pump Operator(s)
Additional Attack Line (Confine & Extinguish) + Backup
Search and Rescue
Initial Rapid Intervention Team (IRIT)
Ventilation
Water Supply - pressurized
Water Supply - non-pressurized
Forceable Entry Team
Utility Control
Laddering (Ground Ladders)
Laddering (Aerial or elevating device operator)
Exposure Protection
Incident Safety Officer
Accountability
Entry Control
Rehabilitation
Salvage
Lighting
Directing Occupants
Scribe
Sector Officers
Air Management (air refilling station, etc.)
Logistics Officer
Administrative and/or Finance Officer
Planning Officer
Evacuations (large scale)
Public Information Officer
Overhaul
Additional Firefighters

The firefighters assigned to tasks on the MRDR list are scalable, meaning that different incidents and different occupancy circumstances can require assigning different numbers of staff to tasks as needed. For example; *Additional Pump Operator(s)* will vary depending on how many pumpers are required at the incident. The number of pumpers will increase as the amount of RFF demand increases, and etc.

Generally, pre-planning of specific occupancies will identify these needs beforehand.

GA developed two scenarios. One for a fire in a hydranted area (urban/suburban) and the other for a fire in a rural area (tanker-shuttle). Manpower needs will escalate with

<sup>75</sup> Ontario Fire Marshal's Office, Operational Planning: An official Guide to Matching Resource Deployment and Risk, January 24, 2011.

the need to shuttle water, as will the need for additional pumpers and for tankers to source and deliver that water. In fact, there is a practical/logistical limit to how big a fire can be successfully mitigated, and it's a lower limit in a rural setting due to water supply issues.

Fire in a Hydranted Area

FIGURE: STAFFING & FIRE FLOW RANGES IN AN URBAN/SUBURBAN SETTING

Fireground Critical Tasks	Low Risk		Moderate Risk		High Risk		Extreme Risk	
	LERL	UERL	LERL	UERL	LERL	UERL	LERL	UERL
Incident Command	1	1	1	1	1	1	1	1
Pump Operator	1	1	1	1	1	1	1	1
Attack Line (Confine & Extinguish)	2	2	2	2	2	2	2	2
Additional Pump Operator(s)	0	0	0	1	2	3	4	5
Additional Attack Line (Confine & Extinguish) + Backup				4	4	8	8	12
Search and Rescue			2	4	2	6	2	8
Initial Rapid Intervention Team (IRIT)			4	6	8	10	12	14
Ventilation		2	2	2	2	4	2	8
Water Supply - pressurized		1	1	1	1	1	1	2
Water Supply - non-pressurized								
Forceable Entry Team						1		1
Utility Control		1	1	1	1	1	1	1
Laddering (Ground Ladders)		2		2		4		6
Laddering (Aerial or elevating device operator)	0	0	1	2	2	3	4	5
Exposure Protection				4	2	6	2	6
Incident Safety Officer				1	1	1	1	1
Accountability			1	1	1	1	1	1
Entry Control				2	1	4	2	4
Rehabilitation				1	1	1	2	2
Salvage				2	2	2	2	2
Lighting						2	1	2
Directing Occupants					1	4	2	4
Scribe					1	1	1	1
Sector Officers					1	4	2	4
Air Management (air refilling station, etc.)							1	2
Logistics Officer					1	1	1	1
Administrative and/or Finance Officer							1	1
Planning Officer				1	1	1	1	1
Evacuations (large scale)					1	1	1	1
Public Information Officer					1	1	1	1
Overhaul								
Additional Firefighters								
Incident Staffing Totals:	4	10	16	39	41	74	59	100

Risk Rating		Fire Flow in USA gpm							
1(a)	400	400							
1(b)	600	600							
2	800	1,000							
3(a)			1,200	2,800					
3(b)					3,000	4,200			
4(a)					4,400	6,000			
4(b)							6,200	7,600	
5							7,800	10,000	

Referring back to **Figure: FUS Table of Effective Response** on page 236 we are reminded of the descriptions for the Risk Ratings. In the above table, the RFF amounts in the blue section,

corresponding to each Risk Rating, are placed under the corresponding column in the MRDR matrix above.

The following table will equate the MRDR risk columns with the FUS Risk Ratings.

**FIGURE: FUS - MRDR CROSS REFERENCE**

FUS Risk	MRDR Risk	Examples of Occupancies
1(a)	Low	Unattached garage or shed, small farm out building. At least 10 meters to exposures.
1(b)	Low	Cottages or small homes not in a subdivision, not with wood shingles.
2	Low	Typical residential housing, bungalow, 2-story, 2-4,000 sqft in area, 10-20 feet separation.
3(a)	Moderate	Large residential, townhouses, single story motels, corner store, rural service garage, smaller-medium sized community hall or church, Victorian homes, single-story schools.
3(b)	High	2-4 story apartment or senior complex, nursing homes, hospital, shopping centre, bus garage, large schools, large agricultural structures, factories.
4(a)	High	Large timber framed residential school complex, large century churches, big box general merchandise store, old timber-framed school, large hay-barn.
4(b)	Extreme	Building supply warehouse (large), general merchandise warehouse (large), shipping terminal (large)
5	Extreme	Paper mill, knitting mill, large clothing mill, downtown Windsor with crowded mixed commercial/residential timber-frame construction.

The table on page 236 provides both the required fire flows (RFF) and manning needs. The variation between the Lower and the Upper Effective Response Level (LERL/UERL) in the manning portion of the table provides allowance for specific occupancy conditions when pre-planning for a response to the occupancy. The RFF changes also.

The next step is to determine the number of pumpers and aerial apparatus that are needed to provide the RFF in the table. The FUS Table of Effective Responses makes recommendations, but these are minimums. The capacities of the water-pumps in the pumpers that are responding is critical.

In the following table, the average pumper capacity is set at 1,500 Imp gallons per minute (IGPM). The average capacity of the current fleet of fire apparatus equipped with fire pumps is 1250 Igpm. The table does not include the number of pumpers needed to do relay-pumping from distant hydrants. This requirement can almost double the total number of pumpers needed, depending on the water supply situation.

**FIGURE: REQUIRED PUMPERS & AERIALS**

		Low Risk		Moderate Risk		High Risk		Extreme Risk	
		LERL	UERL	LERL	UERL	LERL	UERL	LERL	UERL
Incident Staffing Totals:		4	10	16	39	41	74	53	100

Table of Effective Response (FUS)									
Risk Rating		Fire Flow in USA gpm							
1(a)	400	400							
1(b)	600	600							
2	800	1,000							
3(a)			1,200	2,800					
3(b)					3,000	4,200			
4(a)					4,400	6,000			
4(b)							6,200	7,600	
5							7,800	10,000	

Apparatus Needs for Manning and Fire Flow										
Pumers Required:		Attack * PUMPERS								GROUP
AVG Capacity	(110% capacity not accounted)	1	1							1(a)
1,801 USgpm	Standard pumper capacity:	1	1							1(b)
6,816 lpm		1	1							2
1,500 lpgm	* FOR A HYDRANT SERVICED AREA			1	2					3(a)
	Note: if area is NOT serviced by hydrants, then additional pumps will likely be needed for water sourcing, relaying, etc.					2	3			3(b)
						3	4			4(a)
								4	5	4(b)
								5	6	5

Aerials required:										
GA Recommendation			AERIALS							GROUP
IOEB	LEBL	UERL								
0	0	0	0	0						1(a)
0	0	0	0	0						1(b)
0	0	1	0	1						2
1	1	2			1	2				3(a)
1	2	2					2	2		3(b)
1	2	3					2	3		4(a)
1	3	4							3	4(b)
3	4	6							4	5

Based on the above table calculations, the number of attack pumpers needed can range between one and six, and the number of aerials varies between zero and six, depending on the fire risk of the involved occupancy. Additional pumpers will likely be needed to relay pump from distant hydrants or other water sources. Likewise, the actual incident can indicate higher or lower numbers of aerials needed.

The number of fire apparatus operators needed is reflected in the MRDR table on page 237, not including relay pump operators.

*Fire in a Rural Area*

The entire exercise was repeated for a fire in a rural area without hydrants. In this case water supply is dependent on pumpers drafting from a water source, filling tankers who deliver the water to the fire area and dump it into dump-tanks, where another pumper takes the water and relays it to the attack pumper who is near the fire building. Typical for rural fires, access driveways require the attack pumper to leave the public road and enter the fire property.

**FIGURE: STAFFING & FIRE FLOW RANGES IN A RURAL SETTING**

Fireground Critical Tasks	Low Risk		Moderate Risk		High Risk		Extreme Risk	
	LERL	UERL	LERL	UERL	LERL	UERL	LERL	UERL
Incident Command	1	1	1	1	1	1	1	1
Pump Operator	1	1	1	1	1	1	1	1
Attack Line (Confine & Extinguish)	2	2	2	2	2	2	2	2
Additional Pump Operator(s)	2	2	4	8	10	14	19	24
Additional Attack Line (Confine & Extinguish) + Backup				4	4	8	8	12
Search and Rescue			2	4	2	6	2	8
Initial Rapid Intervention Team (IRIT)			4	6	8	10	12	14
Ventilation		2	2	2	2	4	2	8
Water Supply - pressurized		1	1	1	1	1	1	2
Water Supply - non-pressurized	2	2	4	7	9	11	16	20
Forceable Entry Team						1		1
Utility Control		1	1	1	1	1	1	1
Laddering (Ground Ladders)		2		2		4		6
Laddering (Aerial or elevating device operator)	0	0	1	2	2	3	4	5
Exposure Protection				4	2	6	2	6
Incident Safety Officer				1	1	1	1	1
Accountability			1	1	1	1	1	1
Entry Control				2	1	4	2	4
Rehabilitation				1	1	1	2	2
Salvage				2	2	2	2	2
Lighting						2	1	2
Directing Occupants					1	4	2	4
Scribe					1	1	1	1
Sector Officers			1	1	1	4	2	4
Air Management (air refilling station, etc.)							1	2
Logistics Officer					1	1	1	1
Administrative and/or Finance Officer							1	1
Planning Officer			1	1	1	1	1	1
Evacuations (large scale)					1	1	1	1
Public Information Officer					1	1	1	1
Overhaul								
Additional Firefighters								
<b>Incident Staffing Totals:</b>	<b>8</b>	<b>15</b>	<b>26</b>	<b>54</b>	<b>58</b>	<b>96</b>	<b>90</b>	<b>139</b>

The required fire flow (RFF) rate table does not change whether the occupancy is hydrant protected or requires a rural water supply. It is determined by the occupancy that is burning. The objective is control and extinguishment.

What does change is the water supply chain. There is a need to provide pumpers and tankers to provide the RFF. This requires additional staff, and these are reflected in the above MRDR table.

The additional pumpers and tankers are shown in the following tables.

**FIGURE: REQUIRED WATER SUPPLY PUMPERS AND TANKERS**

			Low Risk		Moderate Risk		High Risk		Extreme Risk																																																																																											
			LERL	UERL	LERL	UERL	LERL	UERL	LERL	UERL																																																																																										
<p><b>Tankers Required:</b></p> <ul style="list-style-type: none"> <li>Tanker net capacity (lgal) <b>2,200</b> lgal (Liters)</li> <li>Tanker handling time dump site <b>0.5</b> min</li> <li>Tanker Unloading time <b>2.0</b> min</li> <li>Tanker travel time to fill site <b>4.4</b> min at</li> <li>Tanker handling time fill site <b>0.5</b> min</li> <li>Tanker Refill time <b>2.5</b> min</li> <li>Tanker travel time back to fire <b>5.0</b> min at</li> <li>Deliver Rate calculated <b>148</b> lpgm</li> <li>i.e. <b>177</b> USgpm</li> <li>i.e. <b>671</b> lpm</li> </ul>			<p><b>TANKER SHUTTLE OPERATIONS</b></p> <p>one way distance from fire to water source (10,001)</p> <p>park, ready/retract chute(s), open/close dump(s), pull away water flow time</p> <p><b>68 kmph average speed</b></p> <p>park, attach/detach hose, open/close valves, pull away make pressure, flow water, reduce pressure, stop flow</p> <p><b>60 kmph average speed</b></p> <p><b>Water average delivery rate per tanker</b></p>			<p><b>TANKERS</b></p> <table border="1"> <tr><td>2</td><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>3</td><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>5</td><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td>7</td><td>16</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td>17</td><td>24</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td>25</td><td>34</td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>35</td><td>43</td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>44</td><td>56</td><td></td></tr> </table>						2	2										3	3										5	6												7	16												17	24											25	34													35	43										44	56		GROUP
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<p><b>Total Apparatus Needs:</b></p> <ul style="list-style-type: none"> <li>- pumpers, Table 8</li> <li>- tankers, Table 6</li> <li>- aerials, Table 4</li> </ul>			<p><b>Tanker Shuttle Operations</b></p> <p>Table numbers includes following pumper functions</p> <ul style="list-style-type: none"> <li>- Attack pumpers</li> <li>- Water relay pumpers (dump site)</li> <li>- Water source pumpers (static source)</li> </ul>			<p><b>TOTAL PUMPERS NEEDED (Tanker Shuttle)</b></p> <table border="1"> <tr><td>3</td><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>3</td><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>3</td><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td>5</td><td>9</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td>9</td><td>12</td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td>13</td><td>17</td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>18</td><td>22</td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>22</td><td>28</td><td></td></tr> </table>						3	3										3	3										3	4													5	9												9	12											13	17												18	22										22	28		GROUP
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In the above figure are four tables. The top table calculates the number of tankers required to deliver the RFF. A tanker’s ability/rate of water delivery is based on the maximum allowed FUS travel distance for a residential fire risk (5 kilometers). The tanker volume capacity is set at 2,200 Imperial gallons<sup>76</sup> for these calculations and some assumptions about handling and travel time are made. These assumptions come from the consultant’s experience for a highly efficient tanker shuttle operation. Shorter distances and more efficient tankers will lower times and increase delivered water.

<sup>76</sup> Currently there are 7 tanker/pumpers in the fire fleet, average tank capacity is 2,500 lgal. Only one is set up for high efficiency tanker shuttle rapid water dumping; i.e. side dumping.

The second table calculates the number of required dump sites (near the fire) and a corresponding number of pumpers to move the water to the attack pumper(s). The third table calculates the number of fill sites and corresponding pumpers needed to draft water and fill tankers.

The bottom table sums up the pumper resource needs, including the number of attack pumpers previously determined.

It is GA's opinion that it is impractical to depend on a tanker shuttle to fight a fully-involved rural fire that is above FUS Risk Rating 3(a) at the MRDR UERL level. The ability to effectively coordinate as many as 16 tankers and commensurate pumpers would be rare. Typically in these cases, exposure protection of other structures becomes the objective in a defensive strategy.

**GA recommends** that for potential large fire risk occupancies in rural areas, that adequate on-site water supplies be provided by the owner, such that relay pumping from draft can replace or strongly supplement water shuttled by tankers. These sites should be large all-weather access ponds meeting NFPA-1142.

**RECOMMENDED FRONT-LINE STAFFING AND EQUIPMENT**

**GA recommends** the following staffing complement of active volunteer firefighters for each station, and the recommended fleet of fire apparatus.

**Windsor:**

Highest normally expected risk 4(a), possible 5 (downtown conflagration)

ACTIVE Volunteer Firefighters	Pumpers	Pumper-Tankers	Aerials	Rescues	Utility	Other
60	2	1	1 (110 ft)	1, Regional Heavy Rescue Support	1	1, Regional personnel transporter

Windsor currently has a boat and a tracked off-road vehicle (RTV). Water rescue events are rare, but the risk to firefighters without a boat is considerable, especially on a body of water the size of Pisquid Lake. With the revised response districts, it is likely that Windsor firefighters will make good use of the RTV in rural areas.

**Hantsport:**

Highest normally expected risk 3(b), possible 5 (CKF)

ACTIVE Volunteer Firefighters	Pumpers	Pumper-Tankers	Quint	Rescues	Utility
60	1	1	1 (75 ft)	1, Regional SCBA Support	1

**South West**

Highest normally expected risk 2, possible 3(a) (small stores)

ACTIVE Volunteer Firefighters	Pumpers	Pumper-Tankers
24	1	1

**Brooklyn**

Highest normally expected risk 3(b), possible 4(a) (large church)

ACTIVE Volunteer Firefighters	Pumpers	Pumper-Tankers	Rescues	Utility	Other
40	2	1	1, Regional Command Support	1	RTV

**Three Mile Plains**

Highest normally expected risk 3(b), possible 4(b) (building supply with exposures)

ACTIVE Volunteer Firefighters	Pumpers	Pumper-Tankers	Aerials	Utility
40	1	1	1, (100 ft platform)	1

**Summerville**

Highest normally expected risk 3(a), possible 3(b) (farm complex)

ACTIVE Volunteer Firefighters	Pumpers	Pumper-Tankers	Rescues	Utility	Other
24	1	1	1, Regional mass-casualty Support	1	Boat, RTV

**Changes in Assessments and Property Counts, Revised Fire Districts**

There are 13,335 properties in W/WH. The revised fire districts proposed will change the distribution of protected properties, by fire station, from the existing distribution as estimated on page 187.

According to the address of the properties, thereby identifying the community, the following shows approximately how the properties are will be distributed to the fire departments. Note that Hantsport numbers do not include the areas in Kings County, nor are East Hants properties protected by Brooklyn.

Fire Department	Current Properties	Revised Properties	Revised Value	%
Windsor	1,582	3,100	\$562,755,300	35%
Hantsport	2,911	1,108	\$129,443,800	8%
South West	1,210	1,349	\$135,545,000	9%
Brooklyn	3,242	3,244	\$352,614,100	22%
Three Mile Plains	2,522	2,668	\$303,163,200	19%
Summerville	1,419	1,419	\$78,890,600	5%
Uniacke and District	2	0	\$0	0%
Walton Shore	443	443	\$32,434,600	2%
Unclassified	4	4	\$170,800	0%
<b>Totals:</b>	<b>13,335</b>		<b>\$1,595,017,400</b>	

Also affected is the distribution of identified major occupancies, as follows.

**FIGURE: DISTRIBUTION OF IDENTIFIED OCCUPANCIES, REVISED FIRE DISTRICTS**

Station	A	B	C	D	E	F
Windsor	38	9	35	14	8	14
Hantsport	14	1	14	1	1	9
South West	11				1	1
Brooklyn	28		8	3	6	14
Three Mile Plains	19	1	12	3	8	28
Summerville	9		1	1		3
Uniacke						
Walton Shore	3					2
<b>Totals:</b>	<b>107</b>	<b>11</b>	<b>62</b>	<b>22</b>	<b>21</b>	<b>57</b>

## APPARATUS RECOMMENDATIONS

### **REPLACING FIRE TRUCKS**

A review of the current state of major fire department assets in W/WH shows a need to replace vehicles (fire apparatus) on a regular schedule that meets needs and best practices. NFPA-1911<sup>77</sup> recommends;

*“In the last 10 to 15 years, much progress has been made in upgrading functional capabilities and improving the safety features of fire apparatus. Apparatus more than 15 years old might include only a few of the safety upgrades required by the recent editions of the NFPA fire department apparatus standards ... It is recommended that apparatus more than 15 years old that have been properly maintained and that are still in serviceable condition be placed in reserve status; be upgraded in accordance with NFPA-1912; and incorporate as many features as possible of the current fire apparatus standard (see Section D.3). This will ensure that, while the apparatus might not totally comply with the current editions of the automotive fire apparatus standards, many of the improvements and upgrades required by the current editions of the standards are available to the fire fighters who use the apparatus.”*

NFPA-1911 goes on to say that the original purchase of good quality, with good ongoing maintenance, and periodic upgrading to keep pace with safety and function improvements, can extend apparatus serviceable life somewhat.

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<sup>77</sup> National Fire Protection Association; NFPA-1911, Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles, 2017 edition; Annex D.1.

The other major arbiter of fire apparatus age and condition is the Fire Underwriters Survey (FUS), who published<sup>78</sup> the following guidance table;

**Table 1 Service Schedule for Fire Apparatus For Fire Insurance Grading Purposes**

Apparatus Age	Major Cities <sup>3</sup>	Medium Sized Cities <sup>4</sup>	Small Communities <sup>5</sup> and Rural Centres
0 – 15 Years	First Line Duty	First Line Duty	First Line Duty
16 – 20 Years	Reserve	2 <sup>nd</sup> Line Duty	First Line Duty
20 – 25 Years <sup>1</sup>	No Credit in Grading	No Credit in Grading or Reserve <sup>2</sup>	No Credit in Grading or 2 <sup>nd</sup> Line Duty <sup>2</sup>
26 – 29 Years <sup>1</sup>	No Credit in Grading	No Credit in Grading or Reserve <sup>2</sup>	No Credit in Grading or Reserve <sup>2</sup>
30 Years +	No Credit in Grading	No Credit in Grading	No Credit in Grading

<sup>1</sup> All listed fire apparatus 20 years of age and older are required to be service tested by recognized testing agency on an annual basis to be eligible for grading recognition. (NFPA 1071)

<sup>2</sup> Exceptions to age status may be considered in a small to medium sized communities and rural centres conditionally, when apparatus condition is acceptable and apparatus successfully passes required testing.

<sup>3</sup> Major Cities are defined as an incorporated or unincorporated community that has:

- a populated area (or multiple areas) with a density of at least 400 people per square kilometre; AND
- a total population of 100,000 or greater.

<sup>4</sup> Medium Communities are defined as an incorporated or unincorporated community that has:

- a populated area (or multiple areas) with a density of at least 200 people per square kilometre; AND/OR
- a total population of 1,000 or greater.

<sup>5</sup> Small Communities are defined as an incorporated or unincorporated community that has:

- no populated areas with densities that exceed 200 people per square kilometre; AND
- does not have a total population in excess of 1,000.

FUS is the organization that conducts detailed surveys of municipal fire protection capabilities for the purposes of recommending fire protection grades to the insurance industry. FUS recommendations are highly regarded as a consistent yardstick for comparison to past and future capabilities in fire protection, and their conclusions (ratings) can affect fire insurance costs for individual property owners.

It is clear that both NFPA and FUS consider 15 years as the maximum front-line serviceable age of fire apparatus. However, FUS does recognize that low incident volumes, quality purchases, and good maintenance, proved by testing, can extend the front-line serviceable age to 20 years, followed by up to 5 years in reserve for smaller communities. Front-line means that the apparatus is relied on to be a mainstay for fire protection. Reserve means that it is not so relied on, but can periodically step into a front-line role when needed (e.g. as a maintenance spare).

<sup>78</sup> Fire Underwriters Survey/OPTA, Technical Bulletin, Insurance Grading Recognition of Used or Rebuilt Fire Apparatus, 2014.

**GA recommends** that the following replacement schedule be adopted for the purposes of determining fire apparatus suitability for continued service.

**RECOMMENDED SERVICE LENGTH FOR FIRE APPARATUS**

Type	Condition	Max Age	Service
Pumper	Purchased to NFPA-1901 standard, certified and periodically tested in accordance with FUS/ULC	20 years	First-line duty
Pumper	Purchased to NFPA-1901 standard, certified and periodically tested in accordance with FUS/ULC	25 years	Reserve use
Aerial/Quint	Purchased to NFPA-1901 standard, certified and periodically tested in accordance with FUS/ULC	20 years	First-line duty
Aerial/Quint	Purchased to NFPA-1901 standard, certified and periodically tested in accordance with FUS/ULC	25 years	Reserve use
Rescue	Purchased to appropriate portions of NFPA-1901 standard	25 years	First-line duty
Rescue	Purchased to appropriate portions of NFPA-1901 standard	30 years	Reserve use
Utility vehicles	Light duty chassis	15 years	First-line duty
Utility vehicles	Light duty chassis	20 years	Reserve use
All other vehicles/apparatus	RTV, rescue boat, trailers, etc.	Case-by-case basis	First-line duty or reserve

GA is recommending the following numbers and types of **first-line duty** fire apparatus allocations. These numbers can be accomplished through attrition as current apparatus age-out.

**RECOMMENDED FIRST-LINE DUTY FIRE APPARATUS AND ASSIGNMENT**

Station	Pumper	Pumper/Tanker*	Quint	Aerial	Rescue	Utility	RTV	Boat
Windsor	2	1	0	1	1	2	1	1
Hantsport	1	1	1	0	1	1	0	0
SWH	1	1	0	0	0	0	0	0
Brooklyn	2	1	0	0	1	1	1	0
TMP	1	1	0	1	0	1	0	0
Summerville	1	1	0	0	1	1	1	1
Totals:	8	6	1	2	4	6	3	2

GA is further recommending that two older (no longer first-line) pumpers and a tanker be kept serviceable as maintenance reserves. The purpose of reserves is to temporarily replace apparatus that are out of service for a day or more. They will also remain available for major incidents.

**GA recommends** that a reserve pumper be placed in Brooklyn and Windsor stations, and the reserve Tanker be placed in Summerville.

Two new apparatus types have been introduced in the above recommendation table in comparison to the table<sup>79</sup> of current apparatus.

The term Pumper-Tanker is a better description of the apparatus recommended to replace the current Tanker apparatus. In truth, all current tanker apparatus are equipped with a large pump.

**GA recommends** that replacement Tanker apparatus also include all components necessary to qualify as a pumper and a tanker. This includes little to no significant change from the current apparatus in some cases, but in other cases means the inclusion of adequate equipment and hose carrying capacity.

**GA recommends** a standardized vehicle specification be used Region-wide. Standardized apparatus descriptions are included in **Appendix IX; Standardized Fire Apparatus Features** starting on page 377.

The second new apparatus type is the Quint. The Quint is a combination of a pumper that is outfitted with an aerial ladder device. An example is shown in the photo to the right.



A quint is fully functional as a pumper, with similar capabilities to the recommended Standard Regional Pumper. It can also serve as an aerial apparatus when needed since it is outfitted with a 75-foot aerial device. This apparatus will address the need for quick access to an aerial in Hantsport's urban/industrial environment. It also has the pumping capacity of a second pumper

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<sup>79</sup> See **Figure: Current Apparatus Inventory** starting on page 154.

when needed. It will be an additional aerial available in Windsor, or elsewhere in the Region, at incidents involving larger or complex buildings, or for exposure protection.

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## **THE VALUE OF FIRE APPARATUS STANDARDIZATION**

The following is intended to provide some insight into areas where performance, safety, economy, and effectiveness can intersect in a standardized fire apparatus specification format; a format that can generate savings through bulk purchasing and streamlined maintenance, as well as improved operability for firefighters.

First, a review of the current fire fleet. Major components installed in the current fire fleet are as follows;

- Fire pumps; Hale is the most common fire pump manufacturer (8), Waterous is next (6), followed by Darley (3) and Pierce (1).
- Engines; Cummins is the most common diesel engine manufacturer (12), Detroit is next (5, but three of these are obsolete engines in trucks that need immediate replacement due to advanced age), followed by International (4), CAT (3, but CAT has left the truck engine business), and Mercedes (1, which was only, and is no longer, available in Freightliner chassis).
- Chassis custom; Pierce is the most common *Custom* cab/chassis manufacturer (4), E-One is next (3), followed by American LaFrance (2, no longer in business and both overdue for replacement), and King-Seagrave (1, no longer in business and overdue for replacement).
- Chassis commercial; Freightliner is the most common heavy/medium truck Commercial cab/chassis manufacturer (5), tied with International, and followed by Ford (2) and Peterbilt (1).

The significance of the above information is that there is a large variety of pump, chassis, and engine manufacturers currently in the fire fleet. This strongly suggests that there is an opportunity for standardization of fire apparatus specification and purchasing between the four existing fire departments and internally within each. This standardization will reduce inefficiencies in servicing and repair. Reducing the variety of apparatus specifications will facilitate consolidation of servicing for these vehicles, thereby gaining an advantage of economies of scale from commonality of parts and consolidated knowledge.

There are significant advantages in purchasing, serviceability, and costs, to say nothing of in-depth knowledge accumulation, when a standardized chassis/cab, pump, and powertrain is used for all vehicles of a class in a fleet. Such advantages will surface in cost of ownership with lower parts stock costs and more efficient servicing; thereby reducing service time/cost, with consequent reduction in down-time, and better preventive maintenance knowledge.

Cost savings in purchasing can be achieved with a common specification across multiple vehicles. It then becomes possible to establish multi-year, multi-vehicle contracts, from multiple provider choices; contracts that can attract better pricing and reduce municipal administrative time.

**GA recommends** that specifications for the major classes of fire apparatus be standardized across all stations in the new regional municipality. This will generate savings in total cost of ownership for the municipality.

The standard apparatus specification should include a standard make and model of fire pump, which is a major component of most fire apparatus, and is a major maintenance cost component and cause of down-time. Based on the existing fleet, it is clear that Hale is the predominant pump manufacturer. Hale is a highly reputable pump manufacturer and makes an excellent and reliable product. Hale is probably the most widely specified fire pump in North America.

The Hale Qmax family of pumps offers capacity scalability to suit various needs of the new Regional fire service. The recommended standardized version (for pumpers) is the Hale Qmax rated at 1250 Imp gpm. This pump will produce flows well in excess of its rating, provided there is adequate horsepower to drive the pump and adequate water supply. Horsepower will be addressed by our recommendation on engines.

For aerial devices, the ability to produce a maximum volume water stream from the top of the aerial ladder requires a larger pump due to friction and height losses. For that application, the Qmax in the 1750 Imp gpm rating is recommended.

The standard apparatus specification should also include a standard make and model of engine. Based on the existing fleet, it is clear that Cummins is the predominant engine manufacturer. Indeed, it is one of only a couple choices left in the truck market. Cummins is a highly reliable and fuel-efficient engine manufacturer with excellent power availability, and a choice of power models. Cummins is a standard offering in most fire truck chassis.

In the Regional fire service, there is a need for three different Cummins engines, with different horsepower and torque capabilities. For pumpers and tankers, the Cummins X12-500 is

recommended. This engine is powerful enough to get all the available water flow from the recommended pump and will move these heavy vehicles down the road with good hill climbing and highway performance.

For aerial apparatus, the Cummins X15-605 is recommended. This engine has slightly higher horsepower and significantly more torque. Aerial apparatus are significantly heavier than pumpers and have larger auxiliary power demands from large hydraulic systems that operate the aerial device. The more powerful engine is needed to ensure adequate performance.

Rescue style trucks are generally smaller and lighter and should be based on a commercial chassis. The smaller Cummins ISL9-450 is recommended for this service.

It is desirable that the cab/chassis also be standardized. There is justification for both custom cab/chassis as well as commercial cab/chassis.

The current trend for heavy fire apparatus (pumpers, tankers, aerials) is to specify custom cab/chassis models that are specifically designed for the fire service vocational application. These heavy fire apparatuses incorporate pumps, foam systems, heavy electrical and hydraulic draws, complex electrical systems and other specialized features (e.g. aerial devices). Custom chassis have the advantage over commercial platforms in several ways.

Custom chassis are designed for higher horsepower engines than are available in the commercial chassis, that are suitable for fire service application. Where the apparatus is intended to be stationary and demanding high power output from its engine (i.e. pumping/aerial), engine heat dissipation is a major concern. Custom fire apparatus cab/chassis are specifically designed for this application, whereas commercial cab/chassis are specifically not designed for this application.

In commercial chassis the engine selection is limited, for example the Freightliner M2-106 chassis model is not available with the larger Cummins engines (X12), and neither is the International HV chassis. The Freightliner uses a Detroit engine for higher horsepower applications. The International uses a MANN engine from Europe. Both chassis offer the Cummins ISL9 engine.

Custom chassis are prewired and equipped for fire apparatus applications. Commercial chassis are not, and require significantly more work (time/cost) and materials (cost) on the part of the fire body manufacturer to integrate the chassis with the fire service body, mechanical, electrical, compressed air, and hydraulic systems. The purpose-built aspect of the custom chassis assures a more suitable and reliable final constructed vehicle for pumpers, pumper-tankers and aerials.

Large aerial devices are only available on custom chassis, due to the need for stronger and stiffer frames and specialized systems that integrate into a purpose-built chassis. The chassis and aerial are designed together as an integrated machine.

Having illuminated the value of custom chassis above, there is one difficulty with using custom chassis. It may restrict who the municipality can purchase their fire apparatus from. There are a few manufacturers of custom chassis, and almost all limit their availability for use by independent fire apparatus (body) builders. For those manufacturers, to buy their chassis you must also buy their entire apparatus.

This is not necessarily a bad thing if the manufacturer offers quality apparatus at competitive pricing that meets the municipality's needs, and will continue to do so into the future. In that case, the municipality must be satisfied at a sole source supplier process. Brooklyn/Three Mile Plains is the best example of this, currently operating three custom chassis and one commercial chassis apparatus built by Pierce. Hantsport also has one Pierce custom and SW-Hants one Pierce commercial apparatus.

GA was able to identify nine custom fire-chassis builders in North America;

- **Pierce** (USA-Wisconsin): captive chassis for their own apparatus builder, with a wide range of apparatus types. In Canada has exclusive contract with Maximetel (QC) to build for the Canadian market.
- **Sutphen** (USA-Ohio): captive chassis for their own apparatus builder, with a limited range of apparatus types.
  - o Sutphen has sold some chassis to SVI (USA-Colorado) who specializes in rescue and wildland trucks, strategically filling a gap in Sutphen's product lineup

- **E-One** (USA-Florida): captive chassis for their own apparatus builder, with a wide range of apparatus types.
- **KME** (USA-Pennsylvania): captive chassis for their own apparatus builder, with a wide range of apparatus types.
- **Ferrara** (USA-Louisiana): captive chassis for their own apparatus builder, with a wide range of apparatus types.
  - o E-One, KME, and Ferrara are all owned by the REV Group
- **HME Aherns-Fox** (USA-Michigan): captive chassis for their own apparatus builder, with a wide range of apparatus types.
- **Seagrave** (USA-Wisconsin): captive chassis for their own apparatus builder, with a range of apparatus types, limited rescue options.
  - o Seagrave has sold some chassis to two large independent builders that we know of;
    - SVI (USA-Colorado) who specializes in various role rescue type and wildland trucks, strategically filling a gap in Seagrave's product lineup; and
    - Rescue-1 (USA-NJ) who specializes in various rescue type trucks, strategically filling a gap in the Seagrave product lineup in the eastern states.
  - o Both those independent builders predominantly use Spartan chassis.
- **Rosenbauer** (USA-South Dakota): captive chassis for their own apparatus builder group, with a very wide range of apparatus types.
- **Spartan** (USA-Michigan): available chassis for their own and independent apparatus builders. They are primarily a custom chassis builder in many markets with a wide range of chassis types. Spartan also builds complete fire apparatus with a range of apparatus types.

In GA's opinion, without standardizing on the custom chassis manufacturer, it is possible that over time the Regional fire service could conceivably have up to nine different custom chassis manufacturers in the fleet; each significantly different from each other.

One challenge is that all but one of the manufacturers listed above restricts access to their chassis, with most providing them only to their own integrated apparatus builder network or to strategic partners. These owned/contract builders take the chassis and construct the body, install major components like the pump and piping, the water tank, electrical systems, hydraulic systems, air systems, storage systems, and paint and prep the entire vehicle. Standardizing on one of these restricted access chassis could mean being forced to forgo the competitive purchasing process for the balance of the apparatus. With the chassis representing only from  $\frac{1}{4}$  to  $\frac{1}{3}$  of the total cost of the entire fire apparatus, this could be a concern.

The one exception is the Spartan custom chassis. Although there are surprisingly no Spartan custom chassis currently in the current Regional fire service's inventory, it would make sense to explore standardizing on Spartan as the custom chassis of choice for the majority of the fleet. The advantage is that Spartan markets their custom chassis to the large as well as small independent apparatus builders all over the world. Many of these builders are in Canada as well as in the USA. It is a very competitive market.

For the above reasons, we recommend standardizing on the Spartan Gladiator chassis, medium 4-door (MFD) cab, with 10 inch raised roof and galvanized frame. The galvanized frame is an exclusive Spartan feature that protects the single weakest point affecting a chassis' lifespan, chassis corrosion. This is another reason for considering Spartan.



Standardizing on Spartan would have several advantages. It would lower the overall cost of ownership as noted above. It would also open-up the municipality's choices for purchasing from independent fire apparatus builders across Canada and the USA, of which there are a significant number of choices. In this way, the features wanted in the fire apparatus are available through a competitive bidding process, in addition to the value of standardization of all major components.

In Canada there are the following well-known builders who, except for Maximetal, all build on Spartan chassis;

- **Lantz** (Port Williams, NS): Long noted for their very high-quality rescue trucks and tankers; they also build pumpers. Sells direct to municipalities (no dealer overheads).
- **Metalfab** (Centreville NB): Builds pumpers, tankers and rescue trucks. Sells through dealers.
- **Fort Gary** (Winnipeg, MB): Builds pumpers, tankers and rescue trucks. Sells through dealers.
- **Carl Thibault** (Pierreville, QC): Builds pumpers, tankers, aerials, and rescue trucks. Sells through dealers.
- **Maximetal** (Saint-Georges, QC): Builds pumpers, tankers and rescue trucks. Sells through dealers. Also has exclusive strategic access to Pierce chassis in Canada.
- **Dependable** (Brampton, ON): Builds pumpers, tankers and rescue trucks. Sells direct. Dealer for Spartan aerials.
- **Hub** (Abbotsford, BC): Builds pumpers, tankers and rescue trucks. Sells through dealers.
- ...
- There are also across Canada a number of smaller firms (smaller than those mentioned above) who build fire apparatus for their regional market.
- Buyers also have access to a large number of USA fire truck manufacturers who build on Spartan chassis. Some are available through Canadian fire truck dealers. Access to service and support becomes a critical factor in making these out-of-country purchases.

For other needed Regional vehicles, specifically rescue style vehicles, the most common fire service chassis used is the Freightliner M2-112, with a raised roof crew-cab. Based on local preferences, some other commercial brands are sometimes used for medium/heavy fire trucks (e.g. International, Ford, Volvo, Peterbilt). Only Freightliner, Ford, and International offer production crew-cabs, and only Freightliner offers a raised roof crew-cab that provides the required space for firefighters, similar to that available in smaller custom cabs. The Freightliner has become ubiquitous in this service, and almost every fire apparatus builder offers fire trucks constructed on this chassis.

We recommend the Freightliner M2 chassis as the standard commercial chassis used for lighter duty fire apparatus in the municipality; in a 2-door (as shown), or preferably a crew-cab with raised roof format so the crew does not need to ride in the box. The specific application is variable.



Standardization of major components on fire apparatus has other benefits as well.

Standardization helps to ensure that all assigned drivers are familiar with all fire apparatus in the fleet, not just the ones they normally operate. It reduces training time and effort. Skills learned on one apparatus are directly applicable to another. This reduces the risk of incidents and improves operator skill levels and performance outcomes. It also simplifies the ability to relieve the apparatus operator (at long duration incidents) by any trained operator, even one who is not familiar with that specific apparatus, but who is trained and experienced with other members of the apparatus family.

When apparatus are removed from service for repairs, the replacement spare apparatus will be highly similar to the one being repaired, which improves the effectiveness and efficiency of the use of the spare apparatus. Training will not be required before the *foreign* apparatus can be utilized safely; training and familiarity that is often overlooked.

The integration of standardized apparatus will take upwards of 20 years to completely achieve as attrition drives the replacement of older apparatus. Some vehicles in the current fleet are only a few years old. However, there are also a significant number of apparatus in need of replacement almost immediately; and that will get the process started. Failure to standardize will continue and exacerbate the uncoordinated nature of apparatus purchasing, with all its downsides.

There is yet another initiative possible and recommended that is associated with standardized apparatus. Training and effectiveness for all firefighters is further simplified and enhanced if

along with standardized fire apparatus there is a move to standardized the configuration of equipment carried on the trucks, i.e. what and where.

Although this initiative is simplified when all apparatus are configured the same way, this process can start sooner, even with the current fleet. The benefit is that a firefighter from one station, working at an incident scene alongside a vehicle from another station, will know what and where to find the needed equipment on virtually any apparatus. This speeds operations in time-critical situations.

Although complete standardization of equipment placement is the panacea and cannot be 100% accomplished due to differences in current apparatus, there is much that can be accomplished since most apparatus have similar layouts.

Starting on page 268 are outlines of standard features recommended for all Regional fire apparatus. They are by no means a full specification suitable for the purchase of fire apparatus. More detail on local needs and desired features/standards is required to ensure that a high quality, reliable, and good value apparatus is purchased that will meet the needs and expectations of the purchaser.

There will always be the need to accommodate local needs based on specific risks in the community. Some adjustment in detailed specification may be needed from one standard apparatus to another, one fire district to another. However, these accommodations should not include the major components recommended, but may impact some more minor details.

See **Appendix IX; Standardized Fire Apparatus Features** starting on page 377 for a list of recommended standardized features for fire apparatus.

## **THE VALUE OF MAJOR EQUIPMENT STANDARDIZATION**

There are a number of important types of equipment that are critical to the delivery of, in particular, fire and rescue services. This equipment is used frequently, in all stations, and by virtually every firefighter, on an as need basis. They are all important for life safety, both for the firefighter and for the public being served.

Currently there is significant variety between stations on this equipment. This is an issue for equipment exchangeability, for example with placing Regional spares in service while front line equipment is being serviced. Every station must either go short when equipment is out of service, or have their own inventory of spares. The first-choice downgrades service and tends to result in excess equipment being purchased to avoid that occurrence, which is needlessly expensive.

It is an issue for group purchasing as well, where best pricing can come from the largest volume purchases, and multi-year contracts. It is also a training issue. For instance, at a large incident where firefighters from different stations are working together, there is an issue with understanding how another station's equipment works, if you have not enough of the equipment the firefighter is familiar with at hand.

The equipment that should be strongly considered for standardization across all stations in the Region are as follows.

### *Self Contained Breathing Apparatus (SCBA)*

Currently Windsor is in the final stages of purchasing SCBA manufactured by MSA. It is GA's understanding that all other stations use SCBA manufactured by Scott. There are some significant differences between these manufacturers, so much so that no Chief would consider allowing a firefighter to wear an SCBA that the firefighter was not thoroughly trained on. Misuse can literally kill the firefighter.

At a fire the masks and air tanks (bottles) of SCBA are commonly switched out, either when the SCBA is passed on to another firefighter, or much more commonly when the air bottle is changed for a full one. Air bottles cannot be exchanged between SCBA brands. To do so (if

possible) violates the approvals for the SCBA and creates a large liability if the SCBA is related to an injury.

In order to support fire operations, any regional resource configured for such a use (e.g. Hantsport Rescue 31) would need to carry twice as many \$1,600 air bottles than might otherwise be necessary (some of each brand), even if there was space to do so.

**GA recommends** that the Regional fire service strike a committee to investigate a standard brand and model series of SCBA with which to outfit all fire stations in the Region.

Consideration should be given to the types of SCBA being used by mutual-aid partners as well, but in any case the SCBA used Regionally should be standardized.

**GA recommends** that every structural firefighter be provided with his/her own personal SCBA face mask. Provision of a properly fitting mask is necessary to achieve a pass in annual legislated quantitative Fit-Testing. A variety of mask sizes and models is usually necessary to achieve Fit Test performance.

#### *Hydraulic Extrication/Rescue Equipment*

Currently there is a mixture of Holmatro conventional hydraulics, Hurst conventional hydraulics, and Hurst eDraulic hydraulic rescue/extrication equipment in service. There may be other types that GA is not aware of. Conventional means the cutters/spreaders/rams are operate through hoses pressurized by a gasoline powered pump that generates the hydraulic force/pressure.

Conventional hydraulics are heavy, take up a lot of compartment space, and are high maintenance; with hoses that easily kink or cut, a pump/motor unit that requires fuel, an engine that must be exercised regularly, and small engine repair/service annually at least.

The multiple brand/type units in service are also a training challenge that only firefighters trained and familiar with that specific piece of equipment can operate safely.

**GA recommends** that the Regional fire service standardize on Hurst eDraulic hydraulic extrication/rescue equipment, and phase in replacement of the current equipment that is not eDraulic.

**GA recommends** that all fire stations be equipped with eDraulic Combi-Tools and that Windsor station be equipped with a set of heavy hydraulic jaws, cutters, and rams such that Windsor can provide Regional Heavy Rescue support to all stations. Details on the specific eDraulic equipment that is recommended is on page **291** of this report.

### *Bunker Gear (firefighter PPE)*

Bunker gear is expensive and is certified for use for only ten years. It consists of a firefighter's coat and trousers, gloves, balaclava, boots and helmet. Typical per firefighter costs are around \$2,000. Annual purchasing of some or all bunker gear components will occur annually. Significant savings can be obtained if all PPE is standardized across the Region and central purchases are made.

Bunker gear coats and trousers must be worn as a set. The coat from one make and model cannot be interchanged with another. Every make and model is designed to fit together precisely. Mixing will get firefighters injured and create large liability risks. With standardized PPE it is possible to purchase a coat or a pair of trousers if the other component is damaged. It is also possible to utilize spare gear to replace a damaged item if it is all the same make/model of PPE.

**GA recommends** that the Regional fire service immediately strike a committee to determine bunker gear needs and to test manufacturers' offerings, and to settle on one make, one model, one colour, and on standard features.

**GA recommends** that Proposals from vendors of the selected manufacturer be entertained and that a multi-year contract be negotiated with the vendor, allowing the DPS/FC to requisition PPE from the vendor at contract prices on an annual basis.

### *Gas Detection*

Gas detection devices are manufactured by several firms and each offers various features. From a training perspective it is advantageous that every fire station use the same make and model of multi-gas detector except for the need for one specialized unit for Haz Mat incidents or fire investigation. In this way any trained firefighters will be able to effectively use any gas detector.

**GA recommends** that the Regional fire service standardize on one make and model of general use multi-gas detector for the fire stations.

### *Hose*

GA did not inventory the hose in use at the fire stations, but did notice there is a great variety. There is a tendency to purchase hose on the misunderstanding that all hose is the same. It most certainly is not. Hose must be purchased by make and model based on thorough evaluation of performance and value (life cycle cost). It is much cheaper if bought in bulk Region wide. By doing this it will be possible to purchase high performance, long lasting hose at competitive prices. Never buy hose based on price alone.

Different hose has different performance characteristics. One important one is the pressure loss per length when flowing water. The higher the loss the higher the pump operator must push his pump. With mixed or unknown hose connected together it is impossible to get the pump pressure right. This affects available water flow rates, and can result in firefighter injury or unnecessary fire loss.

**GA recommends** that the Regional fire service strike a committee to evaluate all the available makes and models of hose in the utilized sizes. The evaluation should include performance factors of weight, friction loss, kink resistance, abrasion resistance, liner separation, grip, quality, availability, construction, quality control at the factory. After ranking then price should be evaluated for those makes/models that have tied in the evaluation. Once selected that make/model should become standard for future purchases.

### *Thermal Imaging Cameras*

Similar SCBA and hydraulic extrication equipment, firefighter training and competence are critical in the use of Thermal Imaging Cameras (TIC). Every TIC make/model operates differently, and mistakes can be very costly in firefighter health and safety as well as in property loss and liability. A firefighter who fails to understand what the TIC is telling him can mistake a dangerous high heat condition and lead to a firefighter injury or entrapment by overtaking fire. A

firefighter who does not understand how to calibrate the TIC may not spot a hot spot, resulting in the fire department returning again to a rekindle, and potential lawsuit.

**GA recommends** that the Regional fire service strike a committee to evaluate the available makes and models of thermal imaging cameras. The evaluation should include all recognized performance factors. Testing of demonstration equipment should be involved. Standardization on future purchases of TICs should be based on the successful candidate, and be phased into all stations.

## FIRE STATION FACILITIES AND FUTURE NEEDS

### **STATION LOCATION**

An area to be protected by a proposed station is the most important factor in determining fire station locations. Some areas in the community will contain higher risk potential than others, i.e. those containing primarily business, industrial, mercantile, institutional, and multi-family residences. In some cases, it may not be desirable to locate a station in a high-risk area. The station should therefore be located within a reasonable response distance on the perimeter of the high-risk area. Distribution should provide a concentration of response equipment for response into a high-risk area without depleting other areas of the community (draw down) should a second incident occur.

In other areas of the community with equal risk throughout, such as residential, fire stations should be equidistant from all parts of the area. Where stations are staffed by volunteer fire fighters, consideration must be given to locating the fire stations in or near areas where those fire fighters live and work in order to facilitate quick response. The analysis for the fire station location study consisted of preparing and reviewing various mapping models to facilitate exploring options for fire station locations such that the 4 km, 6 km, 8 km and 10 km travel distances are met for the major growth areas, as well as areas beyond the growth areas where possible. The impact of historical emergency call data and volunteer firefighter residence locations were also considered.

To analyze station locations in particular volunteer staffed stations, as previously stated, the following considerations need to be reviewed and scrutinized.

- Level of Community Risk
- Call volumes by type of incident
- Mutual-aid/Auto aid availability and location
- Road networking and roadway conditions, i.e. bridge capacities and locations
- Community growth or decline
- Population Density
- High value development areas

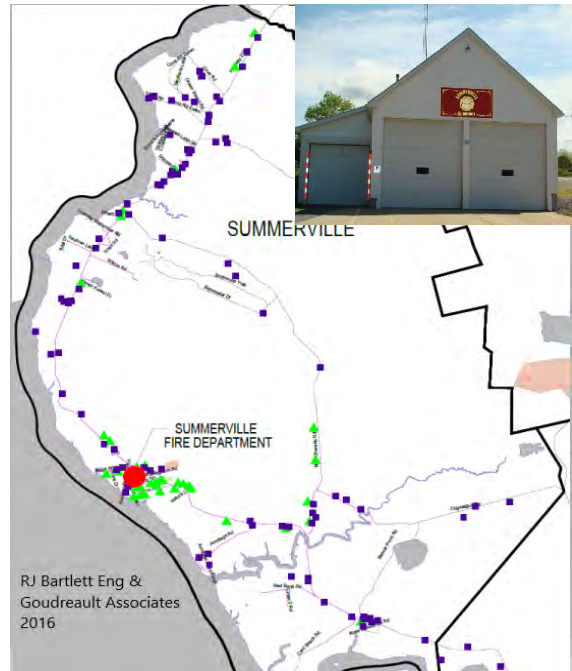
- Land availability, Municipal or other.
- Flood Zones

**Summerville Volunteer Fire Station**

The location for this department’s station is ideal. when considering incident locations ■ and the residence locations ▲ of the volunteer responders.

Best practices by the National Board of Fire Underwriters Standards recommends a station location close to and leading into major or secondary thoroughfares. The Summerville Station meets this location standard.

Based upon future development and community growth, over the next decade the location for this station should remain the same.



### Hantsport Volunteer Fire Station

This department's station is funded in the 2020 capital budget for replacement.

The question for this station is where to locate it given its area of coverage for Hantsport, Hantsborder and Glooscap First Nations.

The majority of incident locations ■ and the residence locations ▲ of the volunteer responders are very near to the department's current station location.

Previous discussions considered locations in the Mount Denson area and possibly the Hantsport connector to Highway 101 to aid in response to the community of Falmouth.

The main issue with these locations is where the residences of the volunteers are. If either of the Mount Denson or the Hantsport connector were chosen, it would increase response time responding to the station and the high probability that the responders would have to drive away from the emergency to obtain the required apparatus and then return to the incident, which based upon 2016 and current call records, are near the community center.

It is recommended that the location for the new Hantsport station remain as close as possible to the densely populated, high-risk area in the center of the community.



### Three Mile Plains Station

The Three Mile Plains Fire Station was opened on November 25<sup>th</sup>, 2017. The location was determined by a previous study based upon the needs at that time. The location allows for easy and quick access to the West Hants Industrial Park and Highway 101.



### Town of Windsor Fire Station

The Town of Windsor Fire Station is located in the downtown area of the municipality and is ideally situated for a quick response to the heart of the economic and business engine of the community.

The 2016 map showing the locations of incidents ■ and locations of firefighter's residences ▲ supports the current



location of the station, which is ideally situated to quickly respond to not only incidents within the town, but to parts of neighbouring Falmouth. The King Street location also allows for quick access and response to incidents along the Highway 101 corridor.

### Community of Falmouth

A previous study provided two possible locations for the community of Falmouth to acquire its own fire station. The recommendation was based upon information at that time indicating the Town of Windsor Fire Department was not in a position to provide first response coverage to the community.

The two options at that time were:

Option A:

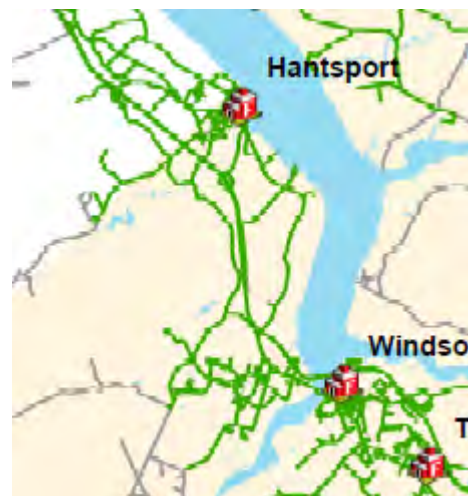
A location being in close proximity to Highway 101, Exit 7 which allows for provision of coverage to the Falmouth major growth area.

### The Option B:

A Falmouth fire station, located within the Village of Falmouth, approximately 2 km southwest of Highway 101 Exit 7, which would provide coverage to the major growth area as well as an additional area southwest of the major growth area.



There is a possible third option and that is to relocate the Windsor Fire Station to a location near the Bridge on Evangeline Trail that crosses over from Windsor to Falmouth. However, this moves the Windsor station away from its volunteer base and the high-risk area of the Town.

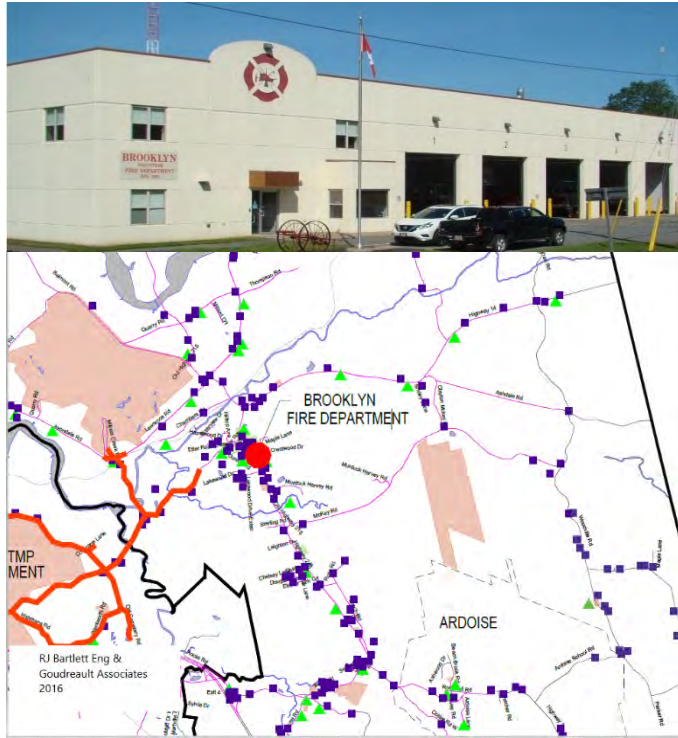
Current Travel time modeling shown here indicates the coverage available to Falmouth within eight (8) minutes, (green lines on map) from both Hantsport and Windsor stations.



When considering call volume and the number of volunteers residing in the area and with the Windsor and Hantsport Fire Departments being able to provide emergency response to this community in a reasonable response time, a fire station for Falmouth at this time is not being recommended. However, if and when there is a consideration to replace the current Windsor Fire Station or if there is significant growth in Falmouth, a revisit of this recommendation should be conducted.

### Brooklyn Fire Station

Located on Highway 215, near the intersection of Highway 14, this location provides ample coverage in multiple directions. A good portion of incidents  and the location of the residences  of this department's volunteers are near the station's current address. The current station was built in 2009 near the same spot the previous station was located.



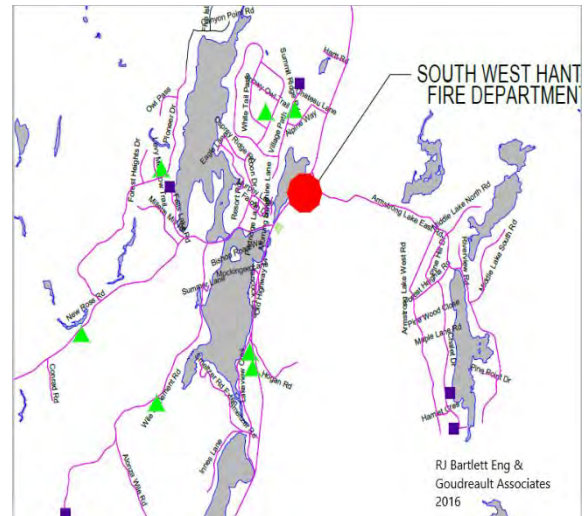
The 2016 study was asked to review the Forest Lakes development area and make any recommendations as to the need for a station in that area of the Brooklyn fire coverage district. The recommendation at that time was not to proceed with an additional station but to monitor the growth and if the area develops sufficiently over the years to justify the addition, then revisit the need. The Forest Lake development and area, based upon anecdotal information and an area site visit by the consultants, appears to have stalled. With development in this area being slowed and the majority of the area being forested land, and few volunteers residing in that area, the need for a station at this time is not warranted. If development grows sufficiently enough and the call volume increases, (currently fire incidents in this area average about three per year), then at that time, a revisit of the recommendation should be considered.

**Southwest Hants Fire Station**

This station is located along Highway 14, near the Armstrong Lake East Road. It is near the high value properties built amongst the heavily forested area and features a helicopter landing pad for medical emergencies and a small training area.

The location of this area is fairly remote from the mainstream stations such as Hantsport, Windsor and Three Mile Plains.

Given its location to the high value residential risk in the area, there is no requirement for relocation of this station for the foreseeable future.



## **FIRE STATION FACILITIES**

### **Apparatus and Equipment**

#### **What type and size of apparatus will be used - current and future?**

While the exact size of future equipment cannot be determined twenty or fifty years from now, a mix of large, medium and small equipment can be anticipated. The current mix of equipment includes large, medium, and small pieces of equipment throughout the region. Overcrowding is an issue in three of the stations. This is as a result of fire apparatus standards changing resulting in bigger sized vehicles. and the acquiring needs of various types of equipment more so than what was required in the past. Right sizing is a term that is now made its way into the fire service. It translates into do we really need all of this equipment in this station.

### **Equipment Bay Configuration**

#### ***Drive-through bays***

Drive-through bays would be desirable to provide additional ease of maneuvering equipment. Discussions with other fire departments have determined that while desirable, they are not essential. Care needs to be given to ensure that the range of response situations can be accommodated without the need of moving equipment out of the way of other equipment. An adequate quantity of bays with strategic stacking of response vehicles can meet the needs of the station without the use of drive through bays. Drive through bays are often not appropriately utilized as designed and thus eliminates the benefit of the extra costs associated with such a configuration.

#### ***Current Equipment sizing***

The fire departments currently have a mix of mixed small equipment, including ½ ton, ¾ ton vehicles, trailers to tow boats and all-terrain vehicles, medium size pumpers and tankers and rescue trucks, larger sized tankers and aerial devices. These vehicles and their on-board equipment need to be stored out of the elements to protect not only the vehicles but the onboard equipment. The vehicles today are highly sensitive to the elements due to their onboard vehicle

electronics and many microprocessors. Most of the apparatus today as a result of the onboard electronics and air brakes, are required to be continuously connected to 120 V electrical systems and external air compressors to keep the air brakes fully charged at all times.

The diagrams below will provide a rough estimate of current apparatus sizing of the region’s fire departments. The pictograms do not allow for an extended front bumper that often carries fire hose and an inlet for fire hydrant connections. These front bumpers can range from twenty-four (24) to thirty (30) inches) Note: There are no known measurements for the Windsor Fire Department 1984 Snorkel. However, in the proposed, Capital vehicle replacement program it is scheduled for replacement in 2020. It is being recommended that a ladder type of aerial device be acquired. The typical dimensions for a rear mount aerial device are included in the pictograms below.

The average size of a ½ or ¾ ton four door vehicle bumper to bumper is approximately thirteen (13) feet, and an accompanying trailer for an all-terrain vehicle with space for related equipment and fuel ranges from ten (10) to twelve (12) feet. Trailers for RTV/UTVs and Rescue boats average 14 to 16 feet in length. Added together the overall lengths can be twenty-nine (29) or thirty (30) feet.

Typical recommended practices for apparatus space requirements such as the Fire Underwriter Services (FUS) require ten (10) feet of spacing between vehicles in front and rear of the vehicle and from the nearest station wall. The space permits load and unloading fire hose and equipment from the vehicle and permits this to take place simultaneously between vehicles.

Based upon the average overall lengths and widths of the fire apparatus outlined below and the required space around the vehicle, the overall space requirements can be summarized as follows.

Sq. Ft per unit	Med Size Pumper	Med Size Tanker	Large Size Tanker	Aerial Device	Utility Vehicle & Trailer
1000 sq. ft.					
1400 sq. ft.					

### *Apparatus Floor and Miscellaneous Off Floor Service Rooms Sizing*

It is no longer permissible, as per NFPA's safety standard *NFPA-1500 Standard on Fire Department Occupational Safety, Health, and Wellness Program*, to have any storage or equipment on the apparatus floor other than the apparatus itself for safety reasons. The square footage presented for apparatus does not include rooms directly off the apparatus floor that are often considered part of the apparatus floor/bay area, rooms such as SCBA compressors, PPE storage, fire hose storage and drying maintenance rooms, equipment storage, laundry rooms, or a decontamination room. Rooms that are necessary for daily operations.

### *Maintenance, Repair, Storage and Support Space Requirements*

The item of greatest concern that has developed over the past many years is that of the rate of cancer in firefighters. Some cancers have been attributed to vehicle exhaust within fire station and the off gassing of contaminated/not properly cleaned PPE (bunker gear). In one station as soon as a person walks through the station's main doors into a public foyer, one can smell the PPE off gassing, while another station the PPE storage is in the training/meeting room of the station adjacent to the facility's kitchen.

Thus, the requirements for isolated and ventilated PPE storage areas directly off the apparatus (Bay) floors.

A fire station facility is more than a truck garage with some storage and a meeting room. In many communities it is the focal point and pride of the community as well as the volunteer firefighters. A reasonably built and maintained station will contribute to retention of volunteers.

There no actual standards for space requirements of fire station but there are recommended guidelines. Fire Underwriters establishes square footage areas per fire units based upon type and size of unit. To assist with determining facility space requirements for fire stations references, established guidelines as per the Whole Building Design Guide (WBDG) a program of the National Institute of Building Sciences and the architect firm of Mitchell Associates Architects NY. This firm has extensive experience in fire station design work and recommendations put forth by F.I.E.R.O. (Fire Industry Education Resource Organization).

The National Fire Protection Association standards, offer requirements for station facilities, as to safety requirements required, but do not offer space requirements for example;

**NFPA-1500:** Standard on Fire Department Occupational Safety, Health, and Wellness Program

“10.1.2 Fire departments shall provide facilities for disinfecting, cleaning, and storage in accordance with NFPA-1581.”

**NFPA-1581:** Standard on Fire Department Infection Control Program, Chapter 10 addresses Facility Safety

“5.5 Equipment Storage Areas.

5.5.1 Emergency medical supplies and equipment stored in fire department facilities, other than those stored on vehicles, shall be stored in a dedicated, enclosed area to protect them from temperature degradation, contamination, and other physical damage.

5.5.4 Potentially Contaminated Personal Protective Equipment.

5.5.4.1 Potentially contaminated personal protective equipment shall be stored in a dedicated, well-ventilated area or room.

5.5.5 Contaminated Storage.

5.5.5.1 Areas or containers for the temporary storage of contaminated medical supplies or equipment prior to disinfection or disposal shall be separated physically from members in facilities or on vehicles.”

**Facility Space Guidelines**

For this example, the Hantsport fire apparatus floor space requirement was used.

	<b>Required Space</b>	<b>Sq Ft</b>	
<b>Firematics</b>	Total Apparatus Bay	5800	
	Radio Room/Watch Desk	110	
	Parts, Equipment & Tool Storage	200	
	EMS Storage	100	
	Workshop	216	
	Firefighting Agent Storage	300	
	Hose Storage & Drying	250	
	SCBA Maintenance/StorageCompressor	520	
	PPE Storage	340	
	PPE Laundry	219	
	Janitors Closet	64	
	Decontamination/Disinfection	150	
		<b>Subtotal</b>	
<b>Administration</b>	Entry/Lobby	120	
	Coat Storage	20	
	Rest Rooms (2)	130	
	Conference/Meeting	361	
	A/V and training Storage	80	
	Officers	144	
	District Fire Chief	288	
	Records Storage	90	
	<b>Subtotal</b>		<b>1,233</b>
<b>Firefighters</b>	Training/Meeting	450	
	Exercise	230	
	Kitchen	200	
	Showers (4 + 2)	324	
	Rest Rooms	271	
	<b>Subtotal</b>		<b>1,475</b>
<b>Miscellaneous</b>	Houskeeping Storage	50	
	File Server	48	
	Mechanical	270	
	<b>Subtotal</b>		<b>368</b>
	<b>Total Space Needs</b>		<b>11,345</b>

### Current Facility Observations

Observations are a as result of station tours and completed surveys. Many of the stations do not comply with NFPA-1500 or 1581. This is understandable given the age and the standards at the time of construction. This same understanding must be applied to the following observations.

- All of the stations within the region do not comply with for the storage of PPE (Bunger Gear). nor do they comply with the same standard for infection control.
- The Summerville and South West fire stations require a vehicle exhaust extraction system.
- Lack of proper maintenance and testing facilities (Many of the stations must place tables in open areas to accomplish maintenance and testing of different types of devices and equipment and some of this takes place in the apparatus floor bays in one particular station this takes place in vehicle wash bays.
- Lack of proper storage areas
- Lack of appropriate cleaning stations for protective equipment, (one station uses buckets)
- Lack of proper workshops
- Multiple uses of areas or equipment that are not designed for multiple purposes.

Some of the observations found may be able to be addressed with properly designed/engineered alterations to current facilities.

### Current Fire Stations.

- **Hantsport** fire station: Whereas this station is scheduled for a much-needed replacement, comments on its current condition would be moot at this time.
- **Summerville** fire station: This station was built in 1883, was modified in 2013.
- **Windsor** Fire Station: This station was built in 1962, some modifications occurred in 2019. This station should, with a few modifications, meet address NFPA-1581 requirements, and should service the municipality into the foreseeable future. The only issue is the dimensions of the overhead doors that service the apparatus bays. The overall height of the doors is 11 feet,7 inches. With the newer standards for fire apparatus, particularly aerial devices, require door openings being 14 feet wide by 14 feet high. The current clearance height of the doors makes acquiring an aerial device very challenging. Instead of possibly obtaining a device to meet the needs of the community it may require a device that will fit into the current station door configuration.

**GA recommends** that an architect familiar with fire station requirements, guidelines and applicable NFPA standards or a construction engineer be acquired to conduct an assessment to determine the feasibility of any required alterations for the Summerville and Windsor fire stations.

### Apparatus Floor Space Requirements

A typical volunteer fire station in the region has a minimum of four emergency vehicles needed to service their designated area. Based upon the typical apparatus sizing two scenarios will be presented, one without an aerial device and one with an aerial device. Identified stations will also have a single spare apparatus, either a medium sized tanker or medium sized pumper. All bays will be single depth. If a doubling of vehicles in a single bay is required then a doubling of the square footage is required for that single bay.

The following total square footage for the apparatus floor area is for the *apparatus only*.

Typical Rural Station – Apparatus Floor Space Only								
Sq. Ft Per Unit	Med Size Pumper	Med Size Tanker 800- 1200 gals	Large Size Tanker >1200 gals	Reserve Med Sized Tanker		Rescue	Utility Veh. + Vehicle/Boat & Trailer	Sub Total Space sq. ft.
1000 sf	1	1		1		1	1	5,000
1400 sf			1					1,400
Total	1000	1000	1400	1000		1000	1000	<b>6,400 sf</b>
Typical Urban Station Apparatus Floor Space Only								
Per unit Square Feet	Med Size Pumper	Med Size Tanker 800 - 200 gals	Large Size Tanker >1200 gals	Reserve Medium pumper	Rescue Medium	Aerial	Utility Veh +/-Boat & Trailer	Total Space Sq. ft.
1000 sf.	2	1		1	1	0	1	6,000
1400 sf						1		1,400
Total	2000	1000		1,000	1,000	1,400	1,000	<b>7,400 sf</b>

<u>Station</u>	<u>Pumper</u>	<u>Pumper /Tanker</u>	<u>Quint</u>	<u>Aerial</u>	<u>Rescue</u>	<u>Utility</u>	<u>RTV</u>	<u>Boat</u>	<u>Current Actual</u>	<u>Truck Total Space</u>
Windsor	2 +1 R	1	0	1	1	2	1	1	5954	8800
Hantsport	1	1	1	0	1	1	0	0	2338	5800
SWH	1	1	0	0	0	0	0	0	1558	2400
Brooklyn	2+ 1R	1	0	0	1	1	1	0	8000	6400
TMP	1	1	0	1	0	1	0	0	3400	3900
Summerville	1	1 +1R	0	0	1	1	1	1	2840	4800
Totals:	8 + 2R	6 +1R	1	2	4	6	3	2		

Projected space needs based upon recommended Apparatus placement.  
Needs based upon FUS, other Fire Service Organization Standards/Guidelines and Best Practices  
R = Reserve Unit

## Storage Needs

What are the present and future storage needs?

Storage is always an issue within any structure. Fire Stations over time require additional storage space as a result in changes to service levels, types of services offered and changes in fire service and safety standards. Currently storage of some fire and medical equipment, limited foam supplies, uniforms, parts and materials for maintenance, response gear, and seasonal items are being stored in the individual stations. Space for storage in the majority of the stations is inadequate to meet the needs. This has added to the overcrowding in the majority of stations. There is a need to provide distinct and appropriately located storage rooms and closets with proper controlled access. It is essential that appropriately designed storage is provided and other purposefully designed functional spaces are not just employed to accommodate ad hoc storage. This could become a safety issue. Recommended storage room types and sizing were provided previously in this chapter.

In a regional concept there is an opportunity to create a central store for bulky items and large volume items. A certain number of stores and equipment will always be required to be retained at the individual stations. In a regional setting, with the possibility of standardized equipment and consumables, a central stores program can assist with any potential bulk purchasing program by permitting bulk storage and drawn as required. Thus, creating savings to all.

A central store should be centrally located, be accessible twenty-four hours per day, be secured and environmentally controlled. Central stores would ideally maintain a reasonable supply of fire hoses of varying sizes, replacement PPE, spare SCBA cylinders and a number of SCBA units, Foam supplies both Class A and Class B, fire department uniforms, safety vests, hard hats, firefighting helmets, gloves, fire boots, batteries, helmet lights and flashlights etc. A complete needs analysis would need to be conducted to determine quantities and type of stores that a central facility should warehouse to meet the needs of the region's fire services.

What type of structure could be used or repurposed as a central store facility? An example of repurposing could be as simple as a designated area within a municipal public works maintenance garage which an area could have a caged off area set aside for the fire department with appropriate security measures, or recycle a smaller municipal structure (a replaced fire station ) or garage that would allow for the use of a fork lift, one would be needed for the offloading bulk foam and large delivery of fire hose for example.

If a central stores program is to be put into place then appropriate policies and operating procedures will need to be developed and implemented, to cover all aspects of who has control, who manages and who has access, accounting practices, and large volume purchasing procedures.

### Summary

In summary, all fire stations require some space for storage of routinely and frequently used supplies and equipment, supplies such as office supplies, washroom supplies, cleaning and maintenance supplies, limited fire hose and SCBA air cylinders to name a few. With the implementation of a central stores it has the ability to reduce operational costs for each station as a result of the ability to purchase and store in bulk. Due to the nature of certain types of materials that would be of a cost saving benefit if purchased in bulk such as firefighting foam, the central stores facility needs to be environmentally controlled. A bulk store also provides a central location for those once and awhile emergencies that require large volumes of supplies, rather than attempting to travel around the region or outside the region with multiple vehicles to acquire what is needed when time is of the essence.

## BUDGETS AND FORECASTS

## FINANCIAL ANALYSIS AND BUDGET FORECASTS

### CURRENT ANNUAL OPERATING BUDGET

As part of the fire service review, GA was asked to establish benchmarks for the operational and capital budgets. For this purpose, GA examined the budgets for the years 2016/2017 through to 2019/2020; i.e. 4-years of budgets.

Dealing with two different municipal methodologies and with the budgets of three societies proved somewhat challenging. In the end GA chose to take the West Hants approved budget format for the mentioned years, and fit everything into that format. Even that approach was not entirely consistent as the format changed slightly over the years. As a consequence, not everything may be exactly as the original budget authors understood things to be, but the numbers do balance, with the exception of Windsor. GA was able to draw some relevant conclusions as a starting point for a go forward benchmark estimate of the 2020/2021 and 2030/2031 budgets, as mandated.

As mentioned for Windsor, GA was not able to exactly balance the budget estimates with extracted numbers. For example; in the *2019/20 Windsor Operating Budget and Summaries* (as approved March 29, 2019), under budget line 10-022-0000 (on page 15) the rolled-up budget estimate for Fire Protection is stated as \$311,950, as shown in the snapshot.

Approved March 26, 2019		TOWN OF WINDSOR - GENERAL Operating Budget 2019/20			
Budget Summary		2018/19 BUDGET	2019/20 BUDGET	\$ Variance	% Variance
<b>REVENUE</b>					
10-011-0000	Taxes	6,368,550	6,461,480	92,910	1.46%
10-012-0000	Grants in lieu of taxes	138,910	120,480	-18,450	-13.28%
10-013-0000	Services provided to other governments	54,200	55,280	1,080	1.99%
10-014-0000	Sales of services	484,110	462,620	-21,490	-4.44%
10-015-0000	Other revenue from own sources	253,450	241,430	-12,020	-4.74%
10-016-0000	Unconditional transfers from other governments	432,650	432,650	0	0.00%
10-017-0000	Conditional transfers from federal and provincial governments	16,170	26,390	10,220	63.20%
10-018-0000	Conditional transfers from other local governments	100,610	112,630	12,020	11.95%
10-019-0000	Other transfers	68,670	40,000	-28,670	-41.75%
<b>TOTAL REVENUE</b>		<b>7,917,320</b>	<b>7,935,920</b>	<b>35,600</b>	<b>0.45%</b>
<b>EXPENDITURE</b>					
10-021-0000	General Government Services				
	Legislative	133,310	132,510	-800	-0.60%
	General administrative	662,230	668,900	6,670	1.01%
	Information Technology Services (IT)	107,740	118,080	10,350	9.61%
	W. B. Stephens Building	86,440	100,620	14,180	16.40%
	Other general government services	119,280	129,640	10,380	8.70%
	Debt and financing charges	71,500	68,900	-2,600	-3.64%
	<b>TOTAL GENERAL GOVERNMENT SERVICES</b>	<b>1,160,490</b>	<b>1,218,660</b>	<b>38,180</b>	<b>3.23%</b>
10-022-0000	Protective Services				
	Police protection	1,055,940	1,092,780	36,840	3.49%
	Law enforcement	84,620	84,690	30	-0.04%
	<b>Fire protection</b>	<b>391,380</b>	<b>311,950</b>	<b>-79,430</b>	<b>-20.29%</b>
	Fire protection-Water supply and hydrants	319,210	319,210	0	0.00%
	Emergency Measures	24,300	25,260	4,960	20.41%
	Building Inspection Services	81,510	92,100	10,590	12.98%
	Other protection	4,000	5,910	1,110	23.13%
	<b>TOTAL PROTECTIVE SERVICES</b>	<b>1,961,760</b>	<b>1,835,800</b>	<b>-26,960</b>	<b>-1.32%</b>

However, from the budget details on pages 23, 24, 25, and 38 of the same budget documents, the expected cost was slightly more, at \$340,460. It was a similar situation for the prior years.

It is possible that allocated costs for fire protection have been misinterpreted; i.e. costs allocated to the Windsor Fire Department. That being said, GA continued on with extracted numbers, understanding that the results possibly overstate the actual costs.

For fire services, like any operation-oriented service, costs are of two main components, fixed and variable.

Fixed costs include debt servicing, equipment purchases, staffing, training, and other costs that reoccur on a regular basis. These costs remain relatively constant regardless of the incident activity levels of the fire department. They are based on the established capacity of the fire department. There are always opportunities to reduce fixed costs, and most cost cutting initiatives are and should be aimed at fixed costs.

Variable costs include items like; fuel for the vehicles and motorized equipment, equipment maintenance, wear & tear related depreciation (or destruction), and expendables such as meals and medical gloves. Variable costs change in accordance with the activity levels of the fire department.

Generally speaking, it is difficult to establish cost cutting initiatives on variable costs. Such initiatives, if attempted, tend to actually affect capacity and can create hazardous conditions for responders. For example; an initiative to reduce the use of firefighting foam can reduce the costs of foam purchases, but will definitely increase the extinguishment time and effort required at incidents where foam use is indicated. It may also generate a secondary incident where firefighters have to re-respond to the original incident to deal with a rekindle; and it is likely that the firefighting foam will then be used, to avoid having to return a third time.

One real potential for variable cost savings is to ensure that purchases of materials and equipment that might be expended are good value. Often this means purchasing good quality materials to start with as well as doing group purchasing.

Based on the consultants' experience GA offers the following specific example; in the early 2000's most American fire hose makers decided to source their fire hose production offshore. This reduced their manufacturing costs substantially, although customers did not necessarily see

these savings. Shortly after, it became quickly noticeable that fire hose was not as durable and was being damaged (and no longer serviceable) at a much faster rate, sometimes at the first fire. An investigation into alternatives discovered a Canadian made hose that was marginally more expensive (about 5%) but was extremely durable, and also offered better performance characteristics. This hose was subsequently purchased as the fire department standard, and the annual cost of fire hose replacement decreased.

Annual Operations Budget Analysis

The annual fire department budgets include accounts for the Windsor, Brooklyn, Summerville, and Hantsport fire departments, including the stations in Three Mile Plains (Brooklyn managed) and Vaughan (Hantsport managed). They also include the Walton Shore and Uniacke fire departments; i.e. the West Hants portion of their budgets.

An analysis of the consolidated budgets for the past four years reveals a few trends. These are discussed on the following pages.

Revenue:

		2016-2017	2017-2018	2018-2019	2019-2020	ANALYSIS				
REVENUE						4-Year Total	4-Year AVG	3-Year AVG	2-Year AVG	4-Year Trend
1	CONTRIBUTION - Hantsport/WH TAX BASE	81,777	0	0	0	81,777				
2	CONTRIBUTION - OPERATIONS GRANT - West Hants	930,442	1,725,925	1,729,501	1,602,941	5,988,809	1,497,202	1,686,122	1,666,221	
3	CONTRIBUTION - GRANTS - East Hants	66,633	66,739	69,417	84,545	287,334	71,834	73,567	76,981	
4	CONTRIBUTION - OPERATIONS GRANT - Kings County	64,400	84,248	57,578	59,955	266,181	66,545	67,260	58,767	
5	CONTRIBUTION - GRANTS - Glooscap	7,064	7,064	7,064	7,065	28,257	7,064	7,064	7,065	
6	CONTRIBUTION - CAPITAL FIRE GRANT - West Hants	37,079	53,650	55,390	188,249	334,368	83,592	99,096	121,820	
7	CONTRIBUTION - CAPITAL FIRE GRANT - Kings County	25,980	26,425	21,540	83,003	156,948	39,237	43,656	52,272	
8	CONTRIBUTION - Grant (SW Society)	43,500	43,500	43,500	27,036	157,536	39,384	38,012	35,268	
9	CONTRIBUTION - Windsor Society (building upgrades)	23,000	22,080	19,830	0	64,910	16,228	13,970	9,915	
10	CONTRIBUTION - Town of Windsor	0	0	0	26,783	26,783				
11	Municipal Costs	0	38,250	31,350	72,600	142,200	35,550	47,400	51,975	
12	Hantsport/Windsor AREA RATE	35,906	34,331	32,863	46,194	149,294	37,324	37,796	39,529	
13	BUILDING RESERVE	22,000	0	0	0	22,000				
14	Surplus (SW)	4,000	6,000	6,000	1,300	17,300	4,325	4,433	3,650	
15	PROVINCIAL FUNDING	39,900	29,630	29,630	29,640	128,800	32,200	29,633	29,635	
16	Donations	2,600	2,600	2,100	5,300	12,600	3,150	3,333	3,700	
17	OTHER - FUNDRAISING/Rent/Auxiliary	76,900	61,085	53,000	40,729	231,714	57,929	51,605	46,865	
18	<b>TOTAL INCOME</b>	<b>1,461,181</b>	<b>2,201,527</b>	<b>2,158,763</b>	<b>2,275,340</b>	<b>8,096,811</b>	<b>2,024,203</b>	<b>2,211,877</b>	<b>2,217,052</b>	
19										
20	Income	NON-WWH Sources Funding:	24.0%	15.6%	14.1%	14.8%				
21	Sources	Donations: % Revenue:	0.2%	0.1%	0.1%	0.2%				
22		Fundraised: % Revenue:	9.8%	5.8%	5.4%	3.0%				

As shown in the above snapshot, over the past three years revenues have been fairly steady, although trending upwards slightly.

There is a caveat about the revenues reported in our analysis. The majority of revenues identified in our spreadsheet originated with West Hants. Revenues for Windsor are not fully accounted in our analysis since it appears that Windsor's fire protection has been largely funded from general revenues and not designated particularly for the fire department.

Windsor did identify relatively small revenues from their *Fire Protection Area Rate* (\$27,040 in 2019/20) and from Provincial grants in lieu of taxes, for *Fire Protection Services* (\$29,640 in 2019/20). In 2016/17 Hantsport reported a \$10k provincial contribution.

In budget years 2016-2018 Windsor also reported a miscellaneous revenue from *own sources* related to *fire department facility upgrades* (\$0.0 in 2019/20). This line represents a grant from the Windsor Fire Society for building upgrades.

***Expenditures:***

Fire department annual expenses were broken into a number of different categories;

- Firefighting Operations,
- Other Operational Expenses,
- Long Term Debt Payments, and
- Capital Expenditures.

Each will be discussed in the following pages.

FIREFIGHTING OPERATIONS

Over the past three years (2017-2019) the trend in this category of expenses has been downward slightly, after an initial sharp rise from the 2016/17 budget year. The following snapshot shows that in 2019/20 the total in this category was \$691,937.

	2016-2017	2017-2018	2018-2019	2019-2020	ANALYSIS				
					4-Year Total	4-Year AVG	3-Year AVG	2-Year AVG	4-Year Trend
24 <b>EXPENSES</b>									
25 <b>FIREFIGHTING OPERATIONS</b>									
26 <b>APPARATUS:</b>									
27 Regular Maintenance	87,522	108,366	94,466	108,266	398,620	99,655	103,699	101,366	
28 Fuel	40,400	37,700	35,500	47,500	161,100	40,275	40,233	41,500	
29 Major Repairs	28,333	23,664	26,333	27,833	106,163	26,541	25,943	27,083	
30 Annual Safety Inspections	8,669	12,367	11,867	14,867	47,770	11,942	13,034	13,367	
31 <b>EQUIPMENT:</b>	5,500	1,500	0	0	7,000				
32 Insurance	33,033	73,163	79,379	77,853	263,428	65,857	76,798	78,616	
33 <b>sub-total</b>	<b>203,457</b>	<b>256,760</b>	<b>247,545</b>	<b>276,319</b>	<b>984,081</b>	<b>246,020</b>	<b>260,208</b>	<b>261,932</b>	
34 <b>EQUIPMENT:</b>									
35 Personnel Protection	108,051	108,466	108,466	103,924	428,907	107,227	106,952	106,195	
36 Hose/Ladders	23,500	7,000	7,000	7,000	44,500	11,125	7,000	7,000	
37 SCBA Test & Inspections	27,633	29,633	29,333	25,533	112,132	28,033	28,166	27,433	
38 Fire Suppression Equipment	22,500	118,097	110,290	84,240	335,127	83,782	104,209	97,265	
39 Rescue Equipment	11,100	0	12,000	12,000	35,100	8,775	8,000	12,000	
40 Testing Repair & Maintenance	49,000	42,300	42,300	40,500	174,100	43,525	41,700	41,400	
41 Air Equipment	10,567	17,567	22,067	18,667	68,868	17,217	19,434	20,367	
42 Uniforms	0	17,000	12,000	11,500	40,500	10,125	13,500	11,750	
43 Other/Meals for Major Calls	27,800	18,800	8,000	15,750	70,350	17,587	14,183	11,875	
44 <b>sub-total</b>	<b>280,151</b>	<b>358,863</b>	<b>351,456</b>	<b>319,114</b>	<b>1,309,584</b>	<b>327,396</b>	<b>343,144</b>	<b>335,285</b>	
45 <b>COMMUNICATIONS:</b>									
46 Dispatch	38,867	40,307	45,367	41,367	165,908	41,477	42,347	43,367	
47 Pagers/Portable Radios	41,167	38,667	38,667	38,167	156,668	39,167	38,500	38,417	
48 Maintenance & Testing	11,800	10,400	11,700	11,000	44,900	11,225	11,033	11,350	
49 Industry Canada Licenses/Air Time	861	0	0	0	861				
50 Publications/Subscriptions	0	1,660	1,660	1,060	4,380	1,095	1,460	1,360	
51 Other	401	3,675	2,814	4,910	11,800	2,950	3,800	3,862	
52 <b>sub-total</b>	<b>93,096</b>	<b>94,709</b>	<b>100,208</b>	<b>96,504</b>	<b>384,517</b>	<b>96,129</b>	<b>97,140</b>	<b>98,356</b>	
53									
54 <b>TOTAL FIREFIGHTING OPERATIONS</b>	<b>576,704</b>	<b>710,332</b>	<b>699,209</b>	<b>691,937</b>	<b>2,678,182</b>	<b>1,071,273</b>	<b>700,493</b>	<b>695,573</b>	

Included in this category is three groups of expenditures; Apparatus, Equipment, and Communications. Apparatus is specific reference to the costs of operating the fire trucks and associated vehicles. Equipment refers to the many other types of equipment (e.g. fire hose, ladders, breathing air, jaws-of-life, and etc.) that a fire department needs to deliver services. Communications refers to radios, pagers, and associated costs with dispatching.

Peppered throughout this category, in various groups, are certain budget lines that include (but perhaps not exclusively) the purchase of smaller capital items used in firefighting and rescue; such as fire hose, firefighter protective clothing (bunker gear), self-contained breathing apparatus (SCBA) components, rescue rope, and etc. In the budgets, these lines are described as; *equipment* (line 31), *personal protection* (line 35), *hoses/ladders* (line 36), *fire suppression* (line 38), *rescue equipment* (line 39), and *air equipment* (line 41). Similarly, in the communications group *paggers/portable radios* (line 47) contains the costs for replacing these items.

Collectively, the items listed above are small, reoccurring, and minor capital expenses. They occur regularly and are of a relatively small dollar amount for a capital item. In our experience these types of items are considered capital because they are not a typical consumable like fuel or bathroom tissue. They are more durable and can last several years before being replaced. They are usually not durable enough to warrant rehabilitation, like a fire truck or a fire station might be, and in that sense are consumed. Fire hose for example may last 10 years or more depending on how hard it has been used. GA has also seen cases where fire hose was destroyed very shortly after it was purchased and placed in service. There is a recurring need, on an annual basis to make these types of expenditures.

**GA recommends** that these **Minor Capital** expenditures be treated differently in future budgets and will address this recommendation in the benchmark portion of this analysis.

Under the communications group, *Dispatch* (line 46) includes the approximately \$36k annual contracted costs for Valley Communications who dispatches and communicates with the volunteer firefighters via radio.

Line 49, *Industry Canada Licenses/air time*, should include the more than \$9k annual cost of federal radio channel licensing, but these costs appear to be included instead in various other places in the budgets, some under line 50. The current amounts being spent are uncertain since not all radios may be individually licensed as required, which is not an un-typical situation.

#### OTHER OPERATIONAL EXPENSES

This category includes all remaining costs for operating the fire departments, with the exclusion of debt servicing and capital expenditures. The costs for this category shows a downward trend over the past four years. The budgeted amount in 2019/20 is almost 14% lower than the four-year high that was seen in 2017/18.

The category is divided into the following groups; Training, Fire Station, and Administration. Please refer to the snapshot on the following page when making reference to the following discussions.

Training captures the costs of training firefighters in accordance with the fire departments training plan and to the standards agreed in the fire departments’ registration documents with the municipality. The line Fire School (line 58) refers to the Nova Scotia Firefighters School (NSFS) in Waverley (HRM). NSFS is the main resource in NS for the provision of qualified training in numerous subjects relating to fire and rescue operations. Many of their programs are geared towards providing certification level instruction. The NSFS also has a field extension component that will deliver training locally.

	2016-2017	2017-2018	2018-2019	2019-2020	ANALYSIS				
					4-Year Total	4-Year AVG	3-Year AVG	2-Year AVG	4-Year Trend
56	<b>OTHER OPERATIONAL EXPENSES</b>								
57	<b>TRAINING:</b>								
58	Fire School Level I	62,133	63,633	65,633	69,133	260,532	65,133	66,133	67,383
59	Medical First Responder	17,500	12,500	13,500	10,000	53,500	13,375	12,000	11,750
60	Seminars/Materials	15,267	16,067	16,067	16,767	64,168	16,042	16,300	16,417
61	Travel/Meals/Etc.	10,333	12,833	12,333	13,333	48,832	12,208	12,833	12,833
62	Firefighter Honorariums	0	143,000	143,000	150,500	436,500		145,500	146,750
63	<b>sub-total</b>	<b>105,232</b>	<b>248,033</b>	<b>250,533</b>	<b>259,733</b>	<b>863,531</b>	<b>215,883</b>	<b>252,766</b>	<b>255,133</b>
64									
65	<b>FIRE STATION:</b>								
66	Light & Power	49,321	54,828	52,053	52,853	209,055	52,264	53,245	52,453
67	Heating	34,968	33,090	30,590	30,000	128,648	32,162	31,227	30,295
68	General Maintenance	28,300	34,500	34,300	51,300	148,400	37,100	40,033	42,800
69	Emergency Equipment	8,700	9,200	9,450	8,950	36,300	9,075	9,200	9,200
70	Snow Removal/Grounds	24,217	28,972	29,467	38,767	121,423	30,356	32,402	34,117
71	Janitorial/Cleaning	74,589	93,149	43,089	44,014	254,841	63,710	60,084	43,552
72	Maintenance/Apparatus Superintendent	0	0	50,000	30,000	80,000			40,000
73	Renovations/Major Repairs	79,003	81,693	74,193	41,663	276,552	69,138	65,850	57,928
74	Uniforms	9,500	0	0	0	9,500			
75	Office Furniture/New Construction	5,000	0	0	0	5,000			
76	Insurance	22,613	25,113	13,500	16,000	77,226	19,306	18,204	14,750
77	Other	152,400	161,660	109,470	85,260	508,790	127,197	118,797	97,365
78	<b>sub-total</b>	<b>488,610</b>	<b>522,205</b>	<b>446,112</b>	<b>398,807</b>	<b>1,855,734</b>	<b>463,934</b>	<b>455,708</b>	<b>422,460</b>
79									
80	<b>ADMINISTRATION:</b>								
81	Salary/Benefits	107,900	108,350	61,180	55,123	332,553	83,138	74,884	58,152
82	Telephone	18,873	19,473	19,773	25,873	88,992	20,998	21,706	22,823
83	Office Supplies	8,353	10,053	9,953	6,983	35,342	8,836	8,996	8,468
84	Publications/Subscriptions	2,560	0	0	33	2,593	648	11	17
85	Membership	1,583	2,083	2,668	2,335	8,669	2,167	2,362	2,502
86	Legal/Audit Fees	17,500	6,500	32,200	13,950	70,150	17,538	17,550	23,075
87	Bank Charges/Interest	1,650	1,621	2,080	5,200	10,551	2,638	2,967	3,640
88	Insurance	37,370	41,835	44,265	48,385	171,855	42,964	44,828	46,325
89	Uniforms	5,000	0	0	0	5,000			
90	Meals for Major Fires	1,000	0	0	0	1,000			
91	Computer Services	8,917	9,917	12,037	9,617	40,488	10,122	10,524	10,827
92	Public Events	16,800	15,900	12,600	17,800	63,100	15,775	15,433	15,200
93	Honourarium	177,000	45,000	45,600	49,600	317,200	79,300	46,733	47,600
94	Fire Prevention	10,000	8,000	1,100	700	19,800	4,950	3,267	900
95	Other	41,020	35,031	28,011	31,150	135,212	33,803	31,397	29,581
96	<b>sub-total</b>	<b>455,527</b>	<b>303,763</b>	<b>271,467</b>	<b>266,749</b>	<b>1,297,506</b>	<b>324,376</b>	<b>280,660</b>	<b>269,108</b>
97									
98	<b>Total Other Operational Expenses</b>	<b>1,049,369</b>	<b>1,074,001</b>	<b>968,112</b>	<b>925,289</b>	<b>4,016,771</b>	<b>1,004,193</b>	<b>989,134</b>	<b>946,701</b>

Line 62, Honourariums, refers to the volunteer firefighter payments that are funded annually by the municipalities. Over the four-year period some station honourarium accounts were also allocated under line 93 in the Administration group. For a more complete picture the lines need to be added together.

The following chart shows the total honourarium amounts, by station, that have been reported in the last four W/WH annual budgets. Not included is any honourarium, or other compensation, that might have been paid from other sources of income, i.e. not W/WH municipal.

**HONOURARIUMS FROM MUNICIPAL BUDGET**

<b>Department</b>	<b>Members<sup>80</sup></b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>	<b>2019-20</b>
Windsor	36	\$53,000	\$45,000	\$45,600	\$49,600
Hantsport	37	\$25,000	\$40,000	\$40,000	\$40,000
South West	16	\$4,000	\$8,000	\$8,000	\$10,500
Brooklyn	39	\$60,000	\$60,000	\$60,000	\$65,000
TMP	25	\$20,000	\$20,000	\$20,000	\$20,000
Summerville	35	\$15,000	\$15,000	\$15,000	\$15,000
Uniacke	35	\$0	\$0	\$0	\$0
Walton Shore	26	\$0	\$0	\$0	\$0
<b>Totals:</b>		<b>\$177,000</b>	<b>\$188,000</b>	<b>\$188,600</b>	<b>\$200,100</b>

Line 59 refers to the cost of training firefighters to the Medical First Responder (MFR) standard so that they can respond with EHS to medical emergencies in their jurisdictions, under the province-wide MFR program.

The budget group Fire Station includes the usual costs associated with the operation of a building, in this case the six fire stations in W/WH and a number of associated meeting/community halls. Also included are costs for Walton Shore and Uniacke fire departments' buildings.

Line 69, Fire Station – Emergency Equipment, refers to back-up generator maintenance and, in at least one fire department, to maintenance of automated external defibrillators.

Lines 71 and 72 capture the costs of the part-time employees who clean the stations and equipment, and in some stations also do minor maintenance and inspections on firefighters' equipment. The line also includes some costs for cleaning and like supplies.

Line 77, Fire Station – Other, includes some large amounts. The major contributor to this line is the Windsor Fire Department where a share of the overall operating costs of the WB Stevens

<sup>80</sup> The number of members receiving Honourarium varies from year to year. This member number also includes all ranks and positions, some of which are not active firefighters and only receive a nominal amount.

building is allocated to the fire department. Over the four-year period this WFD cost totals to just over \$438k, of the line total of almost \$509k.

Line 74 Fire Station – Uniforms, line 89 Administration – Uniforms, and line 42 Equipment – Uniforms all contain the costs to provide station and dress uniforms for the volunteer firefighters.

Line 81, Administration – Salary/Benefits, includes the costs of the Windsor Fire Chief and station maintenance person. In 2019/20 a portion of the West Hants fire coordinators salary and benefits were also carried here. Firefighters in Hantsport/SWH and Windsor also have WCB and EAP benefits; the others do not.

Line 92, Administration – Public Events, includes items like an annual awards event that some stations have, and the Santa Clause parade.

LONG TERM DEBT PAYMENTS

The following snapshot summarizes this category.

	2016-2017	2017-2018	2018-2019	2019-2020	ANALYSIS				
					4-Year Total	4-Year AVG	3-Year AVG	2-Year AVG	4-Year Trend
100 <b>LONG TERM DEBT PAYMENTS</b>									
101 Principle	454,040	606,103	605,803	797,627	2,463,573	615,893	669,844	701,715	
102 Interest	118,848	157,213	153,951	169,309	599,321	149,830	160,158	161,630	
103 Long Term Debt	179,266	57,906	107,737	107,737	452,646	113,162	91,127	107,737	
104 <b>Total Long Term Debt:</b>	<b>752,154</b>	<b>821,222</b>	<b>867,491</b>	<b>1,074,673</b>	3,515,540	878,885	921,129	971,082	

In some budgets this category was broken down into its principal and interest components, in others it was not. The totals in this category, servicing existing debt, are rising with the 2019/20 total (\$1.075M) almost 43% above the 2016/17 total.

A snapshot of the West Hants 2019/20 budget, Municipal Fire Budget section, shows some of these payments in more detail. The balance of costs shown in the summary above are tracked in some of the individual station 2019/20 budgets; these snapshots follow.

**CAPITAL SERVICING; MUNICIPAL FIRE BUDGET;**

<b>Long Term Debt Payments</b>	Projected 2018-2019	Budget 2018-2019	Estimates 2019-2020
Principal - BFD/CC	\$ 89,000	\$ 89,000	\$ 89,000
Term Loan Interest - BFD/CC	\$ 29,778	\$ 29,778	\$ 28,537
Brooklyn Pumper Principal	\$ 74,000	\$ 74,000	\$ 74,000
Brooklyn Pumper Interest	\$ 12,378	\$ 12,378	\$ 11,453
Summerville Pumper Principal	\$ 40,000	\$ 42,200	\$ 42,200
Summerville Pumper Interest	\$ 10,501	\$ 10,501	\$ 9,770
Aerial Truck Principal	\$ 80,000	\$ 80,000	\$ 80,000
Aerial Truck Interest charges	\$ 24,986	\$ 24,986	\$ 23,986
Fire Transition MFC Principal	\$ 193,603	\$ 193,603	\$ 193,682
Fire Transition MFC Interest	\$ 35,821	\$ 35,821	\$ 34,176
TMP Fire Station RBC Principal	\$ -	\$ 60,000	\$ 49,944
TMP Fire Station RBC Interest	\$ 20,149	\$ 25,245	\$ 39,783
<b>Long Term Debt Payments</b>	<b>\$ 610,216</b>	<b>\$ 677,512</b>	<b>\$ 676,531</b>

**CAPITAL SERVICING; HANTSPORT;**

<b>Long Term Debt Payments</b>			
Hantsport Pumper Principal	\$ 25,000	\$ 25,000	\$ 25,000
Hantsport Pumper Interest	\$ 6,075	\$ 6,075	\$ 4,412
Fire Truck Chassis Principal	\$ 17,500	\$ 17,500	\$ 17,500
Fire Truck Chassis Interest	\$ 4,355	\$ 4,355	\$ 4,051
Truck Box Principal (Area Rate)	\$ 20,000	\$ 20,000	\$ 12,500
Truck Box Interest (Area Rate)	\$ 4,000	\$ 4,000	\$ 1,436
Fire Hall Roof Principal (Area Rate)	\$ 4,500	\$ 4,500	\$ 4,500
Fire Hall Roof Interest (Area Rate)	\$ 812	\$ 812	\$ 718
Fire Hall Principal	\$ -	\$ -	\$ 192,801
Fire Hall Interest	\$ -	\$ -	\$ 8,676
Breathing Apparatuses Principal	\$ -	\$ -	\$ 16,500
Breathing Apparatuses Interest	\$ -	\$ -	\$ 2,311
<b>Total Long Term Debt Payments</b>	<b>\$ 82,242</b>	<b>\$ 82,242</b>	<b>\$ 290,406</b>

**CAPITAL SERVICING; SUMMERVILLE;**

<i>Long Term Debt Payments</i>	\$ -	\$ -	\$ -
<b>Total Fire Service Operations</b>	<b>\$ 268,844.33</b>	<b>\$ 208,000.00</b>	<b>\$ 205,500.00</b>
<b>Capital &amp; Reserve Expenses</b>			
Long Term Debt - New Tanker	\$ 43,902.56	\$ 50,000.00	\$ 50,000.00
Long Term Debt - New Pumper	\$ -	\$ -	\$ -
Payout - Credit Union Loan	\$ -	\$ -	\$ -
<b>Capital &amp; Reserve Expenditures Sub Total</b>	<b>\$ 43,902.56</b>	<b>\$ 50,000.00</b>	<b>\$ 50,000.00</b>

**CAPITAL SERVICING; WALTON SHORE;**

<i>Long Term Debt Payments</i>	\$ 2,430	\$ 5,832	\$ 5,832	Add on structure to building
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**CAPITAL SERVICING; BROOKLYN;**

No details.

<i>Long Term Debt Payments</i>	\$ 44,000	\$ 44,000	\$ 44,000
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**CAPITAL SERVICING; UNIACKE;**

No details.

<i>Long Term Debt Payments</i>	\$ 6,000	\$ 7,905	\$ 7,905
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There was no long-term debt servicing shown for Windsor; i.e. that was specifically earmarked for the fire department.

**CAPITAL EXPENDITURES ROLL-UP**

The following snapshot summarizes this category.

	2016-2017	2017-2018	2018-2019	2019-2020	ANALYSIS				
					4-Year Total	4-Year AVG	3-Year AVG	2-Year AVG	4-Year Trend
110 <b>CAPITAL EXPENDITURES</b>									
111 Capital expense current year	123,000	184,285	49,135	14,540	370,960	92,740	82,653	31,838	
112 Accumulated Capital	6,097	0	0	0	6,097				
113 Pay Out Credit Union Loan	4,500	0	0	0	4,500				
114 RESERVES/Misc Capital	81,000	77,000	28,810	14,110	200,920	50,230	39,973	21,460	
115 <b>Total Capital Expenditures</b>	<b>\$ 214,597</b>	<b>\$ 261,285</b>	<b>\$ 77,945</b>	<b>\$ 28,650</b>	<b>582,477</b>	<b>145,619</b>	<b>122,627</b>	<b>53,298</b>	

The expenditures on capital projects appear to have sharply declined in the past two years, at least in comparison to the amounts in the prior two years.

Roll-Up of Expenses

The following snapshot shows a roll-up of the total expenses associated with the annual operations of the fire service in W/WH. The numbers are based on the approved budget estimates for West Hants and for Windsor, as approved by Councils in the indicated budget years.

	2016-2017	2017-2018	2018-2019	2019-2020	ANALYSIS				
					4-Year Total	4-Year AVG	3-Year AVG	2-Year AVG	4-Year Trend
24 <b>EXPENSES</b>									
25 <b>FIREFIGHTING OPERATIONS</b>									
26 APPARATUS:	203,457	256,760	247,545	276,319	984,081	246,020	260,208	261,932	
34 EQUIPMENT:	280,151	358,863	351,456	319,114	1,309,584	327,396	343,144	335,285	
45 COMMUNICATIONS:	93,096	94,709	100,208	96,504	384,517	96,129	97,140	98,356	
54 <b>TOTAL Firefighting Operations:</b>	<b>576,704</b>	<b>710,332</b>	<b>699,209</b>	<b>691,937</b>	<b>2,678,182</b>	<b>1,071,273</b>	<b>700,493</b>	<b>695,573</b>	
56 <b>OTHER OPERATIONAL EXPENSES</b>									
57 TRAINING:	105,232	248,033	250,533	259,733	863,531	215,883	252,766	255,133	
65 FIRE STATION:	488,610	522,205	446,112	398,807	1,855,734	463,934	455,708	422,460	
80 ADMINISTRATION:	455,527	303,763	271,467	266,749	1,297,506	324,376	280,660	269,108	
98 <b>TOTAL Other Operational Expenses:</b>	<b>1,049,369</b>	<b>1,074,001</b>	<b>968,112</b>	<b>925,289</b>	<b>4,016,771</b>	<b>1,004,193</b>	<b>989,134</b>	<b>946,701</b>	
99									
100 <b>LONG TERM DEBT PAYMENTS</b>									
104 <b>Total Long Term Debt:</b>	<b>752,154</b>	<b>821,222</b>	<b>867,491</b>	<b>1,074,673</b>	<b>3,515,540</b>	<b>878,885</b>	<b>921,129</b>	<b>971,082</b>	
105									
106 <b>TOTAL FIRE SERVICE OPERATIONAL EXPENSES</b>	<b>\$ 2,378,227</b>	<b>\$ 2,605,555</b>	<b>\$ 2,534,812</b>	<b>\$ 2,691,899</b>	<b>10,210,493</b>	<b>2,552,623</b>	<b>2,610,755</b>	<b>2,613,356</b>	
107									
110 <b>CAPITAL EXPENDITURES</b>									
115 <b>Total Capital Expenditures:</b>	<b>\$ 214,597</b>	<b>\$ 261,285</b>	<b>\$ 77,945</b>	<b>\$ 28,650</b>	<b>582,477</b>	<b>145,619</b>	<b>122,627</b>	<b>53,298</b>	
116									
117 <b>TOTAL PROJECTION / BUDGET / ESTIMATE</b>	<b>\$ 2,592,824</b>	<b>\$ 2,866,840</b>	<b>\$ 2,612,757</b>	<b>\$ 2,720,549</b>	<b>10,792,970</b>	<b>2,698,243</b>	<b>2,733,382</b>	<b>2,666,653</b>	

The above costs also include financial assistance to Walton Shore VFD and to Uniacke and District VFD; in exchange for their provision of firefighting and rescue services in defined areas of West Hants.

The roll-up totals do not include the associated costs with fire-inspections, which are currently the responsibility of the West Hants building officials in the Planning and Development Department, and are understood to be cost shared with Windsor.

The Planning and Development department Building Inspection notes in the West Hants **2019/20** approved budget book (page 31) comments on this arrangement as shown on the following snapshot from the budget book;

***BUILDING INSPECTION BUDGET HIGHLIGHTS:******2018-19 Building Inspection Budget Highlights***

- The 2018-19 budget included the addition of a full-time Fire Inspector/ Building Official. Staff hired to fill this position could not be retained at the salary offered. This position has been removed for the 2019-2020 fiscal year as the Consolidation legislation prohibits offering a position past March 31, 2020.
- In November of 2018, the Windsor Building/Fire Official began working for West Hants half-time under the service agreement; in April of 2019, West Hants will provide full Building/Fire Inspection services to Windsor under the service agreement. At this point West Hants will again be one full inspector short of requirements.

No breakdown is provided on the portion of inspector costs that might be associated with fire-inspector duties. The Building Inspection budget is provided on page 81 of the West Hants approved 2019/20 budget book.

**BENCHMARK FOR FUTURE BUDGETS*****Annual Operations Budget Benchmark***

The following is the recommended benchmark operations budget, starting in year 2020. A number of pre-existing accounts have been combined and moved to better reflect their relationship to the budget category. The benchmark budget is presented in sections with discussion.

It should be noted that 2020/21 is a transition year and that through the consolidation period the expenditures may not match the benchmark budget. There has been no accounting for extraordinary transition costs nor reduction taken for partial year expenditures that might not fully mature in the budget year. The benchmark budget assumes none of the above costs or reductions. It is based on full year costs in a non-consolidation year.

Revenues

Revenue from area rates, general revenues, own sources, etc. have not been estimated. The new regional municipality will likely be harmonizing and adjusting these sources.

BENCHMARK OPERATIONS BUDGET						
		2019-2020	PROPOSED 2020-2021	\$ INC/(DEC) ref 2019-2020	+/- %	NOTES
	<b>REVENUE</b>					
1	CONTRIBUTION - Hantsport/WH TAX BASE	0				
2	CONTRIBUTION - OPERATIONS GRANT - West Hants	1,602,941				
3	CONTRIBUTION - GRANTS - East Hants	84,545	84,600	55	0%	Brooklyn services (\$52K) to South Rawdon,+ EH share of WSFD
4	CONTRIBUTION - OPERATIONS GRANT - Kings County	59,955	60,000	45	0%	
5	CONTRIBUTION - GRANTS - Glooscap	7,065	7,065	0	0%	
6	CONTRIBUTION - CAPITAL FIRE GRANT - West Hants	188,249				
7	CONTRIBUTION - CAPITAL FIRE GRANT - Kings County	83,003	83,000	(-3)	-0%	
8	CONTRIBUTION - Grant (SW Society)	27,036				
9	CONTRIBUTION - Windsor Society (building upgrades)	0	-			
10	CONTRIBUTION - Town of Windsor	26,783				
11	Municipal Costs	72,600				
12	Hantsport/Windsor AREA RATE	46,194				
13	BUILDING RESERVE	0				
14	Surplus (SW)	1,300				
15	PROVINCIAL FUNDING (Windsor "Fire Protection")	29,640	29,600	(-40)	-0%	
16	Firefighters 50% co-pay; off-duty AD&D benefit		6,270	6,270		Principal benefit amount is \$200,000
17	Donations	5,300				
18	OTHER - FUNDRAISING/Rent/Auxiliary	40,729				
19	<b>TOTAL INCOME:</b>	<b>2,275,340</b>	<b>270,535</b>			
24						

There is also an opportunity for additional revenue generated from cost-recovery fees. These are not shown in the above budget benchmark.

GA’s analysis shows that almost 10% of the approximately 3,640 incidents that W/WH fire departments responded to, and that occurred from January 2, 2014 to August 5, 2019 (5-½ years), were responses to Highway 101 or to its interchanges. This trend<sup>81</sup> is increasing.

**GA recommends** that the new Regional Municipality implement service fees for reasonable cost recovery to highway responses.

Such fees are permitted by legislation. The Insurance<sup>82</sup> Act, §107B(7) states;

“For greater certainty, nothing in this Section prevents a fire department from making a claim for costs incurred in responding to a motor vehicle accident.”

<sup>81</sup> Responses to Hwy-101: 2014 (45), 2015 (47), 2016 (68), 2017 (64), 2018 (81), and 2019 (54 in period Jan-July).

<sup>82</sup> Nova Scotia, Insurance Act, R.S., c.231, s.1.

In Ontario, the province has a program to reimburse fire departments at a rate of \$465.42/hour, per fire truck (maximum 3 trucks). Ontario fire departments can also opt out of the provincial program and charge drivers directly for higher costs. The insurance companies typically pay the fees. At Ontario rates, W/WH might have collected<sup>83</sup> (2-truck response) as much as \$330k, over the mentioned period.

In Newfoundland & Labrador, the Province reimburses fire departments for responses outside municipal boundaries. As stated in the Province's 2015/16 annual report,<sup>84</sup> they paid \$65,050 for 133 incidents (average 489.10 per incident). At NL rates, W/WH might have collected \$175.6k.

**GA recommends** that the new Regional Municipality identify suitable services, and implement cost-recovery fees for these services. The rationale is that although the costs for basic fire protection and rescue services are paid by all residents through their property taxes/area rates, some services are only provided to a few residents and usually for their own benefit, not to the general welfare. An example is the application for a liquor license; which requires a fire inspection where the applicant is the main beneficiary of the license and the municipality is essentially subsidizing this process.

Under §49 of the *Municipal Government Act*,<sup>85</sup> the Municipality has the power to make policies for the setting of fees to be paid for inspections, permits, applications, approvals pursuant to a by-law or legislation. Also, under §79 of the *Act*, the Municipality has the power to prescribe charges for the provision of services.

Some examples of eligible services where cost-recovery fees might be appropriate could include the following;

- Fire inspection of occupancy on request
- Liquor license inspection
- Inspection for occupancy load certificate

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<sup>83</sup> Realistically, it is unlikely there would be a 100% collection rate. It is also suggested that fees only be applied to non-resident service recipients.

<sup>84</sup> Fire and Emergency Services-Newfoundland and Labrador, 2015-16 Annual Report, page 16.

<sup>85</sup> Nova Scotia, Municipal Government Act. 1998, c. 18, s. 1

- Inspection of day-care centre
- Mobile food/beverage truck inspections
- Tent and special occasion inspections
- Response to provincial highways (non-residents)
- Inspection of trade shows and other special events
- Municipal open-fire (burning) permits
- Fire extinguisher training
- Request for smoke or carbon monoxide alarm installation
- Request for report on a fire incident (usually related to an insurance claim)
- Request for assistance in review of plans and/or development consultation (hourly rate)
- Incurred extraordinary costs as a result of an incident (e.g. excavation/demolition equipment, security, fencing, investigation, damage to infrastructure, environmental abatement, and etc.)
- Paid duty (e.g. standby for hot-work)
- False-alarm responses (preventable and excessive)

**GA recommends** that the municipality pursue prosecution and seek fines for violations of the Fire Code, in accordance with the provisions in the *Fire Safety Act*.

Expenses

FIREFIGHTING OPERATIONS:

This category includes the same three groups as in the historical budgets. Some changes in budget line details are suggested from those prior budgeted amounts. The budget notes opposite each item briefly explain the reasons for changes. Further discussion on selected budget line items follows on the next few pages.

		2019-2020	PROPOSED 2020-2021	\$ INC/(DEC) ref 2019-2020	+/ %	NOTES
25	<b>EXPENSES</b>					
26	<b>FIREFIGHTING OPERATIONS:</b>					
27	<b>APPARATUS:</b>					
28	Regular Maintenance	108,266	115,000	6,734	6%	Vehicles are aging and require more maintenance. Some annual and semi-annual inspection and testing is <u>not</u> currently being done.
29	Fuel	47,500	42,000	(-5,500)	-12%	Implement fuel saving program, eliminate unneeded idling
30	Major Repairs	27,833	30,000	2,167	8%	Increase to get Brooklyn E1 serviceable, designate as a reserve pumper
31	Annual Safety and Functional Inspections	14,867	14,000	(-867)	-6%	Legislated. Need to increase inspections to annual major and semi-annual minor
32	<b>sub-total:</b>	<b>198,466</b>	<b>201,000</b>	<b>2,534</b>	<b>1%</b>	
33	<b>EQUIPMENT:</b>					
34	SCBA Testing and Servicing	25,533	35,000	9,467	37%	Legislated: All SCBA, PPE, must be inspected and tested annually. Implement an annual fit-testing program for all firefighters.
35	Testing, Maintenance, & Repair	40,500	52,000	11,500	28%	Legislated: All fire hose must be tested annually. Standards requires testing of ladders, appliances annually.
36	Other	15,750	14,000	(-1,750)	-11%	Reduce unspecified other amounts
37	<b>sub-total:</b>	<b>81,783</b>	<b>101,000</b>	<b>19,217</b>	<b>23%</b>	
38	<b>COMMUNICATIONS:</b>					
39	Dispatch Services	41,367	40,000	(-1,367)	-3%	Valley Communications (\$36,053.33 annual) Contract expires June/2020
40	Radio Testing, Maintenance, & Repair	11,000	25,440	14,440	131%	Radio equipment maintenance contract (\$120/radio)
41	Pager Testing, Maintenance, & Repair		4,000			Pager servicing, approximately 20 per yr @ \$200
42	<b>sub-total:</b>	<b>52,367</b>	<b>69,440</b>	<b>17,073</b>	<b>33%</b>	
43						
44	<b>TOTAL Firefighting Operations:</b>	<b>332,616</b>	<b>371,440</b>	<b>38,824</b>	<b>12%</b>	

*Regular Maintenance:* Repairs and maintenance should be done in accordance with the requirements in NFPA-1911<sup>86</sup>, which is the industry benchmark and best practice. A certified Emergency Vehicle Technician should be servicing all the firefighting related components on the apparatus. The standard also requires certain testing be done annually, and different levels of condition assessments be done semi-annually. Not all fire apparatus is currently be inspected and tested to meet the standard.

<sup>86</sup> National Fire Protection Association; NFPA-1911, Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles.

**GA recommends** that one qualified and experienced fire apparatus maintenance service provider do all the servicing on all fire fleet vehicles.

*Annual Safety and Functional Inspections:* This is closely related to the regular maintenance of the fire apparatus. Safety inspections are mandated by the Province. Functional Inspections are done by a third-party fire apparatus inspector and these inspections verify/certify the condition of the powertrain, pump, foam system, and aerial ladder device; and that these components continue to meet their certified performance capabilities. Not all fire apparatus is currently being annually functional inspected by a third-party expert as is required.

*SCBA Testing and Servicing:* NS occupational health and safety legislation requires annual testing of all breathing equipment, and fit-testing of all persons who will be required to wear this equipment. Not all firefighters are being fit-tested and it is not clear that all equipment is being properly annually tested. A rigorous program is needed to ensure compliance. Increased costs are anticipated in meeting the regulations.

*Equipment, Testing Maintenance and Repair:* NS occupational health safety and safety legislation requires the annual inspection and testing of all fire hose and associated appliances in accordance with NFPA-1962<sup>87</sup>. It appears that this is not being done. Legislation also requires the annual inspection and testing of all ground-ladders<sup>88</sup> in accordance with NFPA-1932<sup>89</sup>. Neither of these inspection regimes is being consistently undertaken. Increased costs are anticipated in meeting the regulations.

*Dispatch Services:* The two contracts with Valley Communications expire in June 2020. A new contract will establish the final cost of this service.

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<sup>87</sup> National Fire Protection Association; NFPA-1962, Standard for the Care, Use, Inspection, Service Testing, and Replacement of Fire Hose, Couplings, Nozzles, and Fire Hose Appliances.

<sup>88</sup> There are two basic categories of ladders used by the fire services. Aerial ladders are powered and mounted to a vehicle. Ground ladders are set on the ground and leaned against the structure. Ground ladders fall into many types (extension, roof, stay-pole, folding, combination, and etc.), but collectively all are called ground-ladders.

<sup>89</sup> National Fire Protection Association; NFPA-1932, Standard on Use, Maintenance, and Service Testing of In-Service Fire Department Ground Ladders.

*Radio Testing Maintenance and Repair:* The cost of purchasing radios, pagers, and associated batteries has been moved to Minor Capital. What remains is the cost of an annual service contract for the testing and maintenance of mobile, portable, repeater, and base station radios.

*Pager Testing Maintenance and Repair:* The cost of maintaining pagers is stated in its own budget line. Pager maintenance can either be done on a parts and labour basis or through a flat rate per pager repair service contract. The flat rate is generally more economical. Previous experience indicates that approximately 10% of pagers will need servicing in any given year.

OTHER OPERATIONAL EXPENSES

This category contains the same four groups as historical budgets. Some changes are suggested from the prior budgeted amounts. The budget notes opposite each item briefly explains the reasons.

		2019-2020	PROPOSED 2020-2021	\$ INC/(DEC) ref 2019-2020	+/- %	NOTES
46	<b>OTHER OPERATIONAL EXPENSES:</b>					
47	<b>TRAINING:</b>					
48	Fire School	69,133	60,000	(-9,133)	-13%	NS Firefighter School (Waverley), third-party training, conventions and conferences
49	Medical First Responder Program	10,000	10,000	0	0%	MFR program in support of EHS
50	Seminars/Training Materials	16,767	16,000	(-767)	-5%	In-house training costs, reference/student materials
51	Travel/Meals/Misc Expenses	13,333	12,000	(-1,333)	-10%	Associated costs
52	<b>sub-total:</b>	<b>109,233</b>	<b>98,000</b>	<b>(-11,233)</b>	<b>-10%</b>	
53	<b>FIRE STATION:</b>					
54	Light & Power	52,853	52,000	(-853)	-2%	8 fire stations
55	Heating	30,000	32,000	2,000	7%	8 fire stations
56	General Maintenance	51,300	37,000	(-14,300)	-28%	General Maintenance of facilities (8 stations), water costs
57	Emergency Equipment M&R	8,950	9,000	50	1%	Backup Generator maintenance
58	Snow Removal/Grounds Keeping	38,767	31,000	(-7,767)	-20%	Competitive contract needed
59	Renovations and Large Repairs	41,663	35,000	(-6,663)	-16%	Unknown what is needed here, majority of costs is WFD share of Stephens building
60	Other	85,260	85,000	(-260)	-0%	Majority of this cost is WFD allocated share of the Stephens building
61	<b>sub-total:</b>	<b>308,793</b>	<b>281,000</b>	<b>(-27,793)</b>	<b>-9%</b>	

*Fire School:* Previously this category was termed Fire School Level I which was a misnomer. Courses taken at the Fire School include more than Level I, so the name has been changed to include all Fire School and third-party sourced training. Costs and travel are anticipated to be lower if the Fire School extension courses are used to bring more training to the Region instead of firefighters traveling to Waverley as often.

GA has not audited the current Fire School costs but would not be surprised if they also contain the cost of conventions and conferences, and other similar professional development events, since there is no pre-existing budget line for these items. If correct, then these costs should be broken out in future budgets for better tracking.

*General Maintenance:* The maintenance costs for the Windsor fire station are not broken out but are instead provided as a percentage of the entire WB Stephens building.

**GA recommends** that a better understanding be undertaken on Windsor fire station actual costs as part of a possible justification for a new facility. Water costs for serviced stations (Windsor, Hantsport) do not have a separate budget line and are therefore unknown.

*Snow Removal/Grounds Keeping:* It may be possible to reduce these costs by use of Regional staff and/or a negotiated contract for all fire/regional facilities that will lower costs.

*Renovations and Large Repairs, and Other:* These budget lines are significantly driven by the allocated costs for the Windsor fire station. The comment made under the General Maintenance budget line applies here as well.

**ADMINISTRATION:**

		2019-2020	PROPOSED 2020-2021	\$ INC/(DEC) ref 2019-2020	+/ %	NOTES
62	<b>ADMINISTRATION:</b>					
63	Salaries: Full-Time, Part-Time	129,137	517,260	388,123	301%	Director/Chief (FT), Assistant Chief (FT), Admin Assist (FT), Inspector (1.5 FT), Div Chief (.75 PT), Stn Mtce (3.75 PT), Investigators (20% PT)
64	Benefits: Full-Time, Part-Time		94,784			25% of FT salary, 7.5% of PT
65	Volunteer Firefighter Honourarium	200,100	225,000	24,900	12%	Harmonization may increase costs
	Volunteer Benefits (WCB, AD&D, MFAP, off	48,385	85,146	36,761	76%	Volunteer WCB (\$291.4x190); VFIS (\$30k) for \$200 AD&D, MFAP, 24/7 coverage for 100 ffs at \$114, 50% copay.
66	Telephone	25,873	22,000	(-3,873)	-15%	Corporate phone rate?
67	Industry Canada Radio Licenses	1,060	9,400	8,340		Collected from various accounts. Fully licensed
68	Radio Lease (TMR), Cell Phones	38,167	38,000	(-167)	-0%	Radio lease (TMR \$5000), and pager leasing, cell phone costs (details unknown).
69	Office Supplies	6,983	8,000	1,017	15%	Supply through corporate accounts
70	Publications/Subscriptions	33	2,000	1,967		NFPA subscription for the Fire Department
71	Memberships Professional Assn's	2,335	2,200	(-135)	-6%	FIANS (\$350), FSANS (\$40x8), CAFCA (\$280), NFPA (\$225), CAFI (\$550 for 10 members), MFCA (\$50),
72	Legal/Audit fees	13,950	12,000	(-1,950)	-14%	Do not know what is currently in this account for highly variable historical value. There will be title search costs, prosecutor costs, court costs, society auditor fees
73	Bank fee/Interest	5,200	2,500	(-2,700)	-52%	Society costs. Benefits to a negotiated single provider?
75	Insurance: Liability/Fire/Theft/3rd Party	16,000	16,000	0	0%	Corporate 3rd party insurance, fire & theft. Fire Department individual liability insurance, fire & theft. Is there overlap currently?
76	Insurance: Vehicles	77,853	70,000	(-7,853)	-10%	Corporate fleet insurance should reduce costs. Coverage should be examined. Own risk/deductible can reduce costs
77	Computers and Software	14,527	10,000	(-4,527)	-31%	Includes software costs for 1 am Responding (\$800pa)
78	Public Events	17,800	15,000	(-2,800)	-16%	Annual honours and service awards event. Parades
79	Fire Prevention	700	4,000	3,300	471%	Fire Prevention Week blitz, smoke alarm program
80	Other	31,150	30,000	(-1,150)	-4%	Has included WCB in past. This has been a catch-all account. Contents unknown. Costs need to be redistributed to specific accounts.
81	sub-total:	629,253	1,163,290	534,037	85%	

*Salaries: Full-Time, Part-Time:* All salaries for recommended positions associated with *Organizational Option #3* appear on this line as indicated in the budget notes. Currently there are staffing costs that includes the Windsor fire chief, a number of part-time maintenance staff who continue to work at the various fire stations in W/WH, and 1.5 fire-inspectors currently with Planning and Development. Please see **ORGANIZATION AND STAFFING** starting on page **83** for a full discussion on GA’s recommendation for staffing.

*Volunteer Firefighter Honourarium:* GA is recommending that a fair and equitable honourarium policy be established that applies to all volunteer firefighters across the Region. The chart shown on page **295** suggests that the past practice may not be equitable.

**GA recommends** that a fair and equitable honourarium policy be established that applies to all volunteer firefighters across the Region.

*Volunteer Benefits:* This is a new budget line. It covers the cost of recommended volunteer firefighter benefits, some of which are available now to some of the firefighters, but not all, and there currently is variability in the amount of benefit provided.

**GA recommends** that the following benefits be provided by the municipality to all volunteer firefighters; Provincial Workers Compensation Benefits (\$62k insured amount), VFIS AD&D and disability coverage (\$200k on-duty principal amount, disability weekly \$700 maximum), VFIS MFAP (member and family assistance program for mental health), VFIS 24/7 (off-duty accident and sickness, 50/50 co-pay with firefighter who subscribes).

*Industry Canada Radio Licenses:* There are federal fees associated with the use of the radio spectrum in Canada. The annual fee for portable and mobile radios is \$40.80 per radio. Currently the fire departments in the region have 161 VHF radios and 38 TMR radios that require licensing. The annual fee for base stations and repeaters is \$52.80 per frequency, meaning the minimum annual fee is \$105.60, and likely more since every channel adds this amount to the fee, and W/WH fire departments use six VHF channels. It is our understanding there are 6 bases and 3 repeaters in W/WH.

It was not possible to identify the current costs for radio licensing since these costs were not broken out of the various places in the budget that they appeared to have been included. The benchmark budget calculates the costs based on known numbers of current radios.

TMR portable/mobile radios that were provided (seeded) to the fire departments by the province do not require licensing. That is provided by the province. Currently the fire departments have 54 seeded radios.

*Radio Lease:* The fire departments currently own an additional 38+/- TMR radios; in addition to those provided by the province. The annual access fee for using these on the TMR system is \$120 per radio (approximate annual total \$4,560). Also included is cell and pager lease costs. The details of these are unknown and should be examined for need and costs.

*Memberships:* It is important for the fire service to network and keep abreast of developments in the industry, many of which deal with developing liability and health/safety issues. Membership

in some key organizations is recommended: FIANS Fire Inspectors Association of Nova Scotia, FSANS Fire Services Association of Nova Scotia, CAFC Canadian Association of Fire Chiefs, NFPA National Fire Protection Association, CAFI Canadian Association of Fire Investigators, MFCA Maritime Fire Chiefs Association.

*Legal Audit fees:* This budget line likely previously included costs associated with the fire departments annual financial audit. Now included in this benchmark budget is costs related to issuing Orders and swearing of information/summons under the Fire Prevention Act related to Fire Code enforcement (for example; title searches, summons servers, prosecution services).

*Insurance Vehicles:* A corporate fleet coverage policy for all fire fleet/municipal fleet vehicles could secure savings vs several policies.

**GA recommends** that an insurance specialist be hired to review insurance policies and coverage options in order to prepare an RFP that obtains needed/desired coverage at best value. Self-insurance (i.e. deductible) risk assessments should be considered.

*Computers and Software:* Computer services are averaging over \$10k annually. GA is uncertain if this is good value. Now included in this line is the annual subscription rate for “IamResponding” which is software/application that allows the volunteer firefighter to use their smart-phone to advise that they are responding to the incident. This is useful information for the incident commander and station officers.

*Fire Prevention:* Basic fire prevention activities has traditionally been done at the local level. Further support for these activities is needed and encouraged.

*Administration; Other:* Not all stations are contributing to this budget line, however some are contributing between 10% and 20% of their administration budget and one up to 40%. Fire departments should be encouraged to better discriminate funding needs.

*Minor Capital Expense Needs*

A review of the inventory of Minor Capital equipment in the fire departments of W/WH indicates there is a need to replenish a portion of these items on an annual basis. These items do not include large capital assets such as vehicles, buildings, and other long lasting and higher-dollar capital projects. They are instead smaller-cost, semi-durable, assets that would be counted in an assessment of current assets, but are on the other-hand of relatively short life span (less than +/-15 years) and of relatively low cost. This subject is first discussed on page 254 of this chapter.

A four-year average of recent W/WH expenditures on Minor Capital projects is \$243,625 and this amount has been declining, with the 2019/20 contribution below the average.

**GA recommends** that expenditures on minor capital equipment be increased since they are currently below sustainable service-requirements.

		2016-2017	2017-2018	2018-2019	2019-2020	ANALYSIS			
						4-Year Total	4-Year AVG	3-Year AVG	2-Year AVG
82	<b>MINOR CAPITAL:</b>								
83	Fire/Rescue Equipment, PPE	181,218	252,630	259,823	225,831	919,502	229,875	246,095	242,827
84	Uniforms	14,500	17,000	12,000	11,500	55,000	13,750	13,500	11,750
85	<b>sub-total:</b>	<b>195,718</b>	<b>269,630</b>	<b>271,823</b>	<b>237,331</b>	<b>974,502</b>	<b>243,625</b>	<b>259,595</b>	<b>254,577</b>

**GA recommends** that the need for the purchase of minor capital items be evaluated on the basis of the required inventory of items (e.g. how many 2½-inch fire hoses are needed) and each items’ expected life-span. Such an evaluation would reveal the needed replacement rate for all such items. Coupled with their current individual costs, it is possible to calculate an average minor capital expenditure demand for budgeting purposes. This analysis has been done; please see **Details of Minor Capital** starting on page 275.

One of the big benefits of this annual minor capital replacement concept, for management and Council, is it facilitates a steady budget contribution on an annual basis, and thereby avoids a substantial increase in one budget year, to address a critical shortfall in equipment, followed by a corresponding drop the following year, an undesirable cycle that can be avoided.

For a specific example, firefighter protective clothing (PPE) costs about \$2,000 per firefighter and has a maximum lifespan of 10 years, some components much less (e.g. gloves). There is a need to replace some of this every year to provide PPE for new firefighters and to replace expired or damaged gear. Largely, this is a very dynamic challenge and difficult to accurately plan.

There are two possible strategies to approach the need to replace PPE. One is to allow the demand for replacement/new PPE to build up as the current equipment is destroyed/ages, and also as new firefighters join; then apply through the budget process for a substantial capital budget item to replace large portions or all of the 190+/- sets needed. To replace all sets would cost approximately \$380k, and would have to be approved as a first priority. The consequences of this strategy are a steady reduction in service as current gear expires or is no longer useable, and/or an increase in firefighter risk (municipal liability) as their PPE no longer does its job.

**GA recommends** that a number of bunker gear sets be purchased annually. Blanket purchasing contracts should be signed that permit the fire department to purchase/requisition annually, say over a 5 or 7-year period, estimated maximum/minimum numbers of firefighters' PPE components, at agreed prices. This strategy allows the fire department to quickly react to unplanned changes in the status of their critical PPE inventory and immediately take pre-approved action to address the need. It also smooths out large variations in the annual budgeting process.

The above recommended strategy should be applied to all minor capital equipment in the fire department. The same needs and advantages would apply.

#### DETAILS OF MINOR CAPITAL RECOMMENDATIONS

The spreadsheet analysis, that starts on the following page, shows the scope of minor capital needs and the annual estimated costs of applying the above recommended strategy. The spreadsheet shows ten years of projected spending, starting in the year 2020.

**MINOR CAPITAL PAGE 1:**

The following is an explanation of what is in this workbook,

- Column D is the life expectancy, in years, of the particular item.
- Column E is the recommended inventory, of the particular item, that the six W/WH fire stations should collectively have in service.
- Column F is the estimated individual cost of each item. Pricing may vary from that noted, and often better pricing is available when obtaining quotations from competing vendors for the same item, especially when group purchasing of standardized equipment, as a Region.
- Column G is the recommended quantity that, on average, should be purchased annually for each item. It is largely based on the inventory divided by the service life.
- Under each year column is a number opposite the items. These are the annual numbers of that item that GA proposes be purchased in that year. Some items are grouped in the same year, for example lines 53-56, because these items when purchased together form a system and will attract better pricing if purchased that way.

Annual Minor Capital Needs: (20-year projected)																
A	B	C	D	E	F	G	Annual Average cost (2020 - 2039): \$ 316,160 +/- vs avg: Surplus / (-Deficit)									
Station:	ALL STATIONS, REGION-WIDE				Estimated YEAR 2019	+/- avg:	(\$27,160)	(\$10,900)	(\$6,680)	(\$920)	\$4,136	\$2,100	(\$5,260)	\$3,800	(\$40,980)	\$8,496
2019 dollars					Annual \$:		343,320	327,060	322,820	317,080	312,024	314,060	321,420	312,360	357,140	307,664
Class	Item	Life	INV	Unit Cost	Ann'l QTY	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
1	Respiratory: SCBA Paks (Scott X3, 4.5, no bottle)	15	97	\$ 6,500	6.5	7	6	7	6	7	6	7	6	7	6	
2	SCBA Bottles (30 min, 4.5, carbon)	15	204	\$ 1,600	13.6	13	14	13	14	13	14	13	14	13	14	
3	SCBA Masks (AV-3000HT spares)	15	107	\$ 600	3.2	3	3	3	3	3	3	3	3	3	3	
4	PAPRs	7	4	\$ 1,200	0.6	2	2						2	2		
5	Fit Tester	15	1	\$ 17,000	0.1	1										
6	Cascade Bottles	15														
7	PASS Alarms (not integrated)	15														
8	Air Pak upgrade Kits	15	40	\$ 3,000	2.7	3	3	3	3	3	3	3	3	3	3	
9																
10					Class Sub-TOTAL:	79,500	91,600	77,100	72,200	77,100	72,200	77,100	74,600	79,500	72,200	
11	Firefighting: Ground Ladders, 40'	25	2	\$ 2,100	0.1										1	
12	Ground Ladders, 35'	25	6	\$ 1,800	0.2					1					1	
13	Ground Ladders, 24'	25	17	\$ 1,300	0.7		1		1		1		1		1	
14	Ground Ladders, 14'	25	34	\$ 600	1.4			2			2			2		
15	1-1/2" hose (forestry, Mercedes Firebr)	10	50	\$ 225	5.0	5	5	5	5	5	5	5	5	5	5	
16	1-3/4" hose (Kraken EXO, 50')	10	300	\$ 325	30.0	30	30	30	30	30	30	30	30	30	30	
17	2-1/2" hose (Kraken EXO, 50')	10	300	\$ 460	30.0	30	30	30	30	30	30	30	30	30	30	
18	3" hose	10	0													
19	4" hose (legacy)	10	0	\$ 1,000												
20	5" hose (Mercedes MegaFlo, 100')	15	180	\$ 1,150	12.0	12	12	12	12	12	12	12	12	12	12	
21	Hard Suction Hose, 8"	25	26													
22	Hard Suction Hose, 5"	25	13													
23	Hard Suction Hose, 4"	25														
24	Hard Suction Hose, 2-1/2"	25	1													
25	Port-A-Tanks (3500 USGal)	15	5	\$ 3,000	0.3		1			1			1			
26	Drafting Equipment (misc.)	25		\$ 1,500			1			1			1			
27	Portable Pumps, Large (CET)	7	1	\$ 7,500	0.1		1		1							
28	Portable Pumps, Small (wildland)	15	2	\$ 5,000	0.1			1							1	
29	Portable Generators	20	11	\$ 1,500	0.6				1				1			
30	Chain Saws	7	4	\$ 3,000	0.6	1							1			
31	K-12 Saws	7	5	\$ 3,000	0.7		1						1		1	
32	Forcible Entry Tools (misc.)	25		\$ 350		1	1	1	1	1	1	1	1	1	1	
33	Firefighting Nozzles	25	98	\$ 975	3.9	4	4	4	4	4	4	4	4	4	4	
34	Hose Appliances	25		\$ 900		1	1	1	1	1	1	1	1	1	1	
35	Ventilation Fans	15	6	\$ 5,554	0.4					1					1	
36	Firefighting Tools (misc.)	25		\$ 500		1	1	1	1	1	1	1	1	1	1	
37	Thermal Imaging Cameras	7	6	\$ 10,000	0.9	3									6	
38	Rechargeable Flash Lights	7	74	\$ 50	10.6	10	10	10	10	10	10	10	10	10	10	
39	Floodlights, portable	10		\$ 950		2		2		2		2		2		
40	Electrical Equip. (misc.)	10		\$ 100		1	1	1	1	1	1	1	1	1	1	
41	Foam Application equipment	15														
42	Deck guns	30	10	\$ 3,500	0.3											
43	TIC Battery	5	7	\$ 200	1.4	1	1	1	1	1	1	1				
44																
45					Class Sub-TOTAL:	79,825	61,225	53,025	55,225	58,679	47,425	46,825	55,025	110,825	60,479	



of \$316k; i.e. the amount of sustainable funds needed annually (in 2019 dollars) for minor capital purchases.

**GA recommends** that \$300k (2019 dollars) be the target as a long-term plan for annual minor capital budgeting, until experience proves this is/not sufficient. However, as shown in the workbook that requirement for funds appears to be front-end loaded based on the expressed current needs of the fire departments. In the short term, Council may want to consider a temporary increase in that amount for the first three years. The benchmark budget shows \$340k in 2020/21 for this reason.

**GA recommends** that the Director of Public Safety/Fire Chief manage the purchasing of minor capital equipment, for several reasons. With advice from the District Chief Management Committee he should set priorities on what equipment will be purchased that year.

**GA recommends** that the Director of Public Safety/Fire Chief have discretionary powers to make adjustments, within the approved minor capital budget total, to annually determine the exact mix of minor capital purchases according to immediate need. In this way, the fire department will be able to more quickly reset priorities as equipment is lost or damaged during the year or after a major fire/incident, balanced with other equipment expiry deadlines.

**GA recommends** that any surplus minor capital funds at the end of the fiscal year (if any) be placed into a revolving reserve account for the future purchase of minor capital equipment.

**GA recommends** that the surplus minor capital revolving reserve account have a set maximum amount of approximately \$100,000. If in any given future year there is an unprecedented or emergency need to make minor capital purchases and there are insufficient budgeted funds, a mechanism should be in place for the Director of Public Safety/Fire Chief to request Council to release additional funds to cover the need.

The regional fire chief should manage the purchasing process. In this way municipal purchasing procedures will be followed, region-wide purchasing of standardized equipment will occur, and best value for public funds should result.

The following shows the minor capital benchmark budget recommendation.

			<b>PROPOSED</b>	<b>\$ INC/(DEC)</b>	<b>+/-</b>	<b>NOTES</b>
		<b>2019-2020</b>	<b>2020-2021</b>	<b>ref 2019-2020</b>	<b>%</b>	
82	<b>MINOR CAPITAL:</b>					
83	Fire/Rescue Equipment, PPE	225,831	330,000	104,169	46%	Reference the Minor Capital budget forecast
84	Uniforms	11,500	10,000	(-1,500)	-13%	
85	<b>sub-total:</b>	<b>237,331</b>	<b>340,000</b>	<b>102,669</b>	<b>43%</b>	

*Long Term Debt*

The benchmark budget carries-forward the existing debt servicing amounts. The details of the debts were not investigated, so it is not reported here when they will be cleared.

		2019-2020	PROPOSED 2020-2021	\$ INC/(DEC) ref 2019-2020	+/- %	NOTES
89	<b>LONG-TERM DEBT PAYMENTS:</b>					
90	Principle	797,627	797,000	(-627)	-0%	Outstanding debt servicing
91	Interest	169,309	170,000	691	0%	Outstanding debt servicing
92	Long Term Debt	107,737	107,700	(-37)	-0%	Outstanding debt servicing
93	<b>Total Long Term Debt:</b>	<b>1,074,673</b>	<b>1,074,700</b>	<b>27</b>	<b>0%</b>	

*Major Capital Needs*

As shown in the snapshot on page 261, the four-year average of recent W/WH direct expenditures on Major Capital projects is \$145,619, and this amount has been declining, with the 2019/20 contribution at \$28,650. In part, this variability is due to the nature of capital projects; they do not necessarily reoccur annually and some can be very costly. In addition, the municipal consolidation’s spending freeze has undoubtedly affected current spending.

*Replacing Fire Trucks*

One recurring demand for capital monies is the purchase of fire apparatus and utility vehicles. Once the requirement to have particular types of fire apparatus/support vehicles, and the number thereof is determined, it becomes possible to project into future years the capital funding demands for their replacement. This means, there is the opportunity to plan for the upcoming expenditures, to know fairly accurately what the costs will be, and to decide the funding strategy by which the capital demands will be met.

A brief discussion on fire apparatus replacement criteria will assist with understanding GA’s budget recommendations on this subject.

A review of the current state of major fire department assets in W/WH shows a need to replace vehicles (fire apparatus) on a regular schedule that meets needs and best practices. NFPA-1911<sup>90</sup> recommends;

“In the last 10 to 15 years, much progress has been made in upgrading functional capabilities and improving the safety features of fire apparatus. Apparatus more than 15 years old might include only a few of the safety upgrades required by the recent editions of the NFPA fire department apparatus standards ... It is recommended that apparatus more than 15 years old that have been properly maintained and that are still in serviceable condition be placed in reserve status; be upgraded in accordance with NFPA-1912; and incorporate as many features as possible of the current fire apparatus standard (see Section D.3). This will ensure that, while the apparatus might not totally comply with the current editions of the automotive fire apparatus standards, many of the improvements and upgrades required by the current editions of the standards are available to the fire fighters who use the apparatus.”

NFPA-1911 goes on to say that the original purchase of good quality, with good ongoing maintenance, and periodic upgrading to keep pace with safety and function improvements, can extend apparatus serviceable life somewhat.

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<sup>90</sup> National Fire Protection Association; NFPA-1911, Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles, 2017 edition; Annex D.1

The other major arbiter of fire apparatus age and condition is the Fire Underwriters Survey (FUS), who published<sup>91</sup> the following guidance table;

**Table 1 Service Schedule for Fire Apparatus For Fire Insurance Grading Purposes**

Apparatus Age	Major Cities <sup>3</sup>	Medium Sized Cities <sup>4</sup>	Small Communities <sup>5</sup> and Rural Centres
0 – 15 Years	First Line Duty	First Line Duty	First Line Duty
16 – 20 Years	Reserve	2 <sup>nd</sup> Line Duty	First Line Duty
20 – 25 Years <sup>1</sup>	No Credit in Grading	No Credit in Grading or Reserve <sup>2</sup>	No Credit in Grading or 2 <sup>nd</sup> Line Duty <sup>2</sup>
26 – 29 Years <sup>1</sup>	No Credit in Grading	No Credit in Grading or Reserve <sup>2</sup>	No Credit in Grading or Reserve <sup>2</sup>
30 Years +	No Credit in Grading	No Credit in Grading	No Credit in Grading

<sup>1</sup> All listed fire apparatus 20 years of age and older are required to be service tested by recognized testing agency on an annual basis to be eligible for grading recognition. (NFPA 1071)

<sup>2</sup> Exceptions to age status may be considered in a small to medium sized communities and rural centres conditionally, when apparatus condition is acceptable and apparatus successfully passes required testing.

<sup>3</sup> Major Cities are defined as an incorporated or unincorporated community that has:

- a populated area (or multiple areas) with a density of at least 400 people per square kilometre; AND
- a total population of 100,000 or greater.

<sup>4</sup> Medium Communities are defined as an incorporated or unincorporated community that has:

- a populated area (or multiple areas) with a density of at least 200 people per square kilometre; AND/OR
- a total population of 1,000 or greater.

<sup>5</sup> Small Communities are defined as an incorporated or unincorporated community that has:

- no populated areas with densities that exceed 200 people per square kilometre; AND
- does not have a total population in excess of 1,000.

FUS is the organization that conducts detailed surveys of municipal fire protection capabilities for the purposes of recommending fire protection grades to the insurance industry. FUS recommendations are highly regarded as a consistent yardstick for comparison to past and future capabilities in fire protection, and their conclusions (ratings) can affect fire insurance costs for individual property owners.

It is clear that both NFPA and FUS consider 15 years as the maximum front-line serviceable age of fire apparatus. However, FUS does recognize that low incident volumes, quality purchases, and good maintenance, proved by testing, can extend the front-line serviceable age to 20 years, followed by up to 5 years in reserve for smaller communities. Front-line means that the apparatus is relied on to be a mainstay for fire protection. Reserve means that it is not so relied on, but can periodically step into a front-line role when needed (e.g. as a maintenance spare).

<sup>91</sup> Fire Underwriters Survey/OPTA, Technical Bulletin, Insurance Grading Recognition of Used or Rebuilt Fire Apparatus, 2014.

**GA recommends** that the following fire apparatus replacement schedule be adopted for the purposes of determining fire apparatus suitability for continued service and as a budget planning tool for fire apparatus replacement.

**RECOMMENDED SERVICE LENGTH FOR FIRE APPARATUS**

Type	Condition	Max Age	Service
Pumper	Purchased to NFPA-1901 standard, certified and periodically tested in accordance with FUS/ULC	20 years	First-line duty
Pumper	Purchased to NFPA-1901 standard, certified and periodically tested in accordance with FUS/ULC	25 years	Reserve use
Aerial/Quint	Purchased to NFPA-1901 standard, certified and periodically tested in accordance with FUS/ULC	20 years	First-line duty
Aerial/Quint	Purchased to NFPA-1901 standard, certified and periodically tested in accordance with FUS/ULC	25 years	Reserve use
Rescue	Purchased to appropriate portions of NFPA-1901 standard	25 years	First-line duty
Rescue	Purchased to appropriate portions of NFPA-1901 standard	30 years	Reserve use
Utility vehicles	Light duty chassis	15 years	First-line duty
Utility vehicles	Light duty chassis	20 years	Reserve use
All other vehicles/apparatus	RTV, rescue boat, trailers, etc.	Case-by-case basis	First-line duty or reserve

Currently there are in service in the fire departments of W/WH the following numbers of fire apparatus and utility vehicles;

**CURRENT APPARATUS INVENTORY AND ASSIGNMENT**

Station	Pumper	Tanker *	Aerial	Rescue	Utility	RTV	Boat
Windsor	3	1	2	1	2	1	1
Hantsport	2	1	0	1	2	0	0
SWH	0	1	0	1	0	0	0
Brooklyn	2	1	1	1	1	1	0
TMP	2♦	1	0	0	1	0	0
Summerville	1	2	0	0	1	1	1
<b>Totals:</b>	<b>10</b>	<b>7</b>	<b>3</b>	<b>4</b>	<b>7</b>	<b>3</b>	<b>2</b>

\* All current tankers have large pumps, equivalent to that of a pumper

♦ One of these pumpers is currently out of service

Several of the existing vehicles are long past their replacement need, both in age and condition. Both aerials in Windsor should no longer be in the fleet. One has an aerial device failure (structural) and will not pass the aerial device certification inspection. The other has a pump that

will not pass ULC<sup>92</sup> testing and is no longer certified. One of these aerials is 35 years old and the other is 30 years old. Both manufacturers are long out of business and the aerials are obsolete.

Brooklyn has a pumper that is out of service for mechanical reasons (unspecified) and is also 32 years old. It is currently parked at the Three Mile Plains station, and is shown on their inventory in the table just above.

In total, there are six vehicles that require immediate replacement based on their serviceability and/or their age. These include an aerial, three pumpers, and two rescues. In addition to these six;

**GA recommends** that Windsor's other aerial (ALF) be scrapped without direct replacement (more on that later) and an unsuitable wildland/urban interface pumper be sold.

**GA recommends** for the future, the following numbers and types of **first-line duty** fire apparatus allocations. These numbers can be accomplished through attrition as current apparatus age-out.

***RECOMMENDED FIRST-LINE DUTY FIRE APPARATUS AND ASSIGNMENT***

<b>Station</b>	<b>Pumper</b>	<b>Pumper/Tanker</b>	<b>Quint</b>	<b>Aerial</b>	<b>Rescue</b>	<b>Utility</b>	<b>RTV</b>	<b>Boat</b>
Windsor	2	1	0	1	1	2	1	1
Hantsport	1	1	1	0	1	1	0	0
SWH	1	1	0	0	0	0	0	0
Brooklyn	2	1	0	0	1	1	1	0
TMP	1	1	0	1	0	1	0	0
Summerville	1	1	0	0	1	1	1	1
<b>Totals:</b>	<b>8</b>	<b>6</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>3</b>	<b>2</b>

**GA recommends** that two older (no longer first-line) pumpers and a tanker be kept serviceable/operational as maintenance reserves. The purpose of reserves is to temporarily replace apparatus that are out of service for a day or more. They will also remain available for major incidents. The recommended capital budget reflects all of the above dispositions.

<sup>92</sup> Underwriters Laboratories of Canada, CAN/ULC-S515 Standard for Automobile Fire Fighting Apparatus. All new fire apparatus equipped with a fire pump must pass the ULC acceptance tests. Other ULC tests are applied to other fire apparatus types (e.g. aerial apparatus). Two types of in-service tests are also required. An annual in-service test and inspection. When new or after a rebuild the pump/aerial/systems require a full performance test. Aerials require a detailed NDE test/inspection ever 5-years.

**GA recommends** that a reserve pumper be placed in Brooklyn and Windsor stations, and the reserve Tanker be placed in Summerville.

More specific information on the recommended fire apparatus can be found in the Operations chapter of this report.

### *Other Capital Needs*

There are a number of proposed new facility, and facility repair, demands on Capital funds. The main one is the replacement of the Hantsport fire station at \$2,620,800. As part of this review GA has not examined in detail the need for a new fire station in Hantsport but concur with the justifications as presented to previous West Hants Council. This project should proceed when funds are available.

#### DETAILS OF MAJOR CAPITAL RECOMMENDATIONS

Starting on the next page are snapshots of the recommended benchmark Major Capital budget projection for the years 2020-2039. The projections are based on requested facility and equipment needs, and the calculated needs for the scheduled renewal of the fire apparatus fleet.

Overall, capital requirements are largely driven by fire apparatus replacements, but another major item in 2020 is the Hantsport fire station replacement. The total projected capital funds requirement for 2020, if every project was to proceed, is estimated at \$6.794 million. The cash-flow for all capital expenditures would not all occur in the budget year as some projects would carryover into 2021 or possibly 2022.

The peak in 2020 is almost entirely a result of the pent-up need for fire apparatus replacement and the proposed Hantsport fire station. There are several smaller capital maintenance and health and safety related projects in 2020 as well. After 2020, the annual average capital demand is \$660k, which includes a projected revenue of \$200k in 2023 with the sale of a surplus pumper.

**GA recommends** an annual contribution of approximately \$650k to a fire capital reserve fund to reduce the annual capital fluctuations in the fire department budgets to a minimal amount.

Adequate reserve funds would greatly reduce the need to debenture these predictable capital costs, thereby reducing the overall cost of capital purchases.

### *Major Capital Forecast*

Starts on the next page.

Annual MAJOR Capital Needs: (20-year projected)							2018 dollars		2018 Avg \$ 967		2023+ Avg \$ 983																		
Recommendations - All Stations							TOTAL, By Decade (\$K):		Estimated Costs for Items (2018 \$)		Annual Totals (\$)																		
							Total 2020-2029:	\$	11,248																				
							Total 2030-2039:	\$	8,090																				
Class	Station	New Item Description	Replacing Current Item	Remarks	Justification	Unit Cost	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039			
1	Apparatus	Windsor	Standard Aerial specification	A4: Aerial Platform; King/King/Ghorkel (1984)	Large quantities of industrial, mixed commercial, and old stock homes/apartment conversions require quick access to aerial capability.  Narrow streets, urban wiring, building size and setbacks require 110' ladder format.	Replace A4 (00G pump failure). Current is well past end of front line service life (20 years) and reserve life (5 years).  Current truck not justified for refurbishment. RETIRE CURRENT.	\$1,350,000	1																					
2	Apparatus	Windsor	Do not replace.	A8: Aerial Ladder; American LaFrance/American LaFrance (1989)	Second aerial device in Windsor is no longer justified with Aerial Platform now in Brooklyn and recommended Gurnt in Hantsport	A8 (00G with ladder failure) and well past end of front line service life (20 years) and reserve life (5 years).  Not justified for refurbishment. RETIRE CURRENT.	-\$1,000		1																				
3	Apparatus	Windsor	Standard Pumper specification	P6: Pumper; E-One/Superior (2002)	Town is extensively hydrant serviced so smaller tank allows more equipment to be carried.	Replacement at end of front line service life (20 years). Transfer to reserve	\$750,000	1																					
4	Apparatus	Windsor	Standard Pumper-Tanker specification	PT2: Pumper-Tanker; International/Superior (2003)	Tanker primary mission. Can operate as a pumper when needed for large fires or secondary incidents	Replacement at end of front line service life (20 years). Transfer to reserve	\$780,000				1																		
5	Apparatus	Windsor	Standard rescue chassis specification. Refurbish rescue body, modernize lighting, hydraulic generator, scene lighting.	R8: Rescue; International/Lantz (1991)	Regional Heavy/Rescue resource and support vehicle for the municipality; in addition to local use	Chassis beyond 25 year end of life. Refurbishment of body with new chassis is economical solution to still needed function.	\$225,000				1																		
6	Apparatus	Windsor	Standard Pumper specification (Rural)	P1: Pumper; E-One/Superior (1993)	Extensive non-hydrant response area surrounds town and requires larger water tank on first due pumper.	Replacement, well beyond its end of front line service life (20 years). Retire (too old for reserve)	\$750,000	1																					
7	Apparatus	Windsor	Standard specification pickup, 4x4, plow package, bed fuel tank	88VB: Utility; Dodge Ram 4x4 crew cab pickup (2008)	Utility, towing, hose carrying, equipment hauler, personnel hauler, emergency refueling of apparatus, plow can be added in future when needed.	Replacement at end of life (15 years) Personnel and equipment transport, and local operations support	\$90,000				1																		
8	Apparatus	Windsor	SUV (suburban) or passenger van, gasoline, AWD, 7+ seats	V7: Utility; Chev passenger van ZWD (2008)	Regional Personnel transport	Replacement at end of life (15 years)	\$45,000				1																		
9	Apparatus	Windsor	Do not replace. Sell	P11: Pumper-WUL; International/Superior (2005)	Current vehicle is not a well configured vehicle. Very hard to work from, impracticable, tank too small, 4x4, does not carry adequate pumper equipment.	Underutilized in current format. Replacement at or before end of front line service life (20 years). Recommend Sell asap while still has residual value	-\$200,000				1																		
10	Apparatus	Windsor	Similar to current capabilities. Re-evaluate as replacement time approaches	RTV: Kubota off-road vehicle, tracked (2011)	Local and Regional off-road support	Replacement at end of life (25 years)	\$50,000																	1					
11	Apparatus	Windsor	Similar to current capabilities. Re-evaluate as replacement time approaches	Rescue Boat; Zodiac Inflatable (2005)	Inflatable boats degrade causing leaks and inflation failures and are not economically repairable.  Regional water rescue support.	Replacement at end of life (15 years) Condition may need assessment for shorter/longer life expectancy. Outboard motor is separate issue and may last longer. Cost not included	\$40,000	1																					
12	Apparatus	Hantsport	Standard specification pickup, 3500, diesel, 3RW, 4x4, plow package, bed fuel tank	R82: Utility; Dodge Ram 3500 4x4 (2008)	Utility, towing, hose carrying, equipment hauler, personnel hauler, emergency refueling of apparatus, plow can be added in future when needed.	Replacement at end of life (15 years) Personnel and equipment transport, and local operations support	\$90,000				1																		
13	Apparatus	Hantsport	Standard rescue chassis specification. Refurbish rescue body, modernize lighting, hydraulic generator, scene lighting.	R81: Rescue; Freightliner M2/Lantz (2016)	Regional SCBA support unit, local use rescue	Replace chassis at end of life (25 years). Refurbishment of body with new chassis is economical solution to still needed function.	\$190,000																				1		
14	Apparatus	Hantsport	Standard Pumper specification (Rural)	E12: Pumper; Pierce Saber/Pierce (2015)	Significant rural areas (as well as intown hydrant areas) requires a larger water tank on first due engine	Replacement at end of front line service life (20 years). Transfer to reserve	\$750,000																			1			
15	Apparatus	Hantsport	Standard Pumper-Tanker specification	T21: Tanker-Pumper; Palfert/Superior (2013)	Tanker is primary mission. Can operate as a pumper when needed for large fires or second incidents	Replacement at end of front line service life (20 years). Transfer to reserve	\$780,000																				1		





**Fire Apparatus:**

In date and priority order, the following table lists the recommended fire-fleet capital projects over the next 20 years (2002-2039). The details for each item are shown on the spreadsheet on the previous three pages.

**GA recommends** the following table of scheduled fire apparatus replacements.

**FIRE APPARATUS RECOMMENDED REPLACEMENTS, 2020-2039**

<b>Item</b>	<b>Cost (\$2019)</b>	<b>Budget Year</b>
Replace Windsor Aerial-4 with new standard aerial	\$1,350,000	2020
Replace Brooklyn Pumper-1 with new standard pumper	\$750,000	2020
Replace Windsor Pumper-1 with new standard pumper (rural)	\$760,000	2020
Replace Windsor Pumper-5 with new standard pumper	\$750,000	2020
Replace Summerville Rescue-4 with new standard chassis and new rescue body	\$400,000	2020
Replace Windsor rescue boat with new Zodiac inflatable	\$40,000	2020+
Replace SWH Rescue-33 with new standard midi-pumper/rescue	\$650,000	2021
Replace Hantsport Engine-11 with new quint	\$1,000,000	2022
Replace Windsor Pumper-Tanker-2 with new standard pumper-tanker	\$780,000	2023
Refurbish Windsor Rescue-6, new standard chassis, refurbish rescue body	\$225,000	2023
Replace Windsor SSV-9 with new standard utility	\$90,000	2023
Replace Windsor V-7 with new passenger carrying SUV/van	\$45,000	2023
Replace Hantsport R-32 with new standard utility	\$90,000	2023
Replace Summerville rescue boat with new Zodiac inflatable	\$60,000	2023+/-
Replace Brooklyn Pumper-Tanker-4 with new standard pumper-tanker	\$780,000	2024
Summerville new standard utility	\$90,000	2027
Replace Brooklyn Rescue-5 with new rescue body on new standard chassis	\$500,000	2028
Replace Brooklyn Rescue-7 with new standard utility	\$90,000	2029
Replace TMP Rescue-11 with new standard utility	\$90,000	2030
Replace Summerville Tanker-2 with new standard pumper-tanker	\$750,000	2031
Replace Hantsport Tanker-21 with new standard tanker-pumper	\$780,000	2033
Replace Hantsport Engine-12 with new standard pumper (rural)	\$760,000	2035
Replace SWH Engine-14 with new standard tanker-pumper	\$780,000	2035
Replace TMP Squad-9 with new standard pumper	\$750,000	2035
Replace TMP Pumper-Tanker-10 with new standard pumper-tanker	\$780,000	2035
Replace Windsor RTV with new similar tracked off-road vehicle	\$50,000	2036
Replace Brooklyn Squad-3 with new standard pumper (rural)	\$760,000	2036
Replace Brooklyn Tower-6 with new standard aerial, platform version	\$1,500,000	2036
Replace Summerville Pumper-1 with new standard pumper (rural)	\$760,000	2036
Replace Summerville RTV with new similar tracked off-road vehicle	\$50,000	2037
Refurbish Hantsport Rescue-31, new standard chassis, refurbish rescue body	\$190,000	2039
Replace Brooklyn RTV-8 with new similar off-road vehicle	\$26,000	2039
<b>Fire Apparatus/Utility Vehicles 20-year Total:</b>	<b>\$16,476,000</b>	

*Other Projects:*

**GA recommends** that the Regional fire departments standardize on the heavy hydraulic equipment purchased and utilized.

**GA recommends** that Hurst eDRAULIC equipment be utilized exclusively. The major advantage of standardization is the training of firefighters on only one system, thereby improving the interoperability between departments at major incidents.

**GA recommends** that not every station needs a full set of heavy hydraulic equipment. See more detail on this subject on page 228.

**GA recommends** that Windsor’s rescue truck be designated as the Regional heavy rescue support apparatus, and be provisioned with multiple hydraulic rescue tools. All other stations should have a more modest set of hydraulics.

Standardization on Hurst eDRAULICS is recommended because they are battery powered. This eliminates the cost of a hydraulic power unit (pump) and the ongoing maintenance costs and safety concerns of the associated hydraulic hoses. eDRAULICS are also more powerful and versatile. Finally, eDRAULICS take considerably less compartment space on fire apparatus, and thereby increase the efficiency of the trucks to carry other equipment.

As part of this initiative, the following purchasing schedule is recommended and included in the Major Capital budget recommendation. Details are provided in lines 38-41 in the budget worksheet.

**HEAVY HYDRAULIC REPLACEMENT PROGRAM**

<u>Item</u>	<u>Cost</u>	<u>Year</u>
Two spreaders (SP777, SP333)	\$36,000	2022
Two cutters (S799, S788)	\$31,000	2022
Two Rams (R421, R422)	\$22,000	2022
Five Combi-Tool (SC758)	\$80,000	2022
Four Combi-Tool (SC758)	\$64,000	2030

Two fire stations currently do not have vehicle exhaust capture systems. The other four stations are using a system made by Plymovent. Diesel soot and fumes are known carcinogens. The fire

station in Summerville and the one in South West both require exhaust capture systems to abate this risk to everyone who enters the station.

**GA recommends** that exhaust extraction systems for Summerville and South West stations be funded as soon as possible. They are scheduled for 2020 in the benchmark budget. The total estimated cost of these systems is \$105k.

The Summerville station has a number of capital maintenance items required to protect the structure and prevent degradation due to weather infiltration. They are detail listed on the Capital worksheet on lines 44-49. The total estimated cost of these repairs is \$105k.

**BENCHMARK, 2020 CAPITAL**

			PROPOSED	\$ INC/(DEC)	+/-	NOTES
		2019-2020	2020-2021	ref 2019-2020	%	
99	<b>CAPITAL EXPENDITURES</b>					
100	Capital expense current year	14,540	7,019,800	7,005,260		Reference the Major Capital forecast budget, 2020 forecast items.
101	Contribution To Reserves	14,110	650,000	635,890		Annual Fire Capital Reserve contribution to finance vehicle replacements and other major capital forecast items. Reference the Major Capital forecast budget.
102	<b>Total Capital Expenditures:</b>	<b>\$ 28,650</b>	<b>\$ 7,669,800</b>	7,641,150		

**Benchmark Budget 2020, Roll-Up**

The following roll-up includes the costs of all the items discussed in the preceding pages.

			2019-2020	BENCHMARK 2020-2021	\$ INC/(DEC) ref 2019-2020	+/- %
25	<b>EXPENSES</b>					
26	<b>FIREFIGHTING OPERATIONS:</b>					
27	APPARATUS:	sub-total:	198,466	201,000	2,534	1%
33	EQUIPMENT:	sub-total:	81,783	101,000	19,217	23%
44	TOTAL Firefighting Operations:		332,616	371,440	38,824	12%
46	<b>OTHER OPERATIONAL EXPENSES:</b>					
47	TRAINING:	sub-total:	109,233	98,000	(-11,233)	-10%
53	FIRE STATION:	sub-total:	308,793	281,000	(-27,793)	-9%
62	ADMINISTRATION:	sub-total:	629,253	1,163,290	534,037	85%
82	MINOR CAPITAL:	sub-total:	237,331	340,000	102,669	43%
87	TOTAL Other Operational Expenses:		1,284,610	1,882,290	597,680	47%
89	<b>LONG-TERM DEBT PAYMENTS:</b>					
93	Total Long Term Debt:		1,074,673	1,074,700	27	0%
94						
95	TOTAL FIRE SERVICE OPERATIONAL EXPENSES:		\$ 2,691,899	3,328,430	636,531	24%
96						
99	<b>CAPITAL EXPENDITURES</b>					
102	Total Capital Expenditures:		\$ 28,650	7,669,800	7,641,150	
103						
104	TOTAL PROJECTION / BUDGET / ESTIMATE		\$ 2,720,549	10,998,230	8,277,681	304%

Not including the projected Capital Expenditures, the base recommended benchmark budget shows an overall increase in fire service operational expenses (projected) of \$636,531, up 24% over the 2019/20 approved budget. This increase is driven by the following items.

- Equipment servicing costs are projected to increase 23% (\$19,217) because of the need to increase equipment inspections and testing to meet legislated standards.
- Communications costs are projected to increase 33% (\$17,073) with the settlement of a new Valley Communications dispatching contract and the implementation of radio and pager maintenance contracts.
- Administration – Salaries and Benefits are projected to increase 301% (\$388,123) with the addition of a full-time Director/Fire Chief, Assistant Chief, and Admin Assistant; and with the addition of a part-time Division Chief, and the moving of 1.5 FTE fire-inspectors from the Planning and Development Department. Salary rates were assumed, so the final cost of these staffing positions has not yet been determined.

- Volunteer benefits are projected to increase by 76% (\$36,761), in part with the introduction of mandatory WSIB coverage.
- The costs for the annual purchase of minor capital equipment is projected to increase by 43% (\$102,669). The projected costs are based on achieving sustainable service delivery.

**GA recommends** that the new Regional municipality elect the highest WSIB protection. The addition of Region-wide firefighter accident, sickness and disability (AD&D) benefits, MFAP, and off-duty AD&D coverage is included in the projected cost increase.

## **PROJECTED 10-YEAR BUDGET IMPACTS**

As part of the fire service study GA was asked to project the impacts on the budget of service changes over the next 10-year period. Of course, any such projection is partly conjecture, based on estimates of changes in service over the projected period of time. Such service changes can be related to changes in;

- the volume of incidents,
- the types of incidents, and/or
- the staffing model (volunteer/composite/career).

Money spent on fire prevention is well spent on many levels. With respect to budgets, fire prevention can avoid some fire-response costs. An effective fire prevention program consisting of;

- public fire-safety education,
- post-fire investigations, and
- fire-inspection/enforcement.

Fire prevention can lower emergency incident volumes (i.e. fires) and their severity/impact on the property owner, and on the economy and social fabric of the community. The overall result of effective fire prevention is to lower the cost of fire losses in the community, lower insurance rates, and lower incident volumes; and thereby reduce costs for fire suppression.

The following table shows historical incident volumes in W/WH, by type;

### ***HISTORICAL INCIDENTS BY TYPE***

<b>Type</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Totals</b>	<b>%</b>
Fire	143	119	187	115	120	684	18%
Pre-Fire Conditions	114	101	110	133	112	570	15%
Rescue	102	99	133	141	137	612	16%
Hazard to Public/Environment	9	16	20	22	13	80	2%
Assistance	24	39	83	202	206	554	15%
Medical Assistance (MFR)	263	272	232	240	250	1,257	33%
Unclassified	12	12	9	2	1	36	1%
<b>Totals:</b>	<b>667</b>	<b>658</b>	<b>774</b>	<b>855</b>	<b>839</b>	<b>3,793</b>	

Incident numbers overall are trending upwards over the five years of data studied. The main drivers are rescues (mostly motor-vehicle related), pre-fire conditions (smoke in the building, etc.), and assistance (mostly mutual assistance between fire station).

The national trend with increasing medical incidents is endemic, but not apparently in W/WH where the annual medical incident volume is relatively steady. As the population continues to age, it is expected that these numbers will start to creep upwards. Medical incidents are not a core part of fire services, but a selected add-on service that Council has decided to support financially for the benefit of citizens. This support could be changed in future if found to be unsustainable. The municipality is not compelled to provide it.

### Population Growth

Growth in population and consequently in housing is usually the largest driver for increases in service demand for fire departments. Service demand means the number of incidents that occur annually. Incident numbers are largely driven by population size, and secondarily by travellers and visitors; in other words, by people.

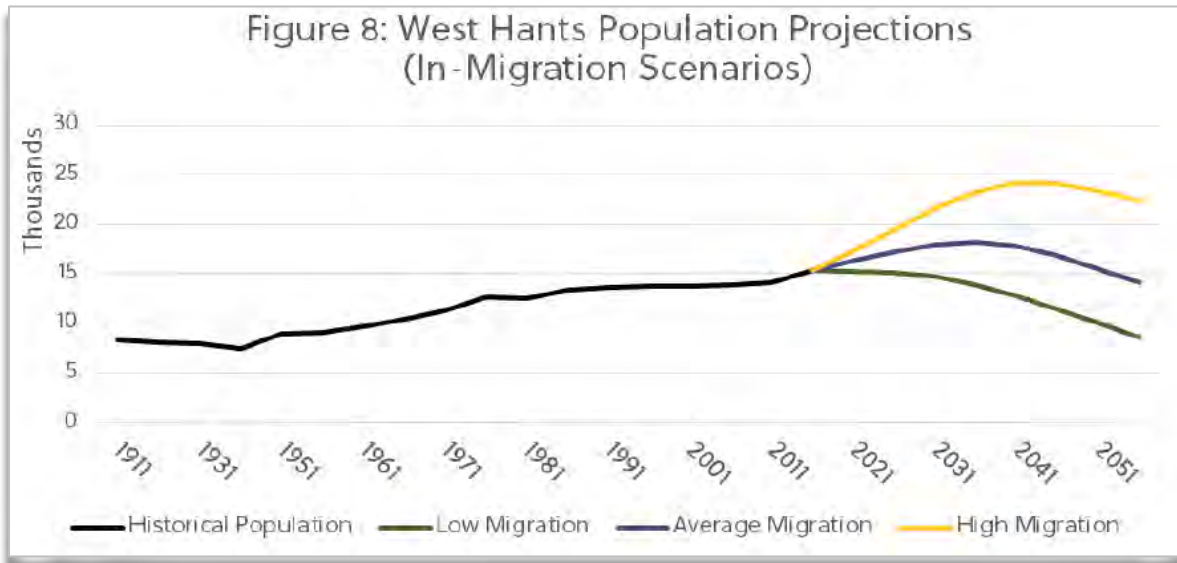
Population projections<sup>93</sup> by West Hants Planning and Development Department show that a significant increase in West Hants population is unlikely over the next 10 years. One extreme of the projections actually shows a decline in population by 2031, which is just beyond the threshold of our projection mandate. There is a several-hundred-% difference between the lower and upper projections.

The chart on the next page shows these projections graphically.

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<sup>93</sup> West Hants Planning and Development Department, Background Report: Population, March 2018, page 8

**WEST HANTS POPULATION PROJECTION**

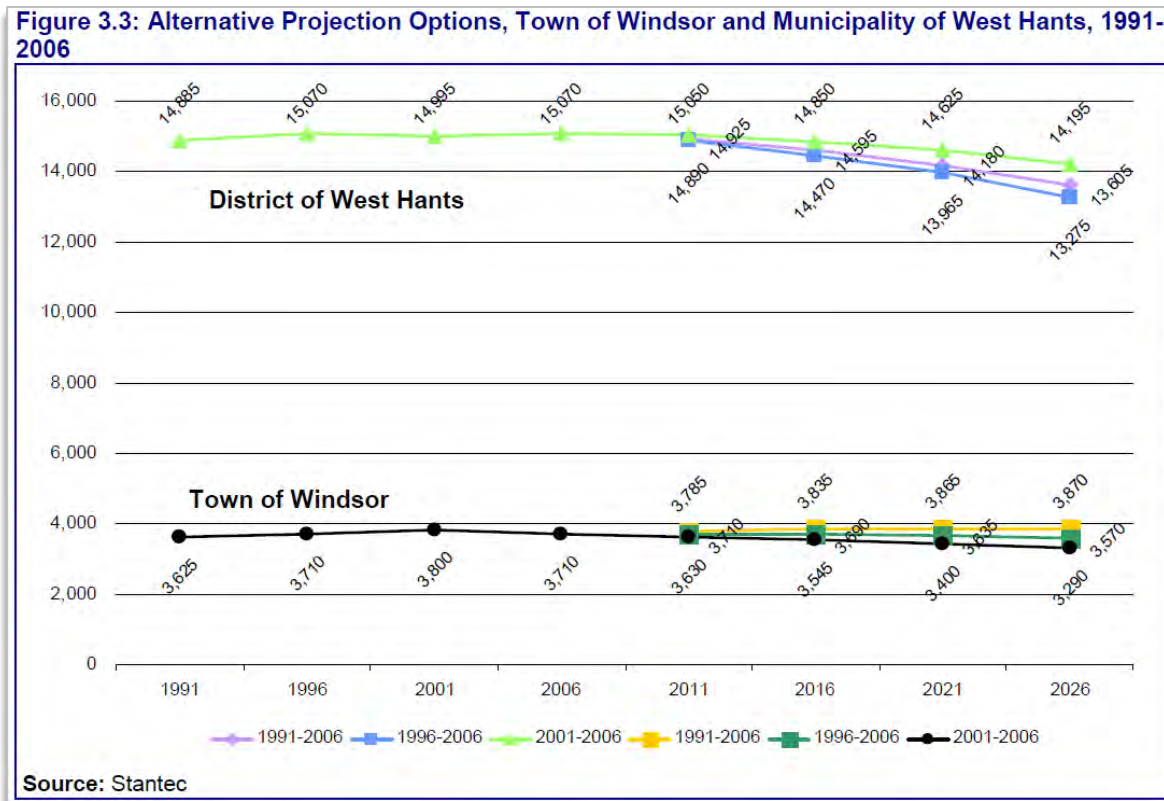


The chart’s “average” projection for 2031 shows a modest population increase to 18,120 which is up almost 2,800 (+18%) from the 15,350 reported by StatsCan in 2016. After 2031 the population is projected, in this version, to level off and decline.

The most optimistic scenario shows a population increase to as high as 24,166 (+57%) by 2041; before then declining. All three projection scenarios predict a declining population, over the long term, starting at or before 2041.

Based on the predicted “average” and “low” population changes GA does not predict any significant changes in incident volumes over the next 10 years. If the “high” prediction proves accurate then it can be expected that over 20 years there will be a commensurate increase in incident volumes, and a proportional increase over the 10-year fire-services study window.

A further study<sup>94</sup> by Stantec, done in 2010, shows a less optimistic population projection and includes the Town of Windsor as well as West Hants. In this chart the population for West Hants is projected to be below 14,000 by 2026 while the Windsor population holds flat. This Stantec



study is relatively consistent with the West Hants study, done 8 years later, in that growth projections for the Region appear to be relatively flat.

For the Town of Windsor, StatsCan<sup>95</sup> reports that between 2011 and 2016 the population of Windsor contracted 3.6%, down from 3,785 in 2011 to 3,648. This actual data corresponds well to the median prediction on the Stantec projection, six years after it was written.

<sup>94</sup> Windsor Integrate Community Sustainability Plan, 2010, page 3.21

<sup>95</sup> <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?B1=All&Code1=1208002&Code2=12&Data=Count&Geo1=CSD&Geo2=PR&Lang=E&SearchPR=01&SearchText=Windsor&SearchType=Begin&TABID=1>

### Development Growth

The development of large commercial, industrial, and residential facilities can increase the demand for service capacity. In this circumstance, service capacity means the ability of the fire service to mitigate the incidents that occur in buildings larger than they are currently equipped to handle. For example; the development of high-rise<sup>96</sup> apartment buildings can place a high demand on manpower, processes, training, and technology for the fire department. This is especially so if the fire department has no prior experience with such buildings, like W/WH that has no structure taller than 4-stories.

To mitigate fire incidents in high-rise buildings requires specialized equipment, specific procedures, diligent fire safety enforcement, and high staffing numbers on-scene at an incident. The municipality does have a significant degree of control over allowing these types of development, and consideration of the impact on the fire services and the costs of increasing capacity should be part of municipal development plans.

West Hants Planning and Development Department reports<sup>97</sup> that it is unlikely that big box retailers and power centres<sup>98</sup> will be developing in W/WH, without a larger population to attract them. The number of commercial development permits is trending downward, although the value of these may be upwards.

Industrial and resource-based development is reportedly<sup>99</sup> not booming in West Hants. Permits and values have been low. A Windsor-West Hants shared industrial park is the preferred location for industrial development, and there are a few industries located there.

Growth in the commercial, industrial, and resource sectors is unlikely to increase substantially over the next 10 years. It is therefore unlikely that an increase in fire services costs will be driven by increasing incident volumes or requirements for capacity increase in these sectors.

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<sup>96</sup> High-rise buildings are buildings that are 6 stories and above in height.

<sup>97</sup> West Hants Planning and Development Department, Background Report: Economic Development, March 2018, page 16.

<sup>98</sup> IBID; in 2010 power centres had an average of 25 tenants, including several big-box retailers.

<sup>99</sup> West Hants Planning and Development Department, Background Report: Industry and Resource, March 2018, page 4.

### Other Threats

There are two other threats to fire service costs, going forward from 2020, that in GA's opinion have the real risk to cause change.

The USA/Canada dollar exchange rate affects the cost of almost every item in the minor capital and major capital budgets. Almost all equipment is either made in the USA or is priced in USA dollars. Fire apparatus may be manufactured in Canada, if one of the Canadian manufacturers is chosen, but the major components of chassis, pump, water tank, materials (aluminum), fittings, and on-board equipment are sourced south of the border. At the present time the dollar exchange rate is around 0.75. Any change, up or down, will affect the purchasing power of the budget, also up or down. Similar affects are felt on other world priced commodities, such as fuel/energy costs.

The second threat to the budget going forward is the staffing model. Currently the fire emergency service is staffed by volunteer firefighters. Declining<sup>100</sup> school enrollments, declining fertility rates and the disproportionate in-migration of seniors is pushing up the average age of the population.

The ability to attract/recruit and retain volunteer firefighters is, in part, a demographic challenge. Prospective volunteers must be fit enough and available. Generally, fit means a healthy adult who is not too young nor too old. The aging population means there are fewer younger persons in the community, and current volunteers eventually get too old to withstand the rigours of being a firefighter.

A secondary demographic problem is local employment. Volunteer firefighters with jobs that are distant from their fire station are less likely to remain volunteer firefighters. They are not able to effectively respond to incidents while at work; and they spend more time commuting and therefore have less time available for volunteer firefighting. A volunteer firefighter should expect to contribute between 100 and 300 hours per year in scheduled activities; training, equipment maintenance, fund-raising, meetings, and in going to incidents.

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<sup>100</sup> West Hants Planning and Development Department, Background Report: Population, March 2018, pages 9, 7, 6, 5.

Without adequate numbers of volunteer firefighters available there will be a gradual transition to part-time or full-time paid firefighters. This will start with a decision to staff one centrally located fire station during week days, and may eventually progress over time to additional hours and additional stations.

**Benchmark Budget Growth Conclusion:**

In the forecast period 2020-2030, GA concludes the following expected threats to the fire services budget:

- Incident numbers will increase slightly due to expected modest population increases, with a consequent increase in the use of consumables like diesel fuel.
- The proposed staffing and apparatus inventory and type will be adequate for the period.
- Costs will generally creep upwards along with the consumer price index (CPI) and wage/benefit settlements.
- The capacity of the fire service will be adequate to address new developments, so investments in new technology will not likely be driven by new risks in the community, but may be driven by safety, health, and efficiency goals.
- The Canadian vs USA dollar exchange rate will affect the operational costs of the fire service to some degree, but its impact will mostly be felt on capital purchases.
- Upgrades in safety and health requirements for firefighter equipment and fire apparatus have historically pushed capital purchase costs upwards well above CPI increases.
- The changing demographics of the community, particularly aging, will place additional strain on recruiting and retaining volunteer firefighters. A strategy should be developed to recruit non-traditional candidates, and also for non-firefighting but still essential roles.
- Incentives to retain good volunteer members must be developed and implemented; for example, health insurance, disability coverage, and access to mental counselling.
- Failure to attract or retain adequate numbers of qualified volunteer firefighters will likely force the transition to a costlier composite fire service.

## APPENDICES

## APPENDIX I; MODEL FIRE SERVICE REGISTRATION POLICY

**[Fire Department and Emergency Services Provider Registration Policy]**

1. The **[Municipality]** shall register a Fire Department or Emergency Services Provider, with or without conditions, in accordance with Section 294 or Section 295 of the *Municipal Government Act*, as applicable, if:
  - (1) The applicant is a body corporate (a society under the *Societies Act* of Nova Scotia, a company under the *Companies Act* of Nova Scotia, or a body corporate pursuant to other legislation);
  - (2) The Municipality is satisfied that the applicant is capable of providing the services being offered, based upon the information provided in the application and upon other information received by the Municipality;
  - (3) The applicant carries a minimum of **[\$5,000,000]** in liability insurance for the vehicles it owns or operates and a minimum of **[\$5,000,000]** in liability for insurance for claims brought against it for wrongful acts or omissions respecting the fire services and/or emergency services which it provides;
  - (4) The applicant does not provide fire response and/or emergency services for profit;
  - (5) The Municipality does not otherwise provide, assist or work with others to provide the same services for the same coverage area unless the Municipality and two or more fire service and/or emergency service providers (one of which is the applicant) have expressly agreed to have overlapping primary service providers;
  - (6) The applicant has completed and signed an application in the form provided by the Municipality (Appendix A);

- (7) The applicant has provided a list of its active volunteers and their training record in a format acceptable to the Municipality;
  - (8) The applicant has provided a schedule of mutual-aid agreements with identification of approval details from the Municipality.
2. The CAO or their designate may approve the registration for the Fire Department or Emergency Services Provider to provide all of the services outlined in the application form, or may limit the services by making revisions to the application form. The Municipality may also include conditions to the approval.
  3. The Municipality shall provide a copy of the approved and signed unamended or amended application form along with any conditions to the applicant, or if the application is not approved, shall notify the applicant accordingly.
  4. Registration as a Fire Department or Emergency Services Provider is effective upon approval of the application by the CAO or their designate.
  5. A registered Fire Department or Emergency Services Provider may provide the services outlined in its approved application, subject to any conditions imposed by the Municipality.
  6. By no later than April 1 of each year, each registered Fire Department and Emergency Services Provider must apply to renew its registration by submitting a new application for registration in the form at Appendix A and providing the information required in paragraph 1 of this Policy. The CAO or their designate shall process the application in accordance with paragraphs 2 and 3 by no later than April 30.
  7. If a registered Fire Department or Emergency Services Provider fails to apply to renew its registration as required by paragraph 6, its registration as a Fire Department or Emergency Services Provider shall be automatically be withdrawn for cause.
  8. In the event an applicant is dissatisfied with a decision of the CAO or their designate to refuse a registration or a registration renewal, or to impose conditions or amendments upon the

registration, the applicant may appeal to Council by written notice to the Municipality’s Clerk within 15 days of receiving notification under paragraph 3.

9. In addition to any other cause for revoking registration, non-compliance with any conditions of registration or with the terms of this Policy, or failure or inability to perform the services to the standards established pursuant to this Policy or otherwise mandated by Council or other regulatory authorities, shall be cause for revocation of registration as a Fire Department or Emergency Services Provider, or for imposing additional conditions upon the registration.

**Appendix A:**

**[Insert Name Here]**

Application for Registration as a  
Primary Fire Response or  
Emergency Services Provider

Applicant: \_\_\_\_\_

Contact Person & Phone #:  
\_\_\_\_\_

Address: \_\_\_\_\_

Incorporated body under: *Societies Act* OR *Companies Act* (circle one)

Registry of Joint Stock Companies Registration # \_\_\_\_\_

Registration Expiry Date: \_\_\_\_\_

Number of Department members:

\_\_\_\_\_

Insurance Provider:

\_\_\_\_\_

Insurance Policy Period:

\_\_\_\_\_

Motor Vehicle Liability Limit: \_\_\_\_\_ -

\_\_\_\_\_

General Liability Insurance Policy Limit (minimum 2 million):

\_\_\_\_\_

Complete financial statements from the previous fiscal year are required as part of the Application for Registration.

Boundaries of Primary Service Territory:

**Please indicate the service that the department will endeavor to provide by placing an X in the appropriate box. N/A denotes a service not being provided by the Applicant**

	Structural	Structural	Structural	N/A
	Offensive	Offensive	Defensive	
		with Mutual-aid		

1. Fire and Fire Related Emergencies                                                                     

*\* Registration as Structural Offensive requires your department to have a minimum of four (4) firefighters trained Level 1 with Fire Control. Alternatively, you do have the option to register as Structural Offensive with Mutual-aid. Please indicate the names of those trained to this standard below. If more space is required, please use the back of this page.*

- 1 \_\_\_\_\_
- 2 \_\_\_\_\_
- 3 \_\_\_\_\_
- 4 \_\_\_\_\_
- 5 \_\_\_\_\_
- 6 \_\_\_\_\_
- 7 \_\_\_\_\_
- 8 \_\_\_\_\_
- 9 \_\_\_\_\_
- 10 \_\_\_\_\_

**Please indicate the level of service that the department is equipped and trained to perform, and will endeavor to provide by placing an X in the appropriate box. N/A denotes a service not being provided by the Applicant.**

Applicants should be aware of NFPA-1670 Standards for Rescue and limit the service they provide to the qualification they possess relevant to the technical categories of Technician, Operational, and Awareness.

	Technician	Operational	Awareness	
	N/A			
2. Vehicle Rescue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Water Rescue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Ice Rescue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Structural/Excavation Collapse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. High Angle Rescue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Hazardous Materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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8. Other (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Other (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Provider	Assistance		
10. Ground Search and Rescue	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

11. Please indicate any other man-made and/or natural disasters for which your department has the training, equipment, and command system to undertake:

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12. Are there limits to the level of service that will be provided (for example, limited number of responders at certain times, lack of equipment, lack of qualifications) in respect to any of the services checked above? If so, please indicate what these are:

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APPLICANT

As Chief of the \_\_\_\_\_

(Name of Department)

I have read and understand the Departments’ role in the registration process and the “Definitions of Terms Used in the Registration Form” in Appendix B, attached.

I understand by signing this I am not committing my department to any guaranteed level of service or response. [As a volunteer organization there may be circumstances where inadequate response to an emergency may occur. We do actively participate in an automatic mutual-aid response, however, there is no assurance that mutual-aid response will be adequate.]

I declare that the information provided in response to this Application for Registration as a Primary Fire Response or Emergency Services Provider under the *Municipal Government Act* with the [Name of Municipality] is true to the best of my knowledge, information, and belief.

Date: \_\_\_\_\_

\_\_\_\_\_  
Name of Chief – **Please Print**

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Signature of Chief

**MUNICIPALITY**

Date of Approval of Registration Application: \_\_\_\_\_

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Name of Chief Administrative Officer (CAO) – ***Please Print***

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Signature of CAO or his or her designate

**Please note:** Explanation of the terminology used in this registration form is provided in the Information from the Office of the Fire Marshal included as Addendum “B” in the Guide Respecting Fire and Emergency Services in the *Municipal Government Act* Resource Binder, a copy of which is attached for your reference. To register, a department must be incorporated and hold any valid liability insurance that is required by municipal policy. The department must operate on a not-for-profit basis. The registration does not make the department an agent of the **[Municipality]**. This registration may be modified by notifying the Municipality thirty days in advance. The **[Municipality]** may revoke this registration for cause.

## Appendix B:

### **Evaluation of Services Provided and Level of Service for Use with Application for Registration as a Fire Department or Emergency Services Provider under the Municipal Government Act**

**Spelling out the specific parameters of services to be provided allows the fire department to plan, staff, equip, train, and deploy members to perform these duties. It also gives the governing body an accounting of the costs of services and allows it to select those services they can afford to provide. Likewise, the governing body should identify services it cannot afford to provide and that it cannot register the department to deliver.**

To assist the fire service and the municipal units, the Department of Municipal Affairs has developed a sample registration form that includes a check list for key services and level of abilities. The use of this form is not compulsory. Each municipality should develop its own registration process in accordance with the *Municipal Government Act*.

**The Office of the Fire Marshal will not be evaluating fire departments; the registration process is between the municipality and the fire department.**

The industry standards most widely used and accepted for the fire service are from the National Fire Protection Association (NFPA). Standard 1500 for Firefighter Occupational Health and Safety is the cornerstone upon which each fire department attempts to meet a standard of safety. The key to this standard is that, “no activity is undertaken unless the benefit outweighs the risk.” There are sections such as physical fitness requirements and recruiting that may require a different approach by individual fire departments.

NFPA standards are updated on a 3-6-year frequency and it is recommended that the most recent version of any particular standard be used when referenced.

### **Definition of Terms Used in the Registration Form**

#### **1 to 3. Fire and Fire Related Emergencies:**

**Structural Offensive:** means the activities of rescue, fire suppression, and property conservation in buildings, enclosed structures, vehicles, vessels, or like

properties that are involved in a fire or emergency situation. Departments should have firefighters trained to NFPA-1001, protective personal equipment, man-down alarms, an accountability system, adequate water supply, adequate pumping capacity and an incident command system. Departments should also have the proper training and protective clothing for wild land fires in accordance with the Department of Natural Resources' provincial standard. Shipboard firefighting, if provided, should be carried out following the NFPA standard 1405 Guide for Land-Based Fire Fighters Who Respond to Marine Vessel Fires. Protection of Aircraft at airports by volunteers, if provided, should be in accordance with Transport Canada guidelines.

**Structural Defensive:** means actions that are intended to control a fire by limiting its spread to a defined area, avoiding the commitment of personnel and equipment to dangerous areas. Defensive operations are generally performed from the exterior of structures and are based on determination that the risk to personnel exceeds the potential benefits of offensive actions.

Such determining factors may include, but not limited to, the extent of fire within the structure, existing water supply for fire load, number of trained personal on site and foremost, risk of personnel versus reward. Also, be advised that an attack strategy may change from defensive to offensive should any or all of the fore mentioned factors change. Fire departments without the ability to carry out structural firefighting may register as providing property protection through defensive strategies. Training for defensive fire operation personal is extensive but less rigorous than NFPA-1001 (a guideline is provided on the Fire Service Association of NS website). Rescue may be undertaken if the benefit warrants the risk. Departments should have proper training and protective clothing for wild land fires in accordance with the Department of Natural Resources' provincial standard.

**N/A:** means the department does not respond to these calls.

**Structural Offensive with Mutual-aid:** means that on its own, a fire department meets the requirements of Structural Defensive only and can meet the

requirements of Structural Offensive with additional specific resources identified in through a Mutual-aid agreement. The expectation would be that upon arrival, such a department would conduct Defensive operations only and if required, could change to offensive once additional resources arrived on scene and were deployed.

#### **4. Medical Emergencies: response to known medical emergencies.**

**Registered First Responder:** means responders registered with the Department of Health through EHS first responder program and respond to medical calls or provide medical assistance at the scene of an incident.

**Medical Assistance:** means responders who have standard or emergency first aid and respond to medical emergencies or provide medical assistance at a response incident to that level only. Equipment includes a first aid kit.

#### **5.to 9. The following terminology is used in respect to vehicle rescue, water rescue, ice rescue, structural/excavation collapse and high angle rescue:**

These activities should be carried out in accordance with NFPA-1670 Standard for Rescue, 2017 edition or other comparable standard adopted by the municipal unit.

Generally, these terms mean:

**Technician:** First responders at the technician level are those persons who respond, as either initial call out or as a mutual-aid response to contain and control the incident. This level of service usually will provide a high degree of intervention.

**Operations:** First responders at the operations level are those persons who respond as the initial response to an incident for the purpose of protecting nearby persons, the environment, or property from the effects of the incident. First responders at the operations level are expected to respond in a defensive fashion to control, prevent a worsening of the incident and provide services within their capabilities.

**Awareness:** First responders at the awareness level are those persons who, in the course of their normal duties, could be the first on the scene of an emergency. First responders at the awareness level are expected to recognize the situation, call for trained personnel, secure the area and provide minimum intervention.

Refer to NFPA-1670 for specifics for each type of rescue.

#### **10. Hazardous Materials:** Response to chemical incidents.

All levels should be in accordance with NFPA-1072 Standard on Professional Competence of Responders to Hazardous Materials Incidents. Fuel spills such as oil, gas and diesel may be handled by all three levels if the spill is minor and stabilized. There is a wide range of service, from a domestic oil spill to an upset gasoline tanker. The important fact is knowing the departments limitations.

**Technician:** Hazardous materials technicians are those persons who respond to releases or potential releases of hazardous materials for the purpose of controlling the release. Hazardous materials technicians are expected to use specialized chemical protective clothing and specialized control equipment.

**Operations:** First responders at the operations level are expected to respond in a defensive fashion to control the release from a safe distance and keep it from spreading. (Note: Firefighters trained to the Level 1 standard are required to be trained to the Operations Level of Hazardous Awareness)

**Awareness:** First responders at the awareness level are those persons who, in the course of their normal duties, could be the first on the scene of an emergency involving hazardous materials. First responders at the awareness level are expected to recognize the presence of hazardous materials, protect themselves, call for trained personnel and secure the area.

**13. Ground Search and Rescue:** self-explanatory.

**Provider:** meets the Nova Scotia Emergency Management Office's provincial standard for SAR teams.<sup>[1]</sup>

**Assistance:** members are under the control of a SAR team.<sup>[2]</sup>

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# Fire Department and Emergency Services Provider Registration Policy - Editor's Annotations

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## Enabling Legislation

*Municipal Government Act*, R.S.N.S. 1998, c.18:

**3** In this Act,

(ac) “emergency services” means services related to the provision of emergency services, including fire services, emergency medical services, search and rescue, water rescue and assistance and protection for people and property in the event of disasters including, but not limited to, floods, hurricanes, motor vehicle accidents and chemical spills;

(af) “fire department” means an incorporated body that provides fire services and that may, at its option, provide one or more other emergency services, and includes a fire or emergency services department of a municipality, village, fire protection district or other body corporate;

....

**294 (1)** A body corporate may apply to a municipality for registration as a fire department.

**(2)** A municipality shall not refuse to register a body corporate that complies with this Act if the

(a) municipality is satisfied that the body corporate is capable of providing the services it offers to provide;

(b) body corporate carries liability insurance, as required by the municipality;

(c) body corporate does not provide the fire services for profit; and

(d) municipality does not provide the same services for the same area.

**(3)** A fire department, including a fire department of a municipality, village or fire protection district, shall register in each municipality in which it provides emergency services.

**(4)** A registered fire department shall provide the municipality with a list of specific emergency services it will endeavour to provide and the area in which the services will be provided.

**(5)** Registration continues in force until withdrawn by the municipality for cause or the fire department requests that the registration be revoked.

**(6)** A municipality may grant or lend money to, or guarantee a loan for, a registered fire department for operating or capital purposes.

**(7)** A municipality may grant or lend assets, without charge, to a registered fire department.

**(8)** Registration does not make a fire department an agent of a municipality.

**(9)** A registered fire department is not a municipal enterprise pursuant to the *Municipal Finance Corporation Act*.

...

**295 (1)** A body corporate may apply to a municipality for registration an emergency services provider to provide emergency services other than fire services.

**(2)** A municipality shall not refuse to register a body corporate that complies with this Act if the

- (a) municipality is satisfied that the body corporate is capable of providing the services it has undertaken to provide;
- (b) body corporate carries liability insurance, as required by the municipality;
- (c) body corporate does not provide the emergency services for profit; and
- (d) municipality does not provide the same services for the same area.
- (3) A body corporate that applies pursuant to subsection (1) shall register in each municipality in which it provides emergency services.
- (4) A registered emergency services provider shall provide the municipality with a list of specific emergency services it will endeavour to provide and the area in which the services will be provided.
- (5) Registration continues in force until withdrawn by the municipality for cause or the fire department requests that the registration be revoked.
- (6) A municipality may grant or lend money to, or guarantee a loan for, a registered emergency services provider for operating or capital purposes.
- (7) A municipality may grant or lend assets, without charge, to a registered emergency services provider.
- (8) Registration does not make an emergency services provider an agent of a municipality.
- (9) A registered emergency services provider is not a municipal enterprise pursuant to the *Municipal Finance Corporation Act*.

### **Important Notice**

The reader is cautioned that editorial and drafting choices involve interpretation of the law.

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Municipal units should consult with their own legal advisors before relying upon, and applying to their own circumstances, the comments or drafts contained in this Manual.

### Comment

- This Policy deals with municipal registration of bodies corporate as a fire department or emergency service provider.
- The *Municipal Government Act* s. 294(2) requires that a municipality register a body corporate as a fire department if the body corporate meets the requirements of the Act. Identical requirements are set out for emergency service providers by s. 295(2) of the Act. The Act requires that a body corporate:
  - be capable of providing the services it offers;
  - carry liability insurance;
  - that fire or emergency services be not-for-profit; and
  - not duplicate services provided by the municipality in the same area.

These requirements are incorporated into s. 1(2), (3), (4) and (5) of the model Policy. The municipality may set out minimum liability insurance requirements in s. 1(3) of this Policy.

- The Policy provides in s. 1(6) for the use of an application form. A model application form is included with the Policy as Appendix A.
- Section 6 of the Policy requires that a Service Provider register annually with the municipality. Although annual registration is not a requirement of the Act, it is recommended as a best practice. Annual registration helps to guarantee that the municipality has the information necessary to make informed decisions with respect to the safety of firefighters and the public. However, annual registration requires more diligence by both the Municipality and Service Providers, so be sure the resources are in place to manage annual registrations.
- Section 8 of the Policy is designed to provide the body corporate with an avenue for appeal to Council should the CAO decide to refuse to register the body corporate as a fire department or as an emergency services provider.

The chapter # in the policy title bar should be replaced by each municipal unit with the chapter # it assigns to this Policy.

## APPENDIX II; WEST HANTS /VALLEY COMMUNICATIONS CONTRACT

**THIS AGREEMENT** made this 10 day of May, 2017 between:

**PARTIES:**

**THE MUNICIPALITY OF WEST HANTS**, a body corporate pursuant to the *Municipal Government Act*, S.N.S. 1998, chapter 18, as amended, having its chief place of business at 67 Morison Drive, Hants County, Nova Scotia (hereinafter called the "Municipality")

OF THE FIRST PART

- and -

**VALLEY COMMUNICATIONS INCORPORATED**, a body corporate pursuant to the *Companies Act*, R.S.N.S., 1989, Chapter 81, as amended, having its registered office and chief place of business at 217 Belcher Street, Kentville, Kings County, Nova Scotia (hereinafter called "Supplier")

OF THE SECOND PART

**WHEREAS** fire and emergency dispatch services are required for departments serving the geographic area comprising the Municipality of West Hants;

**AND WHEREAS** the Supplier wishes to enter into an agreement with the Municipality pursuant to Sections 65(e) and 47(5) of the *Municipal Government Act* to provide fire and emergency services for the fire departments as follows:

**NOW THEREFORE BY THESE PRESENTS, IT IS AGREED AS FOLLOWS:**

1. **TERM OF AGREEMENT**

The term of this Agreement is for three years commencing at noon on July 1, 2017 and ending on June 30, 2020, as set out in 'Schedule A'.

2. **SERVICES TO BE PROVIDED BY SUPPLIER**

For the term of this Agreement, the Supplier shall provide Emergency Dispatch Services for the Municipality twenty-four (24) hours per day for each and every day of the year, including Sundays and Statutory Holidays and shall keep full and complete records of incoming and out-going dispatch communications. Dispatch communications to emergency response units shall be provided quickly, clearly and effectively, including relating all appropriate information to the emergency response unit to maximize the effectiveness of the emergency response. The Supplier will comply with the standards or guidelines regarding emergency dispatch which may be set by the Province of Nova Scotia or the Municipality from time to time. The Supplier will, where appropriate, unless otherwise agreed, use any technology, equipment, software, computer hardware that may be provided by the Municipality to the Supplier for such purposes and shall follow such additional practices and procedures, in respect of telephone answering, emergency dispatch and record keeping as may be requested by the Municipality from time to time.

3. **PRICE ADJUSTMENT**

The contract price herein shall be subject to an automatic price adjustment of 2% beginning in year three on the first day of July, 2019, with an adjustment to per capita numbers effective April 1, 2017, based on the 2016 federal census numbers. This price adjustment is contingent on the Municipality signing a one year extension letter with the Supplier.

4. **PRICE**

Subject to price adjustments as provided for herein, the Municipality shall pay the Supplier \$2,561.33 per month, plus all applicable taxes for the period July 1, 2017 to June 30, 2019 for fire dispatch in the West Hants coverage areas.

5. **PAYMENT**

The Municipality will pay the monthly amount within 45 days of receipt of a monthly invoice from the supplier and will pay interest to the supplier on any amount overdue to the Supplier at a rate of 2% per annum.

6. **SET-OFF**

The Municipality may set-off from any sums payable under this Agreement any sums due and owing or reasonably estimated to be due and owing to the Municipality by VCI whether arising under this Agreement or otherwise.

7. **EMPLOYMENT OF DISPATCHERS**

The Supplier may employ such dispatchers and managers as it deems necessary to perform the services required of the Supplier under this Agreement. The Municipality may not control, direct or supervise the Supplier's employees. The Supplier shall not hold out to third parties that its employees are officers or employees of the Municipality, or that any of the services provided by the Supplier are provided as agents of and for the Municipality, except with the express written consent of the Municipality.

8. **EQUIPMENT AND SUPPLIES**

The Municipality shall supply the equipment, tools and software ("Equipment") to the Supplier, or appropriate replacement Equipment, and may provide such additional Equipment as it deems necessary. This Equipment shall be used solely for emergency dispatch services for the Municipality. The Supplier shall be responsible for the operation of such Equipment during the term of the Agreement and for the cost of replacing any Equipment damaged by the Supplier beyond ordinary, reasonably expected wear and tear. The Municipality shall retain ownership over all Equipment that is paid for or supplied by the Municipality, including replacement or additional Equipment.

9. **STANDARD OPERATING GUIDELINES**

Standard Operating Guidelines (SOGs) will be reviewed and updated from time to time. During the term of the contract the SOGs may be reviewed further by the Municipality, which may result in some procedural changes which the Supplier will be required to implement. In the event that significant cost increases result from such changes the Supplier will be entitled to a reasonable price adjustment to be agreed or failing agreement to be determined by arbitration.

**10. TRAINING**

The Supplier will be responsible for all costs associated with their employees attending fire dispatch related training.

**11. RECORD KEEPING/REPORTING REQUIREMENTS**

The Municipality will require that monthly reports be completed and forwarded to the Municipality and its respective fire departments ("brigade") providing service to the Municipality, as well as retained by the Supplier during the term of the Agreement. The types of records shall include, but not limited to, the number of calls taken, calls dispatched, and incident types. All emergency calls, with accurate time and date, must be recorded when at all possible. A copy of digital recordings, if available, are to be kept on site for the duration of the Agreement, and copies are to be made available upon the request of any brigade, when a recording contains information related directly to them, or an investigation.

**12. INSURANCE**

The Supplier shall provide to the Municipality proof that the Supplier has Liability Insurance naming the Municipality as an additional named insured in the minimum amount of Five Million Dollars (\$5,000,000), providing coverage to the Supplier for any negligent or wrongful acts or omissions regarding the services provided pursuant to this agreement, within 30 days of the signing of the Agreement. The Supplier shall maintain insurance coverage as described herein and this clause shall not be construed to prevent or inhibit a claim by the Municipality or its insurers against the Supplier or its insurers which would be available in the absence of this paragraph.

**13. CAUSE FOR TERMINATION OF THIS AGREEMENT**

This Agreement may be terminated at the election of the other party in the event of bankruptcy or insolvency of a party or a material breach of any of the terms of this Agreement by a Party or in the event the Province of Nova Scotia adopts a province-wide fire emergency dispatch system. In the event of exercise of this clause pertaining to provincial adoption of a province-wide fire/emergency dispatch system, by the Municipality, one year's notice or pay in lieu of notice for one year, totalling one year, shall be given to the Supplier. Failure to comply with any standards required of the Supplier by the Municipality shall constitute a material breach if the Supplier has been given seven days notice to rectify the problem and has failed to do so to the reasonable satisfaction of the Municipality.

**14. EFFECT OF TERMINATION**

In the event of termination, including termination ultimately determined to be wrongful, the Supplier shall forthwith deliver over to the Municipality all Equipment owned by the Municipality under Paragraph 8 of this Agreement. In the event of termination for breach of contract, an arbitrator may award damages as an additional remedy. An arbitrator may award damages in the event the Agreement was wrongfully terminated by a Party, but shall not have authority to reinstate the Agreement.

**15. GOVERNING LAW**

This Agreement shall be governed by and construed in accordance with the laws of the Province of Nova Scotia.

16. **AMENDMENT**

This Agreement may be replaced, renewed or amended during its term by the duly executed written agreement of both parties and only in that manner.

17. **ARBITRATION**

In the event of disagreement between the parties as to the amount payable hereunder or as to the interpretation, application or administration of this Agreement, such disagreement shall be submitted to arbitration pursuant to the provisions of the *Arbitration Act*, with each party appointing one arbitrator who in turn shall appoint a third arbitrator unless the parties agree on a single arbitrator or to some other form of dispute resolution.

18. **WAIVER**

No action or failure to act, and no payment of money shall constitute a waiver of any right or an approval of any breach of duty except as may be specifically agreed in writing.

19. **ENTIRE AGREEMENT**

This Agreement contains the entire Agreement between the parties and it may only be amended by written agreement. Each party acknowledges that the parties have made no representations which it would be reasonable for the other party to rely upon or which have induced the other party to enter this Agreement and each party accepts as its own the risk of relying upon oral representations or promises, irrespective of whether such representations or promises be made before or after the execution of this Agreement. Each party acknowledges and agrees that the collateral contracts that exist in connection with the three county fire departments of Hantsport, Brooklyn, and Summerville, will become null and void during the term of this Agreement, namely on June 30, 2017.

20. **ASSIGNMENT**

No Party shall assign this Agreement without the written consent of the other Party, which shall not be unreasonably withheld.

21. **SUCCESSORS**

This Agreement shall be binding upon the parties hereto, their successors and assigns. No Party shall assign this Agreement without the written consent of the other Party.

22. **MUTUAL INDEMNITY**

Each Party shall indemnify and save harmless the other from all liabilities, damages, losses or expenses attributable to, but only to the extent it is attributable to any breach by the indemnifying Party of any covenant or condition in this Agreement, or any act of negligence by the indemnifying Party. Such indemnity shall survive the termination of this Agreement, and anything in this Agreement to the contrary notwithstanding. Notwithstanding anything to the contrary, the Municipality shall not be liable for, in any event, any indirect or consequential damages suffered by the Supplier, including without limitation loss of income and loss of profits. Further, the obligation to indemnify pursuant

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to this paragraph does not extend to or include any obligation to indemnify the Supplier for any act or omission of any brigade, other emergency service provider, or the 911 service, including negligence.

**IN WITNESS WHEREOF** the parties of have executed this Agreement by the hands of their duly authorized representatives.

SIGNED AND DELIVERED:

May 10, 2017  
Date

Laura Weatherbee  
Witness

**MUNICIPALITY OF WEST HANTS**

Phil Gagnon  
Chief Administrative Officer

Rhoda Blom  
Municipal Clerk

SIGNED AND DELIVERED:

June 5 / 2017  
Date  
Katie McKay  
Witness

**VALLEY COMMUNICATIONS INC.**

Per: Joan M. Gaudin  
President

**SCHEDULE 'A'**

**CONTRACT PRICE**

The Municipality covenants to pay the following amounts to the supplier for provision of fire emergency dispatch and emergency call-taking services. The period of July 1, 2017 to June 30, 2020 is based on emergency call-taking and dispatch for the entire Municipality of West Hants, excluding the Town of Windsor, and based on the 2016 federal census. From April 1, 2017 - March 31, 2020, the costing will be adjusted to reflect the 2016 federal census numbers, with a 2% increase in the third-year of this contract. Existing contracts with individual fire departments will become null and void, effective June 30, 2017.

July 1, 2017 – June 30, 2018	
\$2.00 per capita per annum based on the 2016 Federal Census numbers	of 15368 persons \$2561.33/ mo
July 1, 2018 – June 30, 2019	
\$2.00 per capita per annum based on the 2016 Federal Census numbers	\$2561.33
July 1, 2019 – June 30, 2020	
\$2.04 per capita per annum based on the 2016 Federal Census numbers	\$2612.56

## APPENDIX III; TOWN OF WINDSOR / VALLEY COMMUNICATIONS CONTRACT

**THIS AGREEMENT** made in duplicate on the 16<sup>th</sup> day of May, 2019

**BETWEEN:** **VALLEY COMMUNICATIONS INCORPORATED**, in Kentville, in the County of Kings and Province of Nova Scotia,

Hereinafter referred to as the "**COMMUNICATION SERVICE**"

OF THE ONE PART

-and-

**TOWN OF WINDSOR**, in the County of Hants and Province of Nova Scotia

Hereinafter referred to as the "**TOWN**"

OF THE OTHER PART

**IN CONSIDERATION** of the covenants, agreements, and conditions contained herein, the Parties hereto agree as follows:


1. The Communication Service shall provide communication services for the use and benefit of the Town. Said services to be by utilization of equipment and operators of the Communication Service interconnected with equipment owned or leased by the Town.
2. The term of this Agreement shall be for One (1) year, and shall commence on the 1<sup>st</sup> day of July, 2019 and end on the 30<sup>th</sup> day of June, 2020 subject to provisions for prior termination as hereinafter contained.
3. The Parties acknowledge that charges for Communication Services for the term commencing on the 1<sup>st</sup> day of July, 2019 and ending on the 30<sup>th</sup> day of June, 2020 shall be as follows:
  - (i) A flat monthly rate of \$608.00 (six hundred eight dollars and zero cents) and any applicable taxes.
  - (ii) The sum payable for communication services for each month or part thereof shall be due and payable on or before the 1<sup>st</sup> day of each and every month during the term or until termination of this Agreement, beginning on the 1<sup>st</sup> day of July, 2019.
  - (iii) In respect to payment due and in arrears for more than Thirty (30) days, there will be an additional charge of two percent (2%) per month interest on the unpaid balance.
4. The Town and/or the Windsor Fire Department will supply the transmitters and receivers for the provision of Communication Services and will be responsible for all costs and charges for its own telephone linkage and any other costs and charges associated with the installation, repair, and upkeep of such equipment.
5. The Communication Service will maintain a high standard of service and strict confidentiality with respect to its performance of its services under this Agreement.

- 6. During the term of this Agreement, the Communication Service will not be liable for interruptions, interference or termination of communication services in event that such interruption, interference or termination is caused by an act of God, fire, unavoidable casualty, or any other cause of any kind whatsoever beyond the reasonable control of the Communication Service.
- 7. Any changes in the usual operation of the Communication Service or the Town that may affect the other party, and any complaints of any sort shall be communicated by the President of Valley Communications Incorporated to the Chief of the Fire Department and by the Chief of the Fire Department to the President of Valley Communications Incorporated and to no other persons.
- 8. This Agreement may be terminated by either party by notice of such intention in writing sent by registered mail addressed to the other party at its business address and the effective date of termination shall be three (3) months after date of mailing such notice, PROVIDED HOWEVER, that in the event of termination of communication services by reason of such causes as set out in Clause 6 herein, this Agreement shall terminate on the 1<sup>st</sup> day of the month immediately subsequent to such termination of communication services.
- 9. Time shall be of the essence in this Agreement.
- 10. In this Agreement, the singular shall include the plural and the masculine shall include the feminine, with the intent that this Agreement shall be read with all appropriate changes of number and gender.
- 11. This Agreement shall inure to the benefit of and be binding upon the parties hereto, their heirs, administrators, successors and assigns.

IN WITNESS WHEREOF the Parties hereto have properly executed and placed their respective seals on this Agreement on the day, month, and year first written above.

SIGNED, SEALED AND DELIVERED  
In the presence of:



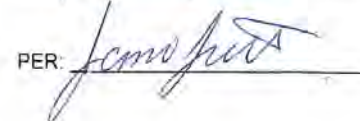


VALLEY COMMUNICATIONS  
INCORPORATED

PER:   
JOAN M. GARDEN  
PRESIDENT

TOWN OF WINDSOR

PER: 

PER: 

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## APPENDIX IV; PROVINCIAL LEGISLATION

### *The Region of Windsor and West Hants Municipality Act*

All municipalities are creations of the province and are an extension of provincial jurisdiction. The Region of Windsor and West Hants Municipality was created under Bill 55 “*An Act to Incorporate “The Region of Windsor and West Hants Municipality,”*” dated October 9, 2018. On April 1, 2020, the consolidation (regionalization) of the two municipalities will come into effect.

### *The Municipal Government Act*

The *Municipal Government Act* provided for the establishment and governance of fire protection in the new Regional Municipality. The main provisions are as follows;

“2 The purpose of this Act is to

- (a) give broad authority to councils, including broad authority to pass by-laws, and to respect their right to govern municipalities in whatever ways the councils consider appropriate within the jurisdiction given to them;
- (b) enhance the ability of councils to respond to present and future issues in their municipalities; and (c) recognize the purposes of a municipality set out in Section 9A. 1998, c. 18, s. 2; 2019, c. 19, s. 1.”

“9A The purposes of a municipality are to

- (a) provide good government;
- (b) provide services, facilities and other things that, in the opinion of the council, are necessary or desirable for all or part of the municipality; and
- (c) develop and maintain safe and viable communities. 2019, c. 19, s. 2.”

“3 Interpretation

In this Act

- (o) “council” means the council of a municipality, except as otherwise defined in this Act;
- (ac) “emergency services” means services related to the provision of emergency services, including fire services, emergency medical services, search and rescue, water rescue and assistance and protection for people and property in the event of disasters including, but not limited to, floods, hurricanes, motor vehicle accidents and chemical spills;

(af) “fire department” means an incorporated body that provides fire services and that may, at its option, provide one or more other emergency services, and includes a fire or emergency services department of a municipality, village, fire protection district or other body corporate;

(ah) “fire services” means services related to the prevention and suppression of fires;”

“Power to make by-laws

174 Without limiting the generality of Section 172, a council may make by-laws respecting

(b) the prevention and fighting of fires;

(d) fire and burglar alarms;”

“293 The Regional Municipality may maintain and provide fire and emergency services by providing the service, assisting others to provide the service, working with others to provide the service or a combination of means.”

“294 (1) A body corporate may apply to a municipality for registration as a fire department.”

The Act restricts the municipality from refusing a corporate body for the provision of fire services if certain conditions are met.

“(2) A municipality shall not refuse to register a body corporate that complies with this Act if the,

(a) municipality is satisfied that the body corporate is capable of providing services it offers to provide;

(b) body corporate carries liability insurance, as required by the municipality;

(c) body corporate does not provide the fire services for profit; and

(d) municipality does not provide same services for the same area.

(3) A fire department, including a fire department of a municipality, village or fire protection district, shall register in each municipality in which it provides emergency services.

(4) A registered fire department shall provide the municipality with a list of specific emergency services it will endeavour to provide and the area in which the services will be provided.

(5) Registration continues in force until withdrawn by the municipality for cause or the fire department requests that the registration be revoked.

(6) A municipality may grant or lend money to, or guarantee a loan for, a registered fire department for operating or capital purposes. 1998, c. 18 municipal government 171

(7) A municipality may grant or lend assets, without charge, to a registered fire department.

(8) Registration does not make a fire department an agent of a municipality.

(9) A registered fire department is not a municipal enterprise pursuant to the Municipal Finance Corporation Act, 1998, c. 18, s. 294.”

“296 (1) The council may make policies respecting full-time, volunteer and composite fire departments and emergency service providers in the municipality.

(2) Policies for fire departments and emergency service providers may include

(a) requirements and procedures for registration;

(b) personnel policies with respect to those members who are employees of the municipality;

(c) the manner of accounting to the council for the use of funds provided by the municipality;

(d) an annual meeting to report to the public respecting fire and emergency services;

(e) such other matters as are necessary and expedient for the provision of emergency services in the municipality.

(3) The council may require proof of compliance with its policies before advancing any funds.”

Sections 294 and 295 (not quoted above) established the procedures for registering incorporated independent fire departments (body corporate) as well as other than firefighting emergency services (§295), for example ice and water rescue. Such additional services require the acceptance of the Municipality.

Note that the MGA provides in §296 the power to regulate all fire service providers through policy of Council.

Further powers were provided that gave the Municipality broad authority in the provision and regulation of fire services;

“Power to make by-laws

172 (1) A council may make by-laws, for municipal purposes, respecting (a) the health, well being, safety and protection of persons; (b) the safety and protection of property;

174 The council shall make decisions in the exercise of its powers and duties by resolution, by policy or by by-law.”

*The MGA* provides powers directly to firefighters to assist their activities;

“Powers where fire

297 (1) When any fire, rescue or emergency occurs, the fire chief or other officer in charge, and any person under the direction of that officer, shall endeavour to extinguish the fire and prevent it

from spreading, conduct the rescue or deal with the emergency {emphasis added} and, for that purpose, may:

- (a) command the assistance of persons present and any inhabitant of the Municipality;
- (b) remove property from buildings on fire or in danger of fire;
- (c) take charge of property;
- (d) enter, break into or tear down any building;
- (e) exclude and remove persons and vehicles from the building or vicinity; and
- (f) generally, do all things necessary to respond to the emergency.

(2) It is an offence to disobey any lawful order or command of the officer in charge.

(3) Where a fire alarm is given or the officer in charge has reason to believe that a fire exists on any premises, the officer in charge and any person under the direction of that officer may enter or break into any building for the purpose of ascertaining whether a fire exists.

(4) The officer in charge may direct that a building be pulled down or otherwise destroyed if, in the judgment of that officer, doing so will tend to contain a fire or protect the public from a dangerous condition.

(5) A Municipality, a fire department, an emergency services provider and an officer in charge, and a person acting under the direction or authority of that officer, are not liable for an act done in the exercise of any of the powers conferred by this Section. 2008, c. 39, s. 308.”

As quoted above, § 297 (1) of *the MGA* said that there is a duty and thereby an expectation placed upon firefighters. This duty was described as: “...*shall endeavour to extinguish the fire and prevent it from spreading, conduct the rescue or deal with the emergency...*” This duty also comes with some considerable powers and protections, thereby facilitating the firefighters in their endeavours, including §299 which made it an offense to interfere with firefighters and fire protection systems.

*The MGA* also provides some specific protection against liability;

#### “No Liability

300 The Municipality, an employee of the Municipality, a member of the fire department of the Municipality, a registered fire department, a member of a registered fire department, a registered emergency services provider and a member of a registered emergency services provider are not liable for an act or omission in providing, or failing to provide, an emergency service, unless they are grossly negligent.”

It is not uncommon for §300 to be interpreted as “fire departments/municipalities cannot be sued,” but that is an erroneous idea. They can be sued, and so can all others who have any level of responsibility in an alleged act or omission. What is certain is that such a suit will be successful if the plaintiff can successfully establish gross negligence.

Restriction on where action may or may not lie with respect to liability was provided in §301, not quoted here.

*The MGA* permits the Municipality or a fire department to provide or to receive assistance from other municipalities. Particular protection are provided, as follows;

“Mutual-aid

302 (1) The Municipality may assist at fires, rescues or other emergencies occurring outside its boundaries.

(2) A municipality may agree with municipalities, villages, fire protection districts, federal and provincial departments and agencies or others to provide assistance at fires, rescues and other emergencies and to receive assistance at fires, rescues and other emergencies.

(3) A fire department that assists a registered fire department pursuant to a mutual-aid agreement is not required to register and is entitled to all of the protections provided by this Act for the assisted fire department.

(4) An emergency services provider that assists a registered fire department or registered emergency services provider pursuant to a mutual-aid agreement is not required to register and is entitled to all of the protections provided in this Act for the assisted fire department or emergency services provider. 1998, c. 18, s. 302.”

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## The Fire Safety Act

The Fire Safety Act<sup>101</sup>, 2002, c. 6, was enacted in early 2003 and primarily dealt with issues surrounding fire safety in buildings and public places. However, *the Fire Safety Act* had the potential to have wide affects on the delivery of fire services; primarily fire prevention but also fire suppression services.

### *Fire Marshal*

The *Fire Safety Act* continued the office of the provincial Fire Marshal (NSFM) from previous Acts. The NSFM is the leading official/authority in fire protection in Nova Scotia. The NSFM is responsible for implementing and enforcing the provisions in the *Fire Safety Act*, and in §13(4) has authority over other acts;

“Personnel

9 (1) Such persons as are necessary for the administration and enforcement of this Act and the regulations shall be appointed in accordance with the Civil Service Act, except where this Act provides otherwise.

(2) The Minister<sup>102</sup> shall designate from among those persons appointed pursuant to subsection (1), a Fire Marshal and one or more deputy fire marshals to perform the duties and functions, and exercise the powers and authorities, imposed or conferred upon them by this Act, the regulations and the Fire Code.

...”

“Powers and duties of Fire Marshal

13 (1) The Fire Marshal may

(a) promote, encourage and co-operate with any body or person interested in developing and promoting the principles and practices of fire prevention and the protection of life and property against fire, including promoting, encouraging and delivering public fire-safety education programs and training and supporting and assisting others to provide public fire-safety education programs and training;

(b) advise persons or organizations interested in developing or promoting the principles and practices of fire suppression, fire prevention, fire-safety education, emergency services and related communication systems, and the delivery of those services and systems;

(c) investigate conditions under which fires occur;

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<sup>101</sup> Chapter 6 of the acts of 2002, “[An Act to Promote and Encourage Fire Safety](#),” short title; *Fire Safety Act*.

<sup>102</sup> The *Fire Safety Act*; §3(y) ““Minister” means the Minister of Environment and Labour”

- (d) require such reports as the Fire Marshal deems necessary from persons authorized or required to inspect, investigate or examine;
  - (e) maintain in the Fire Marshal's office a statistical record of all fires reported to the Fire Marshal;
  - (f) collect and disseminate information with respect to fires in the Province;
  - (g) study methods of fire safety;
  - (h) make recommendations, including guidelines, respecting
    - (i) fire suppression, fire prevention, fire protection and the training of persons involved in the provision of these services as well as rescue and emergency services and the delivery of these services and matters related to any of them,
    - (ii) the establishment of fire departments and fire brigades,
    - (iii) the provision of adequate water supply, and
    - (iv) fire-hose couplings and connections for fire-fighting equipment.
- (2) The Fire Marshal shall exercise such other powers and perform such duties as are assigned to the Fire Marshal
- (a) pursuant to this Act, the regulations or the Fire Code; or
  - (b) by the Minister.
- (3) The Fire Marshal shall submit, annually to the Minister in each year, a detailed report for the twelve months ending on March 31st, in such form as the Minister may prescribe.
- (4) The Fire Marshal has the power and authority to enforce compliance with
- (a) this Act, the regulations and the Fire Code; and
  - (b) all other Acts of the Province relating to the prevention and suppression of fires and all regulations and by-laws made thereunder, including any codes and enactments incorporated by reference therein {emphasis added}."

### *Fire Marshal Authority over the Regional Municipality*

The powers granted to the NSFM gave this official significant authority to direct municipal fire services and their personnel in the execution of their duties particularly in the areas addressed by the *Fire Safety Act*. These areas are primarily related to fire code enforcement through inspection and related fire safety activities to be undertaken by Regional Municipal personnel.

As quoted above, we note that §13(4)(b) in the *Fire Safety Act* permits the NSFM to “enforce compliance” with fire prevention and suppression<sup>103</sup> activities undertaken by *Regional Municipal* personnel. For clarity, the NSFM’s authority extends to legislation other than just *the Fire Safety Act*, which would include for example; municipal by-laws insofar as they address fire safety concerns.

As quoted above, §13(1)(h) states that the NSFM also has the power to enact guidelines for all aspects of fire prevention and suppression activities, including the training of personnel. In this regard, the NSFM has wide discretionary power to affect the standard of care in providing fire services.

### *Municipal By-Laws Permitted*

The municipality can, at its discretion, enhance its ability to regulate fire safety by enacting more by-laws, as follows;

“Municipal by-laws

5 (1) Subject to subsection (2), nothing in this Act prevents a municipality from making and

enforcing by-laws relating to matters dealt with by this Act, the regulations or the Fire Code, including by-laws that impose or prescribe higher or more stringent standards or requirements than those provided for by this Act, the regulations or the Fire Code.

(2) Where a by-law of a municipality conflicts with this Act, the regulations or the Fire Code, this Act, the regulations and the Fire Code prevail to the extent of the conflict. 2002, c. 6, s. 5.”

### *Local Assistant to the Fire Marshal*

The *Fire Safety Act* permits the NSFM to appoint *Regional Municipal* officials to assist in carrying out some of the powers assigned to the NSFM within the jurisdictional boundaries of *the Regional Municipality*. As a practical measure, most municipalities have one or several members of the fire department designated as a *Local Assistant to the Fire Marshal* assigned to fire safety duties.

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<sup>103</sup> The *Fire Safety Act* states in the Interpretation section that ““fire suppression” means an organized emergency response for controlling and extinguishing fires.”

Usually (in addition to the fire chief), these persons are qualified members of the fire prevention division of a fire department. These officials take point position for this work in the municipality and they needed to obey directions from the NSFM as well as their organizational superiors.

“Local Assistant to Fire Marshal

14(1) The Fire Marshal may appoint as a local assistant to the Fire Marshal a qualified fire chief or, with the consent of the fire chief, another qualified member of the fire chief’s fire department.

...

(4) Local assistants to the Fire Marshal shall, within their territorial jurisdiction and, subject to the directions of the Fire Marshal, assist in administering this Act, the regulations and the Fire Code.

...”

### *Fire Safety Inspections Required*

*The Fire Safety Act* required municipalities to perform fire-safety inspections of properties, as follows;

“Duties of a municipality

19 (1) A municipality shall

(a) establish a system of fire-safety inspections of land and premises situate within its jurisdiction, as required by the regulations, to provide for compliance with this Act, the regulations and the Fire Code;

(b) appoint a municipal fire inspector who shall carry out the inspections; and

(c) ensure that the Fire Marshal is notified, in writing, of the appointment of the municipal fire inspector and the revocation of any such appointment.

(2) A municipality that is required to establish and conduct a system of inspections pursuant to subsection (1) shall ensure that

(a) a record is made of every inspection undertaken by the municipality;

(b) the records are made available, on request, to the Fire Marshal or a deputy fire marshal; and

(c) unless otherwise prescribed by the regulations, the records are kept for at least five years.”

*Fire Safety Regulations*, NS Reg 48/2003, state in §13 and §14 the municipal responsibilities for inspection of occupancies;<sup>104</sup>

“Responsibility of municipality to inspect

13 ... a municipality must, within the specified time periods, inspect the following occupancies for compliance with the Act and these regulations:

(a) within 12 months of the coming into force of these regulations, assembly occupancies (Group A) ...

...

14 (1) A municipality must inspect an assembly occupancy (Group A) once every 3 years after the inspection under Section 13.

(2) A municipality must carry out a system of fire inspections on all buildings containing the following occupancies:

(a) a residential occupancy (Group C) that has more than 3 units and is not regulated under the Homes for Special Care Act;

(b) a business and personal services occupancy (Group D);

(c) a mercantile occupancy (Group E); and

(d) an industrial occupancy (Group F).”

*The Regional Municipality* has a duty to inspect certain occupancies on a regular basis, as noted above, for determining compliance to the *Fire Safety Act* and regulations and correcting any issues found.

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<sup>104</sup> The Nova Scotia Building Code Act. R.S., c. 46, s. 1 defines in the Interpretation section; “2(n) “occupancy” or “class of occupancy” means the use or intended use of a building, as defined in the Building Code”

**Note:** In brief, despite there being multiple sub-classifications, each major classification contains; Group A is assembly (i.e. public gathering), Group B is institutional (e.g. jail, hospital), Group C is residential, Group D is business or personal service (e.g. bank, dental office), Group E is mercantile (e.g. department store, shops), and finally Group F is industrial. The Building Code defines the classifications and the Fire Code repeats the definitions.

### *Fire Code*

*The Fire Safety Act* adopted into Nova Scotia law the National Fire Code<sup>105</sup> (NFC), with appropriate modifications. The NFC concerns itself with building fire safety, ensuring that provisions required by the National Building Code are maintained and operated properly.

### *Power to Enter*

There is another significant provision in *the Fire Safety Act*. It is the extraordinary power (when justified) for the fire department to enter on lands or premises to save a life. It is important to note that these powers are not restricted to buildings.

“Emergency entry

28 (1) Where the Fire Marshal, a deputy fire marshal, a local assistant or a fire chief or other officer of a fire department in charge of directing fire-suppression activities has reasonable grounds to believe that a risk of fire poses an immediate threat to the life of a person, the fire official may, without a warrant and at any time, enter upon and inspect land or premises and may

(a) call upon a police officer;

(b) use such force as is necessary, to make the entry or exercise the powers authorized by this Section.

(2) On an entry pursuant to subsection (1), a fire official may

(a) remove persons from the land or premises;

(b) order orally, or in writing, that no person, other than a person permitted by the fire official making the entry, shall be permitted to be, or be, present on the land or premises identified in the order until the fire official otherwise orders;

(c) post a fire watch;

...

(h) do anything that the fire official reasonably believes is required to remove or reduce the threat to life.

...”

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<sup>105</sup> From [https://www.nrc-cnrc.gc.ca/eng/publications/codes\\_centre/2015\\_national\\_fire\\_code.html](https://www.nrc-cnrc.gc.ca/eng/publications/codes_centre/2015_national_fire_code.html) “The National Fire Code of Canada 2015 (NFC), published by NRC and developed by the Canadian Commission on Building and Fire Codes, sets out the technical provisions regulating activities related to the construction, use or demolition of buildings and facilities, the condition of specific elements of buildings and facilities, and the design or construction of specific elements of facilities related to certain hazards as well as the protection measures for the current or intended use of buildings.”

It is the powers contained in §28 of *the Fire Safety Act* that permitted firefighters, either themselves or with the assistance of the police, to evacuate people who were in danger from a fire.

### *Fire Investigation*

Under §32 of *the Fire Safety Act* it was required that the municipality investigate fires, as follows;

“**32 (1)** Subject to subsections (4) and (5), the local assistant shall *immediately*, and in no case later than twenty-four hours following a fire, investigate, or cause to be investigated, the *cause, origin* and *circumstances* of every fire by which property has been destroyed or damaged that occurs within the municipality or part thereof for which the person is a local assistant, unless otherwise directed by the Fire Marshal.

...”

Local Assistants to the Fire Marshal have the power and the duty to take possession of a fire scene and conduct an investigation, involving the local police or Fire Marshal investigators when indicated, and report the results of the investigation to the Fire Marshal. They also must maintain custody of the scene in order for any evidence obtained in an investigation to be valid.

## Forests Act

The Forests Act<sup>106</sup>, R.S., c. 179, s. 1, contains several provisions relating to fire protection. The province takes responsibility for the protection of forests in Nova Scotia, including from fire;

### “Protection of forests

21 (1) The Minister<sup>107</sup> shall undertake all measures which the Minister determines to be reasonable to provide for effective protection of the forests whether Crown lands, other land vested in the Crown or privately-owned land from various injurious agents, including fires, insects and diseases.

(2) The Minister shall undertake programs to ensure that the capability to detect and suppress forest fires is enhanced.”

### “Prevention and suppression of fires

22 (1) Subject to subsection (2), the Minister has control over the prevention and suppression of fires in the woods<sup>108</sup>.

(2) Every city or incorporated town, and a regional municipality with respect to that area of the regional municipality that was a city or town immediately prior to the incorporation of the regional municipality, shall at its own expense take reasonable steps to extinguish fires in the woods within its boundaries and, where a conservation officer deems the action being taken is not adequate, the Minister may take reasonable steps to control and extinguish the fire.

(3) Nothing in this Act imposes any obligation on the Minister to fight fires on any land or the Crown to pay compensation for any property destroyed or damaged by fire or as a result of fighting a fire. R.S., c. 179, s. 22; 1998, c. 18, s. 559.”

Section 21 of *the Forests Act* shows that the province is invested in the protection of crown and private forests from fire and will take all reasonable steps to protect the forests. Subsection 22(2) of the Act delegated fire protection within incorporated boundaries to municipalities. In the case of regional municipalities, the subsection says that this delegation only applied to the boundaries of the pre-existing incorporated components of the new regional municipality.

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<sup>106</sup> Chapter 179 of the revised statutes of 1989, “[An Act Respecting Forests](#),” short title; the *Forests Act*.

<sup>107</sup> The *Forests Act*; §3(o) ““Minister” means the Minister of Lands and Forests”

<sup>108</sup> The *Forest Fire Protection Regulations*; §2(k) ““woods” means forest land and rock barren, brushland, dry marsh, bog or muskeg.”

Subsection 22(2) further states that the Province may takeover firefighting activities within municipal boundaries if provincial conservation staff are not satisfied with the way the municipality is fighting the fire.

The Town of Windsor has a legislated duty under *the Forests Act* to “take reasonable steps to extinguish fires in the woods” inside the boundaries of the Town of Windsor. With the Regionalization of the municipality of Windsor and West Hants Municipality, Windsor will no longer exist as a town but will become part of a regional municipality. Yet as per the *Act*, the responsibility for fires in the woods will become the responsibility of the new Regional Municipality but only for the area which was formerly the boundaries of the Town of Windsor.

The province has the power to restrict the lighting of fires in the woods and to restrict persons from entering the woods when the risk of fires was high enough to be of concern.

“Fire proclamation

24 (1) Notwithstanding any other provision of this Act, the Minister may, whenever the Minister deems it necessary for the protection of woods, by proclamation, prohibit the setting of fires for any purpose in woods or within one thousand feet of woods in any part or parts of the Province during the period specified in the proclamation.

(2) Where a proclamation is made pursuant to subsection (1), no person shall ignite or cause to be ignited a fire in the woods or within one thousand feet of woods in a part or parts of the Province during the period specified in the proclamation.”

“Restricted travel zone

25 (1) Whenever deemed necessary for the protection of the woods, the Minister may at any time by proclamation set aside for any period of time a restricted travel zone in any area of woods upon which no person shall enter for the purpose of travelling, camping, fishing or picnicking, or any other purpose, without a travel permit.”

The *Forests Act* also had provisions for fire suppression and fire prevention, as follows;

“Fire fighting

26 (1) For the purpose of controlling and extinguishing a fire in the woods, a conservation officer may requisition the use of any privately-owned equipment and encourage people to assist in extinguishing a fire.

...

(4) Every person who is aware that a fire has started and exists in any woods shall notify a conservation officer or the Department and any person who neglects or refuses to do so is guilty of an offence. R.S., c. 179, s. 26.”

“Fire prevention

27 (1) No person who is in the woods or within one thousand feet of the woods during the fire season shall throw, drop or otherwise deposit any burning match, cigarette, cigar or smoking material, live coals, hot ashes or burning substance, or fail to extinguish any such thing.

(2) Where a person is permitted to ignite a fire pursuant to this Act, that person shall take every reasonable effort to prevent the fire from spreading and shall not leave the fire unattended until it is completely extinguished.

(3) No person shall ignite or cause to be ignited a fire on privately owned land without the permission of the owner or occupier except in an emergency situation for cooking or warmth or as a distress signal and only if the fire is made in a suitable place and precautions taken against the spreading of the fire.

...

(8) During the fire season, any person in charge of a group entering the woods for any purpose shall ensure that that person and any persons under that person's charge are fully informed of the provisions of this Act and the regulations pertaining to forest fire protection. R.S., c. 179, s. 27.”

### **Forest Fire Protection Regulations**

The regulations pertaining to fire protection arising from the Forests Act are the Forest Fire Protection Regulations.<sup>109</sup> These regulations set the “fire season” in the Regional Municipality and the appropriate restriction, as follows;

“3 (1) The fire season for the counties of Yarmouth, Digby, Shelburne, Kings, Annapolis, Queens and Lunenburg shall be the period of time during each year from the first day of April to the fifteenth day of October, both dates inclusive.

(2) The fire season for all other counties in the Province shall be the period of time during each year from the fifteenth day of April to the fifteenth day of October, both dates inclusive.

(3) Except as provided in the Act, during the fire season as prescribed in subsections (1) and (2), no person shall set, start, kindle or maintain a fire in the woods or within one thousand feet of the woods without a valid permit to burn.”

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<sup>109</sup> “*Forest Fire Protection Regulations* made under subsection 23(2) and Section 40 of the Forests Act, RSNS 1989, c. 179, NS Reg 55/87, NS Reg 167/2008,” short title; *Forest Fire Protection Regulations*.



### Summary of Duties and Powers, Provincial Legislation

The following is a summary of the fire protection related legal duties and discretionary powers of each responsible party as found in the various provincial legislation noted above in this chapter.

<u>Party</u>	<u>Legislation</u>	<u>§</u>	<u>Type</u>	<u>Summary</u>
Municipality	MGA	174	Power	May make by-laws respecting fire prevention and fighting of fires
Municipality	MGA	293	Power	May maintain and provide fire & emergency services
Municipality	MGA	294 295	Power	May accept fire department registrations
Municipality	MGA	296	Power	May make policies for governance of fire and emergency service providers
Municipality, etc.	MGA	300	Protection	Protection against liability for powers
Municipality, etc.	MGA	300	Protection	No liability unless grossly negligent
Municipality	MGA	302	Power	May assist at fires, etc., outside municipality
Firefighters		297	Duty	Shall endeavour to extinguish fire, etc.
Firefighters		297	Power	Generally, may do all things necessary to respond to the emergency, etc.
Firefighters		297	Power	Right to enter break into building if fire suspected
Firefighters		297	Power	Destroy buildings to contain fire or protect public from danger
Province	Fire Safety Act	9	Duty	Shall appoint Fire Marshal and staff
Fire Marshal	Fire Safety Act	13(1)	Power	Promote, advise, investigate, direct, collect information, study, recommend, etc.
Fire Marshal	Fire Safety Act	13(2)	Duty	Duties as assigned by Minister
Fire Marshal	Fire Safety Act	13(3)	Duty	Submit annual report to Minister
Fire Marshal	Fire Safety Act	13(4)	Power	Enforce compliance Acts and Fire Code
Fire Marshal	Fire Safety Act	14(1)	Power	May appoint local assistant to the Fire Marshal, may require Fire Chief consent if local assistant is fire department employee
Municipality	Fire Safety Act	5	Power	May make by-laws on matters in the Fire Safety Act, unless conflicts
Municipality	Fire Safety Act	13	Duty	Must inspect Group A premises during Act implementation schedule
Municipality	Fire Safety Act	14	Duty	Must inspect premises according to schedule
Municipality	Fire Safety Act	19	Duty	Appoint inspector, inspect land/premises for Act/Regulation compliance, keep records
Local Assistant (Firefighter)	Fire Safety Act	14(4)	Duty	Local assistant takes direction from Fire Marshal, assist in administering Act and Fire Code
Firefighter, Fire Marshal, etc.	Fire Safety Act	28(1)	Power	Entry without warrant in case of immediate threat to life of a person
Firefighter, Fire Marshal, etc.	Fire Safety Act	28(2)	Power	Remove persons, bar entry, do anything reasonably believes necessary to remove/reduce threat to life
Local Assistant (Firefighter), Fire Marshal	Fire Safety Act	32(1)	Duty	Immediately investigate fires for origin, cause and circumstances
Province	Forests Act	21(1)	Duty	Take all reasonable measures to protect forests from fire, injurious agents, etc.
Province	Forests Act	21(2)	Duty	Shall undertake programs to enhance detection and suppression forest fires
Province	Forests Act	22(1)	Power	Control over prevention and suppression fires in woods
Province	Forests Act	22(2)	Power	May take over firefighting inside municipal boundaries if deemed necessary

<b>Party</b>	<b>Legislation</b>	<b>§</b>	<b>Type</b>	<b>Summary</b>
Province	Forests Act	22(3)	Protection	Not obligated to fight any fire on any land or pay compensation
Province	Forests Act	24(1)	Power	Proclaim the prohibition of setting fires in the woods for protection of woods
Province	Forests Act	24(3)	Duty	Notice of Proclamation shall be issued publicly
Province	Forests Act	25	Power	Proclamation to close the woods to persons
Province	Forests Act	26(1)	Power	Requisition assistance in fighting woods fires
Municipality	Forests Act	22(2)	Duty	Shall take reasonable steps within boundaries to extinguish woods fires (i.e. boundaries
Public	Forests Act	26(4)	Duty	Must report any woods fire
Public	Forests Act	27	Duty	No person through act or carelessness shall start a fire in the woods or cause it to spread, etc.

## APPENDIX V; MODEL; VOLUNTEER RECRUITMENT AND SELECTION PROCESS

**NOTE:** First Define position(s) advertised for and have in place appropriate position job function descriptions.

### Purpose

The purpose of this policy is to set out guidelines and procedures regarding recruitment and selection of volunteer firefighters across the Regional Municipality.

### *Selection Criteria*

#### Definitions:

**Applicant:** A person who applies for a volunteer position with the Region of Windsor and West Hants Municipality, but has not been accepted into the selection process.

**Candidate:** An Applicant who has met the minimum requirements and is being considered through the selection process.

**Recruit:** An entry level firefighter who has been offered an available volunteer position by virtue of successfully challenging the selection process.

**Probationary:** A volunteer who has successfully completed required training and is on active duty but is still within his/her probationary period.

**Permanent:** A volunteer who has completed all Probationary requirements.

### Requirements

All available openings for Volunteer positions shall be advertised in the local media and posted within The Region of Windsor and West Hants Municipality.

All Applicants for a volunteer position in The Region of Windsor and West Hants Municipality shall, as a minimum, meet all of the following criteria:

1. Complete the application form and truthfully include all information requested.

2. Be at least 19 years of age at the date of closing for applications.
3. Have completed high school or have a substantial equivalent in education or experience such as a recognized community college certificate in a trade with a standing that demonstrates academic ability.
4. Be available to attend training, and if the position applied for requires, attend emergencies, and to participate, as required.
5. Hold a valid unrestricted Nova Scotia driver's license (Class 5)
6. Have access to a reliable vehicle or means of transportation so that he/she may attend to the fire station or emergency scene as required or needed.

All Candidates in order to be considered for appointment to an available position as a volunteer shall meet as a minimum all of the following criteria:

1. Have good oral and written communication skills.
2. Be of sound mind and body as required to perform the duties required of the position applied for.
3. Be of good character, be strongly motivated, and exhibit a positive attitude.
4. Be willing and able to learn, to take direction, and to be a team player.
5. Successfully complete the Applicant selection process.
6. Submit acceptable criminal and vulnerability reference check and driver's abstract record.

All Probationary firefighters in order to receive a permanent appointment as a volunteer firefighter must meet all of the following requirements.

1. Successfully complete all learning and participation expectations.
2. For active firefighting positions Within two (2) years of appointment obtain a class "3" license with "f" endorsement.
3. Demonstrate that they can meet the requirements of the job description.

### **Selection Process Overview**

In general, an Applicant who meets minimum criteria will pass into the selection process and become a Candidate under consideration. All Candidates who pass the selection process shall be placed on a list for possible appointment as a volunteer. Volunteer vacancies will be filled from such a list and any remaining listed Candidates will be considered for appointment over the 12-month life of the list if there are further vacancies and the Candidate remains suitable and available.

An Applicants or Candidates participating in the application and selection process will not be eligible for reimbursement or compensation of any costs or for any loss of income. An Applicant or Candidate is not considered a Recruit until such time as he/she is formally appointed and meets all conditions of the appointment.

Newly recruited volunteers who are appointed and meet the requirements of the appointment shall be placed on Probation for a period of one calendar year from the effective date of the appointment. Probationary requirements include the completion of all required training and exams as are set down, and the receiving of good reports on quarterly evaluations. Probationary volunteers not meeting these requirements may be subject to dismissal.

Thereafter the first year, Probationary firefighters may be conditionally placed on Permanent status pending their obtaining a 3f driver's license no later than the end of their second year. The new firefighter who fails to obtain a Nova Scotia Class "3" driver's license with "P" endorsement by the end of his/her second year shall be deemed to have not completed the probationary requirements and shall be subject to dismissal.

### *Procedural Steps and Requirements*

1. Information on the selection process and application forms shall always be made available at all Fire Stations within the Region of Windsor and West Hants Municipality.
2. When active recruiting is taking place, an orientation meeting shall be held at a designated time and location for all prospective Applicants, and at least two weeks prior to the deadline for the receiving of applications. Meeting attendance by Applicants is not mandatory but all Applicants and spouses will be encouraged to take advantage of this opportunity to ask questions and to get more information on what it takes to be a Volunteer with the Regional Fire Service.
3. Candidates considered for appointment as a Volunteer shall reside in the fire district for which he/she is applying and in which he/she will serve. In the case of the Applicant who lives relatively near district boundaries, and where there is a greater need for firefighters in one district over another district, at the discretion of the Director of Protective Services an application may be received and a subsequent appointment of a successful Candidate may be made to other than the Candidate's home district.
4. All completed applications and relevant certifications will be submitted to the Regional Fire Service's office before the posted deadline. No consideration of late applications will be made.
5. Each station that requires new volunteers to fill available vacancies shall strike a Selection Committee consisting of not less than three, and not more than four. For firefighter positions the committee shall be comprised of, senior firefighters and officers. The Committee for volunteer firefighter positions shall contain at least one senior firefighter not of officer rank. Committee members from other stations are permitted.

6. Candidate selection shall be on the basis of qualifications, ability and potential. At each stage in the screening process the Candidate will be evaluated for eligibility based upon the volunteer position applied for, to proceed to the next step. All Candidates shall be screened through the following steps of the selection process:
  - (a) Screening of Applicant's basic requirements through the application form.
  - (b) Completion of an individual interview with the Candidate where factors such as character, motivation and team skills will be evaluated. This is a subjective interview based on pre-set questions and with a structured evaluation scheme and will be scored.
  - (c) Through the use of the established evaluation system the Selection Committee shall select Candidates at each evaluation stage, deciding who are eligible to proceed to the next step. Where several stations are recruiting at the same time combined testing events will be scheduled where possible.
7. The successful Candidates from the selection process shall be ranked and the list of all successful Candidates shall be recommended by the Selection Committee to the applicable District Fire Chief. The District Fire Chief shall review the selection documents of all the Candidates for errors in process.
8. The District Fire Chief shall present to the Director of Protective Services a list of recommended Candidates for Recruitment, and a list of waiting-listed Candidates. The Director of Protective Services shall review the District Fire Chief's recommendations and may issue conditional letters of appointment to sufficient Candidates to fill available vacancies in the particular station. Any remaining ranked Candidates shall be notified that they are placed on a 12-month waiting list for further vacancies that might appear over that period.
9. Candidates receiving conditional offers of appointment shall have 14 days to provide the following required documentation:
  - (a) At least a "Class 5" Driver's License
  - (b) A satisfactory Criminal Reference Check
  - (c) A satisfactory Driver's Abstract
  - (d) A Doctor's certificate of health using the Municipality's recommended form.
10. The Candidate who provides satisfactory documentation within the time allotted will be required to sign an Acceptance-of-Offer form and shall be placed on the list as a Recruit Firefighter. He/she will be signed onto the Municipality's benefit programs.
11. All Recruit Firefighters shall attend and shall successfully achieve a program of recruit training as is laid down by the Training Division. Recruit Firefighters failing to successfully achieve the recruit program will be terminated.
12. The Recruit Firefighter who successfully completes the Recruit Training Program shall be accepted for service in his/her station as a Probationary Firefighter with limited duties and expectations. For the balance of his/her first year after accepting his/her appointment, the Probationary Firefighter will be expected to pass such tests and to acquire such skills and knowledge as are laid down by the station Training Officer and the Training Division. Failure to satisfactorily achieve these or failure to maintain adequate attendance will be cause for dismissal.
13. Probationary Firefighters will be formally evaluated by the station Training Officer and the station District Fire Chief at the completion of 3 months, 6 months, 9 months, and 12 months of his/her first year. These reviews shall evaluate the Probationary Firefighter's progress and

potential in meeting the Job Requirements of a volunteer firefighter. Concerns identified in these evaluations shall be resolved before the subsequent evaluation. Failure to resolve concerns within those periods will be cause for dismissal.

14. The Probationary firefighter who successfully completes his/her first year shall be appointed as a Permanent volunteer firefighter. However, such appointment shall be conditional on the firefighter obtaining his/her 3f Driver's License prior to the expiry of the second year. Failure to obtain the Driver's License will be cause for dismissal.

*Applicants with previous firefighting experience.*

An Applicant who has previous firefighting experience may, at the discretion of the Director of Protective Services, be recruited through a modified evaluation process as follows:

1. The Applicant shall submit an application, and if suitable shall participate in the Candidate selection process in the normal manner, and if successful shall be ranked as are other Candidates.
2. Credit shall be provided for previous experience that is deemed relevant and significant.
3. If the Candidate is suitable for appointment, he/she may be offered a conditional appointment to a vacancy in the normal manner.
4. The experienced Recruit may be excused from recruit training to the extent that the station Training Officer determines is acceptable and provided the Candidate submits suitable records of previous training and experience for review by the Selection Committee, the station Training Officer and the Divisional Chief of Training and Safety.
5. The experienced Recruit may be immediately placed on 12-month probation, and is subject to periodic mandatory review in the normal manner.
6. The experienced Probationary firefighter shall be assigned tasks in accordance with demonstrated ability, which may exceed those of other Probationary firefighters without previous experience.

*Volunteers transferring to another station.*

Any Permanent Regional volunteers who moves his/her principal domicile from the fire district in which he/she is a volunteer to another fire district may apply for a transfer from one station to another. Such transfer is subject to the following:

1. The volunteer receives a suitable recommendation from the District Fire Chief of the station to which the firefighter currently belongs.
2. The District Fire Chief of the station to which the volunteer is requesting transfer interviews the firefighter and recommends his/her transfer.
3. There is a vacancy in the receiving station.

The Director of Protective Services reviews and approves the transfer.

APPENDIX VI; VFIS PLANS AND COVERAGES (FOR REFERENCE)

VFIS Coverage, General

# Why Choose VFIS Accident & Sickness Coverage?



- 

Since 1991, VFIS has been protecting Canada's Heroes (fire and emergency service personnel) with Accident and Sickness benefits.
- 

We protect emergency responders in every Province, insuring approximately 2,000 departments.
- 

More than 99% of emergency service organizations have experienced little or no change in pricing at renewal due to claims for the past five years.
- 

VFIS provides stability, having underwritten its Accident and Sickness benefits with AIG Insurance Company of Canada for more than 20 years.
- 

Our Claims Department is staffed with experienced bilingual Claim Handlers who have provided expedient claim service since 1991.



**VFIS**  
OF CANADA  
A Division of CVIS, Inc.

### Coverage Highlights

- Accidental Death, Dismemberment, Paralysis, Impairment and Cosmetic Disfigurement do not contain restrictive time frames from the date of the Covered Activity.
- VFIS provides an extra 50% of the Principal Sum on the above benefits when caused by Felonious Assault.
- VFIS provides a guaranteed Heart & Circulatory Benefit when death or disability occurs during the Covered Activity.
- When life threatening cancer is diagnosed and is covered by Provincial Workers' Compensation, VFIS includes a \$5,000 Cancer Benefit without purchasing a separate policy.
- When Injury Permanent Impairment results in 50% or greater impairment, benefits are provided for life!
- Heart Impairment Benefits can be provided up to 125% of the Principal Sum.
- Weekly Income benefits are selected by the fire department and guaranteed for the first 28 days without coordination with other benefits.
- VFIS offers Weekly Income benefits for 10 years without any change in the definition of occupation.

### Why Choose Optional OFF DUTY Benefits?

- Provides Accidental Death, Dismemberment and Income benefits for designated (rostered) members for Off-Duty Injuries.
- No minimum premium required to obtain the 24-hour coverage.
- VFIS provides an additional 10% of the death benefit when death is caused by Felonious Assault.
- Provides Weekly Income for a covered Off-Duty Injury after a seven day waiting period, for up to 104 weeks at a minimum of \$100 a week.

### Why Choose Optional SPOUSE AND DEPENDENT Benefits?

- Provides Accidental Death, Dismemberment and other benefits for Eligible Dependents.
- Paralysis (Quadriplegia, Paraplegia or Hemiplegia) benefits are provided for twice the Accidental Death and Dismemberment Principal Sum for Eligible Dependents.
- Includes a Spousal Total Disability benefit in the amount of \$100 per week for a covered Injury.

145 Wellington Street West • Toronto, Ontario M5J 1H8 • 1.800.461.8347 • Canada@vfis.com

This flyer is only a brief illustration of our program and may contain unintentional inaccuracies, or coverages not included in our quotations. You must refer to the actual insurance policy for a description of coverages, exclusions and conditions. Specimen policies are available for review and analysis.



VFIS Coverage, On-Duty & Off-Duty Coverage



## ACCIDENT AND SICKNESS PROGRAM

### WHO IS COVERED?

All classes of members, including:

- Volunteers, Including Paid-on-Call
- Part-Time Paid Members (25 hours per week or less)
- Junior Members
- Members in training
- Auxiliary Members
- Commissioners, Directors and Trustees
- Deputized Bystanders (during participation in emergency)
- Non-Members asked by the organization or auxiliary to assist
- Administrative Personnel (Paid Employees who do not train for or respond to emergencies)

OPTIONAL: Career Members - Paid Employees (25 hours per week or more)

### WHEN DOES COVERAGE APPLY?

For injuries and illnesses sustained while participating in normal duties such as:

- Emergency Response (Fire and EMS)
- Classroom Training and Training Exercises
- Meetings and Conventions
- Firemaths Events or Contest
- Fundraising for Policyholder
- Official Functions intended to further the Policyholder's business, (e.g., Installation dinners)
- Travel to and from all normal duties
- Authorized Public Safety Events
- Administrative and Maintenance Duties




### WEEKLY INCOME BENEFITS

#### TOTAL DISABILITY

- First 28 Days - Benefit selected paid regardless of other sources of income
- After 28 Days - Benefit equals:
  - Pre-disability wages less other income benefits paid or payable
  - Up to benefit amount selected
- Cost of Living Adjustment (COLA):
  - Benefit increases each July 1, after 52 consecutive weeks of disability
  - 5% minimum - 10% maximum increase (per CPI)
- Total Disability Benefit Periods:
  - Basic: 260 Weeks
  - Extended: 520 Weeks
  - Long Term: to age 70

#### PARTIAL DISABILITY

- First 28 Days - 50% of benefit selected paid regardless of other income
- After 28 Days - Benefit equals:
  - Pre-disability wages less other income benefits paid or payable
  - Up to benefit amount selected
  - Maximum benefit period 52 weeks

### OCCUPATIONAL RETRAINING BENEFIT

- Pays for occupational retraining if the insured becomes Permanently Totally Disabled and we agree to a rehabilitation program


### WEEKLY INJURY PERMANENT IMPAIRMENT\*

- Income benefit payable for life with 50% or greater impairment rating
  - Paid in addition to any benefit paid or payable under the policy
  - Payable even if the Member returns to work in any job

\*Optional for career members

### EDUCATION AND TRAINING


- Fire/EMS and Vehicle Operations
- ESO Administration
- Risk Control Articles
- Safety Flyers, Posters and More
- Many Free Services to VFIS Clients



### EXCLUSIONS

Insurer will not cover any loss caused by or resulting from:

- suicide or any attempt at it, or intentionally self-inflicted injuries;
- injuries that happen while flying except:
  - as a passenger on a commercial aircraft; or
  - as a passenger on any aircraft while taking part in a Covered Activity;
- injuries that happen while flying as a crew member, or during parachute jumps from the aircraft;
- war or any act of war, whether declared or undeclared;
- mental or emotional disorders, except as specifically provided for covered Post-Traumatic Stress Disorder;
- treatment of alcoholism or drug addiction and any complications arising therefrom, except loss caused by injury sustained during and resulting from a Covered Activity;
- illness, except as provided by the policy;
- military service of any province or country;
- cancer, except as provided by the Cancer Benefit



### DEATH BENEFITS

- Death due to injury or illness
- Heart attack or stroke within 48 hours of emergency response or training
- Seat Belt
- Safety Vest
- Military
- Dependent Child and Education (per dependent child)
- Spousal Support and Education
- Memorial Benefit (paid to department)
- Dependent Elder (per dependent elder)
- Rehabilitation

### LUMP SUM LIVING BENEFITS

- Accidental Dismemberment and Paralysis
- Permanent Impairment:
  - Injury, Illness, Vision and Heart
  - Cosmetic Disfigurement Resulting From Burns
  - HIV Positive
  - Cancer Benefit

All of the lump sum benefits listed above are in addition to medical expense benefits or disability income benefits payable under the policy.



### OPTIONAL COVERAGES

- Off Duty Member and Eligible Dependents Benefits

### MEDICAL EXPENSE BENEFITS

Medical Expenses - Such as:

- medical, hospital or surgical treatment;
- home health care;
- nursing services prescribed and monitored by a physician;
- Postexposure Prophylaxis Protocol (PEP) treatment, when such treatment is advised by the attending physician;
- infectious disease screening test(s); and
- postexposure preventive inoculations as a result of participation in a Covered Activity

Cosmetic Plastic Surgery - In addition to medical expense benefit

Post-Traumatic Stress Disorder

Critical Incident Stress Management Expense Reimbursement

Family Expense Benefit

Family Renewal and Trauma Counseling

### OTHER BENEFITS

- Felonious Assault
- Home Alteration and Vehicle Modification

### OPTIONAL BENEFITS

- Weekly Hospital Benefit
- First Week Total Disability Benefit
- Coordinated 28-Day Total Disability Benefit
- Extended Total Disability Benefit (520 weeks)\*
- Weekly Injury Permanent Impairment COLA\*
- Long-Term Total Disability COLA\*
- Special Events Benefit Rider - Coverage for unique events held by the organization
- Organized Team Sports Rider - To cover sanctioned league sports\*

\*OPTIONAL FOR CAREER MEMBERS

## VFIS 24 Hour (Off Duty) Coverage

### Member Only Benefits

- Accidental Death & Dismemberment - Principal Sum
- Paralysis is 2 times Principal Sum & Uniplegia is 100% of Principal Sum
- Vision Impairment
- Seat Belt is 15% of Principal Sum
- Up to \$20,000 Repatriation Benefit
- Up to \$20,000 Rehabilitation Benefit
- Up to \$5,000 Day Care Benefit (per child up to max 4 years)
- Up to \$5,000 Education Benefit (per child up to max 4 years)
- Up to \$20,000 Spousal Occupational Benefit
- Up to \$20,000 Home Alteration & Vehicle Modification Benefit
- Up to \$20,000 Family Transportation Benefit
- Up to \$5,000 Funeral Expense
- Up to \$5,000 Bereavement Benefit
- Up to \$15,000 Identification Benefit
- Up to \$10,000 Psychological Therapy
- Cerna Benefit is 1% of Principal Sum paid per month (Max 100 payments)
- \$10,000 Parental Care Benefit
- Felonious Assault Benefit is 10% of AD&D Benefit
- Total Disability Benefits
  - 7 Day Waiting Period
  - Payable up to 104 Weeks
  - Non Income Earners receive \$100/wk for 13 weeks

### Family Benefits

The amount of coverage for your family depends on your family status at time of loss.

Family Status at Time of Loss	AD&D/Principal Sum
Spouse Only (no children)	60%
Children Only (no spouse)	20%
Spouse & Children	50% Spouse & 15% Children

- Accidental Death Benefit (Amount depends on chart above)
- Accidental Dismemberment (Amount depends on chart above)
- Paralysis is 2 times the Death Benefit (Amount depends on chart above)
- \$5,000 Day Care Benefit (per child up to max 4 years)
- \$20,000 Home Alteration and Vehicle Modification
- \$20,000 Repatriation Benefit
- 15% Seat Belt Benefit
- \$5,000 Funeral Expense
- \$15,000 Identification Benefit
- \$10,000 Psychological Therapy
- \$100/wk Accident Weekly Disability for Spouse Only
  - 7 day waiting period payable on day 9
  - Payable up to 13 weeks

At VFIS, we have developed a comprehensive 24 Hour (Off Duty) package to help protect both volunteer firefighters and their families from financial hardship resulting from accidental death, dismemberment or accidental injuries that occur outside of fire department covered activities and duties.

VFIS  
Suite 209 • 145 Wellington Street West  
Toronto, Ontario M5J 1H8  
Phone: 1-800-461-8347 • Fax: 855-558-0014

VFIS Coverage, Member and Family Assistance Program (MFAP)

### Volunteer Firefighter Member and Family Assistance Program (MFAP) Solutions

Harness the power of full-scale employee firefighter and workplace support solutions through an exclusive MFAP arrangement through VFIS of Canada a division of CVIS, Inc.



**DID YOU KNOW?**

- Mental and nervous disorders have replaced musculoskeletal conditions as the top condition causing long-term disability. Source: Canadian Council on Integrated Healthcare
- The mounting costs of maintaining unhealthy employee firefighters, coupled with the expense and disruption associated with staff turnover, is leading many employers to implement a health promotion strategy. Thanks to a growing body of evidence, today's workplace health programs are no longer viewed as just a good idea, but rather a crucial investment in an organization's long-term success. Source: The Case for Comprehensive Workplace Health Promotion, Centre for Health Promotion, University of Toronto

*Member and Family Assistance Programs (MFAPs) are employer paid benefits that support both the members and the workplace. These services are designed to enable members to resolve personal and work issues so that optimal productivity is maintained. They include health, wellness and other strategic solutions for smaller employers/municipalities.*

Homewood Health offers Volunteer Fire Departments the same services as some of Canada's largest employers at a preferred

VFIS of Canada member rate of \$ 2.00 per member per month (non-member rate \$ 3.00).



- 1 Ease of use**  
All of our services are simple and intuitive to use, so all members can benefit (e.g. online solutions allow easy and secure access anywhere and anytime, email response is fast and available 24/7 in both official languages, consulting is short-term and solution-focused, and we have consulting offices across the country).
- 2 Prevention focused**  
Homewood Health takes a comprehensive and prevention-focused approach to a member's well-being and productivity. Our healthy workplace strategy targets the member, workplace and organization. Our prevention focus strengthens the resiliency of your workforce.
- 3 Appealing and relevant messaging**  
MFAP and related services are only useful to the extent that they are utilized by members and key personnel (managers, supervisors, etc). We craft our messages to appeal to members in different stages of their life and career, ensuring that prevention efforts are relevant, appealing, and successful.

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### MEMBER SUPPORT SERVICES



**Short-term Counseling (one session only)** Our unique solution-focused cognitive behavioural therapy approach focuses on teaching individuals, couples, and families the skills necessary to solve their life problems without creating a long-term dependent counselling relationship. Confidential counselling is offered in the local community. Our counselling is delivered by our extensive national network, with the highest rates of clinical psychologists. Their focus is on specific goal attainment, behaviour change, accurate diagnosis of complex problems, and the best possible outcomes. Treatment is provided for a full range of personal or work-related issues including, but not limited to:

- substance, adjustment issues, aging and care giving, anger
- management, anxiety, child development
- communication problems; domestic violence; depression; family issues; grief and bereavement; marital issues
- parenting; personal adjustment problems; relationship difficulties; sexuality; stress; separation/divorce/custody; special needs of children, and trauma

**Life Smart Coaching Services**

**Life Balance Solutions:**

- Childcare & Parenting
- Elder & Family Care
- Legal Advisory Service
- Financial Coaching
- Relationship Solutions

**Career Smart Coaching Services:**

- Shift Worker Support Program
- Retirement Planning

**Health Smart Services:**

- Nutritional Coaching/Smoking Cessation Program/Improve your Wellness

**Online Resources and Services**

- E-Learning Courses
- Health Risk Assessment
- Child and Eldercare Locator
- Health Library

**Crisis Management/Trauma**

- Crisis Management Services (CMS) - charged separately @ \$225 per hour



**KeyPersonAdviceLine** Designed for key personnel and supervisors, the advice line allows key persons to contact a Homewood Health counsellor at any time for consultation should a situation arise at the workplace which requires a professional opinion. These consultations are designed to be available on an immediate, as-needed basis.

For more information ask for our detailed brochure defining each service. Marketed & Sold by CVIS, Inc. Developed by Homewood Health

**MFAP Solutions—supporting employee/firefighter well-being, capability and effectiveness.**

Learn more about other solutions offered through your Member and Family Assistance Program (MFAP).  
1 800 461 8147 | Canada@vfis.com  
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VFIS Coverage, Trauma Care

Homewood Health™

## Trauma Care



**Post-Traumatic Stress Disorder (PTSD) is a serious condition that can affect anyone who has experienced a traumatic episode or repeated exposure to traumatic episodes.**

It can leave a person debilitated by severe anxiety, nightmares, flashbacks and uncontrollable thoughts about an ordeal. Left untreated, symptoms can worsen and leave an individual unable to cope with everyday life.

Studies show that accurately and effectively addressing symptoms and distressed functioning early can have significant impact on successful recovery and return to normal functioning.

**A New Response**  
Homewood Health™, in partnership with VFIS, is offering Trauma Care Program—a new mid- to long-term treatment option for firefighters experiencing trauma symptoms.

This unique program model is designed to utilize industry best practices such as Cognitive Behavioural Therapy, resiliency training and a wide range of online mindfulness tools for individuals who remain on the job but are struggling with acute or long-term trauma symptoms.

The program provides up to 20 hours of individual treatment.

**Our Unique Partnership**  
VFIS is offering firefighters the opportunity to take advantage of this program through their Post Traumatic Stress Disorder Benefit. Through this benefit, firefighters are eligible for covered access to Homewood's treatment for trauma experienced on the job.

**VFIS OF CANADA**  
145 Wellington Street West, Suite 209  
Toronto, Ontario, M5J1H8  
1.800.461.8347 | canada@vfis.com  
www.vfiscanada.com

**Homewood Health | Santé**

## Trauma Care

**Program Access**  
This fee for service program must be initiated through VFIS in order to be eligible for reimbursement. Firefighters must first meet the definition of traumatic incident\*.

To initiate a claim, firefighters can access the initial claim report and Attending Physician Statement form online at [www.vfiscanada.com](http://www.vfiscanada.com).

Completed forms can be returned to VFIS by fax at 1.855.558.0014 or electronically to [Canada@vfis.com](mailto:Canada@vfis.com). Once approved, a firefighter has the option to be contacted by a member of Homewood Health's Trauma Care Intake team to initiate services, or to call Homewood Health directly at 1.800.461.8347 and request Trauma Care services.

\***Traumatic Incident** – means an abnormal experience, outside the range of usual human experiences and includes, but is not limited to:

1. Line-of-duty death or serious injury to other **Insured Persons**;
2. A single incident having multiple casualties;
3. Death or serious injury of a child, and
4. Dealing with victims known to the **Insured Person**.

**Specialized Clinicians**  
Clinicians are specifically selected for this service. They have expertise and specific training in evidence-based psychotherapy, particularly Cognitive Behavior Therapy, relating to PTSD, as well as mood and anxiety disorders. Trauma Care clinicians also have experience working with military personnel and first responders and have undergone additional training regarding the cultural perspectives shared by many individuals in these occupations.



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## APPENDIX VII; SAMPLE JOB DUTIES AND DESCRIPTIONS

*Director of Protective Services/Fire Chief Draft Job Description***IMMEDIATE SUPERVISOR:** CHIEF ADMINISTRATIVE OFFICER**Position Summary: (ILLUSTRATIVE PURPOSES ONLY)**

*Reporting to the Chief Administrative Officer, you will lead the Regional Fire Service and manage the many necessary changes in the organization and operations to meet the ever-changing demographics of the community and regulatory requirements. Key focus area is the development of an overall strategy and plan in developing a path toward greater integration of services, facilitate change and support the volunteer fire services.*

The position includes responsibility for the Regional Fire Service, Regional Emergency Management, liaison with local RCMP and EHS. The Regional Fire Service is designed to deliver the best possible fire protection and emergency service in order to avoid loss of life and property through prevention, code enforcement, preparedness and response. The Regional fire Service is primarily a volunteer fire service consisting of some part time positions. This staffing model meets the needs of the Region and reflects the commitment of both the Region and that of its various communities and residents. This commitment to a primarily volunteer model is unwavering and must be understood and embraced by all personnel. The position will be responsible for the coordination of a uniform and integrated team of Fire Departments, each possessing an uncompromised identity.

As part of the Corporate management team, participates in the overall stewardship of the municipality. This position has corporate and department responsibilities for emergency and business continuity planning. The Regional Municipality expects all employees to work in an environmentally friendly way in all the tasks that they do; to work in a manner that is safe for themselves and others and to be aware of their health & safety obligations; to continually look for opportunities to improve their job that will result in excellence in municipal government and; to recognize the uniqueness of the individuals they come into contact with, and to treat them with dignity and respect.

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**PURPOSE OF JOB:**

The Director of Protective Services/Fire Chief position is a senior management position responsible to plan, organize, direct, control and evaluate all aspects required of modern-day emergency services which include fire and rescue services, code enforcement, emergency management, medical first responder programs and activities of the Region. The Director/Fire Chief is required to analyze and consult with the CAO and other Regional officials and emergency services in developing recommendations for the protection of life and property within the Region. Administrative duties including planning, development of policies and procedures, directing and controlling activities of the work unit, long term planning, recruitment and retention of personnel, purchase of equipment, control of expenditures, management of budgets and the assignment of personnel and equipment, human resources as it relates to those personnel under his/her comm

**Responsibilities as the Regional Emergency Measures Organization Coordinator.**

The Director of Protective Services/Fire Chief includes responsibilities as the Regional Emergency Measures Organization coordinator. Responsibilities include but are not limited to and. Further the position is responsible to keep current any mutual-aid, auto-aid agreements and annual fire department registrations.

1. Responsible for the development of Emergency Management Plans.
2. Provides assistance to municipal departments, non-governmental and volunteer agencies develop plans and procedures.
3. Ensure that current plans and procedures align and compliment with those of NS EMO
4. Facilitates inter and intra-agency cooperation.
5. Coordinate municipal operations with provincial and Federal governments in the event of an emergency.
6. Responsible to ensure that the Emergency Coordination Centers (ECC) and associated equipment are fully functional and ready for use 24/7.
7. Responsible for semi-annual preparedness exercises.

**FIRE SERVICE Job Duties and Tasks:**

1. Promote the missions and values of the Regional Municipality.
2. Ensures that Council approved policies and procedures are adhered to in the department and that other departments observe policies within the jurisdiction of the Fire department.
3. Interacts with other departments on a regular basis as many of the Fire department's daily responsibilities require an integrated corporate approach.
4. Actively promote the Municipality's health and safety program. Lead by example in the areas of health and wellness and work life balance.
5. Responsible for ensuring that employees of the department are provided with a safe and healthy workplace consistent with corporate standards and the healthy workplace initiatives.
6. Provide supervision for the activities of the Regional Fire Service department including the performance of staff.
7. Develop, implement and maintain short- and long-term planning to ensure effective services.
8. Create financial budgets to meet the needs of the department. Routinely monitor the budget expenditures, advising the CAO of variances and significant deviations.
9. Review and make recommendations to the CAO as to the type of fire and emergency services, including equipment and human resources (recruitment and retention of personnel).
10. Keep abreast of changing local conditions in firefighting, fire prevention, inspections and develop recommendations for the provision of fire services.
11. Provide leadership and communication through regular meetings (i.e. the Fire Chiefs Advisory Board) and delegation responsibilities.
12. Promote effective employee/employer relations.
13. Encourages participation by subordinates in departmental projects and teams.

14. Develop and mentor senior officers to provide leadership to the department.
15. Represent the Regional Fire Service department in communications with the media and the public, in coordination with the CAO.
16. Establish and maintain effective working relationships with members of the public, residents, Councillors and staff.
17. Manage emergency service contracts, mutual-aid and auto aid agreements.
18. As required, report to Council on Regional Fire Service activities.
19. As part of the Emergency Coordination Centre (ECC), be available for call backs to emergencies.
20. Respond on scene to large scale emergencies/fires in an incident command role as required.
21. Other related duties as assigned.

**Supervision:****Supervision Given:**

**Provides policy direction.** Organizes programs and goals and objectives for the department. Provides direction for all staff in the department. Must be able to maintain an effective working relationship with volunteer firefighters. Must be able to motivate and maintain active volunteer fire fighting force.

**Responsibility:****Supervision Received:**

Accountable for own actions, and those of subordinates.

**Effect of Errors:** Strategic errors made by this position can result in loss of life and property in the community. The Director of Protective services/Fire Chief has technical expertise that does

not allow for senior positions to be able to assist in some of the critical strategic decision making for the department.

**Freedom to Make Decisions:** Employee makes operating decisions between alternative courses of actions which have long lasting effects. Must be prepared to make decisions with a limited information base or decisions that may have political overtones.

**Interpersonal Contacts:**

**Purpose:** Contacts are a major portion of the job. Provides leadership for staff in the department, and advises staff at all levels.

Performs a public relations function for the municipality and must use tact with the media.

Is involved in Emergency Response, which calls for skill in human relations and dealing with people in emergency situations.

**Ingenuity:** Must originate policies for the Fire Department where there may be no precedent. Must consider political ramifications of decisions to change staffing requirements at different locations. Must be open to new ideas, equipment, potential cost savings to the Corporation. The position works on long-term planning for the department, including deployment of resources to reflect changes in population growth.

### Assistant Chief of Fire Prevention

**Immediate Supervisor:** Director of Protective Services/Fire Chief

**Direct Reports:** Regional Fire Inspectors/Investigators, Station Volunteer Fire Investigators and Station Public/Life Safety Educators.

**Position Purpose:** **(ILLUSTRATIVE PURPOSES ONLY)**

The Assistant Chief Position is responsible for the establishment, organization, coordination and administration of the Regional Fire Inspections/Investigations Division. Division personnel will enforce and interpret all Fire Department related by-laws of the Municipality, National Building and Fire Code, Nova Scotia's Fire Safety Act and various Provincial and Federal Acts, Regulations and Codes. Manages Division so that fire inspections and life safety studies meet the requirements of relevant legislation, codes and standards; fire risk analyses are completed and compliant with building and life safety legislation. Manage and ensures all incidents of fires are properly investigated, coordinate investigations and cooperate with other investigative authorities and agencies. Establish and maintain a Fire service photographic capability. Develop and administer business and information systems related to Division programs and activities. Acts as an Assistant to the Fire Marshal of Nova Scotia under the provisions of the Provincial Fire Safety Act. This position may from time to time perform support roles during emergencies. Participates in the formulation of departmental policies, procedures, regulations and program objectives along with providing administrative and technical advice to the Director of Protective Services/Fire Chief.

**Key duties include:**

#### **FIRE INSPECTIONS/CODE ENFORCEMENT**

1. Maintains all files in accordance with the file classification system and records retentions policies.
2. Assess development plans for all occupancies for compliance with relevant codes and standards by liaising with the Chief Building Official, architects and engineers.

3. In conjunction with the CBO, oversees interactions with developers, architects, engineers and building owners to ensure compliance with the provisions of applicable acts and regulations in order to meet adequate fire safety in new and existing buildings.
4. Ensures the highest standards of confidentiality and integrity at all times.
5. Cause information to be laid and prosecutes infractions of all applicable By-laws, codes, acts, standards and statutes, when required.
6. Hold regular team meetings and encourage team building.
7. Formulates departmental policies, procedures, regulations and program objectives along with providing administrative and technical advice to the Director of Protective Services/Fire Chief
8. Ensures appropriate training and skill development for staff
9. Monitor and manage usage of the designated budget.
10. Draft Operational and Capital Budget of Divisional needs for the Director of Protective Services/Fire Chief
11. Actively participates in Fire inspections/Code Enforcement
12. Prepares necessary documentation and reports in support of any code enforcement issue including meetings with the Crown, if required.

**FIRE INVESTIGATION:****Key duties include:**

1. Ensures all incidents of fires are investigated
2. Examine fire scenes (when required) for the purpose of investigation of the origin and cause of the fire / explosion and report same to the Provincial Fire Marshal of required by the Fire Safety Act.
3. Coordinates and cooperates with other investigative agencies such as the Office of the Fire Marshal, the RCMP and Insurance Investigators and or their contractors.
4. Author investigative reports detailing the incident and investigative findings.
5. Attend court as required.
6. Ensures appropriate training and skill development for all staff including volunteer staff
7. Hold regular team meetings and encourage team building.
8. Performs other related duties as assigned

**PUBLIC EDUCATION and LIFE SAFETY**

The Assistant Chief manages and promotes public relations, public education and media relations programs and activities focusing on public and Life Safety in an effective manner. Reviews and analysis past incidents of fires to develop an appropriate program and target audience.

**Key duties include:**

1. Utilizes fire loss data in the development and design of appropriate fire safety education programs
2. Utilizes analytics and data in the development and delivery of targeted public education messages
3. Provides Assistance to the Community and fire service volunteers in the design and the delivery of public safety education presentations and seminars to a variety of audiences

including community groups, dwelling unity owners/residents, elementary school students, seniors, and workplace employees

4. Provides assistance in the development of special events, media campaigns and other activities to promote and provide education on fire prevention and safety awareness
5. Provides fire safety materials to support program delivery, including lessons plans, PowerPoint presentations, and brochures
6. Utilizes all forms of media to support effective fire safety messaging to the public and undertakes media related activities as required to such as interviews (print, radio, television, and social media) and the preparation of media advisories and releases
7. Engages with various internal and external stakeholders
8. Work with the Regional fire departments for school fire drill programs, station tours, and community events
9. Develop and implement fire department and community volunteers for the delivery of Public Education and Life Safety Programs.
10. Insures appropriate training and skill development for volunteer staff
11. Hold regular team meetings and encourage team building.
12. Maintains all files in accordance with the file classification system and records retentions policies
13. Monitor and manage usage of the designated budget.
14. Prepare Division operating and capital budgets for the Director.
15. Demonstrates a commitment to personal and professional development

## **EMERGENCIES:**

Participates in a rotational on-call schedule with Fire Prevention /Investigative staff and volunteer staff as the fire services on call fire investigator.

The Divisional Chief may be asked to attend, as required by the Director of Protective Services/Fire Chief, emergencies either to the Municipality's Emergency Control Center, in a support role to the Director, or act as the REMO in his absence. The Assistant Chief may be also asked to report to the scene of the emergency and provide a support role to the Incident Commander.

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## DUTIES

### Divisional Chief of Training, Occupational Health & Safety, & Communications

**Immediate Supervisor:** Director of Protective Services/Fire Chief

**Direct Reports:** Regional and Departmental Training and Safety Officers

**Position Purpose:** **ILLUSTRATIVE PURPOSES ONLY**

The Divisional Chief Position is responsible for the establishment, organization, coordination and administration of the Regional Training, Health, Safety & Wellness Policy and Programs as well as the department's communications, including maintenance and documentation.

Participates in the Board of Fire Chiefs meeting as required.

**Key duties include:**

**Training:**

Researching, developing and preparing a variety of training programs. Coordinating training programs, manuals, lessons and syllabus for volunteer, part time and full-time fire department personnel; providing motivation and mentoring of department members for professional growth;

coordinating and scheduling the delivery of fire service-related training programs such as recruit training, officer development, inspection and investigation, emergency care, vehicle driver/operator training etc.; coordinate assigned activities with other divisions and outside agencies;

researching and evaluating fire department policies, procedures, techniques and equipment; assisting with recruitment and evaluation - screening resumes, arranging interviews, and creating new hire documents for Volunteer; managing MFR, Ice/Water and specialized training such as Trench Rescue, Confined Space and Hazmat; maintaining training records for all fire department employees; and other duties as assigned.

1. Performs an assessment of needs

2. Consults with the District Fire Chiefs Advisory Committee
3. Determines best practice in the development & implementation plans for program delivery
4. Manages Direct Reports, assign and distribute workloads
5. Produces an annual training plan and develops curriculum and lesson plans in all required areas.
6. Develop fire officer soft skill development opportunities
7. Develop personnel for future roles to meet the projected needs of Regional Fire Service (Succession planning)
8. Look for training opportunities with outside jurisdictions, agencies and private corporations.
9. Develops and maintains a comprehensive training records management system data base.
10. Coordinates and oversees the annual recruit training program.
11. Develops and implements Pre-fire Planning and Post-Incident Analysis and Review programs.
12. Authors a variety of reports involving complex and confidential matters, and Standard Operating Guidelines and Training Directives
13. Select instructional staff that assists with meeting department policies and instructional goals.
14. Review and approves all Practical Training Safety Plans
15. Develops and implements standardized new fire service member orientation.
16. Construct a performance-based instructor evaluation plan so that instructors are evaluated at regular intervals. The evaluation needs to identify areas of strengths and weaknesses.
17. Recommend changes to improve instructional style and communication methods. In addition, provide an opportunity for instructor feedback.

18. Develop an evaluation plan to collect, analyze and report data for program validation and participant feedback.
19. Proctor written and performance tests according to procedures in addition to maintaining security of the testing materials.
20. Draft training equipment purchasing specifications that support the training program goals.
21. Prepare annual operational and capital budget that supports the needs of the Regional Service for the Director of Protective Services/Fire Chief

**Safety, Health, Safety & Wellness Policy and Programs:**

1. Applicant Medicals
2. Infection & Disease Control
3. Fire Ground Safety Command (Participates in a rotational on-call schedule with volunteer staff.
4. Establishes programs and protocols to meet the needs NFPA-1500 requirements
5. Establishes programs and protocols to meet the needs of NFPA-1521
6. Scene Safety
7. Traffic Control Safety
8. CISD
9. Liaises with medical and mental health professionals
10. Supervises Direct Reports
11. Prepare annual operational and capital budget that supports the needs of the Regional Service for the Director of Protective Services/Fire Chief

**Develops, Implements and Enforces the Regional Fire Service's Risk Management Plan in the following areas:**

1. Administration
2. Facilities
3. Training

4. Vehicle operations, both emergency and non-emergency
5. Protective clothing and equipment
6. Operations at emergency incidents
7. Schedules and participates in an on-call rotation as a Fire Safety Officer for emergencies.
8. Operations at non-emergency incidents
9. Products of combustion, carcinogens, fireground contaminants, and other incident-related health hazards
10. Other related activities

### **Occupational Health & Safety Committee**

1. Establish and Co-chairs the Reginal Fire Services Occupational Health & Safety Committee, as the management representative.
2. Track, record, Trend and publish LTI and Near Misses
3. Responsible to ensure that committee minutes are recorded, and distributed throughout the organization.
4. Establish and Keep current fire station Safety Bulletin Boards.

### **COMMUNICATIONS**

1. Liaises with the appointed PSAP and Fire Dispatch Service provider.
2. Manages the Reginal Fire Service Fire Dispatch contract on behalf of the Regional Municipality.
3. Keep inventory of all radio equipment.
4. Manages Radio call sign assignments both apparatus and personnel.
5. Manages communications and related supplier contracts, on behalf of the fire services and departments.
6. Prepares operating and capital budgets for the Director of Protective Services/Fire Chief.

### **Emergencies:**

Participates in a rotational on-call schedule with full time and volunteer staff as an Incident Safety Officer.

The Divisional Chief may be asked to attend emergencies, as required by the Director of Protective Services/Fire Chief, either to the Municipality's Emergency Control Center, in a

support role to the Director or to the scene of the emergency in a support role to the Incident Commander.

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## APPENDIX VIII; ADMINISTRATIVE OFFICE SPACE AND COSTS

### ADMINISTRATION OFFICE SPACE REQUIREMENTS

GA's recommendations to provide central administrative staffing for a regional fire services HQ means that there will be a need to establish office space for this staff. GA recognizes that industry standards may not be achievable as there are constraints with existing buildings which will, by economic necessity, be repurposed through the consolidation process and afterwards; until such time as new structures are justified.

The one main caveat is that there be effort made to keep the fire services personnel together in one location in order to ensure proper coordination and communications at all levels and functions; this is critical for success.

The following is offered for assistance in understanding what industry standards are for office spaces. It may be useful as a planning tool.

#### *Office Functional Requirements and Location*

Office space must be flexible and have a technologically-advanced working environment that is safe, healthy, comfortable, durable, aesthetically-pleasing, and accessible. It must be able to accommodate the specific space and equipment needs of the office function.

The single biggest issue that impacts on facility cost effectiveness is that of location. There are a number of options to consider in determining location. For the purposes of this exercise, the assumptions made are that this will be the regional headquarters for the fire services, and current municipal facilities cannot accommodate the additional office functions and space. Current fire stations across the region are not able to accommodate the additional office function and space. If a new municipal office building is planned for the new regional municipality then this would present an ideal opportunity to incorporate the fire services administrative offices into that new facility. Some location options might exist, as follows;

- As a regional headquarters, ideally, the offices should be centrally located, close to the majority of stations and municipal offices.

- Incorporate the required offices into a new fire station. Location may not be ideal.
- If renting or leasing space, availability that meets the needs, budget and location.
- Construct a separate office building, if land availability at reasonable costs.

### Space Types and Functional Requirements

An office such as a fire department headquarters incorporates a number of space types to meet the needs of staff and visitors. These include:

- Offices both private and semi-private
- Visiting fire station service personnel and committee work areas
- A conference room
- Washrooms
- Reception area
- Wait area
- Small kitchenette
- Space for printer and communications
- General storage for office supplies
- Storage for investigation equipment and evidence lock-up
- IT , and security closet
- Maintenance Closet

In addition to the foregoing, the headquarters would require security features i.e. cameras and parking spaces for no less than 10 vehicles for the office staff, visiting fire station members and the public.

Based upon the required functionality of department administration, meetings that would include municipal staff, fire department personnel, public, and others, and given that the staff organization is that of a regional service it is being proposed that an office space of approximately between 2,700 and 3,000 square feet is required.

### Office Cost Estimates

The following office requirement is based upon the new Regional Fire Service organization. Requiring approximately 3,000 sq. feet (278.7 sq., m).

References used in the cost estimates are:

- ALTLUS Construction COST Guide 2018
- Quebec Hydro Study of 2018 (1 April)
- REMAX Real Estate Services – Windsor NS
- BDC.CA
- Prevost Fire Station Cost Calculator

The costing does not include the following:

- Utilities
- Insurance
- Fit up
- Furnishings
- Data/IT/Communications
- Maintenance

*Rental /Lease:*

REMAX – Office Space Rental or lease Windsor

Rental or Lease average cost OFFICE SPACE 3000 sq. ft. - \$3/sq. ft

(\$3.00 sq. ft per month +HST = \$10,350/mo. \*10 yrs. = \$1.242 mil.)

Office costing does not include utilities, fit up, furniture, data, electronic equipment, security, communications equipment, telephones.

*ALTUS Construction Guide 2018*

Halifax Leasing rates as per Altus 2018 Construction Guide,

Market net effective rate for suburban Class A office space averages \$9/sq. ft.

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### *Buildings Costs*

When calculating the total construction area for a private sector building, unit costs should be applied exclusively to the Gross Construction Area (GCA). This assumes that GCA comprises 70% of the Total Construction Area (TCA)

The costs assume base building construction only, including mechanical and electrical services, washrooms, and finishing of ground floor entrance lobby and elevator lobbies to upper floors.

The cost of tenant partitioning and finishes, with the exception of ceiling and column finishes, are excluded. The cost of finishing this space can fluctuate depending on the density of partitioning and the quality of finishes. Costs assume standalone buildings and are not representative of a component within a mixed-use building

The costs given assume single-storey buildings with the exception of enclosed malls. The cost of providing parking facilities is excluded from the unit costs provided. The Commercial Rental Unit (CRU) space is considered shell. The public space is finished. Costs assume standalone buildings and are not representative of a component within a mixed-use building.

Fire Stations exclude any costs associated with training buildings.

- Fire Station Cost for Halifax = \$250-315 per sq. ft. (land and site costs not included)
- Commercial Halifax \$165 to \$210 per sq. ft.
- Strip plaza HFX = \$100 to \$150 per sq. ft.

BDC Conventional Commercial Loan fixed rate (Sample, for Illustrative Purposes Only)  
(Municipal Finance Corporation rates may be somewhat lower)

Build (land and site costs not included)

- Commercial Office Space
- \$525,000 (3000 sq. ft at \$175 per sq. ft)
- 5% interest
- 10 years total cost = \$668,212.75
- Total interest = \$143,212.75
- Monthly payments of \$5,568.44

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Commercial Office space \$525,000 (3000 sq. ft at \$175 per sq. ft)

- 4.3 % interest
- 10 years total cost = \$621,506.44
- Total interest = \$96,506.44
- Monthly payments of \$5,179.22

Commercial Office space at \$525,000 (3000 sq. ft at \$175 per sq. ft)

- 3.45 % interest
- 10 years total cost = \$621,506.44
- Total interest = \$96,506.44
- Monthly payments of \$5,179.22

Commercial Office space at \$600,000 (3000 sq. ft at \$200 per sq. ft)

- 3.45 % interest
- 10 years total cost = \$710,293.08
- Total interest = \$110,293.08
- Monthly payments of \$5,919.11

Fire Station Office space at \$900,000 (3000 sq. ft at \$300 per sq. ft) Note: Fire Stations are now required to be built to disaster seismic standards contained within Part 4 of the NBC. This increases the square footage costs.

- 3.45 % interest
- 10 years total cost = \$1,065,439.62
- Total interest = \$165,439.62
- Monthly payments of \$8,878.66

Office costing does not include utilities, fit up, furniture, data, electronic equipment, security, communications equipment, maintenance nor insurance costs.

### *Electricity Costs*

Quebec Hydro Study of 2018 (1 April) Hydro Costs of Major Cities, cites Halifax, Commercial customers 1000, kWh/month with a power demand of 500kW avg bill = \$142/mo. including taxes.

*Water Costs (Town of Windsor 2017/2018)*

Base Charge 1" meter

- \$166.51 quarterly
- \$666.04 Annually

Consumption Rate \$6.69 per 1,000 imperial gallons (1.47 cubic meter)

Rates for Fire Sprinkler: 6" pipe or less \$200 annually.

Total Capital layout for administration office space over a twenty-year period and depending upon the interest rate of capital loans, what is the best financial option for the municipality?

There are a number of additional variables not included in this report, is land costs and associated site development costs and the estimated property value at the end of its life cycle use for the regional fire service.

There are a number of options for consideration:

- If there is a need/plan in the near future to acquire a new regional municipal office, then the option perhaps is to lease or rent appropriate facilities until the new municipal offices, that include required fire service office space, can be completed.
- An alternative solution would be to plan for space within a new fire station. Depending upon location it may not be central to other stations or municipal offices, not to mention the timeliness of construction and occupancy.
- The lease or rent option may be an alternative. However, appropriate office space may not be available within the Windsor West Hants area. The associated costs of renting and leasing, not to mention fit up costs to meet the needs of the fire service offices over a twenty-year period may be more costly.
- The last option is to purchase land and build a separate fire service headquarters building.

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## APPENDIX IX; STANDARDIZED FIRE APPARATUS FEATURES

### **STANDARD PUMPER, KEY STANDARDIZED FEATURES**

#### CUSTOM SPARTAN MODEL GLADIATOR CAB AND CHASSIS;

- Medium-length four-door (MFD) cab with 10” raised roof, aluminum cab construction
- Seating for 6 firefighters with 5 SCBA seats (i.e. all except the driver)
- Seating in rear, four forward-facing, two outer position with flip up seats
- Air-bag package for all occupant protection in front or side impacts
- Cabinets behind driver and officer seats, external and internal access
- Cummins diesel engine model X12-500; rated at 500 hp, 1695 lb-ft torque.
- Allison automatic transmission model series 4000 EVS
- Locking rear differential
- PTO for hydraulic generator drive

#### CUSTOM BODY, ALUMINUM CONSTRUCTION;

- Full height and depth compartments on both sides of body before and after rear axle and full height/width compartments over the wheel arches (sometimes called rescue style body)
- Continuous roll-up doors for body side compartments
- Amdoor brand roll-up doors, painted body colour, with integral compartment lighting
- Adjustable shelving on tracks in compartments, minimum 14 in side compartments
- Rear of body compartment
- SCBA bottle storage compartments in sealed wheel arch compartments (4)
- Aluminum double-door hinged hose bed cover

#### EQUIPMENT STORAGE;

- Minimum 350 cubic feet of compartment storage in body
- Design of hose beds and body for access to hose and compartments within easy reach of firefighters standing on ground or wide tailboard, without the need to climb
- Ladder storage through the tank, on beam, 24’/14’/10’ attic, plus pike poles
- Main hose bed capacity;
  - o One division of 12 lengths @ 100’ ea. of 5” supply,
  - o Three divisions of 8 lengths @ 50’ ea. of 2-1/2” double jacket (pre-connected),
  - o One division of 12 lengths @ 50’ ea. of 2-1/2” double jacket

- Pre-connected attack line capacity at pumphouse;
  - o Two divisions of 6 lengths @ 50' ea. of 2-1/2" double jacket (pre-connected)
- Hard suction hose storage enclosed above side compartments with door at back of body, one 13+/-foot length per side (maximum that will fit).

#### PUMP:

- Hale pump model Q-Max rated at 1500 IGPM at 150 psi, from draft
- Hale transfer case model "K", midship split shaft drive
- All discharges/suctions minimum size 3-inch stainless steel piping
- Steamer inlets equipped with MIV, both sides, front suction
- Front suction with minimum 6-inch stainless steel piping, swivel elbow, suitable for drafting
- Tank to pump (TTP) minimum 4-inch size automated valve and piping
- Side-panel controls, electronic governor, manual valve controls except MIVs, TTP, deck-gun
- Deck-gun discharge 4-inch size piping and automated valve with 3-inch size flange for gun mount
- RHS discharges, 2 @ 2-1/2", and 1 @ 4"
- LHS discharges, 2 @ 2-1/2"
- FoamPro 2001 metered injection foam system, piped to both cross-lay pre-connects and one rear pre-connect, with external foam pick-up and onboard tank

#### TANKS:

- Water/booster tank manufactured from welded polypropylene, by UPF
- Water tank size; 550 Imp gal net capacity
- Class A foam tank size; 25 Imp gal net capacity

#### FEATURES:

- Hydraulic generator for 120/240 volts A/C power on and off the truck, Harrison Hydra-Gen rated at 10kw
- 220 Volt LED floodlights on sides of body and front of cab for night-time incidents (FRC Spectra SPA260-J15)
- 12 Volt LED scene lights on sides and back of body (FRC Spectra 900)

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## **STANDARD PUMPER, KEY STANDARDIZED FEATURES; FOR RURAL AREAS**

### CUSTOM SPARTAN MODEL GLADIATOR CAB AND CHASSIS;

- Medium-length four door (MFD) cab with 10" raised roof, aluminum cab construction
- Seating for 6 firefighters with 5 SCBA seats (i.e. all except the driver)
- Seating in rear, four forward-facing, two outer position with flip up seats
- Air-bag package for all occupant protection in front or side impacts
- Cabinets behind driver and officer seats, external and internal access
- Cummins diesel engine model X12-500; rated at 500 hp, 1695 lb-ft torque.
- Allison automatic transmission model series 4000 EVS
- Locking rear differential
- PTO for hydraulic generator drive

### CUSTOM BODY, ALUMINUM CONSTRUCTION;

- Full depth, width, and available height compartments below the tank-tee on both sides of body before and after rear axle
- Full height width and available depth high-side compartments above the lower compartments, and over the wheel arches on both sides of the body
- Continuous height roll-up doors for body side compartments where lower and upper compartments coincide
- Amdoor brand roll-up doors, painted body colour, with integral compartment lighting
- Adjustable shelving on tracks in compartments, minimum 14 in side compartments
- Rear of body compartment
- SCBA bottle storage compartments in sealed wheel arch compartments (4)
- Aluminum double-door hinged hose bed cover

### EQUIPMENT STORAGE;

- Minimum 300 cubic feet of compartment storage in body
- Design of hose beds and body for access to hose and compartments within easy reach of firefighters standing on ground or wide tailboard, without the need to climb
- Ladder storage through the tank, on beam, 24'/14'/10' attic, plus pike poles
- Main hose bed capacity;
  - o One division of 12 lengths @ 100' ea. of 5" supply,
  - o Three divisions of 8 lengths @ 50' ea. of 2-1/2" double jacket (pre-connected),
  - o One division of 12 lengths @ 50' ea. of 2-1/2" double jacket
- Pre-connected attack line capacity at pumphouse;

- Two divisions of 6 lengths @ 50' ea. of 2-1/2" double jacket (pre-connected)
- Hard suction hose storage enclosed above side compartments with door at back of body, one 13+/-foot length per side (maximum that will fit).

#### PUMP:

- Hale pump model Q-Max rated at 1500 IGPM at 150 psi, from draft
- Hale transfer case model "K", midship split shaft drive
- All discharges/suctions minimum size 3-inch stainless steel piping
- Steamer inlets equipped with MIV, both sides, front suction
- Front suction with minimum 6-inch stainless steel piping, swivel elbow, suitable for drafting
- Tank to pump (TTP) minimum 4-inch size automated valve and piping
- Side-panel controls, electronic governor, manual valve controls except MIVs, TTP, deck-gun
- Deck-gun discharge 4-inch size piping and automated valve with 3-inch size flange for gun mount
- RHS discharges, 2 @ 2-1/2", and 1 @ 4"
- LHS discharges, 2 @ 2-1/2"
- FoamPro 2001 metered injection foam system, piped to both cross-lay pre-connects and one rear pre-connect, with external foam pick-up and onboard tank

#### TANKS:

- Water/booster tank manufactured from welded polypropylene, by UPF
- Water tank size; 850 Imp gal net capacity
- Class A foam tank size; 25 Imp gal net capacity

#### FEATURES:

- Hydraulic generator for 120/240 volts A/C power on and off the truck, Harrison Hydra-Gen rated at 10kw
- 220 Volt LED floodlights on sides of body and front of cab for night-time incidents (FRC Spectra SPA260-J15)
- 12 Volt LED scene lights on sides and back of body (FRC Spectra 900)

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## **STANDARD MIDI-PUMPER/RESCUE, KEY STANDARDIZED FEATURES**

### COMMERCIAL CAB AND CHASSIS

- Freightliner M2-106 crew-cab with raised roof
- Four-wheel-drive, traction tires all wheel positions
- Seating for 5 firefighters with 4 SCBA seats (i.e. all positions except the driver)
- Air-bag package for all occupant protection in front or side impacts
- Reinforced bumper in front
- Cummins diesel engine model ISL9-450; rated at 450 hp, 1250 lb-ft torque.
- Allison automatic transmission model series 3000 EVS
- Locking rear differential
- PTO for water pump drive

### CUSTOM BODY, ALUMINUM CONSTRUCTION;

- Full depth, width, and available height compartments on both sides of body before and after rear axle
- Full height width and available depth high-side compartments above the lower compartments, and over the wheel arches on both sides of the body
- Continuous height roll-up doors for body side compartments where lower and upper compartments coincide
- Amdoor brand roll-up doors, painted body colour, with integral compartment lighting
- Adjustable shelving on tracks in compartments, minimum 10 in side compartments
- SCBA bottle storage compartments in sealed wheel arch compartments (4)
- Aluminum double-door hinged hose bed cover

### EQUIPMENT STORAGE;

- Minimum 150 cubic feet of compartment storage in body
- Design of hose beds and body for access to hose and compartments within easy reach of firefighters standing on ground or wide tailboard, without the need to climb
- Ladder storage through the tank, on beam, 15' combo/10' roof/10' attic, plus pike poles
- Main hose bed capacity;
  - o One division of 6 lengths @ 100' ea. of 5" supply,
  - o Two divisions of 8 lengths @ 50' ea. of 2-1/2" double jacket (one pre-connected),
- Pre-connected attack line capacity at pumphouse;
  - o Two divisions of 6 lengths @ 50' ea. of 2-1/2" double jacket (pre-connected)

- Hard suction hose storage enclosed above side compartments with door at back of body, one 10+/-foot length per side (maximum length that will fit).

PUMP:

- Hale pump model RSD rated at 1050 IGPM at 150 psi, from draft
- Hydraulic PTO driven from transmission
- All discharges/suctions minimum size 3-inch stainless steel piping
- Steamer inlets equipped with MIV, both sides
- Tank to pump (TTP) minimum 4-inch size automated valve and piping
- Side-panel controls, electronic governor, manual valve controls except MIVs, TTP, deck-gun
- Deck-gun discharge 3-inch size piping and automated valve with 3-inch size flange for gun mount
- RHS discharges, 2 @ 2-1/2", and 1 @ 4"
- LHS discharges, 2 @ 2-1/2"
- FoamPro 2001 metered injection foam system, piped to both cross-lay pre-connects and one rear pre-connect, with external foam pick-up and onboard tank

TANKS:

- Water/booster tank manufactured from welded polypropylene, by UPF
- Water tank size; 400 Imp gal net capacity
- Class A foam tank size; 25 Imp gal net capacity

FEATURES:

- 12 Volt LED scene lights on sides and back of body (FRC Spectra 900)

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## **PUMPER/TANKER, KEY FEATURES**

### CUSTOM SPARTAN MODEL GLADIATOR CAB AND CHASSIS;

- Long two-door (LTD) cab with 10" raised roof, aluminum construction
- Seating for 2 firefighters with no SCBA seats
- Exterior access cab cabinets on both sides
- 12" extended and reinforced front bumper
- Tandem axles
- Cummins diesel engine model X12-500; rated at 500 hp, 1695 lb-ft torque.
- Allison automatic transmission model series 4000 EVS
- Locking rear differentials, locking inter-differential

### CUSTOM BODY, ALUMINUM CONSTRUCTION;

- Lower full-depth compartments on both sides of the body both before and after the rear axle
- Full height half-depth compartments on full length of the RHS of body
- Full height half-depth compartment above the LHS forward compartment
- Continuous roll-up doors for body side compartments RHS and front compartment LHS
- Hinged doors for LHS compartment behind rear axle
- Roll out tray for 23 hp portable pump in LHS behind rear axle compartment
- Flat deck above compartment and wheel well on remainder of LHS of body for 3000 US-gal porta-tank rack
- SCBA bottle storage compartments in sealed wheel arch compartments (4)
- Roll-up doors Amdoor brand, painted body colour, with integral compartment lighting
- Adjustable shelving on tracks in compartments, minimum 10 in side compartments
- Aluminum double-door hinged hose bed cover

### EQUIPMENT STORAGE;

- Minimum 250 cubic feet of compartment storage in body
- Hose beds and body design kept low and hose and compartments within reach of firefighters standing on ground or wide fixed steps
- Ladder storage through the tank, on beam, 35'/16'/10' attic, plus pike poles
- Main hose bed capacity;
  - o One division of 8 lengths @ 100' ea. of 5" supply,
  - o Two divisions of 8 lengths @ 50' ea. of 2-1/2" double jacket (pre-connected),
- Pre-connected attack line capacity at pumphouse;

- Two divisions of 6 lengths @ 50' ea. of 2-1/2" double jacket (pre-connected)
- Hard suction hose storage enclosed above RHS compartments with door at back of body, two @15-foot length each.

PUMP:

- Hale pump model Q-Max rated at 1500 IGPM at 150 psi, from draft
- Hale transfer case model "K", midship split shaft drive
- All discharges/suctions minimum size 3-inch stainless steel piping
- Steamer inlets equipped with MIV, both sides, front suction
- Front suction with minimum 6-inch stainless steel piping, swivel elbow, suitable for drafting
- Tank to pump (TTP) minimum 4-inch size valve and piping
- Side-panel controls, electronic governor, manual valve controls except MIV, TTPs, and deck-gun
- Deck-gun discharge 4-inch size piping and automated valve with 3-inch size flange for gun mount
- RHS discharges, 2 @ 2-1/2", 1 @ 4"
- LHS discharges, 2 @ 2-1/2"

WATER TANK:

- Water/booster tank manufactured from welded polypropylene, UPF brand only
- Water tank size; 2200 Imp gal net capacity
- Dump valves on both sides of body and at rear
- Dumps 12" x 12' square with powered extension chutes (Newton)
- Dump valves and chute extensions operable from in-cab controls
- Rear dump equipped with 180-degree side to side swivel

FEATURES:

- 12 Volt LED scene lights on both sides and back of body, and forward facing on cab (FRC Spectra SPA260-Q15)

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## **AERIAL, KEY FEATURES**

### CUSTOM SPARTAN MODEL GLADIATOR CAB AND CHASSIS;

- Medium four door (MFD) cab with no raised roof, aluminum cab construction
- Seating for 6 firefighters with 5 SCBA seats (i.e. all except the driver)
- 12” extended and reinforced front bumper
- Tandem axles
- Air-bag package for all occupant protection in front or side impacts
- Cummins diesel engine model X15-605; rated at 605 hp, 2050 lb-ft torque.
- Allison automatic transmission model series 4000 EVS
- Locking rear differentials, locking inter-differential
- PTO for hydraulic generator drive
- PTO for aerial hydraulic drive
- In-cab cabinets on both sides (aka medical cabinets)

### CUSTOM BODY, ALUMINUM CONSTRUCTION;

- Maximum compartmentation
- Roll-up doors for body side compartments
- Amdoor brand roll-up doors, painted body colour, with integral compartment lighting
- Adjustable shelving on tracks in compartments
- SCBA bottle storage compartments in sealed wheel arch compartments (4)
- Aluminum hinged hose bed cover

### EQUIPMENT STORAGE;

- Minimum 300 cubic feet of compartment storage in body
- Ladder storage plus pike poles, rear access, minimum 180 feet of ground ladders in body:  
40’/35’/28’/28’/16’/10’
- Main hose bed capacity;
  - o One division of 8 lengths @ 100’ ea. of 5” supply,
- Pre-connected attack line capacity at pumphouse;
  - o Three divisions of 6 lengths @ 50’ ea. of 2-1/2” double jacket (pre-connected)

### PUMP;

- Hale pump model Q-Max rated at 1750 IGPM at 150 psi, from draft
- Hale transfer case model “K”, midship split shaft drive

- All discharges/suctions minimum size 3-inch stainless steel piping
- Steamer inlets equipped with MIV, both sides, rear feed
- Tank to pump (TTP) minimum 4-inch size automated valve and piping
- Side-panel controls, electronic governor, manual or electronic valve controls except MIVs, ladder pipe which shall be electronic
- RHS discharges, 2 @ 2-1/2", and 1 @ 4"
- LHS discharges, 2 @ 2-1/2"
- FoamPro 2001 metered injection foam system, piped to two cross-lay pre-connects with external foam pick-up and onboard tank

**TANKS:**

- Water/booster tank manufactured from welded polypropylene, by UPF
- Water tank size; 200 Imp gal net capacity
- Class A foam tank size; 25 Imp gal net capacity

**AERIAL:**

- 110'+ aerial ladder, mid-mount
- Minimum tip capacity, unlimited, of 500 pounds wet/dry
- Pinable waterway for water tower operation or rescue operation
- 1250 Imp gpm flow capacity from master stream
- Ladder tip control of master stream
- Galvanized torque-box and stabilizers
- Stable set-up in any position under full load in any rotational angle, any achievable elevation
- Travel height below 11'-1"

**FEATURES:**

- Hydraulic generator for 120/240 volts A/C power on and off the truck, Harrison Hydra-Gen rated at 12kw
- 220 Volt LED floodlights on sides of body, front of cab, aerial operator station ladder tip for night-time incidents (FRC Spectra SPA260-J15, SPA100-J20)
- 12 Volt LED scene lights on sides and back of body, ladder tip (FRC Spectra SPA900, SPA100-Q15)

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## **QUINT, KEY FEATURES**

### CUSTOM SPARTAN MODEL GLADIATOR CAB AND CHASSIS;

- Medium four door (MFD) cab with no raised roof, aluminum cab construction
- Seating for 6 firefighters with 5 SCBA seats (i.e. all except the driver)
- 12” extended and reinforced front bumper
- Single rear axle
- Air-bag package for all occupant protection in front or side impacts
- Cummins diesel engine model X15-605; rated at 605 hp, 2050 lb-ft torque.
- Allison automatic transmission model series 4000 EVS
- Locking rear differential
- PTO for hydraulic generator drive
- PTO for aerial hydraulic drive
- In-cab cabinets on both sides (aka medical cabinets)

### CUSTOM BODY, ALUMINUM CONSTRUCTION;

- Maximum compartmentation
- Roll-up doors for body side compartments
- Amdoor brand roll-up doors, painted body colour, with integral compartment lighting
- Adjustable shelving on tracks in compartments
- SCBA bottle storage compartments in sealed wheel arch compartments (4)
- Aluminum hinged hose bed cover

### EQUIPMENT STORAGE;

- Minimum 300 cubic feet of compartment storage in body
- Ladder storage plus pike poles, rear access, minimum 85 feet of ground ladders in body:  
35’/28’/16’/10’
- Main hose bed capacity;
  - o One division of 8 lengths @ 100’ ea. of 5” supply,
  - o One division of 12 lengths @ 50’ ea. of 2-1/2” double jacket (pre-connected),
- Pre-connected attack line capacity at pumphouse;
  - o Three divisions of 6 lengths @ 50’ ea. of 2-1/2” double jacket (pre-connected) Pump;

### PUMP;

- Hale pump model Q-Max rated at 1750 IGPM at 150 psi, from draft

- Hale transfer case model “K”, midship split shaft drive
- All discharges/suctions minimum size 3-inch, stainless steel piping
- Steamer inlets equipped with MIV, both sides, rear feed
- Tank to pump (TTP) minimum 4-inch size automated valve and piping
- Side-panel controls, electronic governor, manual or electronic valve controls except MIVs, ladder pipe which shall be electronic
- RHS discharges, 2 @ 2-1/2”, and 1 @ 4”
- LHS discharges, 2 @ 2-1/2”
- FoamPro 2001 metered injection foam system, piped to two cross-lay pre-connects with external foam pick-up and onboard tank

#### TANKS:

- Water/booster tank manufactured from welded polypropylene, by UPF
- Water tank size; 400 Imp gal net capacity
- Class A foam tank size; 25 Imp gal net capacity

#### AERIAL:

- 75’ aerial ladder, rear mount
- Minimum tip capacity of 500 pounds wet/dry, any angle
- Pinable waterway for water tower operation or rescue operation
- 1250 Imp gpm flow capacity from master stream at tip
- Ladder tip control of master stream
- Galvanized torque-box and stabilizers
- Stable set-up in any position under full load in any rotational angle, any achievable elevation

#### FEATURES:

- Hydraulic generator for 120/240 volts A/C power on and off the truck, Harrison Hydra-Gen rated at 12kw
- 220 Volt LED floodlights on sides of body, front of cab, aerial operator station ladder tip for night-time incidents (FRC Spectra SPA260-J15, SPA100-J20)
- 12 Volt LED scene lights on sides and back of body, ladder tip (FRC Spectra SPA900, SPA100-Q15)

## **RESCUE, KEY FEATURES**

### COMMERCIAL CAB AND CHASSIS

- Freightliner M2-112 crew cab with raised roof
- Seating for 5 firefighters
- Air-bag package for all occupant protection in front or side impacts
- Reinforced bumper in front
- Cummins diesel engine model ISL9-450; rated at 450 hp, 1250 lb-ft torque.
- Allison automatic transmission model series 3000 EVS
- Locking rear differential
- PTO for hydraulic generator drive

## **UTILITY, KEY FEATURES**

### COMMERCIAL CAB AND CHASSIS

- Dodge Ram 3500, crew-cab, pick-up with 6 foot +/- box
- Cummins diesel engine 6.7HO; rated at 400 hp, 1000 lb-ft torque
- Aisin automatic transmission
- Four-wheel drive, SRW
- Front suspension with snow-plow upgrade
- Option: Snow plow attachment and plow
- Option: Small bed fuel tank for emergency refuelling of fire apparatus at the scene

## APPENDIX X; TABLE OF RECOMMENDATIONS

<b>Recommendations</b>		<b>Report Page</b>
<b>MAJOR RECOMMENDATIONS</b>		
1	GA recommends the hybrid organizational model because it is the best compromise in providing regional coordination and efficiencies yet maintains the local volunteer character of the fire department.	xiv
2	GA recommends providing centralized administration support, management and leadership. A full-time Director of Public Safety Services – Regional Fire Chief, and a full time Assistant Fire Chief with primary responsibilities for fire prevention are recommended. A part-time Divisional Chief is also recommended to take responsibility for developing and coordinating of firefighter qualifications and training.	xiv
3	GA recommends a District Fire Chief management committee as a key recommendation, to bring together all the local fire district management personnel; so that plans and decisions on common issues of concern and service delivery can be made.	xiv
4	GA recommends better accountability and standardization of policies, procedures, major equipment, training and qualification standards, and levels of service. Accompanying this is revised response districts that minimize travel times to all portions of W/WH. To help ensure maximum efficiency and effectiveness of resource utilization, recommendation are made to develop response scenarios where all resources are available to respond as needed and are not bounded by fire department district silos.	xiv
5	GA recommends the benchmark annual operating budget as a starting point going forward.	xiv
6	GA recommends the proposed 20-year capitalization plan, primarily for fire apparatus replacements, using a standardized approach to specification and group purchasing.	xiv
7	GA recommends that all purchasing of significant-cost items be coordinated.	xiv
8	GA recommends minimum standards for training and qualifications of firefighters; in order to achieve a consistent service level throughout the new municipality that meets public expectations. Also recommended is a benefits package for the volunteer firefighters that recognizes the long term physical and mental health risks that fire/rescue first-responders are exposed to. Recommendations include a fair and uniform honourarium system.	xiv
9	GA recommends that all fire prevention activities, including fire-inspection, fire-investigation, and fire-safety education be brought inhouse. These are mandated services and require coordination, proper execution, and prioritizing in order to meet legislative mandates.	xv
10	GA recommends that the current 1.5 FTE fire-inspectors in Planning and Development be reassigned to the regional fire service.	xv
11	GA recommends that four on-call fire-investigators be trained and equipped to investigate all fires and to gather necessary information on origin, cause and circumstances, and to liaise with the office of the Fire Marshal and RCMP in securing evidence as necessary.	xv
12	GA recommends that better coordination and support of local fire department efforts in fire-safety education be provided, including the possible involvement of non-firefighting personnel from the community in this activity.	xv
<b>DETAILED RECOMMENDATIONS</b>		
13	GA recommends that when the new regional municipality officially comes into being April 1, 2020, that all the fire departments, municipal or otherwise, providing fire and rescue services within the region, including those that are contracted by the municipality, register with the new municipality on an annual basis.	11
14	GA recommends that the municipality include a multi-lateral automatic aid provision in their service agreement with each of the society fire departments. This provision will simplify utilizing the closest, appropriate, and adequate resources to incidents in all of the geographic area of the Region, irrespective of registered protection area (aka fire districts).	12
15	GA recommends that a review of the current registration form used by the Municipality of West Hants be used as the base registration document, and that it be amended to reflect the new regional municipality and its needs.	12
16	GA recommends the Kings County registration, clause 3.c. be edited for clarity. If the intention here is simply to require fires to be investigated then that should be stated clearly.	13
17	GA recommends that in the Kings County registration; either a) replace the term “fire suppression” with “fire extinguisher training” or b) delete the reference to “fire suppression.”	14

	<b><u>Recommendations</u></b>	<b><u>Report Page</u></b>
18	GA recommends in the Kings County registration, one of two options; a) delete cause 7.c. or b) reword the clause to reflect the following; <i>“The municipality and the Hantsport fire station will endeavour to amend its operating procedures and guidelines to meet the objectives of the Regional Municipality of Windsor -West Hants and Municipality of the County of Kings Fire service agreement”</i>	14
19	GA recommends that Duck Pond Road area of Kings County, as indicated on the map noted as Schedule ‘A’ of the Kings County agreement, be serviced by Southwest Hants. The Southwest Hants fire station is the closest station and the Duck Pond Road will fall within their recommended fire response district.	15
20	GA recommends that the arrangement with Glooscap FN be formalized through a service agreement between the two entities to establish the fire service programs and service levels that will be provided by West Hants.	15
21	GA recommends that a formal service agreement be established with the Walton Shore Volunteer Fire Department that specifies the services and service levels and other expectations that the Regional municipality has.	15
22	GA recommends that a consumables cost recovery clause be developed and considered for inclusion in any mutual-aid agreement.	18
23	GA recommends that any model the Council chooses that maintains the existence of individual incorporated fire departments (i.e. Status Quo model-1 or Hybrid model-3) should have a multi-lateral mutual-aid agreement in place between the municipality and each fire department, as well as with all other municipalities that the fire department might provide assistance to if they are to enjoy all the protections provided under §302 of the MGA. This would likely include Kings County, The Municipal District of East Hants, the District of Chester (Lunenburg County), and Halifax Regional Municipality.	18
24	GA recommends that the East Hants fire departments of Walton Shores and Uniacke should execute a Mutual-aid Agreement with the Regional Municipality. By virtue of being a Regional Municipality and employing a Regional fire service model if so chosen, the municipality will be signing mutual-aid agreements with other parties on behalf of all of the Regional fire stations.	19
25	GA recommends that the Kings County mutual-aid agreement should be reviewed and updated with any required amendments since the last update for this agreement is from 2001, and include execution by W/WH.	19
26	GA recommends that the new Regional municipality enter into a mutual-aid agreement with the Municipality of the District of Chester (MDC) in Lunenburg County and the New Ross and Chester Volunteer Fire Departments. MDC shares a border with the Region and with the fire districts of the New Ross Fire Department and the Chester Fire Department.	19
27	GA recommends that all mutual-aid agreements be signed by the municipalities involved, not only by the individual fire departments. The mutual-aid agreements currently in force are standard across the region. The main difference is who are the signatories to the agreements. Whereas the municipality has ownership of the majority of the capital investment of the regional fire services then the municipality has significant responsibility in providing mutual-aid services. Whereas there will be a new regional municipality commencing April 2020 all the mutual-aid agreements will require amending to reflect the new regional municipality.	19
28	GA recommends that regardless of the organizational model chosen by council, that a review and standardization of all policies, procedures, and guidelines of all types, that apply to the fire departments is undertaken quickly. The goal should be to produce consistency and fairness, and to meet the best practices of a collaborative fire and emergency service delivery program for the Region.	21
29	GA recommends that policy COGE007 be amended to more appropriately place responsibilities on station custodial staff. Sentence 4 of the policy has the potential to place a number of people and organizations at risk, not to mention the responders themselves.	23
30	GA recommends that the Windsor and West Hants false alarm, fire protection, burn permit and outdoor fires by-laws be reviewed and harmonized. The Bylaws relating to out of doors burning may need to address differing needs by area due to the rural nature of the Municipality of West Hants vs the very urban nature of Windsor.	23
31	GA recommends that if the false fire-alarm by-law is not enforced, that the by-law should be repealed.	24
32	GA recommends that the new fire department administration conduct a human resource needs assessment of the fire service in the Region. The recommendations on active front-line firefighter numbers is contained in Recommended Front-Line Staffing and Equipment starting on page 210 of this report, but there are numerous support (staff) positions not identified there.	31

	<b><u>Recommendations</u></b>	<b><u>Report Page</u></b>
33	GA recommends a review of the current recruitment and selection process, including currency with best practices, modifications required to meet the real needs of the organization, compliance with current Human Rights requirements, and alignment with corporate human resource policies.	31
34	GA recommends a review of fire department job descriptions, ensuring there is a job description for every position, volunteer or otherwise. Job descriptions should be complete with expectations and rewards. They outline necessary qualifications, time commitments (frequency and length), responsibilities and activities involved, the organization's accountability structure, and the performance evaluation methods.	31
35	GA recommends that membership in a fire department be restricted to those volunteer firefighters who actual reside in the fire district. Moving forward, the current practice of selectively choosing the fire department you prefer should no longer be permitted. As this practice robs the community of which a volunteer resides of a valuable resource. It also increases the risk of an accident as the volunteer rushes longer than necessary distances to attend the fire station when the pager goes off.	32
36	GA recommends that volunteer firefighter recruitment be a region-wide program for the regional fire service and that successful applicants be assigned to a regional station, based upon the closest station (i.e. fire district) to their residence.	33
37	GA recommends that the recruitment process commence with a properly designed marketing program throughout the region. This coordinated approach to recruiting will help to ensure standards are met and will ease the burden on individual stations. Turnover in volunteer fire departments is typically as much as 20% annually, but GA does not have the actual figures for WWH. It is likely that there is a need for an annual recruitment process, managed regionally with direct input and assistance from each of the stations.	33
38	GA recommends that the Regional Municipality invest in developing the leadership and management skills in the officers of all fire departments in the Region, as appropriate to their respective roles.	35
39	GA recommends that the Regional municipality register their volunteer firefighters with WCB before the eventual requirement for such registration occurs.	38
40	GA recommends the following recruitment and retention initiatives be implemented as part of a Region-wide program aimed at volunteer firefighter retention and in recognition of the special needs of volunteer firefighters; {see details on page}	40
41	GA recommends that the new Regional Municipality strike a committee of the appropriate fire service and municipal personnel, including finance personnel, to establish a fair, equitable, and affordable honourarium program across the region. The program should meet the following points; {see details on page}	47
42	GA recommends that the following table of qualifications be implemented as a standard baseline for officer promotions in all fire departments in the Region. {see details on page}	53
43	GA recommends the following promotional process. {see details on page}	54
44	GA recommends that performance evaluations be done by the immediate supervisor annually.	54
45	GA recommends that standard operating procedures/guidelines (SOP/Gs) be developed that outline a systematic approach for the rehabilitation of members operating at incidents and training exercises; in accordance with NFPA-1584. The procedures need to address cooling and warming, medical monitoring, Emergency Medical Care, member accountability, and documentation.	57
46	GA recommends that separate roles for ISO and OHS be established at each fire station.	60
47	GA recommends that; as required by regulations and standards that an official written occupational safety, health, and wellness policy be developed for the Regional Fire Services that that identifies specific goals and objectives; {see details on page}	60
48	GA recommends that the fire service evaluate the effectiveness of the occupational safety, health, and wellness program at least once every 3 years and submit an audited report of the findings to the DPS/FC and corporate CAO.	61
49	GA recommends acquiring a proper records management system (RMS). If related recommendations throughout this report are accepted, then an RMS training module adhering to NFPA-1401; <i>Recommended Practice for Fire Service Training Reports and Records</i> can be acquired as part of an overall Records Management System.	70
50	GA recommends that a three-year period be considered a reasonable period of time for a new recruit to become NFPA-1001 Level I qualified if that recruit aspires to attain a higher rank.	74

	<b><u>Recommendations</u></b>	<b><u>Report Page</u></b>
51	GA recommends a minimum mandatory training of six (6) hours per quarter to maintain Veteran driver status, plus an annual 8-hour training day. This is required to maintain skill proficiencies and teamwork skills.	76
52	GA recommends that all stations use the same method, specifically to employ the same colour helmets by rank, and standardize on vinyl reflective qualification stickers.	76
53	GA recommends that there be at least one certified Training Instructor (Minimum Level I Instructor) at each of the region's six stations.	77
54	GA recommends that an annual 3-day Regional Training Weekend be established and organized on an annual basis. Such a weekend could be rotated annually amongst the six station locations, each playing host in turn.	79
55	GA recommends that an individual, at least on a part time basis, be hired Regionally (Division Chief) to guide and assist in the development and delivery of Region-wide, standardized, focused, and appropriate training and personnel development to the fire departments and firefighters. If the desire is to have a regional single focused fire operational service, then all associated training must also be singularly focused. For this to occur, a regional-wide program, with homogenous training policies and procedures, with common goals, and common objectives needs to be implemented and managed.	81
56	GA recommends that a thorough evaluation of current fire-inspection practices and procedures be conducted to determine compliance with the Act. Changes should be immediately made where discrepancies are found or practices open up the municipality to avoidable liability.	110
57	GA recommends that qualified fire-investigators be retained by the Regional fire service for the purposes of investigating all fires for their origin, cause, and circumstances.	111
58	GA recommends that more resources, coordination, and emphasis be placed on fire-safety education activities. These activities should be delivered locally but coordinated regionally and in accordance with risks in the community.	112
59	GA recommends the implementation of Model 3; Hybrid Regional Fire Service, for all of the reasons discussed starting on page 120.	127
60	GA recommends the hiring of a full-time Director of Protective Services/Fire Chief.	127
61	GA recommends the hiring of a full-time Assistant Fire Chief.	127
62	GA recommends the hiring of a part-time Divisional Chief.	127
63	GA recommends the hiring of a full-time Administrative Assistant.	127
64	GA recommends the hiring of four part-time paid on call fire-investigators.	127
65	GA recommends the transfer of 1.5 FTE Fire-Inspectors from Planning & Development, Building, to the regional fire services.	127
66	GA recommends that future communications/dispatching contracts reference all services required, for example; "provision of fire department dispatching and emergency communication services".	132
67	GA recommends that Valley Communications have one or two staff attend a recognized certification program such as offered by the Association of Public-Safety Communications Officials (APCO).	134
68	GA recommends that the backup dispatch/communications facility's communications equipment be tested at least monthly.	135
69	GA recommends that at least once every six months the communications/dispatch backup facility shall be operated for one full shift as per FSANS standard and that records of all testing and operations of the backup facility be created and maintained, including all maintenance provided.	135
70	GA recommends that the dispatch/communications service provider undertake the development and implementation of business continuity plans and successions plans, if they have not already been made, as soon as possible.	135
71	GA recommends that the Regional Municipality investigate a cost-effective fully integrated Fire CAD/RMS program.	138
72	GA recommends that Valley Communications adhere to FSANS Fire Dispatch Standards	139
73	GA recommends that the Regional municipality and Valley Communications acquire the required software and firmware/hardware to enable the capture of any and all ANI/ALI data from the Primary PSAP.	139

	<b><u>Recommendations</u></b>	<b><u>Report Page</u></b>
74	GA recommends that the Regional municipality appoint a single contact person to manage emergency dispatch/records management, radio communications, and be the primary liaison between the municipality and Valley Communications.	139
75	GA recommends that Valley Communications test, and time, Language Translation services provided by ATT in Toronto.	139
76	GA recommends that the Municipality and Valley Communications implement a proper and ongoing incident call reporting and auditing program.	139
77	GA recommends that VComms acquire the necessary radio transmission recording equipment to record all fire department used channels.	147
78	GA recommends that the Regional fire departments operate on TMR channel 23 for all incident dispatches and incident operations, and TMR channel 22 for water shuttle and Traffic Control operations, etc.	147
79	GA recommends that the Municipality maintain the current VHF system for fire service paging only. The Municipality should strike a committee of the fire services to examine if there are any compelling reasons why the VHF system must be maintained for other than paging use.	147
80	GA recommends that the fire departments permit VComms to provide the contracted services for dispatching and communications as required by the service contract, by discontinuing the practice of taking over radio communications from fire stations.	147
81	GA recommends that the fire departments and VComms implement the use of industry standard radio transmitted benchmarks (KPIs) for all fire incidents.	147
82	GA recommends that dispatch protocols for MFR incidents be revised so that only one MFR capable unit is dispatched to single patient incidents.	147
83	GA recommends that the fire departments collectively develop and implement a standardized training program to make all personnel aware of required radio operating procedures, benchmarks, channel usage, and all other aspects critical for effective and efficient radio system usage.	147
84	GA recommends that fire stations be numbered starting with Summerville as number 1 and going clockwise from there.	152
85	GA recommends that a standard system of IDs be utilized for identifying functional positions on the fire-ground, starting with the regional staff and extending down through to all apparatus seat positions and to firefighters who arrive on-scene in a private vehicle.	153
86	GA recommends that standard radio protocol titles be established for all regular positions at an incident scene.	153
87	GA recommends that fire apparatus specifications be standardized across the region, by type and class of apparatus.	157
88	GA recommends that the Windsor boat be professionally inspected to determine its need for replacement.	157
89	GA recommends that a standardized, and coordinated, scheme of unique fire apparatus number identifications be established Region-wide, as follows; {detail on page}	157
90	GA recommends that steps be immediately taken to establish a robust internal data collection protocol for all incidents, not just fires. {detail on page}	158
91	GA recommends that a Region-wide False Fire-Alarm by-law be developed and enforced.	163
92	GA recommends that the Windsor and Three Mile Plains stations be appropriately resourced to deal with any population and residential growth that creates increased service demand.	175
93	GA recommends that the new Regional government carefully consider potential impacts on fire service capability with every new industrial, large commercial, or large residential planning application. The fire service should not be opposed to such developments, but must speak clearly about needs and plan accordingly for any such large-scale development.	177
94	GA recommends that there be response plans developed to ensure that all personnel Region-wide are well aware of bridge restrictions where fire apparatus cannot cross.	179
95	GA recommends that dry-hydrants be installed at all planned rural water supply points in the Region. Water supply points should be established within 5 kilometers by road to all hamlets and clusters of residential housing,	181

	<b><u>Recommendations</u></b>	<b><u>Report Page</u></b>
	and within 2.5 kilometers to all commercial risks. All dry-hydrants should be developed in accordance with the requirements of NFPA-1142, and should also be maintained in accordance with the standard.	
96	GA recommends that good records of all dry-hydrant maintenance, inspections, and testing should be kept as protection against liability and for reference and pre-planning purposes.	181
97	GA recommends that all dry-hydrants or other static water sources that are established on private property be accompanied by an executed agreement defining rights, duties, and liabilities.	181
98	GA recommends that complete fire statistics be collected and records kept, including all information requested by the NS Fire Marshal for inclusion in the provincial database. Records retention rules generally do not require retention of such data beyond five or seven years. It is further recommended that fire statistics be kept at least 15 years in order for trends to be clearly seen and analysed.	185
99	GA recommends, based on the travel-time predictions, the following fire station response districts. {detail on page}	197
100	GA recommends that where Uniacke previously responded into the east Ardoise area that this arrangement not continue. Analysis revealed that the travel-time to that area is virtually the same for both Brooklyn and for Uniacke. The additional complication, cost, and inefficiency of managing an additional fire service in that sparsely occupied area does not contribute measurably to potential outcomes.	198
101	GA recommends that the Duck Pond Road - Black River Lake area be serviced from the South West fire station.	198
102	GA recommends that the following first-response objective staff/time benchmarks for each of the following communities be established; in accordance with the recommended revised fire districts. {detail on page}	199
103	GA recommends that for planning purposes related to staffing, apparatus, and public information that these response objectives be implemented.	200
104	GA recommends that the Regional fire department develop Run-Cards to specify when and where certain types of incidents occur that the appropriate closest stations and appropriate resources are simultaneously dispatched. Simultaneous dispatch should occur for all fire/suspected fire events in all response areas. Simultaneous dispatch should occur for all other incidents, other than MFR incidents, in all Rural and Remote areas.	201
105	GA recommends that for potential large fire risk occupancies in rural areas, that adequate on-site water supplies be provided by the owner, such that relay pumping from draft can replace or strongly supplement water shuttled by tankers. These sites should be large all-weather access ponds meeting NFPA-1142.	209
106	GA recommends the following staffing complement of active volunteer firefighters for each station, and the recommended fleet of fire apparatus. {detail on page}	210
107	GA recommends that the following replacement schedule be adopted for the purposes of determining fire apparatus suitability for continued service. {detail on page}	215
108	GA recommends that a reserve pumper be placed in Brooklyn and Windsor stations, and the reserve Tanker be placed in Summerville.	215
109	GA recommends that replacement Tanker apparatus also include all components necessary to qualify as a pumper and a tanker. This includes little to no significant change from the current apparatus in some cases, but in other cases means the inclusion of adequate equipment and hose carrying capacity.	216
110	GA recommends a standardized vehicle specification be used Region-wide. Standardized apparatus descriptions are included in Appendix IX; Standardized Fire Apparatus Features starting on page 377.	216
111	GA recommends that specifications for the major classes of fire apparatus be standardized across all stations in the new regional municipality. This will generate savings in total cost of ownership for the municipality.	219
112	GA recommends that the Regional fire service strike a committee to investigate a standard brand and model series of SCBA with which to outfit all fire stations in the Region. Consideration should be given to the types of SCBA being used by mutual-aid partners as well, but in any case the SCBA used Regionally should be standardized.	228
113	GA recommends that every structural firefighter be provided with his/her own personal SCBA face mask. Provision of a properly fitting mask is necessary to achieve a pass in annual legislated quantitative Fit-Testing. A variety of mask sizes and models is usually necessary to achieve Fit Test performance.	228
114	GA recommends that the Regional fire service standardize on Hurst eDraulic hydraulic extrication/rescue equipment, and phase in replacement of the current equipment that is not eDraulic.	228

	<b><u>Recommendations</u></b>	<b><u>Report Page</u></b>
115	GA recommends that all fire stations be equipped with eDraulic Combi-Tools and that Windsor station be equipped with a set of heavy hydraulic jaws, cutters, and rams such that Windsor can provide Regional Heavy Rescue support to all stations. Details on the specific eDraulic equipment that is recommended is on page 291 of this report.	229
116	GA recommends that the Regional fire service immediately strike a committee to determine bunker gear needs and to test manufacturers' offerings, and to settle on one make, one model, one colour, and on standard features.	229
117	GA recommends that Proposals from vendors of the selected manufacturer be entertained and that a multi-year contract be negotiated with the vendor, allowing the DPS/FC to requisition PPE from the vendor at contract prices on an annual basis.	229
118	GA recommends that the Regional fire service standardize on one make and model of general use multi-gas detector for the fire stations.	230
119	GA recommends that the Regional fire service strike a committee to evaluate all the available makes and models of hose in the utilized sizes. The evaluation should include performance factors of weight, friction loss, kink resistance, abrasion resistance, liner separation, grip, quality, availability, construction, quality control at the factory. After ranking then price should be evaluated for those makes/models that have tied in the evaluation. Once selected that make/model should become standard for future purchases.	230
120	GA recommends that the Regional fire service strike a committee to evaluate the available makes and models of thermal imaging cameras. The evaluation should include all recognized performance factors. Testing of demonstration equipment should be involved. Standardization on future purchases of TICs should be based on the successful candidate, and be phased into all stations.	231
121	GA recommends that an architect familiar with fire station requirements, guidelines and applicable NFPA standards or a construction engineer be acquired to conduct an assessment to determine the feasibility of any required alterations for the Summerville and Windsor fire stations.	244
122	GA recommends that these Minor Capital expenditures be treated differently in future budgets and will address this recommendation in the benchmark portion of this analysis.	254
123	GA recommends that the new Regional Municipality implement service fees for reasonable cost recovery to highway responses.	264
124	GA recommends that the new Regional Municipality identify suitable services, and implement cost-recovery fees for these services. {detail on page}	265
125	GA recommends that the municipality pursue prosecution and seek fines for violations of the Fire Code, in accordance with the provisions in the <i>Fire Safety Act</i> .	266
126	GA recommends that one qualified and experienced fire apparatus maintenance service provider do all the servicing on all fire fleet vehicles.	268
127	GA recommends that a better understanding be undertaken on Windsor fire station actual costs as part of a possible justification for a new facility.	270
128	GA recommends that a fair and equitable honourarium policy be established that applies to all volunteer firefighters across the Region.	271
129	GA recommends that the following benefits be provided by the municipality to all volunteer firefighters; Provincial Workers Compensation Benefits (\$62k insured amount), VFIS AD&D and disability coverage (\$200k on-duty principal amount, disability weekly \$700 maximum), VFIS MFAP (member and family assistance program for mental health), VFIS 24/7 (off-duty accident and sickness, 50/50 co-pay with firefighter who subscribes).	272
130	GA recommends that an insurance specialist be hired to review insurance policies and coverage options in order to prepare an RFP that obtains needed/desired coverage at best value. Self-insurance (i.e. deductible) risk assessments should be considered.	273
131	GA recommends that expenditures on minor capital equipment be increased since they are currently below sustainable service-requirements.	274
132	GA recommends that the need for the purchase of minor capital items be evaluated on the basis of the required inventory of items (e.g. how many 2½-inch fire hoses are needed) and each items' expected life-span. {detail on page}	274

	<b><u>Recommendations</u></b>	<b><u>Report Page</u></b>
133	GA recommends that a number of bunker gear sets be purchased annually. Blanket purchasing contracts should be signed that permit the fire department to purchase/requisition annually, say over a 5 or 7-year period, estimated maximum/minimum numbers of firefighters' PPE components, at agreed prices. {detail on page}	275
134	GA recommends that \$300k (2019 dollars) be the target as a long-term plan for annual minor capital budgeting, until experience proves this is/not sufficient. However, as shown in the workbook that requirement for funds appears to be front-end loaded based on the expressed current needs of the fire departments. In the short term, Council may want to consider a temporary increase in that amount for the first three years. The benchmark budget shows \$340k in 2020/21 for this reason.	278
135	GA recommends that the Director of Public Safety/Fire Chief manage the purchasing of minor capital equipment, for several reasons. With advice from the District Chief Management Committee he should set priorities on what equipment will be purchased that year.	278
136	GA recommends that the Director of Public Safety/Fire Chief have discretionary powers to make adjustments, within the approved minor capital budget total, to annually determine the exact mix of minor capital purchases according to immediate need.	278
137	GA recommends that any surplus minor capital funds at the end of the fiscal year (if any) be placed into a revolving reserve account for the future purchase of minor capital equipment.	278
138	GA recommends that the surplus minor capital revolving reserve account have a set maximum amount of approximately \$100,000. If in any given future year there is an unprecedented or emergency need to make minor capital purchases and there are insufficient budgeted funds, a mechanism should be in place for the Director of Public Safety/Fire Chief to request Council to release additional funds to cover the need.	278
139	GA recommends that the following fire apparatus replacement schedule be adopted for the purposes of determining fire apparatus suitability for continued service and as a budget planning tool for fire apparatus replacement. {detail on page}	283
140	GA recommends that Windsor's other aerial (ALF) be scrapped without direct replacement and an unsuitable wildland/urban interface pumper be sold.	284
141	GA recommends for the future, the following numbers and types of first-line duty fire apparatus allocations. These numbers can be accomplished through attrition as current apparatus age-out. {detail on page}	284
142	GA recommends that two older (no longer first-line) pumpers and a tanker be kept serviceable/operational as maintenance reserves. The purpose of reserves is to temporarily replace apparatus that are out of service for a day or more. They will also remain available for major incidents.	284
143	GA recommends that a reserve pumper be placed in Brooklyn and Windsor stations, and the reserve Tanker be placed in Summerville.	285
144	GA recommends an annual contribution of approximately \$650k to a fire capital reserve fund to reduce the annual capital fluctuations in the fire department budgets to a minimal amount. Adequate reserve funds would greatly reduce the need to debenture these predictable capital costs, thereby reducing the overall cost of capital purchases.	285
145	GA recommends the following table of scheduled fire apparatus replacements. {detail on page}	290
146	GA recommends that the Regional fire departments standardize on the heavy hydraulic equipment purchased and utilized.	291
147	GA recommends that Hurst eDRAULIC equipment be utilized exclusively.	291
148	GA recommends that not every station needs a full set of heavy hydraulic equipment. See more detail on this subject on page 228.	291
149	GA recommends that Windsor's rescue truck be designated as the Regional heavy rescue support apparatus, and be provisioned with multiple hydraulic rescue tools. All other stations should have a more modest set of hydraulics.	291
150	GA recommends that exhaust extraction systems for Summerville and South West stations be funded as soon as possible. They are scheduled for 2020 in the benchmark budget. The total estimated cost of these systems is \$105k.	292
151	GA recommends that the new Regional municipality elect the highest WSIB protection. The addition of Region-wide firefighter accident, sickness and disability (AD&D) benefits, MFAP, and off-duty AD&D coverage is included in the projected cost increase.	294

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